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Public participation in marine spatial planning in Iceland

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Public participation in marine spatial planning in Iceland

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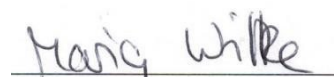
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Statement

I hereby declare that this project is based on my own observations, is written by me, and that it has not been previously submitted to a higher degree, neither in part nor in whole.



Maria Wilke

Clarification of contribution

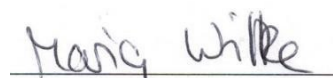
I hereby declare that the ideas behind this research, the writing of the following thesis and the three accompanying papers are my own work, done under the supervision and with assistance of my supervisors, Dr Sigríður Kristjánsdóttir, Dr Ragnheiður I. Þórarinsdóttir, Dr Bradley Barr, Dr Knut Bjørn Stokke and Dr Carsten Jahn Hansen.

The contribution of Maria Wilke to the papers included in this thesis was as follows:

Paper I: Maria Wilke planned the work, together with Dr Sigríður Kristjánsdóttir. The data was collected by Maria Wilke. Maria Wilke analysed the data and wrote the manuscript. Dr Sigríður Kristjánsdóttir advised and edited before submission. Maria Wilke corresponded with the scientific journal and addressed review comments.

Paper II: Maria Wilke planned the work, collected, and analysed the data, and wrote the manuscript. Maria Wilke corresponded with the scientific journal, edited the manuscript, and addressed review comments.

Paper III: Maria Wilke planned the work, collected, and analysed the data and wrote the manuscript. Maria Wilke corresponded with the scientific journal, edited the manuscript, and addressed review comments.



Maria Wilke

Ágrip

Norðlæg samfélög standa frammi fyrir margvíslegum áskorunum vegna loftslagsbreytinga, þar á meðal breytt veðurmynstur, hækkun sjávarborðs og fjölgun ágengra tegunda. Til að takast á við loftslagsbreytingar - sem margar hverjar valda óvissu fyrir lífsviðurværi - þarf að þróa aðferðir til að skipuleggja og laga sig að framtíðinni. Ísland hefur nýlega hleypt af stokkunum skipulagi haf- og strandsvæða (MSP) og eitt fyrsta skipulagsferlið hefur farið fram á Vestfjörðum. MSP býður upp á tækifæri fyrir yfirvöld, hagsmunaaðila og almenning til að sameinast um sjálfbæra áætlun fyrir hafsvæði sem eru undir auknu álagi af mannavöldum. Marine Spatial Planning (MSP) miðar að vistkerfisbundinni stjórnun auðlinda hafsins sem leiðir mismunandi hagsmunaaðila og almenning saman til að ræða hagsmunaaðila þeirra og móta sjálfbæra leið fram á við. Þátttaka almennings er mikilvægur þáttur í MSP til að gera hana lýðræðislega lögmæta og sjálfbæra til lengri tíma litið. Hins vegar kemur MSP með sínar eigin áskoranir þar sem ferlið reynir að virkja hagsmunaaðila og almenning í ákvörðunum um „ósýnilegt“ rými sem er að miklu leyti undir yfirborði sjávar. MSP var formlega innleitt með lögum á Íslandi árið 2018 og hófust tvö verkefni á Vestfjörðum og Austfjörðum árið 2019, og eitt er fyrirhugað í Skjálfandaflóa og í Eyjafirði. Þessi ritgerð fjallar um MSP á Íslandi þar sem niðurstöður rannsókna hafa verið birtar í þremur rannsóknargreinum. Í grein I eru óvissuþættir umhverfisbreytinga á Vestfjörðum kannaðar í tengslum við margvíslegar samfélagslegar áskoranir fyrir strand- og hafskipulag á Íslandi. Gögn úr skipulagsferlinu sem og úr viðtölum og vinnustofu sem haldin var á Vestfjörðum voru greind og rædd til að komast að því hversu mikil áhrif umhverfisbreytingar hafa á MSP.

Til að leggja mat á umfang þátttöku almennings í íslenska MSP ferlinu eru í grein II kynnt gögn sem safnað var með viðtölum (n=80), samtölum, athugunum og greiningu á gagnaöflun og tillögustigum skipulagsferlisins. Niðurstöðurnar sýna að takmarkaður hópur fólks, þar á meðal aðilar frá stofnunum og formlegir hagsmunaaðilar, hafði tekið þátt í upplýsingaöflunarstigum ferlisins, en á síðari stigum umræðu og ákvarðanatöku voru heimamenn áberandi fjarverandi. Þessi skortur á þátttöku almennings undirstrikar þörfina fyrir ítarlegri samskipti um MSP-ferlið og málefni hafsins í aðliggjandi samfélögum sem og brýna þörf fyrir aðkomu almennings að ákvarðanatöku og MSP á sjó.

Skipulag haf- og strandsvæða er nýtt á Íslandi, en strandsvæðaskipulag (CZP) er vel rötgróið í Noregi. Í grein III er samanburður gerður á þátttöku í haf- og strandskipulagsferlum á milli Íslands og Noregs og hvaða lærdóm má færa á milli landanna. Gögnum var safnað í tveimur tilviksrannsóknum, annars vegar í Tromsø svæðinu í Noregi og hins vegar á Vestfjörðum á

Íslandi með greiningu á skipulagsgögnum, heimildarýni og viðtölum í báðum tilviksrannsóknum. Niðurstöður sýna að þátttaka almennings er formlega óaðskiljanlegur í báðum ferlunum, en er í reynd mjög mismunandi. Bæði skipulagsferlin eru knúin áfram af stækkun fiskeldisiðnaðarins og margvísleg vandamál sem samfélögin standa frammi fyrir í skipulagsferlinu eru svipuð. Löggjafar- og samhengismunur, sem og ólíkur rammi skipulagsferlanna, veldur hins vegar miklum mun á útfærslum og áhrifum þeirra fyrir byggðarlög. Í Noregi er þátttaka almennings pólitískt eftirsótt og höfð að leiðarljósi í þátttökustefnu, sem leggur áherslu á samlegðaráhrif milli sérfræðipækkingar og staðbundinnar þekkingar. Í Tromsø-héraði var þýðingarmikil þátttaka almennings mismunandi eftir sveitarfélögum og takmörkuð þátttaka frumbyggja er enn vandamál. Á Íslandi eru litlar pólitískar væntingar um þátttöku almennings og ferlið einkennist af óvirkri nálgun á þátttökusem miðar að því að upplýsa almenning en felur ekki í sér viðtækari skiptingu ákvarðanatökuvalds.

Lykilorð: Haf- og strandskipulag; hafsvæðisskipulag, strandsvæðisskipulag, þátttaka almennings, þátttaka borgara, blátt réttlæti

Abstract

As the global climate is changing dramatically, Northern communities are facing a multitude of challenges including changing weather patterns, sea level rise and invasive species. To cope with the recent climatic changes - many of which present great uncertainties to livelihoods - strategies should be developed to plan and adapt for the future. Iceland has recently launched marine spatial planning (MSP) endeavours, and two of the first planning processes have been conducted. MSP presents opportunities for authorities, stakeholders, and the public to come together to forge a sustainable path ahead for marine areas that are under increasing pressure from human activities. MSP aims at ecosystem-based management of ocean resources that brings different stakeholders and the public together to discuss their conflicts of interest and forge a sustainable path forward. Public participation is a crucial element of MSP to make it democratically legitimate and sustainable in the long-term. However, MSP comes with its own considerable challenges as it attempts to engage stakeholders and the general public in decisions about an 'invisible' space largely beneath the surface of the sea. MSP was formally introduced by law in Iceland in 2018 and two projects were initiated in the Westfjords and Eastfjords in 2019, with one further planned in Skjálfandi Bay. This dissertation explores MSP in Iceland in three research articles. In paper I, the uncertainties of the environmental changes in the Westfjords are explored in conjunction with the multitude of societal challenges to coastal and marine planning in Iceland. Data from the planning documents as well as from semi-structured interviews and a workshop conducted in the Westfjords are analysed and discussed to establish how environmental changes and the societal context set the scene for Icelandic MSP.

To assess the scope and depth of public participation in the Icelandic MSP process, paper II presents data that was collected through participant observation, unstructured and semi-structured interviews (n=80) and document analysis in the three case studies. The results show that a limited group of people including institutional actors and formal stakeholders had been engaged in the information gathering stages of the process, but in the later phases of discussion and decision-making, local community members were notably absent. This lack of public participation highlights the need for more in-depth communication about the MSP process and marine issues in the adjacent communities as well as an urgent need for inclusion of the public into marine decision-making and MSP.

Whereas marine spatial planning is new to Iceland, coastal zone planning (CZP) is well established in Norway. Paper III investigates how participation in coastal and marine planning

processes compare between Iceland and Norway, and what lessons can be shared between them. Data was collected in two case studies in the Tromsø region in Norway and the Westfjords of Iceland through analysis of planning documentation, literature review and semi-structured interviews. The results show that public participation is formally integral to both processes, but in practice varies considerably. Both planning processes are driven by the expansion of the aquaculture industry and a variety of issues faced during the planning process are similar. However, divergent frameworks of the planning processes result in major differences between the implementations and their implications for local communities. In Norway, public participation is politically desired and guided by a participation strategy, emphasising synergies between expert and local knowledge. In the Tromsø region, meaningful public participation varied across the involved municipalities and issues regarding indigenous participation remain. In Iceland, there is little evident political expectation of public engagement, and the process is characterised by a passive approach to participation that aims to inform the public but does not include wider sharing of decision-making power.

Keywords: marine spatial planning, coastal zone planning, public participation, citizen involvement, blue justice

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Table of contents

Ágrip.....	v
Abstract.....	vii
Acknowledgements.....	ix
1 Introduction	1
1.1 Climate change impacts and resilience in coastal communities in the North.....	2
1.2 Education and Ocean Literacy	3
1.3 Marine Spatial Planning	6
1.3.1 Public participation in MSP.....	7
1.3.2 Non-Participation	8
1.4 Objectives and structure of the thesis.....	9
2 Methods	11
3 Main Results.....	15
3.1 Climatic and societal context for Icelandic MSP	15
3.1.1 Literature review.....	15
3.1.2 MSP process in Iceland	16
3.2 Public participation in three case studies.....	18
3.2.1 Westfjords case study results.....	21
3.2.2 Eastfjords case study results	22
3.2.3 Skálfandi Bay case study results	24
3.2.4 Themes and codes across all three case studies	25
3.3 Comparison between Iceland and Norway.....	27
4 Discussion	35
4.1 What does the climatic and societal context mean for public participation in Icelandic MSP?.....	35
4.2 Why is the participation level so low and what could be done to improve it?	37
4.3 What are lessons to be learnt from looking beyond Icelandic MSP? Comparison with the Norwegian case and wider considerations.	41
4.3.1 Blue Justice as a path to increase inclusivity and participation	42
4.3.2 Missing links: ecosystem protection goals and human dimensions in MSP	46
5 Conclusion	49
Bibliography	55
Appendix	65
Paper I	67
Paper II.....	83
Paper III.....	97

List of original papers

The present thesis is based on the following publications, which will be referred to by their Roman numerals:

- I. Wilke, M, & Kristjánsdóttir, S. (2023). Under the surface: climatic and societal challenges in marine spatial planning in the Westfjords of Iceland. *Climate* 11(8), 172. <https://doi.org/10.3390/cli11080172> [published].
- II. Wilke, M. (2023). Public participation in marine spatial planning in Iceland. *Frontiers in Marine Science* 10, 1154645. <https://doi.org/10.3389/fmars.2023.1154645> [published].
- III. Wilke, M. (2023). Comparing public participation in coastal and marine planning in the Arctic: lessons from case studies in Iceland and Norway. *Coasts* 3(4), 345-369; <https://doi.org/10.3390/coasts3040021> [published].

In addition, the author contributed to the several research articles during the doctoral work.x

From the Nature-based Solutions project S-ITUATION:

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- Nickayin, S. S., Wilke, M., & Þrastardóttir, R. (2022). State of the art of Nature-based Solutions in Iceland. Report. Rit LbhÍ nr. 159. ISSN 1670-5785 [published].

From the Bioregioning project spin-off:

- Hubbard, E., Wearne, S., Jonas, K., Wilke, M., & Norton, J. (2023). Where are you at? Re-engaging bioregional ideas and what they offer to geography. *Geography Compass*. <http://doi.org/10.1111/gec3.12722> [published].
- Wearne, S., Hubbard, E., Jonas, K., & Wilke, M. (2023). A Learning Journey into Contemporary Bioregionalism. *People & Nature*, 00, 1-17. <https://doi.org/10.1002/pan3.10548> [published].

From the COAST project:

- Wilke, M. & Kristjánsdóttir, S. (2024). Can public participation in marine planning support the SDG journey? A case study from the Westfjords of Iceland. In S. Kristjánsdóttir (Ed.) *Sustainable Development Goals in relation to Arctic Challenges*. Routledge. [in review].

From the JUSTNORTH project and Skjálfandi Bay case study:

- Gómez, S., Patraca, B., Zoghbi, J., Ariza, E., Wilke, M., Einarsson, N., Huijbens, E., & Chambers, C. (2024). Exploring social media as a tool for disentangling cultural ecosystem service values of whale watching to inform environmental judgments and ethics: The case of Húsavík, Iceland. *Journal of Ecotourism* 1-15. <https://doi.org/10.1080/14724049.2024.2308367> [published].
- Chambers, C., Wilke, M., Smáradóttir, S., Zoghbi, J., Gómez Mestres, S., Einarsson, N., Ariza Sole, E., Huijbens, E., & Corine Wood-Donnelly, C. (2024). Justice in the coastal and marine environment: A case study in Skjálfandi Bay, Iceland. *Ocean & Coastal Management*. [in preparation].

From the SOLIC project:

- Olsen, M. S., Amundsen, V., Alexander, K., Thorarinsdottir, R., Wilke, M., & Osmundsen, T. C. (2024). Social license to Operate for Aquaculture – a cross-country comparison. *Aquaculture*. [accepted].

List of tables

Table 1	All themes and codes assigned across the three case studies in Iceland.....	26
Table 2	Comparison of two marine planning processes: Marine spatial planning in the Westfjords of Iceland and intermunicipal coastal zone planning in the Tromsø region in Norway	311
Table 3	Key findings relating to public participation in marine planning processes compared.....	333

List of figures

Figure 1	Map of areas for MSP in Iceland defined by the National Planning Agency. First plans were created for Westfjords and Eastfjords, and future MSP is envisaged for the central North including Skjálfandi Bay (after Hafskipulag, 2021).	6
Figure 2	Ladder of citizen participation (after Arnstein, 1969, p. 217).....	7
Figure 3	Split ladder of participation (after Hurlbert & Gupta, 2015, p. 104).....	8
Figure 4	Map of Icelandic case studies and main results. From the six identified themes in total, the map shows the four themes that illustrate the different narratives in the three case studies (n= total number of interviewees per case study). (The additional themes of Iceland and Planning and Marine Planning Process, as stipulated by the interview questions, permeated all case studies and are further detailed below.).....	20
Figure 5	Top codes allocated in the Westfjords case study.....	211
Figure 6	Top codes allocated in the Eastfjords case study.	23
Figure 7	Top codes allocated in the Skjálfandi Bay case study.	25
Figure 8	Map of the Tromsø region in Norway with the three municipalities involved in intermunicipal CZP: Tromsø, Karlsøy and Balsfjord.....	277
Figure 9	Elements of blue justice as identified in the case studies of Norwegian intermunicipal CZP in the Tromsø region and MSP in the Westfjords, Iceland.....	42

1 Introduction

This research presents the first study into Iceland's first ongoing MSP processes, yielding novel insights into MSP practice in the High North as well as critically examining the processes employed to conduct MSP in Iceland. Focussing on public participation, the overarching objective is to find out how, when and in how far local citizens can have meaningful input into the planning of their ocean and coastal spaces. This research is highly relevant as coastal communities in the North are facing unprecedented environmental changes as well as the impacts of rapidly developing marine industries (Choudhary, Saalim & Khare, 2021; Bennett et al., 2015). In Iceland, many communities are dependent on the health of the ocean and its resources and thus need to find ways to sustainably manage their coastal and marine spaces for the future (Árnason, 2005; Wang & Chambers, 2023; Kokorsch & Benediktsson, 2018). MSP strives for ecosystem-based management of marine resources by fostering collaboration among various stakeholders and the public, encouraging discussions of conflicts of interest, and collectively charting a sustainable path for the future of coastal and marine areas (European Commission, 2014). MSP offers a valuable framework for sustainably managing and utilizing marine resources and activities (European Commission, 2014). However, for MSP to be effective, it is crucial to ensure meaningful public participation considering the voices and concerns of local communities (Jarvis et al., 2015; Pomeroy & Douvère, 2008). To effectively engage the public in policymaking, ocean literacy and education on marine issues are vital to support informed decision-making and foster environmental citizenship among community members (Cudaback, 2008; Fauville et al., 2019; McKinley & Fletcher, 2012). By involving the public, MSP can benefit from local knowledge and experience (Yet et al., 2022; Jarvis et al., 2015). Further, when the public is given the opportunity to engage in the decision-making process, they are more likely to support and comply with the resulting plans and regulations.

To explore the depth of public participation in MSP in Iceland and beyond, this thesis presents three research papers. Paper I examines the uncertainties of environmental changes in the Westfjords of Iceland, exploring their intersection with numerous societal challenges that affect MSP in Iceland. The analysis draws from planning documents, semi-structured interviews, and a workshop to elucidate how environmental shifts and societal factors shape Icelandic MSP. In paper II, the extent and intensity of public participation in the Icelandic MSP process are evaluated using data obtained through participant observation, unstructured and semi-structured interviews (n=80), and document analysis across three case studies in the Westfjords, Eastfjords and Skjálfandi Bay. To compare the Icelandic findings to other MSP processes in the North and to

derive shared lessons, paper III explores the differences in participation in coastal and marine planning processes between Iceland and Norway. The data was obtained and analysed by examining planning documentation, reviewing literature, and conducting semi-structured interviews in both the Westfjords of Iceland and the Tromsø region in Norway.

This introduction will provide an overview of the context in which the research is situated. It explores the context of climate change and its impacts on Northern communities (chapter 1.1), the importance of ocean literacy (1.2) and the theoretical aspects of MSP (1.3), public participation in MSP (1.3.1) as well as the dangers of non-participation (1.3.2) before detailing the overall objectives and structure of the thesis (1.4).

1.1 Climate change impacts and resilience in coastal communities in the North

The impacts of climate change put coastal communities globally under severe pressure from rising sea levels, increasing storm events, rising ocean temperatures and acidification, among others (Dolan & Walker, 2006; Cinner et al., 2018; Camare & Lane, 2015). Polar regions are warming faster than regions in lower latitudes (Choudhary, Saalim & Khare, 2021), and thus coastal communities in the High North are among the especially vulnerable. The Westfjords of Iceland are located just below the Arctic circle and are characterised by fjords, mountain plateaus, little arable land at lower levels, small coastal settlements, and harsh weather conditions. Livelihoods here are inextricably linked to ocean resources with fisheries, cruise tourism, fish farming and shipping as prominent economic sectors (Árnason, 2005; Wang & Chambers, 2023; O'Brien, 2014; Kokorsch & Benediktsson, 2018).

Interlinked with the idea of constant change is the need for resilience of systems (Berkes & Ross, 2016). According to Folke et al. (2002) the resilience of socio-ecological systems is heavily intertwined with their ability to successfully survive and adapt to changes. As the environment is changing, specifically at the coast, and at a faster rate than ever before, communities need to adapt quickly to survive. Thus “[c]ommunity resilience [...] is the existence, development, and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability, and surprise” (Magis, 2010, p. 401).

Folke et al. (2002) point out the dangers of assuming linear and predictable responses of ecosystems to anthropogenic activities: Both human systems and ecosystems are complex, interdependent and constantly changing, so it is impossible to predict responses of one system and how it is going to impact the other (Folke et al., 2002). DeFries and Nagendra (2017) describe environmental management as a “wicked problem” (p.266) which is hard to define and does not have a clear-cut, fixed solution:

Wicked problems arise from one or a combination of multiple dimensions: complexity and interdependency of components, which create feedbacks and nonlinear responses to management interventions; uncertainty of risks and unintended consequences; divergence in values and decision-making power of multiple stakeholders; and mismatches in spatial and temporal scales of ecological and administrative processes (p. 266).

As a wicked problem, environmental management including coastal and marine planning requires adaptive solutions (DeFries & Nagendra, 2017). Greenhill et al. (2020) also postulate that governance of these dynamic and unpredictable systems cannot effectively be carried out in linear, top-down models of governance. Global environmental change and its interlinked uncertainty necessitate adaptive governance (Greenhill et al., 2020) and adaptive planning.

1.2 Education and Ocean Literacy

The ability to learn is an important determining criterion for resilience (Folke et al., 2002), because only through learning will a social system be able to adapt (Holling et al., 2002). This is why greater efforts are needed to educate the public on environmental issues. Active engagement of individuals in finding solutions to mitigate anthropogenic impacts on the natural world is what Masud et al. (2015) call pro-environmental behaviour. They point out that for individuals to act, greater public awareness is necessary (Masud et al., 2015) as a first step. With regards to the management of coastal and marine spaces, raising general awareness about the value of marine resources and improving knowledge about marine issues are vital from the start of the process (Berkes and Ross, 2016).

There are education programmes that focus on what has been described as ocean literacy. According to Cudaback (2008), it is important to teach ocean literacy so that people can make informed decisions. Fauville et al. (2019) describe Ocean Literacy as an “understanding of the ocean’s influence on us and our influence on the ocean” (p. 239) and an ocean literate person as “someone who understands the essential principles and fundamental concepts about the functioning of the ocean, is able to communicate about the ocean in meaningful ways and is able to make informed and responsible decisions regarding the ocean and its resources” (p. 239). Apart from learning about oceanic environments, human impacts on the ocean and threats to its ecosystems, ocean literacy programmes should also focus on positive attitudes and values to foster ocean stewardship (Cudaback, 2008; Uyarra & Borja, 2016). To actively engage in decisions and actions supporting ocean wellbeing, an individual needs to feel “concerned about, responsible for, and empowered to improve the wellbeing of the ocean” (Cudaback, 2008, p. 11). A similar relationship between general place attachment and pro-environmental behaviour is explored by Halpenny (2010) in National Parks in the US. In the oceans and at coasts, McKinley

and Fletcher (2012) call this concept marine citizenship, and they argue that through this collective responsibility for the oceans, individual people can make a positive difference to the environment.

The Ocean Literacy movement started in the United States and has taken roots and found widespread acceptance and extension in Europe and beyond. It is often tied to work in school and in STEM (science, technology, engineering, mathematics) subjects, but ocean literacy is inherently important to all members of society (Fauville et al., 2019). The Ocean Literacy framework defines the seven overarching principles of ocean sciences:

- The Earth has one big ocean with many features,
- The ocean and life in the ocean shape the features of the Earth,
- The ocean is a major influence on weather and climate,
- The ocean makes the Earth habitable,
- The ocean supports a great diversity of life and ecosystems,
- The ocean and humans are inextricably interconnected,
- The ocean is largely unexplored (Santoro et al. 2017, p.19; Ocean Literacy Network, 2013).

Ocean literacy has close links to environmental education and aligns with its objectives as described by the United Nations of Education Scientific and Cultural Organisation (UNESCO):

- Awareness: to acquire an awareness of and sensitivity to the global environment and its allied problems.
- Attitude: to acquire a set of values and feelings of concern for the environment, as well as the motivation to actively participate in environmental improvement and protection.
- Skills: to acquire the skills for identifying and solving environmental problems.
- Participation: to be actively involved at all levels in working towards resolution of environmental problems. (UNESCO, 1975, pp. 26–27).

Pomeroy and Douvere (2008) also stress the importance of early engagement of the public in education due to its empowering nature when contemplating a coastal or marine management project – such as planning. Learning about the environmental processes involved and the governance structures through which stewardship is implemented gives everyone the means to participate in informed decision-making and brings different actors closer together. When varied parties come together, new knowledge can be generated as well as practices shared (Pomeroy & Douvere, 2008; Reed, 2008).

Thus, the literature suggests that such education can be used as a tool for community development. Bhattacharyya (2004) defines community through solidarity rather than through a fixed locality. Of course, locality and people's connection to places are of utmost importance for communities. However, Bhattacharyya (2004) focusses more on the relations and solidarity within communities to affect change. Effective community development needs "macro-micro coordination" (p. 5), meaning different levels of management within the community working together as per the principles of adaptive governance. This solidarity among the members of the community could be used for environmental education supporting increased empowerment. "The ultimate goal of development should be human autonomy or agency" (p. 12). Thus, environmental education and ocean literacy carried out as a community development project could act as an empowering tool to enhance solidarity and agency. Studying public attitudes and values connected to the ocean and marine issues can be a way to meaningfully engage society in the dialogue about planning and managing the resources of the sea. Jefferson et al. (2015) state that engaging the community "has the potential to significantly reduce certain pressures on marine systems" (p. 61) as well as being a powerful tool for the success of marine management projects. However, educating the public on marine and environmental issues is challenging. For example, Henderson and Zarger (2017) stress the politically driven nature of education and the non-causality of the link between education programmes and the multiple ways in which individuals interact with nature. Education alone will not make the public necessarily more engaged in ocean governance or MSP, but it is a vital step in that direction.

Environmental education is not a prominent part of the Icelandic national curriculum (Pálsdóttir, 2014; Ministry of Education, Science and Culture, 2014). This in turn means that, as a nation dependent on marine resources and maritime activities, there are few formal education settings to generate a broad knowledge base on ocean issues among the public. Iceland is an island nation that heavily relies on marine products and industries. Even the strongest economic sector, tourism (OECD, 2019), relies on preservation of natural resources, and engaged and informed public can contribute to connecting these fields. Thus, communities in the Westfjords and beyond can benefit from the knowledge and engagement environmental education can provide. Many community members are already highly knowledgeable about seafaring and marine issues as they pertain to their daily or professional activities. Such knowledge is incredibly valuable, for example for MSP, but it is often sectoral and lacking forums for discussion and the creation of synergies (Jentoft, 2017; cf. Costa et al., 2021; Yet et al., 2022).

Coastal and marine management science has established that learning networks and education are important to sustainably manage ocean resources (Dalton et al., 2020; Pomeroy & Douvere, 2008). Education pertaining to ocean issues should be widely available across society to support marine stewardship and to empower community members to take part in decision-making about their local coastal and marine resources and spaces (Folke et al., 2002; Holling et al., 2002, Pomeroy & Douvere, 2008; Greenhill, 2020; Wescott, 2004; Cudaback, 2008; Ocean Literacy Network, 2013; Fauville et al., 2019). With the lack of such provision in Iceland, decisions on marine and coastal spaces are often taken by local or national authorities and traditional stakeholders in powerful economic positions within industry or institutions whereas other community members can feel excluded from decision-making (Wilke, 2019).

1.3 Marine Spatial Planning

Marine Spatial Planning (MSP) is grounded in eco-system-based ocean and coastal management and consists of planning where and how human activities take place at sea (European Commission, 2014). The marine space is complex with interlinked ecosystems above and below the surface. MSP includes gathering geographic, geologic, biologic, social and spatial data to better understand the marine and coastal environment before making decisions on how to protect and/or use these spaces. This is often accomplished through the allocation of different use areas, such as fisheries zones, recreational zones, shipping lanes, protected areas etc. accompanied by a set of rules defining what is allowed within those areas to what extent and at which times. Thus, MSP often produces one or several maps showing the designated areas as well as one or more documents detailing the guidelines or rules that were set up for those spaces.

MSP should thus be both process-oriented and adaptive. In addition, it should be integrated – both in terms of land-sea interactions as well as across disciplines and borders (European Commission, 2014). Stakeholders and the public are a vital part of this discussion and MSP offers ways to reduce their conflicts of interest in coastal and ocean use (Douvere, 2008; Sullivan, 2011). Education and capacity building are vital to ensure meaningful participation by both stakeholders

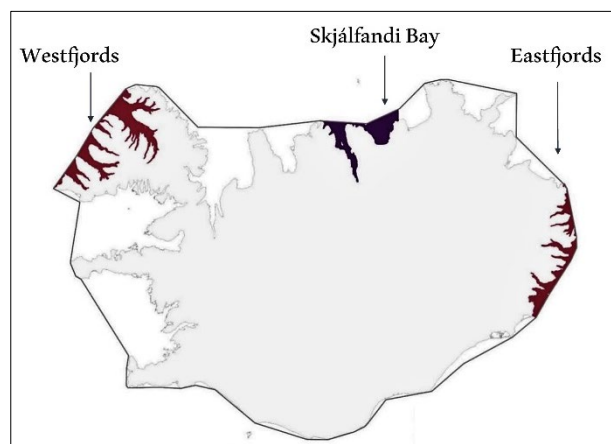


Figure 1 . Map of areas for MSP in Iceland defined by the National Planning Agency. First plans were created for Westfjords and Eastfjords, and future MSP is envisaged for the central North including Skjálfandi Bay (after Hafskipulag, 2021).

and the public, and to make MSP sustainable over time (Pomeroy & Douvere, 2008).

Like in other Nordic countries, Icelandic oceanic spaces are under increasing pressure from both climate change impacts and human activities like fishing, (cruise) tourism, shipping, and aquaculture (Bennett et al., 2015; Foley & Mather, 2019). In response, the Icelandic Parliament passed Law 88/2018 on the planning of coastal and marine areas in 2018 (Landsskipulagsstefna, 2016). On land, planning is generally carried by local municipalities. However, the municipal jurisdiction only reaches out to 115m into sea from shore, so that MSP is under the jurisdiction of the National Planning Agency (*Skipulagsstofnun*). First plans in the Eastfjords and Westfjords of Iceland (see Fig. 1) were commenced in 2019 when the National Planning Agency established two regional councils and consultative groups to produce regional area plans for the fjord areas (Landsskipulagsstefna, 2016; Lehwald, 2020).

1.3.1 Public participation in MSP

Involving the public in MSP is not only vital for its long-term success in terms of public buy-in and support for the plan, but public participation is important on multiple levels: It is crucial for the democratic legitimization and justice of MSP (Flannery, Healy & Luna, 2018), and it empowers communities to accept stewardship of the oceans as well as increasing agency (Berkes & Ross, 2016; Cudaback, 2008). With knowledge about the ocean and the MSP process, communities are enabled to engage in decision-making. Meaningful public participation also helps to build and ensure trust and transparency and can counter-act established power hierarchies and reduce conflicts (Pomeroy & Douvere, 2008; Quesada-Silva et al., 2019; Tait & Hansen, 2013; Olsen et al., 2014; Fletcher et al., 2013).



Figure 2 Ladder of citizen participation (after Arnstein, 1969, p. 217)

Participation can involve various levels of public engagement and empowerment. The ladder of citizen involvement in planning processes that Arnstein (1969) first proposed (see Fig. 2) starts with "nonparticipation" (manipulation and therapy) at the bottom, over "tokenism" (information, consultation, and participation) in the middle to "citizen control" (including partnership, delegation, and finally citizen control) at the top (p. 217) which comes with a promise that local people's input will be significant. Raising participation levels into the upper rungs of citizen control with the aim of meaningfully

engaging the public and involving them in decision-making should be the aim of successful MSP.

Hurlbert and Gupta’s (2015) newer model of participation, known as the split ladder of participation, is specifically tailored to environmental issues. According to this model, different types of problems require distinct approaches to participation, considering the extent of involvement and the necessary learning process (see Fig. 3). Furthermore, the model emphasises that as participation levels increase, a higher level of trust becomes necessary, in contrast to processes with low participation. For unstructured problems characterized by significant uncertainties in knowledge and values, influenced by societal and political factors, and generating intense debate and low trust, a substantial level of participation is deemed necessary (Hurlbert & Gupta, 2015).

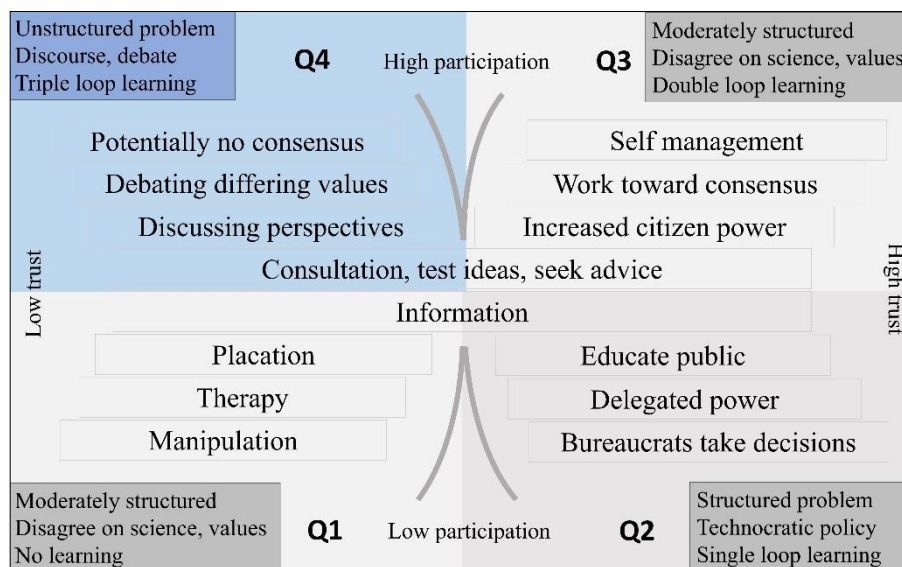


Figure 3 Split ladder of participation (after Hurlbert & Gupta, 2015, p. 104)

1.3.2 Non-Participation

Jarvis et al. (2015) have identified that many MSP processes include top-down consultation rather than actual participation by the public. Flannery et al. (2018) discuss what happens when local communities are not involved in MSP, and the barriers to participation. Especially when MSP processes are conducted through top-down governance, getting citizens to participate can become difficult. Non-participation is more likely when there is a perceived or real lack of:

- Trust in institutions,
- Knowledge about issues or process,
- Ability to influence decision-making,
- Resources to take part (time, money, transport, equipment, access),

- Vision of benefits of participation (Flannery et al., 2018; Fletcher et al., 2013, Jarvis et al., 2015).

An additional factor that is often overlooked when considering participation is the social connection that local inhabitants have to the sea. Domínguez-Tejo et al. (2016) recommend for this aspect to be strengthened in MSP processes and participation strategies. Flannery et al. (2018) conclude that planners and MSP practitioners should consider the potential barriers to participation and address and mitigate these wherever possible within the process.

1.4 Objectives and structure of the thesis

The overall objective of the thesis is to contribute to the understanding of the importance of public participation in marine planning endeavours in Iceland.

The thesis has three overall objectives: (I) to establish the climatic and societal context in which MSP is situated in Iceland, (II) to assess the scope and depth of public participation in Icelandic MSP, to explore how it is perceived as well as to identify any barriers to public participation, and (III) to discover what can be learned from comparing participation in Icelandic MSP to the more established coastal zone planning process in the North of Norway. Each of these objectives is addressed in a separate paper with a corresponding Roman numeral.

In chapter 2, the methods and materials of the research will be explained, including ethical considerations and limitations of this project. In chapter 3, main results will be communicated: First, results on the climatic and societal context for Icelandic MSP (3.1) will be presented, subdivided into findings from the literature review (3.1.1) and the MSP process in Iceland (3.1.2). Second, results from the study into public participation in the three case studies (3.2) in the Westfjords, Eastfjords and Skjálfandi Bay will be reported. Third, results from the comparison between Iceland and Norway (3.3) will be presented. In chapter 4, the findings will be discussed and put into context of what other studies have found. Chapter 5 presents a conclusion to the research including recommendations for MSP in Iceland and an outlook. The bibliography (chapter 6) and original research articles in the appendix (chapter 7) conclude the thesis.

2 Methods

To establish the environmental and societal context of the newly launched MSP processes in Iceland (paper I), a literature review was conducted first. The literature consulted includes scholarly articles and academic and non-academic literature as well as documents pertaining to the MSP process led by the National Planning Agency. An opportunity to reconnect to a previously established network of local inhabitants and marine experts in the Westfjords of Iceland was used by engaging in participant observation in the community to find out how the planning process unfolded (papers I and II). Field notes were taken during the data collection phase between September 2021 and March 2023.

To assess public participation in the MSP processes in Iceland (II), semi-structured interviews were conducted with key informants in the three case study sites of the Westfjords, Eastfjords and Skjálfandi Bay. The Westfjords case study received most of the research focus, as the study here was part of the larger project Sustainable Resilient Coasts (COAST) as well as being one of the areas actively undergoing MSP at the time. Thus, the Westfjords were chosen as the base for the research, and in turn yielded the most interviews (48 interviewees). The Skjálfandi Bay case study was conducted in coordination with the JUSTNORTH project and yielded 21 interviews in two weeks' field work. The Eastfjords case study is the smallest, with six interviews. Due to time restrictions and logistics, the Eastfjords could only be visited for five days.

The key participants of this study consisted of individuals directly involved in the ongoing planning process and community members who have local knowledge or knowledge in coastal and marine issues. Interviewees were identified from the following fields: industry (aquaculture, fisheries, tourism, consulting, food, and shipping), local business, academia/research institute, NGO, local government/municipality, regional governmental agency, national government/agency, local community member, tourist. Although these categories describe each interviewee, it should be noted that most of them could be attributed to more than one stakeholder group at once, i.e., researchers who are also community members and active in an NGO, etc. The grouping was primarily done to ensure targeting a wide range of different individuals with a variety of backgrounds.

The interviewees were asked whether they were aware of and/or involved in the (then) ongoing MSP processes, and in which capacity. They were then asked to elaborate on the process, how it was unfolding from their perspective, and on their own involvement. If they were not involved or had not heard about the ongoing MSP, they would be made aware of the general outline of the

process, and any questions they posed about the process answered as objectively as possible, pointing out the available information online. Following on from that, depending on the background, expertise, and willingness of the interviewee, they were asked to elaborate on ongoing issues and points of contention in the marine spaces in question, and their expertise with participation in planning. Often, by this point, there was very little steering of the direction of the conversation by the interviewee, as interviewees drove the themes and topic of discussion in the latter part of the interview.

There are five additional interviews which were held with individuals knowledgeable of planning procedures in Iceland. These interviews are categorized as “Iceland in general” as they do not pertain to either case study but shed light on general trends and perceptions about planning and participation in Iceland.

Fieldwork was conducted from October 2020 to May 2021 in the Westfjords, in May and June 2021 in Skjálfandi Bay and in April 2022 in the Eastfjords. All interviews and workshops were conducted in person whenever possible, but some had to be conducted online due to Covid-19 restrictions during the time of research. In total, this study includes accounts of 80 informants who reported their experience either in casual conversation, in scheduled individual interviews or group interviews. Informed consent was obtained with consent forms before each interview, and the interviewees were made aware of their rights to withdraw or have their contribution deleted at any time.

Data was documented in field notes from participant observation, interview recordings and their transcripts, workshop transcripts and notes on documents relating to the planning process. To protect the identities of the interviewees, their names were anonymised with unique ID codes that include letters and numbers pertaining to when and where the interview was taken, and a running number. The audio-recorded interviews were transcribed with the help of the software Otter.ai. The transcribed interviews were then analysed with MaxQDA software. The transcripts were inductively coded, yielding 54 codes. These codes were then grouped together into six larger themes: *Iceland & Planning*, *Marine Planning Process*, *Participation*, *Frustration & Exclusion*, *Aquaculture* and *Environment*.

To conduct a comparison of the findings to another coastal and marine planning process (paper III), a literature review and analysis was conducted specific to the Tromsø region intermunicipal coastal zone planning. Further, an interview was conducted with a key informant who has long been actively engaged in various municipal and intermunicipal coastal zone planning projects in the region. This yielded an insight on the CZP process from the planners’ perspective and is

compared in paper III to the perspectives of those directly involved in planning in the Westfjords of Iceland (including planners, members of working groups and invited stakeholders). This fieldwork was conducted in December 2021 while on a research exchange, though Covid-19 restrictions prevented a field trip to Tromsø. It had to be conducted online due to Covid-19 restrictions during the time of research. The data was transcribed and analysed in the same way as the Icelandic interviews.

Further detailed descriptions of the methodology for each part of the research can be found in papers I, II and III in the appendix.

3 Main Results

3.1 Climatic and societal context for Icelandic MSP

3.1.1 Literature review

Academic and non-academic literature, such as reports and newspaper articles, were reviewed to identify climatic and societal factors that surround the launch of MSP in Iceland (paper I). Iceland is situated just below the Arctic circle at 66°North and is thus strongly impacted by the unprecedented and accelerated changes that are occurring in the Arctic (Overland, Wang & Box, 2019). Here, feedback loops between higher ocean temperatures, melting sea and glacial ice and less white reflective icy surface are expected to lead to an average temperature increase of circa 4°C, even if global warming is limited to 2°C (Overland et al., 2019; Choudhary, Saalim & Khare, 2021; IPCC, 2022). So-called “cascading effects” (Box et al., 2019, p. 13) describe multiple impacts of these changes for habitats, i.e., for polar bears and various whale species. Filbee-Dexter et al. (2019) found that Arctic kelp forests are likely to change, with non-endemic kelp species adapted to boreal, slightly warmer, North Atlantic conditions, spreading, and originally Arctic, ice-adapted species receding. The increased rates of melt water and rain leads to freshening of the Arctic Ocean which affects the whole marine ecosystem: For example, this changes the conditions for Arctic zooplankton, which is a key species in the whole food web (Thomas et al., 2022).

As well as a greening of the Arctic, Overland, Wang and Box (2019) highlight the increase in air temperature specifically in the winter seasons, as well as the increased sea ice loss during the summer seasons as an ongoing trend. All these changes, and their multiplying and cascading effects, are changing the Arctic ecosystems in an unprecedented way (Overland et al., 2019; Thomas et al., 2022).

In Iceland, climate change brings both favourable and adverse effects. On land, short-term benefits include increased vegetation cover (Raynolds et al., 2015) and opportunities for agriculture due to a longer growing season (Jónsdóttir, 2012). However, mid-winter thaw events accelerate road deterioration and destabilise mountain permafrost (Farbrot et al., 2007). The melting of polar sea ice is partially seen as an opportunity for increased shipping and trade. Iceland will also see an increased melt of glaciers which are expected to disappear within the next 200 years (Farbrot et al., 2007; Welling et al., 2019). Iceland’s marine life is characterized by high primary production meaning that a high abundance of phytoplankton provides oxygen and food for other marine organisms (ICES, 2021). Although warming waters might increase

productivity, acidification will harm oceanic life (Jónsdóttir, 2012). Iceland's oceanic waters are a mix of warmer, more saline waters of Atlantic origin, and colder, fresher Arctic waters. While the Arctic water masses dominated in the past, the last twenty years have been dominated by the Atlantic water masses (ICES, 2021).

These changing conditions have had impacts on the distribution of several fish species, including haddock, ling and anglerfish which have spread from Southern Iceland north clockwise along the Icelandic shelf. In general, cold-water species are decreasing while once rare warm-water species are more common now (ICES, 2021). Sandeel populations have been on the decline with negative consequences for Icelandic fish and seabirds dependent on this food source (Jónsdóttir, 2012): Breeding populations of the Brünnich's guillemot, common guillemot, razorbill, Northern fulmar, kittiwake, European shag, and puffin have all declined in the last decades (ICES, 2021). Additionally, coasts and rivers have seen a variety of invasive species that have taken hold in Iceland, such as the European flounder (Henke, Patterson & Ólafsdóttir, 2020).

Immediate action is needed to adapt to these unprecedented changes, many of which will have unanticipated implications on ecosystems and civilizations (Overland et al., 2019). Thomas et al. (2022) emphasise that a) society is not ready for these rapid changes and does not know how to manage and mitigate their impacts, and b) the repercussions of Arctic climate change will be felt well outside the Arctic region. Thus, it may be particularly crucial to execute the 17 UN Sustainable Development Goals (SDGs) in the Arctic (Wilke & Kristjánsdóttir, 2024, in review; United Nations, 2015). It has been suggested that specific indicators and frameworks for the Arctic are needed to increase their applicability to the region's actual conditions (Nilsson & Larsen, 2020; Sköld et al., 2018).

Overall, the findings of the literature review on Arctic climate change and its impacts highlight the profound effects of climate change on the Arctic and Icelandic ecosystems, emphasising the need for immediate intervention and adaptation strategies to mitigate the unpredictable consequences for both ecosystems and societies.

3.1.2 MSP process in Iceland

MSP is new to Iceland, and the first official marine spatial plans have been created in the Westfjords and Eastfjords from 2019 to 2023 (Hafskipulag, 2022a). Reviewing the existing literature about this process, primarily non-academic literature pertaining to the process directly, news outlets and reports (paper I), resulted in the following findings: In general, Icelandic MSP is characterised by its novelty, complexity, focus on the aquaculture industry, simultaneous occurrence with the Covid-19 pandemic, limited public participation, and media attention.

Planning in Iceland has traditionally focused on terrestrial and urban areas (Kristjánsdóttir, 2017) whereas marine areas were planned either by the industrial sectors that were using the space, or by loose collaborations of local and regional actors until recently. Planning on land is generally carried out by local municipalities operating under national planning frameworks (Kristjánsdóttir, 2017). In the marine space, however, coastal municipalities only have jurisdiction up until 115m outwards to sea. Until recently, human activities at sea beyond that limit had not undergone comprehensive planning processes. However, there had already been some academic as well as practitioners' forays into the realm of MSP in the Westfjords in the past. A Westfjords-wide management plan was proposed by local and regional actors in 2009 (Eydal, Óskarsson & Ólafsdóttir, 2009; Sullivan, 2011), and another two community-driven, bottom-up initiatives worked on marine spatial plans for two fjord systems in Arnarfjörður and Ísafjarðardjúp (Eydal, 2013). However, these initiatives were not officially recognised nor considered legally binding by national authorities with the argument that they lacked a legal basis (Lehwald, 2020). Two academic studies emphasised the need for effective and adaptive MSP in the Westfjords due to the region's history of marine resource use, reliance on fisheries, rapid growth of the aquaculture sector, and limited decision-making power of local municipalities at sea (Sullivan, 2011; Lehwald, 2020). Lehwald (2020) recommends a detailed stakeholder engagement process and the establishment of a Coastal Zone Manager to lead and coordinate the MSP process.

In 2018, the Icelandic parliament passed Law 88/2018 on the planning of coastal and marine areas (Landsskipulagsstefna, 2016), launching the first MSP endeavours. Due to the seaward limit of municipal jurisdiction, the National Planning Agency (Skipulagsstofnun) became the leading actor in both the Westfjords and Eastfjords MSP processes. In each region, a regional council consisting of eight members was appointed by nomination from various ministries and associations as a working group creating the plan proposals. In addition, the Minister of Environment and Natural Resources appointed two local consultative groups with members nominated by the regional council and different associations in the fields of business, tourism, environmental protection, and outdoor activities (Hafskipulag, 2022a).

In total, three stakeholder meetings were held during the data gathering stage with three groups of representatives from different sectors. Public meetings were envisaged at different stages, but the Covid-19 pandemic impacted the both the timeline and logistics of the process. Additionally, parliamentary elections in the autumn of 2021 led to the transfer of overall responsibility for MSP from the Ministry of Environment and Natural Resources to the Ministry of Infrastructure.

Subsequently, the members of the regional councils were also partially changed. Public meetings were only held to introduce the proposed plans to local communities in the summer of 2022 (three meetings in the Westfjords, two in the Eastfjords, and one in Reykjavík), while public comments were collected through the website all throughout the planning phase. Following the publication of the plan proposals in mid-June 2022, a legally required three-month-period of public consultation was observed where community members could view the proposed plans online and in their local municipalities for comments and feedback. A final version of the plan was approved by the regional councils in both the Eastfjords and Westfjords in December 2022 (Hafskipulag, 2022b; Hafskipulag, 2022c).

However, shortly before the proposed plans were made official, a report by the National Audit Office exposed a multitude of regulatory shortcomings regarding the aquaculture industry in Iceland. The report criticises how numerous ministries, research institutes and agencies had not done enough to regulate this fast-growing industry (Ríkisendurskoðun, 2023). Some of the concerns raised include underfunding of relevant agencies, political corruption, and the need for deeper investigations and accountability. The report attracted extensive media coverage and launched a nation-wide public debate on aquaculture as well as larger marine issues, including the ongoing MSP (Drífudóttir, 2023; Erlingsdóttir, 2023; Hjaltadóttir, 2023; Kristjánsson, 2023). This attention to marine issues on a national level is in stark contrast to the earlier stages of the MSP process where public focus and media attention had been rare and mostly limited to the affected regions.

Finally, on 2 March 2023, both proposed plans were signed by the Minister of Infrastructure to become legally binding documents. In contrast to some other countries globally where marine spatial plans are used as guiding documents, Iceland has adopted an approach that considers the rules that are set out in the marine spatial plans as legally binding. This means that, for example, an aquaculture company can only apply for licences from the relevant institutions within the delineated areas set aside for this use in the plan. To change any of the delineations set out in the plan, the Minister for Infrastructure would have to request a revision of the respective plan from the National Planning Agency and the respective regional council.

3.2 Public participation in three case studies

Paper II presents aspects of public participation in Icelandic MSP. During the data collection phase of the research, public engagement in the MSP process was limited to the Hafskipulag website, partially due to Covid-19 restrictions. Thus, it was difficult to assess the participation rates with the MSP process. However, semi-structured interviews with local inhabitants and key

informants yielded valuable data in three case studies in the Westfjords, Eastfjords and Skjálfandi Bay. Interviewees touched on whether they knew about or were involved in the MSP process, their experience with public participation and planning, marine issues, aquaculture, and any additional related topic that was important to them. Originally, 54 codes were established in the analysis phase, some of which were merged during the process, and various sub-codes were created. Six overall themes emerged from grouping together the 46 assigned codes. These themes serve as umbrella terms to gather the codes they contain and to help understand prevailing issues and topics within and between the case studies.

The theme *Iceland and Planning* includes twelve codes that describe planning practices in Iceland in general, and how planning relates to political processes and perceived power hierarchies in Iceland. The theme *Marine Planning Process* includes codes describing the MSP process in Iceland as well as reactions to and thoughts about it. *Participation* emerged as its own theme as respondents did not only elaborate on their current active participation in the MSP process but also reflected on participation processes in general and how these are carried out in Iceland, as well as on Icelanders' disposition towards participating. *Frustration and Exclusion* was established as a theme including various kinds of declarations of disappointment, irritation, anger or confusion about MSP, governance in general and towards marine or environmental issues. *Aquaculture* specifically emerged as its own theme as there were numerous mentions of the industry including its relation to other marine industries, governance, and law. The theme of *Environment* came about as respondents voiced concerns over predominantly coastal and marine environments in relation to human activities.

Each case study produced distinctly different narratives, as can be seen by the different occurrence of themes and codes that were identified. Figure 4 shows a map of the three case studies in Iceland as well as some of the main themes that occurred in the interviews.

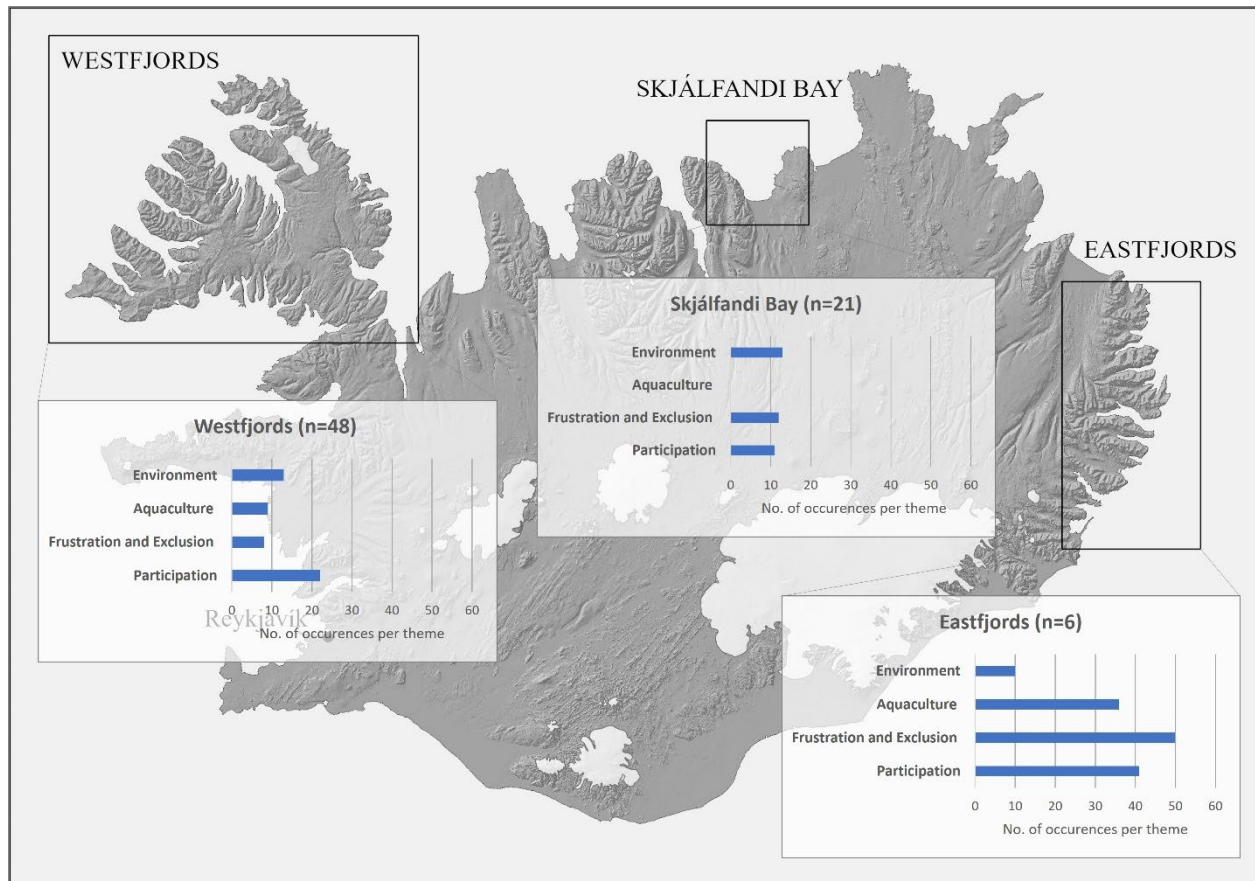


Figure 4 Map of Icelandic case studies and main results. From the six identified themes in total, the map shows the four themes that illustrate the different narratives in the three case studies. (n= total number of interviewees per case study). (The additional themes of Iceland and Planning and Marine Planning Process, as stipulated by the interview questions, permeated all case studies and are further detailed below.)

Although not exhaustive, the mapped four themes for each case study illuminate the many perspectives and different narratives on MSP in Iceland. All three case studies emphasised the themes of *Iceland and Planning*, and the *Marine Planning Process*: Interviewees were directly questioned on these themes during the semi-structured interviews, thus, their occurrence in and of itself does not differ significantly between the case studies. Since they were the overall subject of all interviews, these two themes are not shown on the map (Fig. 4). Instead, the remaining four themes are depicted on the map to highlight some of the key distinctions between the case studies.

The following section will detail the findings per case study, starting with an explanation of the overall themes as shown in Figure 4 and further elaborating with a separate graph each on the top codes that occurred in each case study. The results are anonymised, but exemplar quotes are used to aid in the explanation of the codes that occurred most often.

3.2.1 Westfjords case study results

In the Westfjords, interviewees focussed mainly on the theme of *Participation* (see Fig. 4), elaborating on past experiences with terrestrial planning as well as describing its complexity and barriers to participation. Concern for the *Environment* was mentioned, mostly in connection with a desire to continue protecting nature and wildlife in the Hornstrandir Nature Reserve in the north of the region.

Surprisingly, *Aquaculture* was not at the forefront of most people's minds at the time of research, although the Westfjords are one of the areas that have experienced the most rapid and extensive growth of the industry in the last few years, and this trend is expected to continue. There were only a few mentions of *Frustration and Exclusion* relating to the MSP process. In fact, many interviewees – among them marine experts – were not aware of the ongoing MSP process in their local area and there was little involvement from community members.

Figure 5 shows the most prominent codes that were assigned in the Westfjords. The top code that was allocated in the Westfjords transcripts was *Planning process unclear*, with many interviewees reporting a lack of information and communication about the MSP process. Some of the occurrences of this code (occurring eleven times) manifested as questions as to who is making decisions, how the public is supposed to be involved and how the process is envisaged. Some interviewees had heard about the ongoing MSP but were not informed in detail, as this interviewee stated: “I know about the coastal planning, yes, but not any specifics”; whereas some stated having had no official information at all, such as this interviewee: “I live in one of those coastal areas. And I kind of heard nothing since the law, the bill was passed in 2018 [the Coastal and Marine Planning Act]. The whole process kind of just disappeared, and has just recently surfaced, because of some debates in the Eastfjords”.

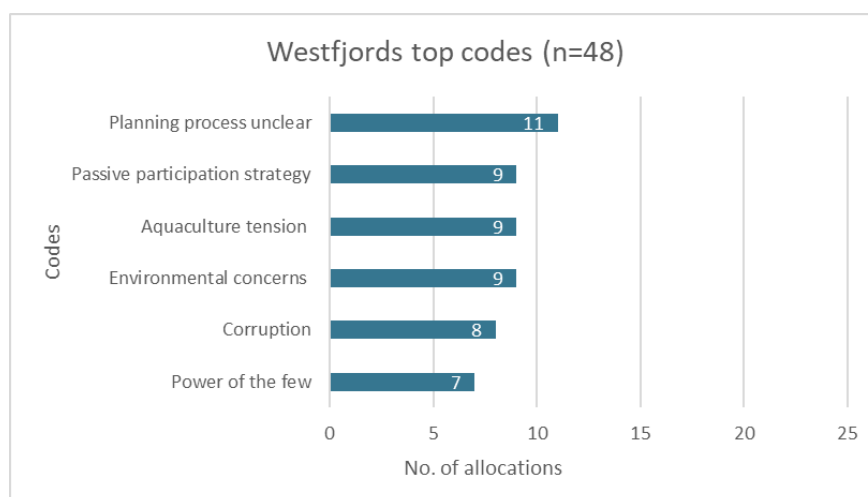


Figure 5. Top codes allocated in the Westfjords case study.

As numerous interviewees were not aware that MSP was ongoing at the time of the interviews, many reported that they had not been involved. The code *Passive participation* strategy was assigned nine times (see Fig. 5), with statements like this: “Simply relying on a website and assuming people will check it on their own is a passive approach to communication”.

Aquaculture tensions, although not as prominent as in the Eastfjords, were also voiced in the West (coded nine times, see Fig. 5). Among others, interviewees stated concerns over foreign (predominantly Norwegian) ownership of aquaculture companies and questioned the fair distribution of profits. Another concern was raised in that the attraction of aquaculture as an industry comes with the promise of employment for remote regions like the Westfjords, but that in reality, it is a highly automated industry which, once established, requires little manpower to produce large quantities of fish. Others saw issues with the potential location of open sea pens, protesting: “I don’t want to have aquaculture in Jökulfirðir” (the fjords that are situated adjacent to Hornstrandir Nature Reserve).

Concern for Hornstrandir was also common within the code *Environmental concerns* which was also coded nine times in the Westfjords. Interviewees spoke about their worries for unregulated dumping from cruise ships and the potential impacts for the protected wildlife and landscape. Other concerns included the discharge of sewage into the open sea, the recurring illegal burning of large amounts of toxic material and the increased amount of litter and plastic released into the ocean in case of an increase in aquaculture operations in the fjord system.

The codes of *Corruption* and *Power of the few* occurred as well, but to a lesser extent directly related to MSP (eight and seven times respectively, see Fig. 5). The concerns voiced here largely had to do with a feeling of powerlessness in terms of planning and decision-making in general. One interviewee remarked: “Corruption here is known and accepted, people seem to accept it”, while another stated: “A few people make all the decisions” in relation to politics and planning.

3.2.2 Eastfjords case study results

In contrast, the Eastfjords data show a clear picture of *Frustration and Exclusion* (see Fig. 4) which was often linked to *Aquaculture* themes, as there was a pre-existing debate among locals whether they supported fish farming in their fjords. Interviewees here were aware of the MSP process and were looking for a way to make their voices heard. Thus, the theme of *Participation* also featured often with respondents reflecting on how they could engage with the process. The theme of *Environment* was one of the less prominent topics as it seemed to be implied in some of the arguments put forward against aquaculture rather than being discussed in relation to the marine plan (see Fig. 4).

Figure 6 shows the top code of *Aquaculture tension* (coded 25 times) as the main topic of discussion and contention in the Eastfjords. One interviewee voiced some of these concerns: “We are concerned about the fish farming. They were supposed to wait until the plan came out, but they (company) just came anyway and said they will do it. They are so sure that they are going to get licenses for aquaculture like that (snaps fingers) from [the licensing agencies].” This quotation further shows that specifically in the Eastfjords, there was a perception that MSP was merely putting onto a map what was already happening in the fjords and was acting as an enabler for the aquaculture industry.

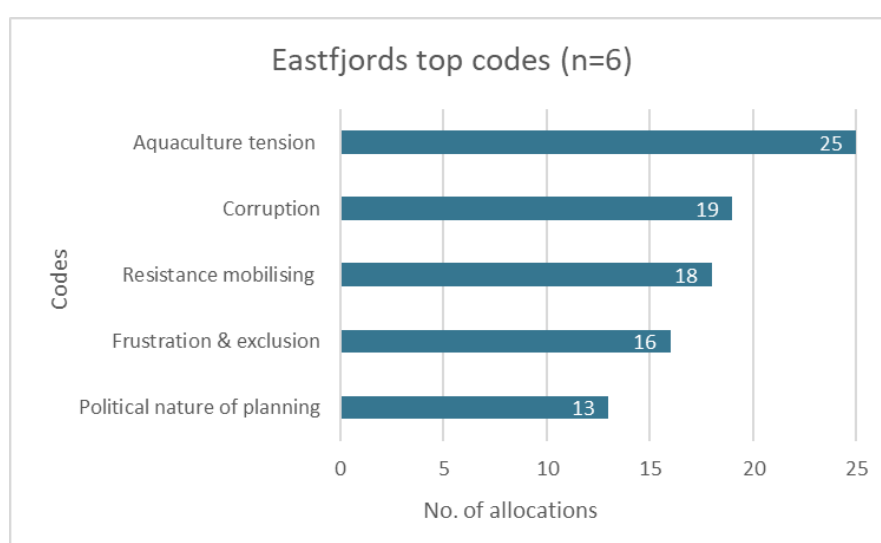


Figure 6 Top codes allocated in the Eastfjords case study.

Another prominent code in the Eastfjords case study was *Corruption* (coded 19 times, see Fig. 6). One interviewee explained why they felt corruption was an issue that permeated MSP procedures specifically: “Some people on the committee of the planning are so in favour of aquaculture that it is concerning. They shouldn’t be there; it should be an objective committee. So, it is corrupted”. Another interviewee explained why they thought it was politically motivated to attract aquaculture to the country without much regulation or cost to the industry: “It’s already been decided by the government, intentionally under-selling Iceland to attract the businesses”, in a sort of whatever-it-takes-attitude: “You know, and they’re just willing to steamroll through the obstacles”.

In the Eastfjords in particular, there has been ongoing *Resistance mobilising* (coded 18 times, see Fig. 6) against the expansion of aquaculture sites. Interviewees here were concerned about the legality of some aquaculture licences and in order to stop any further expansion, were prepared to fight legal battles: “Potentially, we could go to court and fight existing licences all around

Iceland”. In the meantime, community members organised a survey in their local town asking residents about their opinion on aquaculture to convince their municipal representatives and the planning committees to listen to their concerns.

Feelings of *Frustration & exclusion* (coded 16 times) permeated the Eastfjords case study. In addition to the concerns already raised, interviewees mainly criticised the MSP process and those responsible of conducting it for not discussing the issues that arise in the obviously contested marine space openly and publicly during the planning stages: “That's what we, as the people here, we cannot accept it. No. One of the things was also with this [planning] committee, that it should be in contact with people about this. But nothing”.

The code *Political nature of planning* occurred 13 times (Fig. 6) and in these instances, interviewees described that the committees tasked with MSP are primarily comprised of representatives of ministries, and appointed by them, or of municipal politicians, and that, consequently, MSP was going to play out as a struggle between different political agendas, and focus less about the interests of the public.

3.2.3 Skálfandi Bay case study results

Lastly, in Skjálfandi Bay, where MSP has not started yet, the narratives revolve around expectations for the planning process and the desire to create a future vision for the bay that considers all users and the health of the ecosystem (see Fig. 4). Interviewees voiced concerns for the *Environment*, specifically whales in this context, and there were some expressions of *Frustration and Exclusion* in relation to decision-making in general. Meaningful *Participation* was hoped for and expected for future MSP, while *Aquaculture* was not mentioned here at all (there are no fish farms in or near Skjálfandi Bay).

Figure 7 shows that the top code in Skjálfandi Bay was *Hopes for the plan* (coded 23 times). It illustrates that interviewees here were in a different position than in the other case studies, as locals here were aware of the MSP to come and have started formulating visions for the bay. One interviewee said: “I want to protect our, like, traditions, our ecosystems”. Others wished for a holistic planning vision: “Both to keep it as much as possible a conflict-free space, but also to protect what we have. So, for example, on the kelp [harvesting], it might influence the whale watching, so that the whales won't swim into Skjálfandi. I think we have to take it into account. Like a big picture view”, “Well, I think we should focus on the planning of the bay, how we're going to use it in the future, and what steps we need to take so that the next generation can also enjoy it and use it.”

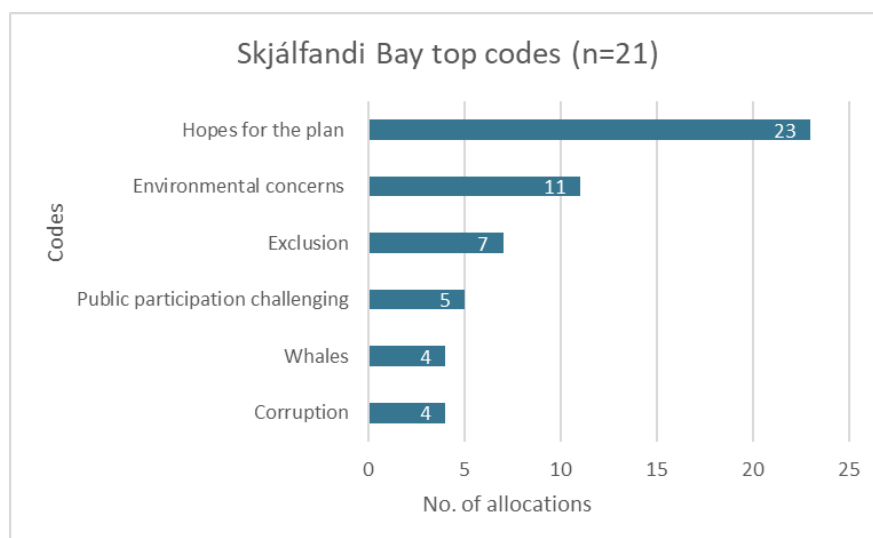


Figure 7 Top codes allocated in the Skjálfandi Bay case study.

The second most occurring code in Skjálfandi Bay was *Environmental concerns* (coded eleven times, see Fig. 7), with most issues centred around whales and their importance both for the health of the ecosystem as well as for the local economy that is strongly based on tourism and the whale watching industry. Other concerns included the ongoing debate on whaling in Iceland, with all interviewees being strictly against this practice.

Although MSP had not yet started in the area, interviewees did reflect on planning practices, participation, and their experience with marine governance in general, and remarked specifically on the *Exclusion* of groups (coded seven times, see Fig. 7), particularly women and foreigners in decision-making. Interviewees also acknowledged the difficulties of public participation (code *Public participation challenging* coded five times). Further issues surrounding *Whales* (coded four times) and the presence of *Corruption* (coded four times) were also remarked on in Skjálfandi Bay.

3.2.4 Themes and codes across all three case studies

The total distribution of all themes and codes across all three case studies can be seen in Table 1 (p. 26). The top code overall is *Aquaculture tension* (coded 34 times), followed by *Corruption* (coded 31 times), *Environmental Concerns* (coded 30 times) and *Hopes for the plan*, *Frustration & Exclusion*, and *Resistance mobilising* (coded 23 times each).

Table 1 All themes and codes assigned across the three case studies in Iceland. Themes are presented with their pertaining codes and numbers indicate how many times within a document group (case study) a specific code was allocated. The colour highlights illustrate the number of code occurrences visually and they are arranged on a scale from lightest blue to darkest blue with the extremes of the spectrum being the lowest and highest numbers that occurred (1 and 25 respectively).

Theme	Code	Westfjords	Eastfjords	Skjálfandi Bay	Sum
Iceland and Planning	Municipalities responsible for planning	2		2	4
	Lack of regional planning	3			3
	Economy		1	2	3
	Jobs	1	3		4
	Reactionary	2			2
	Conflict within communities			3	3
	Political nature of planning	4	13	3	20
	Power of the few	7	7	2	16
	a) Corruption	8	19	4	31
	b) Icelandic Clan System	1			1
Marine Planning Process	Challenging/new	1	3	1	5
	Hopes for the plan			23	23
	Covid impacts		1		1
	Arnafjörður base plan	5		1	6
	Top-down process	2	3		5
	Not involved	6	6		12
	Concerns	3	5		8
	a) Lack of transparency	2	5	1	8
	b) Lack of information	6	2	3	11
	c) Planning process unclear	11	6	1	18
	d) Role of Planning Agency	4		1	5
	e) Power of Planning Agency	2	5		7
	f) Selection of consulting committees		11		11
g) Stakeholder engagement	4	1		5	
h) Selection of stakeholders	4		1	5	
Participation	Debating participation	1			1
	a) Public participation challenging	2	2	5	9
	b) Historical lack of participation	1	1	1	3
	c) Passive participation strategy	9	4	2	15
	d) Lack of participation	3	7		10
	e) Participation fatigue/nonsensical	1	8		9
	f) No impact	1	5	1	7
	g) Success of participation			1	1
	h) Lack of discussion	6	9	2	17
	i) Information but no empowerment	2			2
Frustration and Exclusion	Frustration & exclusion	6	16	1	23
	a) Planning status quo		12	1	13
	b) Resistance mobilising	2	18	3	23
	c) Exclusion			7	7
	d) Polarising		5		5
Aquaculture	Aquaculture tension	9	25		34
	a) Shipping routes & sea cables		9		9
	b) Legality of AC licenses		2		2
Environment	Environmental concerns	9	10	11	30
	a) Whales			4	4
	b) Climate change in Iceland			1	1

After analysing the environmental and societal context in which MSP is situated in Iceland as well as conducting interviews to learn more about public participation in the ongoing MSP projects, an international comparison was sought to find out how the Icelandic approach might differ from a more established process in a somewhat comparable geography. This is why a comparison with a Norwegian case was chosen to complement this research (paper III). This study compares public participation in the respective marine and coastal planning processes in the Westfjords of Iceland and in the Tromsø region in Norway. It is assumed that, given the previous experience with coastal zone planning, the Norwegian process might include a more detailed public engagement strategy and higher public participation levels which could be helpful in a comparison with Icelandic MSP, both to learn from experiences of a more established process as well as to determine the direction in which Icelandic MSP could develop.

3.3 Comparison between Iceland and Norway

To compare the Icelandic MSP to a Norwegian case (paper III), an additional literature review on the Norwegian context for coastal and marine planning was conducted before the comparative work began. Moreover, a semi-structured interview was conducted with a key informant who had long been involved in coastal zone planning (CZP) in the Tromsø region (see Fig. 8). The findings from the interview will be described in conjunction with those found in the literature as they pertain to the same themes. However, data gathered from the interview will be clearly marked as such.

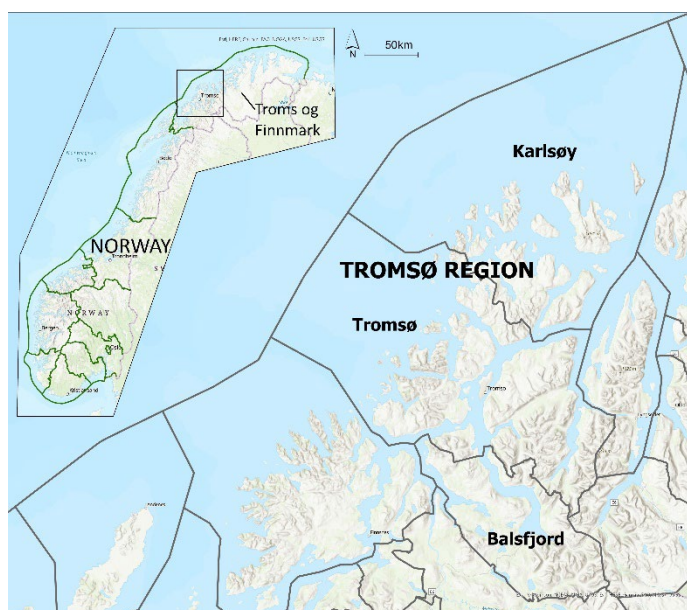


Figure 8 Map of the Tromsø region in Norway with the three municipalities involved in intermunicipal CZP: Tromsø, Karlsøy and Balsfjord.

Rather than MSP, Norwegian planning at the coast and sea is set up as coastal zone planning (CZP). CZP is well established and has undergone several shifts to adapt to new situations. CZP creates policy balancing out various interests in the coastal zone and its resources to ensure a sustainable use. Although traditionally local municipalities had the main planning responsibility in Norway, CZP has shifted towards regional planning with the aim to improve fragmented governance of different municipalities and governance levels (Movik & Stokke, 2021; Hovik & Stokke, 2007; Kvalvik & Robertsen, 2017). The regional county councils, however, do not have the same planning authority as municipalities. Thus, any regional coastal zone plans are not legally binding but can only serve as guidelines for municipal CZP (Movik & Stokke, 2021). Recently, intermunicipal CZP has been launched in several counties in Norway to attain greater integration across municipalities, sectors, and ecosystems. However, individual municipalities retained a large share of their planning authority in most counties and their degree of integration varies substantially (Kvalvik & Robertsen, 2017).

In the Tromsø region (Fig. 8), one of the main drivers in this intermunicipal CZP process is the need to balance the interest of the growing aquaculture industry with those of other coastal activities (Movik & Stokke, 2021; Kvalvik & Robertsen, 2017). The rapidly expanding aquaculture industry has identified a lack of available space to grow their operations as a challenge that must be addressed (Hersoug et al., 2021). Previous coastal zone plans needed to be updated intermittently: The first municipality-led plans from the 1980s focussed primarily on the fisheries sector (Rånes, 2015; Sør Dahl et al., 2017) which needed to be changed with the advent of aquaculture in the 1990s. The following rendition outsourced planning to consultation companies that delivered plans fast but with no public input. These plans were then updated in 2013 with the first intermunicipal CZP process led by a project manager on the county level (Robertsen et al., 2014). Finally, the newest version of CZP was launched in 2020. In this newest CZP project, the municipalities of Tromsø, Karlsøy and Balsfjord worked together to create a common intermunicipal plan with a county-level coordinator overseeing the cooperation and communication between different actors.

The previous rounds of CZP in the Tromsø region have led the interviewee to the recognition that it is more effective for the core planning activities to be carried out by individuals from the respective local authorities, rather than hiring external planners. This is due to the need for local networks and expertise when managing different conflicts of interests between stakeholders as well as a need to foster synergies and learning between participating municipalities. It is also

often financially more viable to conduct planning as a co-creative activity between municipal actors instead of paying temporary external expertise (cf. Sør Dahl et al., 2017).

The most recent intermunicipal CZP process in the Tromsø region lays out a detailed participation strategy in the plan proposal (Tromsø-området regionråd, 2020). It describes that participation is both desired and regarded as vital to the process as it serves democratic purposes to hear all interested parties and in the hope that conflicts can be discussed early. The process aims to provide opportunities for input by citizens so they “feel heard through the process and that they feel ownership of the plan.” (p. 19). Although no specific distinction is made between the participation of stakeholders vs. the public, the plan proposal does identify four stages in which participation should happen: A planning programme phase at the beginning to set out the direction of the process (involved stakeholders, with public feedback), a planning phase which includes public meetings and stipulates other channels of public involvement, a consultation phase in which the public can comment on a proposed plan, and, finally, a feedback phase where comments are worked into the final plan and public meetings are held to introduce it (Tromsø-området regionråd, 2020). Although the plan programme includes a detailed section on the importance of participation and suggests forums to utilise, it leaves the specific arrangements up to the respective municipalities to realise as they see fit.

In practice, however, “participation is difficult” as the interviewee stated, especially regarding the general public. The interviewee stipulated that it is generally much easier to engage well-organised stakeholders and interest groups in Norway than the public: “Most of the plans have failed in relation to achieving a broad participation. We have participation from the main stakeholders, but the public in general are lacking”. Reasons that were named included the lack of awareness on the benefits of participation in CZP and why that might be important to local inhabitants. Like many other public processes, the Tromsø region intermunicipal CZP process was impacted by the Covid-19 pandemic and resulting social distancing regulations. Open meetings had to be re-arranged to virtual gatherings, which change the atmosphere and accessibility. Overall, the interviewee judged the engagement of the public as low in Norwegian intermunicipal CZP processes, except for cases that involve widely debated public issues: “If you have a big conflict, then you are able to attract people. But those meetings aren’t very productive” in the sense that there might be strong-spoken individuals or groups present, but they might not represent the whole public, potentially leading to non-constructive, aggressive meetings that, in the worst case, scare off other members of the public from attending. Rather than solving heated debates in a public forum, the interviewee believes that the public needs to

be made aware that CZP in general is of great importance to them and thus focus on general ocean literacy in the community to “chang[e] their understanding of the coastal zone. And it's important because [...] you have to understand what the basic foundation of this community is”.

Another complex task has been to ensure participation by the Sami people. Sami have traditional rights to coastal areas for fishing and other marine activities. However, the interviewee stated that it can be difficult to locate and engage Sami people, explaining that there is no publicly accessible register of Sami people, and they might be moving between different municipalities regularly, but only appear registered in one, making it hard to establish which should be their official municipality. Some might choose not to identify as Sami. This was attributed to a legacy of historical oppression of traditional Sami culture. Even if Sami engagement can be achieved, the interviewee stressed that it is particularly difficult to find anyone who is willing to make statements on behalf of coastal Sami people, a group that has historically been underrepresented in the official organisations such as the Sami Parliament (Engen et al., 2021). This is particularly challenging with elder inhabitants who tend to not identify as or speak on behalf of coastal Sami – but it is exactly they who hold the type of traditional ecological knowledge that is crucial for CZP. In the Tromsø region process, letters were sent out to coastal Sami in to inform them about the ongoing process and to invite them to participate. Throughout the CZP process, four meetings were held with two Sami organisations: the Reinøy reindeer grazing district and the organisation BIVDU of Sea Sami fishermen.

Although the planning documents emphasise the creation of a sustainable plan through a democratically justifiable process, the interviewee stressed that communities should be at the heart of CZP, and that “it's not [only] about space, it is about community and relations and flows”. The interviewee also pointed out another shortcoming of the Tromsø region process in that the integration of land-sea processes and interactions need to be studied and included more in CZP. Rather than product-orientation, the interviewee wishes for more process-orientation of CZP.

Table 2 shows how the Tromsø region intermunicipal CZP compares with the MSP process in the Westfjords of Iceland.

Table 2 Comparison of two marine planning processes: Marine spatial planning in the Westfjords of Iceland and intermunicipal coastal zone planning in the Tromsø region in Norway (paper III).

Aspect	Westfjords (Iceland)	Tromsø region (Norway)
Status	One of two first official marine spatial plans	Review of previous coastal zone plan 2015
Main driver	Rapid expansion of aquaculture industry, competing interests for marine space	Rapid expansion of aquaculture industry, competing interests for marine space
Main planning authority	National level: National Planning Agency (Skipulagstofnun)	Local level: Municipalities (Tromsø, Karlsøy, Balsfjord)
Levels of governance involved	National Planning Agency leadership, municipalities involved in working groups	National overall strategy, regional and intermunicipal coordination, municipal planning
Municipal jurisdiction	115 m out to sea	1 nautical mile out to sea from baseline (outermost islands and skerries)
Process period	2019-2023	2020-2023
Plan validity	2023 onwards	2023-2033
Adaptability	None built in	Review within 10 years
Monitoring	Not laid out	Not laid out
Land-sea integration	No	Yes
Objectives	Product-oriented	Product- and process-oriented: clear product (plan) and process targets
Participation strategy	None documented	Engagement plan documented
Information & engagement channels	<ul style="list-style-type: none"> • Documentation of plan process and proposals on Hafskipulag.is website • Interactive web maps before start and after plan proposal on website • Announcements on municipal websites and news outlets • Three sectoral stakeholder meetings for data gathering • Three local public meetings for draft plan 	<ul style="list-style-type: none"> • Website • Regional council website • News outlets • Radio programme • Two rounds of public inspections in plan proposal stage, final hearing stage • Five public meetings: four online due to COVID-19, recorded • Two webinars on aquaculture and other industry needs and impacts • Sami participation: four meetings with two Sami organisations (fisheries and reindeer herders) • Interactive web maps after plan approval, comparison with previous plan maps

The main driver for coastal and marine planning in both regions was the rapid expansion of the aquaculture industry and increased competition for marine space. While the main planning authority in Westfjords was the national level it was the municipalities who led the planning activities in the Tromsø region. The Westfjords process also had less governance levels involved, with a national-level leadership and municipal involvement, while in the Tromsø region, a three-level approach was used with a national overall strategy, regional intermunicipal co-ordination, and municipal planning. A striking difference also lies in the municipal jurisdiction over marine space which extends only 115m out to sea in the Westfjords while it reaches 1 nautical mile out to sea from the baseline of the outermost islands and skerries in the Tromsø region, giving Norwegian municipalities direct authority over much more marine space. The process period was similar; planning was undertaken from 2019-2023 in the Westfjords and 2020-2023 in the Tromsø region. The plan validity differs significantly: while the Westfjords plan is valid from 2023 onwards and its regulation put into law, the coastal zone plan in the Tromsø region is only valid for the period between 2023-2033. There is no adaptability built into the Westfjords plan while it is regarded as important in Norway, with a built-in review of the Tromsø region plan within ten years. However, monitoring was not detailed in either plan. The Westfjords plan also omits any land-sea integration, as the plan only covers areas that are outside of the municipal planning line at 115m out to sea. In contrast, the coastal zone plan in the Tromsø region integrates land-sea interactions. Another difference in the planning processes was their objectives which were found to be product-oriented in Westfjords while they were both product- as well as process-oriented in the Tromsø region. Further, there was no documented participation strategy in the Westfjords while this was an important part of the plan programme in the Tromsø region. Information channels varied in both regions, with the Westfjords using the website for documentation of the planning process, proposals and interactive web maps before the start and in the hearing stage as well as using announcements on municipal websites and news outlets. The Tromsø region also used a website, the regional council website, news outlets, a radio programme, two webinars on aquaculture and other industries, and interactive web maps. In terms of engagement channels, both processes relied heavily on in-person meetings with stakeholder and the public, although many had to be re-arranged to online meetings during Covid-19. More meetings as well as educational presentations were held in the Tromsø region planning process, and the Sami in particular were a group that was specifically focussed on to ensure participation.

In addition to the general differences identified between the two coastal and marine planning processes, the realities of public participation varied across the two locations (see Table 3). In the Westfjords, the public was largely uninformed of the ongoing MSP process and in the Tromsø

region, established stakeholders dominated the discussion. Furthermore, the insufficient involvement of Sami and young people in the Tromsø region intermunicipal CZP process was highlighted. The lack of participation here was attributed to a lack of interest, ignorance of marine resources, the purpose of planning the marine space and participation, as well as an acceptance of the frequently messy nature of the process.

Table 3 Key findings relating to public participation in marine planning processes compared (paper III).

Aspect	Westfjords (Iceland)	Tromsø region (Norway)
Issues of public engagement as characterised by the interviewees	<ul style="list-style-type: none"> • Passive participation strategy – people would not know/find ways to engage • Hard to engage public • Planning process unclear • Lack of discussion of issues 	<ul style="list-style-type: none"> • Public less than established stakeholders • Lack of Sami people involved in planning → problems of institutional framework unaddressed • Lack of youth involved in planning
Difficulties to engage public attributed to	<ul style="list-style-type: none"> • Corruption • Issues with representation • Negative experiences with previous planning • No perceived benefits • Finances 	<ul style="list-style-type: none"> • Lack of interest • Lack of education on marine resources, benefits of MSP and participation • Recognition of messiness of process
Main contention point	Aquaculture	Aquaculture
Summary	Institutional framework inadequate for regional MSP → a more nested approach from local to regional to national might work better	Institutional framework works better but does not incorporate reality of life of Sami people → inadequate
Next steps	Both processes need to consider big picture questions: Do established institutional planning frameworks effectively work in their contexts? → “MSP is rarely a continual process that encourages questioning of its own conclusions over time” (Craig, 2019, p. 8)	

In the Westfjords, however, the interviewees linked the insufficient public involvement to factors such as a lack of trust, corruption, apathy, unpleasant planning experiences, and being over-consulted. In terms of issues that arose in engagement meetings and other channels, aquaculture was the main source of disagreement in both areas. Overall, it can be said that the institutional structure for MSP in the Westfjords is unsuitable for the goals it established for public involvement. The Tromsø region’s intermunicipal CZP saw better participation results with the process. However, it still lacked public participation and did not adequately reflect the realities of Sami people's daily lives. Moving forward, both processes should reflect on their structural issues including whether their current institutional planning frameworks are effective in their respective circumstances.

4 Discussion

4.1 What does the climatic and societal context mean for public participation in Icelandic MSP?

In paper I, the climatic and societal context of Icelandic MSP was analysed. The findings show that Iceland is already experiencing the effects of climate change with increased snow and glacier melt, and warmer ocean and air temperatures. Although these changes might have some short-term advantages, their long-term effects are concerning and require immediate action. In the marine ecosystems, measurable consequences for many marine species have been reported with fish stocks and sea bird populations changing in unprecedented ways.

The findings have also shown that the societal context in which MSP has been launched in Iceland is unique in that MSP in the remote areas is led by the national planning agency and the national Ministry of Infrastructure, both of which operate out of the capital. This presents a clear departure from the usual municipal jurisdiction in terrestrial planning. In turn, residents of local municipalities wish for more inclusion in MSP. A fast-growing aquaculture sector and a reported politicised experience of previous planning present additional challenges to Icelandic MSP.

Icelandic maritime governance has historically placed a strong emphasis on fisheries management. Thus, the results of this study should be considered within the context of these earlier developments. Before 1990, Iceland's fishing quota system was completely overhauled to curb overfishing and to improve the industry's sustainability (Chambers & Carothers, 2017; Kokorsch & Benediktsson, 2018). However, fishing rights were all but privatised by dissociating quota from the vessels and their ports and allowing them to be traded, only capping the total allowable catch (TAC) per species. While the new Individually Transferrable Quotas (ITQ) were considered by some as economically and ecologically successful, their socioeconomic implications were felt throughout fishing communities (Kokorsch & Benediktsson, 2018). While fishing quota began to concentrate in urban areas, many remote coastal communities were left vulnerable (Kokorsch & Benediktsson, 2018), widening the gap between large and small-scale fisheries, and raising the perceived corruption risk (Gisladdottir et al., 2021). Further, the amount of power of local communities in Icelandic fisheries policymaking decreased after the implementation of the ITQ system (Kokorsch et al., 2015) while concerns about regulation enforcement and transparency came to light (Gisladdottir et al., 2021). Specifically, small-scale fishermen in remote fishing communities reportedly lack influence over fisheries policy, mistrust institutions, and can feel discontent with decision-making processes (Chambers & Carothers, 2017). The remote coastal communities studied in this research are still impacted by the long-

term effects of these previous marine policies. It is thus in line with this earlier research on fisheries and marine governance that one of the prevailing themes that concerns coastal communities is corruption in decision-making and the consolidation of power in the hands of a powerful few. These sentiments are now discussed on a more public forum than before after the publication of the National Audit's Office on the state of the aquaculture industry (Ríkisendurskoðun, 2023).

The occurrences of interviewees being unaware and uninformed of the entire MSP process are what Flannery et al. (2018) warn of when describing the dangers of exclusion and non-participation that can result in irritation in communities and call into question the legitimacy of the MSP process. Perceived inequalities in power and influence on decision-making as well as a lack of trust are serious barriers to participation in MSP (Flannery et al., 2018; Greenhill et al., 2020). Tait and Hansen (2013) describe a wide-ranging crisis of people's trust in governments as well as in planning. This crisis of trust is particularly evident in regional planning because of the disputed and often vaguely defined role of regions. Projects managed from the top down do not do justice to local planning needs and varied identities (Tait & Hansen, 2013; Hansen, 2017). These findings are similar to what was found in this research where community members and municipal actors brought up distrusting the national authorities responsible for MSP. The lack of regional governance mechanisms in Iceland makes the realities of regional planning challenging.

In Norway, Falleth and Nordahl's (2017) study has shown that particularly municipal planning is rather based on market-led processes than public participation. During a long 'informal planning process' of property acquisition, raising funds etc., developers can establish a position of power to influence future planning. This is why here, lobbying is seen as more effective than participation in planning (Falleth & Nordahl, 2017). Since this type of lobbying begins long before the official planning process, "it is unclear when the formal [planning] process begins and when the formal participation rights, such as information and announcements about the planning, come into play" (pp. 98-99). This can make local governments dependent on private actors and their market deliberations, leading to a dilemma for politicians who end up "torn between their roles as elected representatives for their local inhabitants and their dependence on private actors" (p. 100). Although this example comes from terrestrial planning, it can help explain the findings of the Icelandic MSP process insofar that market considerations seem to play a significant role in how the plans turn out, and numerous interviewees highlighted the political power of the aquaculture industry specifically. Marine space cannot be claimed like territory through direct ownership, but the practice of aquaculture results in a comparable spatial

occupation of marine areas because of their fixed installations. Once fish farms have been installed, it can limit the access of other users to the same marine space. This contrasts with many other marine activities in the fjords of Iceland. For example, shipping, fisheries, and recreational activities are all highly mobile and can accommodate one another in many ways even when using the same ocean space.

4.2 Why is the participation level so low and what could be done to improve it?

Paper II sought to assess the scope and depth of public participation in Icelandic MSP, to explore how it is perceived, and to identify any barriers to public participation.

Like other studies on participation in MSP (Pomeroy & Douvere, 2008; Jarvis et al., 2015; Flannery et al., 2018; Quesada-Silva et al., 2019), the findings of this research show an urgent need for the inclusion of wider community members, for more transparent communication and for the use of varied and meaningful participation channels. In the Westfjords and Eastfjords MSP processes, only limited public consultation took place which impeded community empowerment and raised questions of legitimacy (cf. Fudge et al., 2021). This tokenistic approach (Flannery et al., 2018) has been criticized by community members and stakeholders alike. Additionally, multiple barriers to participation have been identified, both top-down barriers such as how the process is envisaged by those involved in the planning, and bottom-up barriers, such as the perception of community members that their input will have little impact.

Rodríguez-Pose (2018) proposes the concept of “subtle revenge” (p. 11) of remote places, which are usually in decline, whose people feel disregarded by governments and then start to actively undermine the system of power. This kind of subtle revenge seems to be at play particularly in the Eastfjords, where the theme of *Frustration and Exclusion* was dominant, and where community members have started petitioning as well as taking legal action against different agencies to get the plan and aquaculture licences revoked.

Two other studies have shed light on participatory projects in Iceland beyond MSP. Welling et al. (2019) researched participatory scenario planning in nature tourism on glaciers that are heavily impacted by climate change. They found that the participatory methods were welcomed and worked effectively with a small, already established group of stakeholders (cf. Smythe & McCann, 2018). However, broadening these methods to the overall public is seen with scepticism in the current rigid planning systems (Welling et al., 2019). In another study on participation in land restoration projects, Berglund et al. (2013) found that although top-down mechanisms are not adequate for wicked problems like complex environmental issues, these approaches will often stand in “radical contrast” (p. 1) to how things have always been done, and

how professionals are trained. Berglund et al. (2013) further highlight a sort of functional participation which is a tool to achieve the leading agency's goal to produce an outcome, and where those with other goals are not necessarily focused on. Only minor decisions are taken in participatory forums while main decisions are taken centrally. This is still the case in today's MSP as present data has shown. Lastly, Berglund et al. (2013) observe that participants were most likely to engage with predictable, face-to-face interactions and reduced engagement when the contact became unpredictable. This, they suggest, "highlights the need to view participation not only as a means to an end but also as a process" (p. 10). Findings from the Icelandic MSP case as well as the two other studies indicate a need for a revision of planning processes and institutions in Iceland to address some of these ongoing issues.

There are various examples of marine planning processes that Iceland could draw from, both in terms of best practice as well as those that ran into similar difficulties. Numerous interviewees reported participation fatigue and negative experiences with previous participating in planning. Although this is accepted as a common and well-known experience, it was not addressed by the MSP process. Young et al. (2020) found that long-term participation is often perceived as a burden which leads to stress, and thus to non-participation. This is one of the factors that planners should consider in their participation strategy (Young et al., 2020).

Like the Icelandic MSP case, the Queensland coastal planning has been characterised as a top-down, "centralized and politicized" (Zafrin et al., 2014, p. 13) process lacking trust-building through common visioning. Rather, objectives had already been defined by the leading agency. Communities were not deeply engaged but only consulted on already created plans. As in Iceland, this process has been critiqued for insufficient power-sharing.

In French MSP (Tissière & Trouillet, 2022), EU regulations require participation, but in practice it seems to be considered optional. In Polish MSP, Tafon et al. (2023) found barriers and issues similar to the Icelandic case: on paper the process promises to be just and inclusive but in reality, it enables those who are already powerful. These examples illustrate the obvious gap between the theory and practice of the ideals of both MSP and participation. Although academics have long demanded wider and deeper participation in MSP, the reality of planning processes is often far from that ideal (Clarke & Flannery, 2019). Similarly, MSP itself has been studied in multiple countries and case studies where it has become clear that there is a wide gap between the theoretical promises of the benefits of MSP and the often-disappointing reality of such processes on the ground (Trouillet, 2020). In response to this realisation, Trouillet (2020) calls for a critical turn in MSP research and to engage in alternative practices that allow multiple perspectives and

approaches to MSP to “ensure that MSP does not become an illusion behind which other agendas lie” (p. 1).

Other than similar pitfalls, other countries also offer insights into best practices in MSP that the Icelandic process can perhaps learn from. In a Scottish Shoreline Management Plan (Murdy, 2019), a detailed engagement plan was created as a central aspect of the planning process. It lays out the strategy of the planned engagement including recognizing its complexity, suggesting methods and dates as well as considering accessibility.

In British Columbia in Canada (Diggon et al., 2019), Indigenous and traditional ecological knowledge (TEK) integration into MSP plays a central role. Here, the localised First Nations’ plans were created before the overall regional planning began, granting First Nations’ values and knowledge feature prominently. This example suggests that successful participation can be achieved when Indigenous perspectives are recognized, acknowledged, and integrated into the planning process. A similar nested approach could be adopted in Iceland and beyond, with the central idea that local planning based on local and traditional knowledge comes first and regional and national plans can build on that. This could also offer strategies to make Norway’s engagement with the Sami people more central to the process and more effective.

In Norwegian CZP, public participation is required by law, but municipalities are free to put it into practice as they see fit. This can be an issue as there is no inbuilt accountability or oversight to ensure effective public participation. Lacking such monitoring mechanisms, CZP could also leave room for poor or tokenistic public engagement. Buanes et al. (2005) found that although participation rates in CZP tend to be generally high, the engagement channel matters. While institutional stakeholders predominantly utilized formal participation channels such as working groups, veto powers, and responses during the hearing phase, local interest groups like fishermen, landowners, farmers, and community members preferred informal participation channels like public meetings, media interactions, and direct contact with planners. Notably, all groups showed a preference for directly contacting the planners as their primary means of participation. This observation suggests three crucial lessons for MSP practitioners: a) It is essential to establish a diverse range of both formal and informal engagement channels to attract participation from various groups; b) Both formal and informal engagement should be equally considered in influencing decision making, ensuring the public involvement is not just a “checkbox” exercise while stakeholders with economic interests are paid most attention; and c) Emphasising personal, face-to-face contact is vital for effective engagement, a finding also

supported by Berglund et al. (2013) in Iceland. Similar results were also found by Smythe and McCann (2018) in various case studies of MSP in the United States of America.

This research into Icelandic MSP focussed on the process rather than its outcome. Nevertheless, the responses from all three case studies indicated that the main goals of MSP in Iceland lie not in the process but rather on the completion of a marine spatial plan. The process itself has not been specifically highlighted in any public documentation. The significance of prioritising the process over the product has also been emphasised in other studies (cf. Wescott, 2004; Craig, 2019; Diggon et al., 2019). Fletcher et al. (2013) reports on two MSP cases in England (Solent and Dorset coasts) where pre-existing stakeholder networks were used as engagement channels. Despite the existence of conflicts of interest, they did not pose an insurmountable barrier. Instead, participants welcomed the chance to openly discuss their concerns, demonstrating a successful instance of MSP functioning both as a process and as a platform for constructive dialogue. Fletcher et al. (2013) therefore emphasise that the process of MSP is crucial, not merely the result (cf. Jentoft, 2017).

A key issue within the Icelandic MSP process recurring across various themes and codes was the lack of information and education in the affected communities. When the public is unaware of the significance of the MSP process, its benefits, and the stakes involved, meaningful engagement becomes exceedingly challenging. The Icelandic data not only identified top-down barriers but also revealed bottom-up barriers explaining why community members might be hesitant to participate even when given the opportunity. To promote early and ongoing community engagement (Zafrin et al., 2014) with limited resources, an effective approach could be to adopt New Zealand's example of incorporating citizen science into MSP (Jarvis et al., 2015). Augmented knowledge of the local marine area can not only spark interest in MSP but can also encourage informed citizens to take ownership of their ocean space and take responsibility.

During numerous interviews, the recent growth of Iceland's aquaculture industry emerged as a highly debated subject. The expansion of fish farming was the initial catalyst for the introduction of MSP and is gaining increasing attention from the public (Wilke & Kristjánsdóttir, 2023). Despite the various challenges posed by this development, it also presents opportunities for integrating adaptive aquaculture management and MSP within a legal framework. Craig (2019) demands a governmental reform of MSP to establish legal connections between aquaculture licensing procedures and MSP processes. Interviewees in the Eastfjords specifically highlighted this lack of legal accountability, making Craig's (2019) proposal highly relevant for Icelandic

MSP. Craig (2019) suggests the integration of mandated public participation forums to support adaptive governance that includes in-built iterative cycles to assess activities and adjust management measures. Thus, the process could create multiple forums for discussion, enhance plan legitimacy, maintain the rule of law, and promote overall fairness (Craig, 2019). This process-focused approach has become a central idea in addressing MSP process deficiencies in Iceland and beyond.

4.3 What are lessons to be learnt from looking beyond Icelandic MSP? Comparison with the Norwegian case and wider considerations.

In paper III, the aim was to explore what can be learned from comparing participation in Icelandic MSP to the more established coastal zone planning process in Norway. The two case studies of the Westfjords MSP process and the Tromsø region intermunicipal CZP process were chosen for this comparison.

The documentation of both planning processes indicates varying degrees of desire for public participation on the part of those responsible for conducting the planning. The public would be more likely to be engaged if they believed their input would be meaningful. The differences in the legal frameworks between Norway and Iceland contribute to challenges in local community participation. Norway retains a larger planning authority in the extended coastal space, while in Iceland, municipal actors yield planning authority to national authorities in marine planning.

This has consequences on how engaged municipal actors are in the planning process, and how much time, effort and resources they can spend on public participation. In the Icelandic case, expectations for public participation and information about the planning process was largely seen as a task for the leading agency conducting MSP rather than a municipal task. However, it can be argued that municipalities are best placed to engage their local public using existing communication channels and networks, as well as knowing local issues and interests.

The Norwegian Intermunicipal CZP process includes a report dedicated to public participation, singling out Sami people and youth as groups that are particularly hard to engage. This acknowledgement is important, but it should be followed by addressing these issues and finding ways in which to effectively engage previously largely excluded groups. Effective ways to implement participation seem to be lacking in both Norway and Iceland.

Norway's advancement in aquaculture and coastal planning compared to Iceland makes a compelling basis for comparison, highlighting issues in Iceland that might have already been encountered or are still present in Norway.

4.3.1 Blue Justice as a path to increase inclusivity and participation

The data indicates that both processes require further steps towards more inclusive and participatory practices. Similar issues have been found in adjacent disciplines. To achieve just and sustainable futures for coasts and oceans, the relatively recent concept of “blue justice” has been proposed (see Fig. 9, p. 32). Even on a theoretical level, the concepts of integrated CZP aiming at sustainably managing ocean space and resources and blue justice seeking ocean solutions that put recognitional, procedural and distributional justice and inclusion at the forefront of “blue economy” (Engen et al., 2021) are closely linked. Here, the findings of the two case studies in practice and how they related to blue justice will be further explored.

Although blue justice cannot be quantitatively measured, and as a relatively new concept has yet to establish its exact parameters, it is important to indicate where there are injustices in ocean policies and practice (Engen et al., 2021). Whilst coastal communities globally have long fought for inclusion in decision-making, blue justice as a concept only emerged in 2018, often as a counterargument to the celebrated notion of the blue economy. With the increasing interest in blue economy and the growth of maritime activities, pressure on the oceans and coastal zones has increased, and processes like CZP and MSP can, although intended to find the best solutions, lead to social injustices, exclude groups and reinforce the power of already influential actors (Engen et al., 2021). Blue economy literature often omits detailing its implications for justice and what an equitable, just, and sustainable ocean-based economy looks like in practice (Fusco et al., 2022; cf. Flannery et al., 2016). Originally focussed on small-scale fisheries, the concept of blue justice has recently been expanded to achieving justice in the marine space more broadly (Blythe et al., 2023).

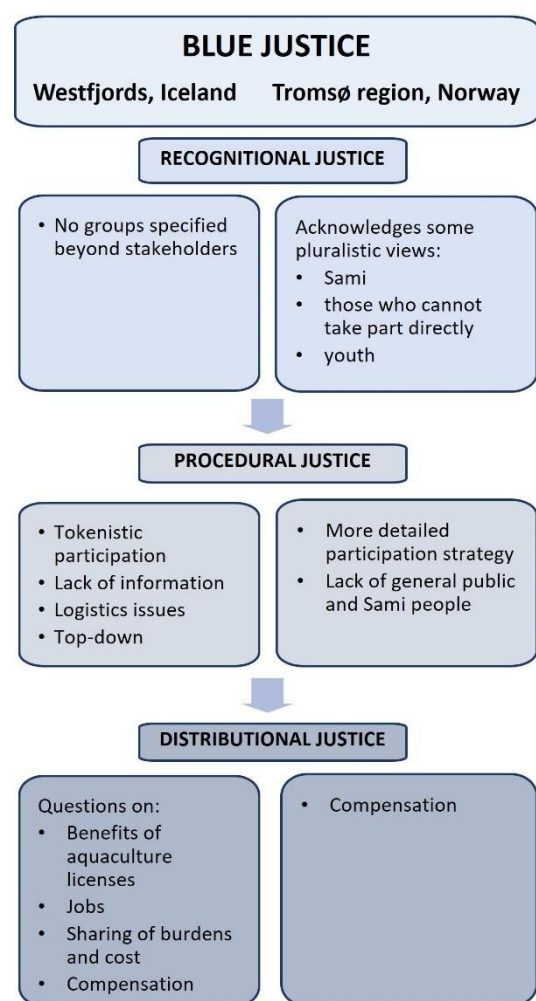


Figure 9 Elements of blue justice as identified in the case studies of Norwegian intermunicipal CZP in the Tromsø region and MSP in the Westfjords, Iceland.

Blue justice encompasses three dimensions: recognitional, procedural, and distributional justice. Recognitional justice recognizes the diversity of views, rights, and values, acknowledging that different people may have varying perceptions of justice. Historically marginalized groups like small-scale fisherfolks, women, and indigenous people are particularly relevant in this context, as they have often been excluded from maritime affairs and policies (Engen et al., 2021; Blythe et al., 2023). Procedural justice, closely linked to recognitional justice, pertains to the fairness of the processes involved, including who gets to participate in discussions and decision-making. Distributional justice refers to the outcomes of the process, focusing on the equitable and fair distribution of benefits and burdens. It also involves addressing and rectifying previous disadvantages and harms that may have occurred (Engen et al., 2021). Flannery et al. (2016) explain that academia and practice both lack a comprehensive picture of the distributional impacts of MSP endeavours, and that the question of ‘who benefits’ should be central to all MSP processes. Figure 9 illustrates recognitional, procedural and distributional elements of blue justice identified in both case studies.

Bennett et al. (2021) note that exclusion from decision-making is likely a precursor and intensifier of subsequent injustices, as evident in top-down processes. They specifically highlight MSP as a prime example for often tokenistic participation, poor communication, and its inability to change direction, a concept known as “path dependency” (cf. Clarke & Flannery, 2019). This directly relates to the two case studies, and especially so to the Icelandic case where objectives were set without engaging or consulting affected communities before the start of the process, where communication difficulties have been reported and where trust in institutions has been called into question. To address these challenges, decision-making processes concerning the marine space should be explicitly guided by a focus on justice (Bennett et al., 2021).

The Norwegian case study highlights the insufficient inclusion of the Sami people, who have traditionally relied on small-scale fisheries and farming, with legally protected rights to practice these activities (Engen et al., 2021). Research on Sami names of seascapes reveals a rich history of fishing grounds named in various languages and traditions, including Sami, Kven, and Nordic languages, reflecting long-standing traditional ecological knowledge (TEK) among the Sea Sami (Brattland & Nilsen, 2012). Guidelines were established by the Sami Parliament to safeguard traditional fishing areas in CZP, but Engen et al. (2021) emphasise that decision-making power for the Sea Sami remains contested. To address this, meaningful engagement with Sami representatives should occur during the process's design stage rather than just the consultation phase. Challenges in identifying registration municipalities and demarcating customary fishing

grounds suggest a broader mismatch between Norwegian administration frameworks and Sami people's traditional use and understanding of land- and seascapes.

Gustavsson et al. (2021) emphasise gender issues in blue justice, revealing the systematic exclusion of women in maritime fields (especially fisheries) from policy and decision-making. Despite their significant contributions to the blue economy, women's governance over marine space remains limited. Women's groups advocating for inclusion in marine decision-making exist, but their influence tends to be local rather than reaching regional or national levels, often formed in response to urgent crises and temporary in nature, as illustrated through cases from the UK, Zanzibar, Chile, and France (Gustavsson et al., 2021). Gender norms still hinder individual and collective participation in fisheries and marine governance. Gustavsson et al. (2021) propose formalising women's groups and as a pathway to procedural justice, to be better positioned as recipients of distributive justice and benefits.

In the Tromsø region, young people's limited involvement in the intermunicipal CZP process was highlighted. Nordic countries have a longstanding tradition on promoting a healthy childhood connected to nature, outdoor experiences, environmental education, and developing stewardship for the natural world. The tradition of *friluftsliv* (life outdoors) is important to young people today, as is caring for the environment they live in, especially in coastal communities (Gurholt, 2014). In both Iceland and Norway, outdoor education aims to foster respect for nature, encourage young people's participation in society and decision-making, and view them as competent individuals and valuable actors in environmental protection (Norðdahl & Jóhannesson, 2013; Norðdahl & Jóhannesson, 2014; Kjörholt, 2002). Despite these shared values, young people were absent from both the Norwegian intermunicipal CZP and Icelandic MSP processes, and both processes lacked targeted strategies for inclusion. Engaging youth in policymaking and decisions about their locality is essential to retain them in remote coastal communities. They are also the first generation to face the full impact of climate change (Kjörholt, 2002) and it is vital to include them in shaping their future. Going forward, youth are perhaps the easiest group to engage in Norway, as the country already focuses on environmental and sustainability education. In Iceland, the lack of such provision presents a barrier to engaging youth in MSP and youth engagement should be addressed both at the level of marine education and of governing marine space. What is required is the political will to connect the two fields in practice. It would be advisable to find ways to open conversations with young people, in schools or social settings, about how they envision the future of their home places and what they would need to imagine a local future. These ways of informally engaging very specific groups into the

discussion without necessarily expecting them to take part in any official planning meetings, read planning documents etc. would nevertheless be of great value for the planners and for the future of these remote communities and should be focussed on.

On a broader scale, there has been an insufficient integration of different voices, perspectives and knowledges of coastal and marine users into the respective policies (Clarke, et al., 2013) and there is an urgent need to address these shortcomings, not just to improve MSP but wider ocean policy beyond Norway, Iceland and the Arctic. In order to do so, one of the key challenges is establishing ways in which Indigenous and Western knowledge systems can co-exist and enrich ocean policy (Clarke et al., 2013). Another is bridging the gap between professional, highly technical input from experts and equally valuable, local knowledge from community members, both of which are necessary in order to arrive at sustainable and equitable solutions (D'Hont & Slinger, 2022).

Aquaculture is a major source of conflict in both case studies and serves as a driving force behind the planning processes. The industry's rapid growth poses significant challenges for coastal and marine planning, as it requires substantial ocean space with largely exclusive use, thereby limiting other users as well as raising questions about licensing procedures and profit distribution in both countries (Johnsen & Hersoug, 2014; paper II). Examining aquaculture provides insight into decision-making power hierarchies in both nations. In Norway, the responsibility for prioritising aquaculture in each area lies with municipalities, while in Iceland, national authorities have the overall authority (Johnsen & Hersoug, 2014). Over time, Norwegian coastal planning evolved to give municipalities more authority in creating their own plans. It stands to reason that in the future, the newly developed Icelandic planning process might shift in a similar direction to the Norwegian practice, with many of the same pressures and activities to organise, and one way might be yielding more decision-making power to the local municipalities with time. For this to happen, however, Johnsen and Hersoug (2014) point out that in the Norwegian case, it was a process riddled with conflicts, for example balancing out national interests like conservation of marine resources and ecosystems with local priorities like the creation of employment opportunities. In Iceland, this seems to be the other way around, with aquaculture and its impacts debated heavily on the local level while largely supported by national actors. A change in responsibility for aspects of marine planning requires time to build trust between the actors at multiple levels, and it is recommended to create stable networks with regular meetings to pave the way for such change (Johnsen & Hersoug, 2014). It is also debatable whether more power at the municipal level would lead to better outcomes in MSP.

More power at the municipal level would also require a re-examination and adaptation of the existing national standards to adopt more rigorous and well-defined rules and benchmarks which must be followed in municipal decision making, thus making it consistent nationwide, and less arbitrary.

4.3.2 Missing links: ecosystem protection goals and human dimensions in MSP

A noteworthy aspect missing from the data in both presented case studies is the link between ecosystem protection goals and the discussed planning processes. It is surprising that neither interviewees nor the examined documents raised this point, considering that coastal and marine planning is inherently designed to adopt an ecosystem-based approach for ocean management and has come about with the realisation that oceans must be carefully managed to avoid harmful consequences of human activities. Although the plans touch on the ecosystems in their proximity and their significance, even detailing derived ecosystem services, they lack explicit information on how specific planning measures, zoning, and subsequent activities will prevent further degradation or promote net biodiversity gain. The ecosystem goals in the studied plans appear implicit rather than explicit. Kvalvik et al. (2020) argue that while the theoretical acceptance of ecosystem services providing benefits to humans is widely recognised, its integration into policies and practices remains fragmented. They suggest that the complex language used in literature on ecosystem services might impede an effective incorporation into planning practice and emphasising the need for a shift to better make use of the concept in practice.

Relatedly, and tying in the findings of the present study, Bennett (2019) emphasises that the “human dimension of the world’s peopled seas and coasts” (p. 1) is a fundamental aspect that should be considered in all ocean-related policy and decision-making, including MSP, and marine social science with its varied foci, methods and perspectives on human-ocean relationships is best placed to provide this information. However, much like the present research has found that public participation and involvement of citizens in decision-making in MSP are lacking in Iceland and beyond, Bennett (2019) states that policymakers from local NGOs to international institutions seldom possess the necessary capacity or allocate adequate investments in social science. Insufficiently understanding and including the social sphere and multiple human connections to the coasts and seas into ocean policy can have serious consequences including unethical actions and resistance to conservation, management or development efforts (Bennett, 2019). These could already be observed in the present study with the backlash against the plans and their envisioned integration of aquaculture sites in Iceland, specifically in the Eastfjords.

5 Conclusion

MSP can be highly valuable for coastal communities, particularly in the High North where environmental conditions are changing rapidly, as it can help provide guidance to sustainably manage and use marine resources and activities. However, for MSP to be truly effective, meaningful public participation and ocean education are essential.

Public participation ensures that the voices and concerns of local communities are taken into account during the planning process. By involving the public, MSP can benefit from local knowledge and experience, leading to more informed decision-making. Coastal communities often have a deep understanding of their local marine environment, including its ecological, economic, and cultural significance. Therefore, their active involvement in MSP can contribute valuable insights and help shape plans that are more socially acceptable and sustainable in the long term. Furthermore, meaningful public participation fosters a sense of ownership and empowerment among coastal communities. When people have the opportunity to engage in decision-making processes, they are more likely to support and comply with the resulting plans and regulations. This can lead to better implementation and enforcement of MSP measures, ensuring the desired outcomes are achieved.

Ocean literacy is another crucial aspect of MSP as it helps raise awareness and understanding of marine ecosystems, their interconnections, and the importance of sustainable resource management. By educating the public about the value of the oceans and the need for responsible stewardship, MSP can foster a culture of conservation and sustainable use. This can lead to increased public support for MSP initiatives and a more environmentally conscious approach to coastal activities. Thus, by meaningfully involving the public and promoting ocean literacy, MSP can benefit from local knowledge, enhance social acceptance, and foster a sustainable marine environment for future generations. This research presents the first study into ongoing MSP in Iceland, thus generating new insights into marine governance in Iceland and how the public is involved in these decisions.

MSP is particularly distinctive and complex in Iceland because of the country's social and environmental context (Paper I). Its sub-Arctic location and the climate change effects that have already been reported suggest that immediate action is required to improve the management of marine ecosystems.

A literature analysis and semi-structured interviews were used to analyse the first MSP processes that were carried out in Iceland (paper I and II). Many people have described the MSP

participation process as being passive and confusing, which has led to sentiments of exclusion and dissatisfaction with the planning process. Future MSP processes require a more comprehensive and detailed participation strategy and a sincere commitment from the planning agency to adhere to this strategy and to be held accountable. A general overhaul of the process is advised to increase trust-building, define objectives that include the voices of local communities, and improve transparency and clarity of the decision-making process (paper I).

Recommendations (paper II) include the integration of a three-level MSP structure, with the National Planning Agency responsible for creating an overarching strategy and ensuring broad participation. Regional and local agencies would also play a role in fostering community engagement and addressing local issues. Decentralisation is recommended, starting with local initiatives, and nesting them within regional and larger plans. Paper II also emphasises the need for a process-oriented approach, and for balancing procedural and outcome orientation to fulfil the promises of MSP in terms of inclusive decision-making. It suggests creating a detailed participation and engagement strategy with commitments to implement these as well as accountability mechanisms. They should also be accompanied by an education and information campaign to raise awareness and provide ongoing education on the benefits of MSP. Additionally, the inclusion of adaptive management is proposed to support long-term ecosystem management, incorporating continuous monitoring, assessment, and adaptation. Building trust through commitments to transparency, accountability, and accessibility is emphasised, along with a commitment to sharing responsibilities and decision-making from the beginning. It must be acknowledged that these recommendations may not solve all the issues identified in the case studies but represent steps in the right direction. There is a clear need to acknowledge community members as contributors to planning and to ensure their voices are heard in shaping the future of the coastal and marine areas.

Paper III describes a study comparing coastal and marine planning processes in Iceland and Norway to assess the effectiveness of public participation and identify existing barriers. Public participation is seen as crucial for coastal zone planning, as it ensures democratic legitimacy, transparency, and opportunities for knowledge exchange and stewardship over coastal resources. The objective of paper III was to evaluate public participation in the intermunicipal Coastal Zone Planning (CZP) process in the Tromsø region of Norway and the Marine Spatial Planning (MSP) process in the Westfjords of Iceland. Relevant documents, reports, academic literature were analysed, and in-depth interviews with key informants were conducted. The results indicate that some stakeholders and interest groups were invited participants in both planning processes,

although this seemed to be a very limited group of selected stakeholders in Iceland with no power to influence decision-making. However, public participation was reported to be low in both case studies, and several barriers were identified. These include political conflicts, limited channels for participation, representation issues, oppressive laws affecting the participation of Sami people, and knowledge gaps about the coastal zone and its users. Exploring both processes in Iceland and Norway revealed the implications of coastal and marine planning for blue justice in terms of issues related to recognitional, procedural, and distributional justice and raising questions about the legitimacy of the planning processes and aquaculture licensing practices.

Paper III also offers recommendations to promote broader public participation, including the appointment of a community learning and engagement officer as a municipal employee. This would support ocean literacy and facilitate community exchange and participation not only in coastal and marine planning but also in other municipal processes. Coastal and marine planning should be viewed holistically, considering the relationships of trust between authorities, organizations, and citizens. Mainstreaming justice as a framework for marine planning and ocean policy could address many of the identified issues and improve the planning processes.

The importance and impact of this research overall lies in its novelty for Iceland, as well as its expandability across other Arctic and Northern countries. Concepts that include bottom-up approaches to governance and decision-making are relatively new for Iceland and present a concept that is not well established, especially in marine governance. As top-down management has been the norm in Iceland, this research highlights that this has implications such as creating barriers to public participation leading to dissatisfaction in coastal communities with decision-makers as well as potentially resulting in suboptimal engagement and marine plan outcomes in terms of social acceptance and sustainability.

The knowledge gained from this research has several implications for planning practice and practitioners. This study suggests the need for more in-depth communication about the MSP process and marine issues in adjacent communities. It highlights the importance of incorporating a detailed participation strategy in planning processes, as demonstrated by the intermunicipal coastal zone planning process in Norway. This strategy, along with serious commitments to adhere to it by planners, can help ensure that all relevant stakeholders, including the general public, are effectively engaged in decision-making. The lack of public participation is a limitation of the MSP process in Iceland. The research emphasises the need for ongoing discussions and debates during the planning process. These discussions can help address conflicts of interest and ensure that diverse perspectives are considered as well as increasing

transparency and trust in the MSP process. Planning practitioners should prioritise engaging with the general public to ensure a more sustainable and inclusive approach to marine planning. Hence, the research calls for a reform in the Icelandic MSP process, including strengthening participatory channels, marine environmental education and ocean literacy, and improving the accessibility of information. Finally, the research underscores the importance of considering issues of justice, such as recognitional, procedural, and distributional justice, in coastal and marine planning. This can help ensure that the planning process is fair and equitable for all involved.

There are several ways in which the present study contributes to academic research. The contribution of paper I lies in its exploration of the unique environmental and societal contexts of MSP in the Westfjords of Iceland. Paper I sheds light on the challenges faced in planning for climate change and the growth of the aquaculture industry, and provides recommendations for improving the MSP process. The research adds to the existing literature on marine governance in the North and highlights the importance of public participation and transparency in decision-making. Paper II is the first study to present data identifying limited public participation in ongoing MSP processes in Iceland. It also highlights the need for more inclusive and transparent participation methods to generate community buy-in, foster justice, integrate local knowledge, and establish learning networks. The academic contribution of paper III lies in its comparative analysis of two recent coastal and marine planning processes in Iceland and Norway. By examining the similarities and differences between these processes, the research provides insights into the strengths and limitations of each approach. This analysis can inform future planning practices and help improve the effectiveness of coastal and marine planning worldwide.

Reflecting on the research process over three years and the results from three case studies in Iceland and one in Norway, the present study has several limitations. Overall, the focus on specific case studies was necessary to explore ongoing and recent MSP processes. However, restricting the research on specific regions and case studies as well as the reliance on interviews and document analysis may limit the generalisability of the findings to other contexts. The number of interviewees specifically in Norway was heavily limited due to COVID-19 restrictions and represents an expert planning coordinator's view rather than the opinions of a wider public. In addition, further research is needed to explore the relationship between power, decision-making, and the marine environment in Iceland and beyond.

Future research could directly address some of the limitations presented here and expand the research in time – by continuing the study in Iceland and adding to the data as MSP is further

developed and including other areas –, and in location – by broadening the geographic focus of the research into other countries in the Arctic and High North to obtain a more robust and broad data-set and to be able to make wider-ranging recommendations and improve MSP practices.

Relatedly, future research could specifically target communities with Indigenous populations in order to address some of the issues identified in Norwegian CZP and offer ways to meaningfully engage Indigenous groups into marine planning. This can involve developing frameworks that respect and integrate traditional knowledge systems and ensuring meaningful participation of Indigenous communities in decision-making processes.

Another aspect that could be studied is the effectiveness of MSP in addressing the challenges faced by Northern communities as identified in paper I, evaluating how Icelandic MSP is addressing changing weather patterns, sea level rise, and invasive species etc. This assessment can provide crucial monitoring of MSP in Iceland which is not currently detailed in any plans, and it could provide insights into the success and limitations of MSP in mitigating the impacts of climate change on coastal and marine areas. This could involve tracking the ecological, social, and economic impacts of MSP implementation over time, and identifying any necessary adjustments or improvements to ensure sustainable management of marine areas.

Given the limited public participation observed in the Icelandic MSP process, future research could focus on developing strategies to increase the involvement of local community members throughout and in particular in the decision-making stages of MSP. This can include exploring innovative approaches to communication and engagement and should target groups that are not currently actively engaged in the process.

Another aspect that requires more research are the implications of coastal and marine planning for blue justice. The present research recommends to further study the issues related to recognitional, procedural, and distributional justice in MSP processes beyond Iceland and to explore the potential of mainstreaming justice as a framework for marine planning and ocean policy. This should include assessing how justice principles can be integrated into MSP processes to address the identified issues and improve the planning processes.

Finally, future research should focus on strategies to integrate ocean literacy and public education into MSP processes. The theoretical importance of education and ocean literacy has been widely discussed but in practice, MSP is lacking clear education guidelines and strategies that translate into processes on the ground. This research could include action research, testing out creative channels of educating different target groups before or alongside MSP processes.

Overall, future research should aim to further enhance the understanding and implementation of MSP in the context of changing climates and the unique challenges faced by Northern communities. By addressing the gaps and limitations identified in the current research, future studies can contribute to the development of more effective, inclusive and just approaches to MSP through ocean literacy, education and public participation.

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Appendix

Paper I

Paper II

Paper III