

Methodology

Data Collection – Four Phases

The research within WP2 and WP4.1 has been organised to generate 3 interlinked activities: a governance mapping exercise, a value assessment survey and interviews, and an acceptability survey focused on climate smart proposed marine plan scenarios for each nation. In each phase, we have sought the most appropriate method for investigating relevant research questions under the contextual circumstances. All work with human subjects was approved in advance by the University of Essex Ethics Committee (ETH2122-0082).

We first employ qualitative methods – interviews, workshops, and desk research – to explore the structure of governance of our three key sectors (aquaculture, conservation, fisheries). In early interviews, we focus on respondents from governance/regulatory organisations, whose input we use to generate governance maps for each sector in each devolved nation. We build on this work and these relationships by asking stakeholders and marine planners questions related to their values and preferences, using their responses and a ratings-based questionnaire to better understand the value they place on various components of the marine space. We then present initial findings from completed phases during stakeholder workshops, which represent the third phase. After using these findings to inform the creation of management scenarios that feed into MSPACE Work Package 4.2's multiple criterion decision analysis (MCDA), we design and administer a survey asking stakeholders their willingness to accept or trade between the various management scenarios for their devolved nation. The answers to these surveys help us gauge the social acceptability portion of the MSPACE triple bottom line.

Before describing each phase in detail, we offer a summary in Table 1. This table summarises our data gathering methods according to analytical approach used and the contribution it makes to our analysis.

Table 1 . Connecting methodological triangulation to its contribution

Phase and Method	Data Gathered	Analytical Approach	Contribution to Analysis
Phase 1a: Expert interviews and stakeholder/governance mapping	Identification of stakeholder organisations involved in marine planning and governance	Proposed stakeholders, validation by expert and then 2 other sources (expert, publication).	Set up a visual general landscape of actors involved in marine planning decisions.
Phase 1b: Document Analysis	Government publications, institutional policy documents, marine plans with narrative Grey literature reports on social and economic contributions of sectors and values News items on sectors	Compile information on history, motivation, and process of marine planning in the U.K. Determine the staggered roll-out of marine planning across the nations. Identify differing definitions of the marine economy by nation state. Identify marine sector priorities by nation state. Understand influence of Brexit on marine economy and trade.	Drew up a timeline across nations, discrepancies between nation states and data gaps in defining elements for marine planning process. Identified lingering and developing challenges to the marine planning process.

Phase 2a: Questionnaires	Rating of criteria valued in marine environment	Assessing scores according to stakeholder sector (aquaculture, conservation, fisheries) Analysis of highest and lowest scores overall and by sector	Established a relative rating of marine elements by sector and nation.
Phase 2b: Interviews	Commentary of scoring process and the practices, reality and desired outcomes. Seeking explicit and implicit values, preferences, and trade-offs.	Coding of interview material according to prominent topics Coding of values according to IPBES definitions of values, preferences, and trade-offs	Brought forth similarities and differences across stakeholder groups and nation state for values, preferences, and suggested trade-offs.
Phase 3: Stakeholder workshops	Stakeholder feedback and input according to workshop activity around values, preferences, and trade-offs	Summary of participant feedback on each work package by nation state Workshop activity recorded, responses aggregated and analysed by theme using qualitative analysis software, synthesis of similar and differences between groups and respondents. Analysis of administered impact survey by in-person workshop	Compared responses to work packages to draw out similar critiques, concerns and appreciations of MSPACE climate smart approach. Deepened understanding of cross-sector stakeholder relations, animosities and collaboration. Identified key stakeholder positions.
Phase 4: Online Survey Social Acceptability of Scenarios	Stakeholders' responses according to sector and devolved nation	TBD	TBD

Note: Table based on Chapter 8, in G. Espedal et al. (eds)¹

Phase 1 – Elite interviews and stakeholder identification

In the first phase, we conducted a stakeholder analysis and mapping exercise of marine planning governance in 3 specific sectors: aquaculture, fisheries, conservation. The objective of this analysis was to identify key actors and produce a descriptive (though not yet comprehensive) review of stakeholders in these sectors.

Phase 1 began with elite interviews, which included a core group of 4 stakeholders who were the MSPACE devolved nation case leads (Case Lead Respondents, CLR). Each case lead detailed their own interests in the marine environment and identified other stakeholders who had given permission for us to contact them. We spoke with the case leads to learn more about their perceptions of the governance network and their preferences regarding elements of the marine space. Each also gave information that helped us craft diagrams illustrating the governance structure and relationships between stakeholders in their devolved nation. We conducted one or two remote interviews with each case lead, plus multiple exchanges of emails and iterations of draft governance maps.

The lists of people provided by the CLRs were stakeholders who consented to have their information shared with the research team. From these initial contacts, the snowball sampling continued with each subsequent stakeholder interview that took place around the value rating.

Additionally, interviews were requested from individuals identified through publicly available on-line resources.

To identify and keep a record of stakeholders beyond these initial four case leads, we created a master stakeholder database. This database was initially populated with each stakeholder (whether person or organisation) mentioned by a case lead. The database was held securely at the University of Essex, and included organisation names, key contact names, the sector(s) represented by that organisation or person, and the organisation's or contact person's email address or LinkedIn profile link. No one outside the research team was able to access this list.

Creating the Stakeholder Database

Information in the database was found by one of two means. In some cases, the devolved nation Case Lead Respondent (CLR) contacted a stakeholder and secured permission to share their name and contact information with the team. When that contact method was not possible, we searched for the information online with Google, GoogleScholar, LinkedIn, Twitter/X, and Facebook engines. Although the organisation was the main unit of interest in terms of the governance maps, each organisation might have multiple potential individual contacts, and each person might represent more than one organisation. The primary unit of analysis of the database was therefore the individual.

We also identified potential stakeholders that were not explicitly mentioned by our case study leads. These extra stakeholders were identified as we employed traditional search engines and databases to search for combinations of "fisher*", "marine plan", "coastal partnership", "marine/coastal management", "aquacultur*", "conservation", combined with each devolved nation name. These searches identified multiple groups and organisations interested in the marine space within the fisheries, conservation, and aquaculture sectors, as well as management and regulatory groups. We then identified individuals within these organisations that we might be able to contact by researching organisation websites and social media profiles and collecting public contact information. If anyone we subsequently contacted mentioned the name of a new person or organisation that we had not found, we added that contact to the database.

We thus employed elite sampling, snowball sampling, and desk research to identify stakeholders and create our contacts database. Through these means, we compiled a database of 424 individuals from a total of 227 organisations. This database served as the record of stakeholder contact information and contact history throughout the project. The database was held securely on University of Essex servers.

Document Analysis

As part of the beginning of our research, we also engaged in the analysis of documents, including policy plans, marine plans, websites, statutes, laws, regulations, statements of purpose, mission statements, press releases, news articles, social media posts, and organisational websites. Grey literature publications (technical reports, working papers, government documents) and academic literature notably for marine planning processes and use were consulted to inform the context for each nation case study.

Phase 2 – Stakeholder expansion and interviews

The second phase of the research adopted both positivist and constructivist qualitative methodologies. We began to expand our interview pool by first approaching the stakeholders identified with the help of our devolved nation case leads. Our central goal was twofold: first, to

check, augment, and validate our findings from the first four interview subjects; and second, to discuss the value respondents put on various elements of the marine space.

Stakeholder analysis and mapping

After considering multiple mapping structures, we opted to create visual maps and attach an accompanying master key or stakeholder identification document. We created 12 maps – one for each sector (aquaculture, conservation, fisheries) in each devolved nation (East of England Offshore, Northern Ireland, Orkney Islands/Scotland, Wales). The visual maps organise stakeholders into groups depicted by six concentric rings. Each circle is a different colour and represents a different organisational category: government, regulator, agency/public body, research/scientist/academic, industry/marine users, and (environmental) nongovernmental organisation (ENGO/NGO). On the maps, each organisation is represented by a small circle with its name or initials/abbreviation in the centre. Where one organisation fits into more than one category, that organisation is depicted as an oval that stretches across the relevant concentric rings. We first created the maps using the information provided by the CLRs, and then validated them with the broader group of respondents. Any comments or changes were then circulated back to the CLRs for validation, and then back to the remaining respondents. Using this two-cycle validation method, respondents from each devolved nation case reached agreement on the maps for East of England, Northern Ireland, Scotland, and Wales.

Accompanying the maps was a Unified Stakeholder Key that identified full organisation names for all abbreviations on the maps, as well as a brief description of each organisation and a list of prominent or primary partners and/or associate/affiliate stakeholder organisations.

Descriptions were combed from organisations' websites and other documentation (such as when an organisation was created through statute). Organisations were listed in the partner or affiliate column if they met one of two criteria:

1. Organisation A and Organisation B mentioned each mentioned the other as a partner or affiliate in their own materials (website, printed materials, founding documents, press releases, or interviews with a member of MSPACE). In this case, each stakeholder organisation was seen to validate the other's claim.
2. Organisation A mentioned Organisation B in one of the ways listed in 1, but Organisation B made no mention of Organisation A. Still, two independent sources mentioned the affiliation of Organisation A and B in their own materials. In this case, the two independent sources were seen to validate the claim of Organisation A.

All sources are cited in the directly within the Unified Stakeholder Key. These maps were delivered in early 2023 and shared with stakeholders from then on, including during stakeholder workshops²⁻⁵. Workshop participants from the East of England, Orkney Islands, and Wales workshops acknowledged that the maps could be useful to explain the governance network for their area, but that elements of them had changed since our work had completed. Continual change meant that static maps would be outdated almost as soon as they could be released. Stakeholders in these devolved nations did not think it was worthwhile to update the maps that would then become dated just as quickly.

The governance map for Northern Ireland went through a second round of validation after the September 18, 2023, MSPACE workshop in Belfast³. Stakeholders from the workshop sought to rectify certain elements on the maps that had changed in the year since they had been created. Amendments and comments then went through the same double-cycle review as the previous maps had undergone.

The team undertook the decision to stop updating all maps after the Northern Ireland map was updated. The maps had supplied needed information to the MSPACE team about the governance of the sectors, yet the cost of updating them outweighed the future benefit they could provide. Work on the maps ceased.

Rating Elements of the Marine Space

To determine stakeholder preferences for the use of marine space in England and thereby inform the development of the MSPACE climate-smart spatial management scenarios presented in other MSPACE work (CITE), we used positivist direct survey techniques during remote individual interviews conducted from July 2022 through April 2023. In these interviews, we gave stakeholders a values questionnaire which asked participants to give a numerical value from 0-100 on several criteria associated with marine space. The number given was explicitly meant to represent the value, or level of importance, that the specific element of the marine space represented to them in their professional capacity. As each participant filled out their ratings, a member of the research team engaged them in conversation to elicit complementary information on why and how they valued these elements at the levels indicated. In most cases, interviews were recorded and transcribed, with participant permission, via internal Microsoft Teams software. When Teams seemed to malfunction and failed to generate transcriptions, recordings were transcribed by Microsoft Word. All AI-generated transcriptions were then corrected by watching or listening to the recorded interview so that they reflect precise transcriptions of the speakers.

The original selection of elements of the marine space to be ranked was based on the World Bank's "Roles Oceans and Coasts Play in Human's Lives" (p. 2)⁶, augmented by insights gleaned from other sources⁷⁻⁹. As can be seen in Table 2, this list included: leisure and recreation; food provision; identity, culture, and heritage; conservation designations; tourism; governance; biodiversity; learning and research; biosecurity; water quality; economy; health; and transportation and shipping. Once interviews began, participants were given the opportunity to name additional elements they found important about the marine space.

Table 2 List of values and definitions for valuing the marine space

Criteria to be rated (0-100)	Team definition
Leisure, recreation	Worth of marine space for non-employment reasons, free time, holiday
Food provision	Worth of marine space as a source of food
Identity, culture, heritage	Worth of the marine space as a source of meaning with personal or community significance based on ideas, customs, or beliefs
Conservation designations	Worth of the marine space as a place for statutory designations to areas of water that are valuable to conserve natural resources
Tourism	Worth of the marine space to attract people to the area
Governance	Worth of marine governance
Biodiversity	Worth of the biodiversity of the marine space
Learning and research	Worth of the learning and research that can be conducted in the marine space
Biosecurity	Worth of the biosecurity of the marine space
Water quality	Worth of the quality of water in the marine space
Economy	Worth of the marine space in providing economic benefits
Health	Worth of the marine space in affecting health and well-being
Transportation and shipping	Worth of the marine space as a route for moving goods from one place to another
*Climate Change	Worth of the marine space in terms of its relationship with climate change

*Energy

Worth of the marine space in supplying fuel or energy

Source: Original identification of values on the World Bank's "Roles Oceans and Coasts Play in Human's Lives" (p. 2)⁶ and other literature. Respondents were not given definitions and were allowed to use their own interpretations.

Notes: *indicates elements added to the survey after the 42nd interview.

Some respondents chose not to rate elements about which they felt they had no professional opinion/remit. Additionally, the semi-structured interviews focused on eliciting preferences regarding trade-offs between the different elements. We then considered the interviews to be descriptive narratives of phenomena as experienced in a respondent's professional life. These narratives have been interpreted for the purposes of this study taking into account the multiple and sometimes contradictory meanings the elements may carry¹⁰.

The constructivist qualitative approach was woven into the survey exercise. First, questions regarding valuing the elements of the marine space were shared with each participant before the interview. Then the survey list of attributes was the impetus for each interview discussion, which was carried out in the company of a researcher who recorded the conversation and asked open, unstructured, and varied questions seeking the lived experience of the stakeholder in the stakeholder's role. The constructivist approach was used to elicit preferences and perceived trade-offs in marine planning¹.

During the interviews, stakeholders self-identified the sectors they considered themselves to be involved or working in, their primary responsibilities, and the primary nation of their activity. Participants were able to add commentary in a comment box for each attribute and were also allowed to add extra attributes they felt were important in free text boxes at the end of the survey. If any extra attribute was added in free text 3 times or more, it was added to the list of elements to rate. As a result, only a portion of respondents rated these additional fields: climate change; energy. These two additional attributes were added to the list after the 42nd survey due to meeting the pre-set threshold.

Phase 3 – Stakeholder engagement workshops

As part of the overall multi-disciplinary MSPACE project, five MPSACE workshops were held, one for each of England, Northern Ireland, and Scotland, and two for Wales, from July through November 2023. Except for two remote workshops for Wales, all workshops were held in person. They were directed and facilitated by the team for Work Package 2, with co-hosting from local case study region leads. The workshops convened a total of 76 stakeholders who came to see a presentation of Work Packages 1-3 of the MSPACE project, provide feedback and for the in-person workshops participate in an interactive session around values, preferences and trade-offs (See Table 3). Four summary reports were produced for each nation including dominant feedback themes on presentations, a thematic analysis of expressed values, preferences and trade-offs provided through the interactive session and pre- and post- survey responses. The objectives of these stakeholder engagement workshops were to assess how the MSPACE project was received, to gather feedback on key areas of concern, to be able to address any shortcomings in communication or information gathered, and to iteratively analyse stakeholder perceptions of values, preferences, and trade-offs by sector.

Table 3 Workshop Schedule, Location and Participant Numbers

Date	Place	Number of Participants
June 14, 2023	Stromness, Orkney Islands, Scotland	9
September 18, 2023	Belfast, Northern Ireland	22
September 29, 2023	York, England	27
September 25, 2023	On-Line for Wales	6
November 6, 2023	On-Line for Wales	12
Total		76

Workshop agenda

In each workshop, MSPACE work package (WP) presentations took place in the morning (WPs 1-3; WP4 had not yet begun). Throughout the presentations presenters solicited feedback, which was readily given by participants. This feedback was gathered by each WP presenter, a recording of the plenary session and workshop groups, and through note taking by MSPACE researchers Pat Danahey Janin and Océane Marccone during the presentations.

The morning presentations sought to accomplish the following:

- Present an overview of MSPACE, followed by updates and outcomes from the 4 MSPACE work packages (see Table 4).
- Obtain feedback from the participants on the utility of the work, the desire for possible specialised reports geared towards regional preoccupations and priorities, additional data sources, and potential future updates or representations of the governance maps.

The feedback would help the MSPACE team work towards the MSPACE project central goal (triple bottom line): advising policy makers regarding climate-smart, economically viable and socially acceptable marine planning strategies.

Table 4 MSPACE work packages

Work package	Description
1	Climate smart marine planning
2	Governance maps, values, and preferences
3	Economic input-output model applied to the maritime sector
4	Social acceptability and multiple criteria decision analysis (MCDA) based on outputs and insights from work packages 1-3

In the afternoon of each of the in-person workshops, an exercise and interactive discussion took place. These were different for each location (below). For each location, pre- and post- surveys were administered to assess the impact of the workshop on thoughts and perceptions about the importance of climate smart marine planning.

Afternoon exercise in York, East of England

In the York workshop, a worksheet exercise and interactive discussion took place in the afternoon over approximately 90 minutes. Participants were divided into 3 groups – aquaculture (online) and conservation and fisheries (in person). Participants were asked to fill out a worksheet first from the point of view of an assigned role in the sector and then from their own professional role and point of view. This feedback was gathered by each group lead during the group discussion, and through a recording of the group discussion session and a plenary discussion session.

The afternoon workshop sought to accomplish the following:

- Consult stakeholders to learn their perceptions of the synergies/opportunities/trade-offs that they and other stakeholders have regarding the MSPACE key sectors and to reflect on how those differ/align with each other.
- Engage stakeholders with some of the ideas to be raised during the upcoming MSPACE WP4 work and activities. Inspire continued contact between stakeholders and MSPACE team.

Afternoon exercise in Belfast, Northern Ireland

In Belfast, a worksheet exercise and interactive discussion took place in the afternoon over approximately 1 hour. Participants were asked to individually fill out a worksheet based upon their current professional role and respond to a list of characteristics to evaluate a climate smart marine spatial plan. The list of 15 characteristics presented were non exhaustive examples taken from the values and preferences survey administered between June 2022 and April 2023. Each participant was asked to respond to 5 questions and indicate 1) which criteria were considered important, 2) which criteria were considered less important, 3) what might be missing, 4) what might be removed and 5) any additional comments. An open discussion ensued to understand the participants' responses.

The afternoon workshop sought to accomplish the following:

- Identify general criteria (concepts) that could help specify designated criteria (operational definitions) in subsequent scenario planning sessions.
- Learn which criteria were most important to participants and why.

Afternoon exercise in Stromness, Orkney Islands, Scotland

In Stromness, an interactive discussion took place in the afternoon over approximately 2 hours. Participants were divided into 2. Three scenarios were presented asking participants to express what they believed would be fears, sacrifices and trade-offs by sector (fisheries, conservation, aquaculture). Group members were asked to assume the viewpoint of a particular actor within each sector (local/small business, large business, regulator, consumer, or user). Each group was facilitated by one MSPACE researcher accompanied by a second researcher who took notes.

The workshop sought to accomplish the following:

- Find out attendees' perceptions of the fears for each stakeholder group.
- Find out attendees' perceptions of what each stakeholder group is willing to trade off (preferences) for the sake of climate smart MSP.
- Find out attendees' perceptions of how each stakeholder group thinks about and measures tradeoffs.
- Encourage attendees from across sectors to acknowledge the variety of perspectives and validity of frustrations and complaints across each sector – our objective was not to exacerbate disagreements or power differentials.

Workshop analysis

Transcripts and notes from the workshops were coded and analysed based on the Coding system described below. Direct questions regarding the utility of MSPACE outputs were used to adjust future work/presentations for intelligibility and overall flow. Responses from the pre- and post-surveys were analysed with Stata for changes in thoughts and perceptions over the course of each workshop. Please see individual stakeholder reports²⁻⁵ for more details and full findings.

Phase 4 – Social Acceptability Survey

The final phase of the data collection involved drawing up an acceptability survey focused on climate smart proposed marine plan scenarios for each nation. An online survey asked respondents to choose the level of acceptability of various scenarios that proposed changes to how the marine space would be managed. Each scenario included estimations of the effects it would have on economic, social, and natural elements of the space. The survey was posted on Qualtrics and circulated among stakeholders.

Data Sample, Coding, and Analysis

We attempted contact with a total of 424 individuals for individual interviews. Ninety people responded positively, 30 declined or decided not to pursue the interview for various reasons, and 304 did not respond (See Table 5). Including the initial 5 CLR mapping-focused interviews, we conducted a total of 76 interviews with 85 people, plus 71 complete questionnaires. Eight interviews were not recorded or transcribed or could not be located, and two individuals were interviewed twice. Twenty interviewees participated in a total of eight interviews with at least one other respondent. The breakdown of interviewees and interviews by nation reveals a predominance of UK interviewees and interviews.

Table 5 Breakdown of interviewees and interviews by nation and topic

	England/UK	Wales	Scotland	Northern Ireland	Total
Number of Interviewees	42	12	17	14	85
Total Number of Interviews (Unit of Analysis)	35	12	15	14	76
	England/UK	Wales	Scotland	Northern Ireland	Total
Governance					
Maps	1	2	1	1	5
Interviews					
Survey	34	10	14	13	71
Interviews					
Group	3 groups of 2				
Interviews	1 group of 3	1 group of 2	1 group of 2	0	8 groups
	1 group of 4		1 group of 3		20 interviewees

Once a transcript was complete and accurate, it was uploaded to the qualitative analysis software Dedoose. At that point each interview was coded and linked to descriptors that would enable both qualitative and quantitative analyses of the content. The same was done with transcripts from the stakeholder engagement workshops when recordings were available.

Interviews were pseudonymised with the identification of the person interviewed located in a password-protected document kept separately from the interview transcripts. To maintain and protect confidentiality as promised to all interview subjects, and to thereby assure no linkage between their comments made in confidence and their identities, the research team will not make the interview transcripts available for consultation. All quotations used in publications and reports have had identifying information redacted.

Descriptors were created for each interviewee indicating the source and level of analysis of the interview data for each nation case. These descriptors include: participant ID, marine plan region, marine plan level, stakeholder type, sector, gender, interview date, and type. By linking the descriptors to each interview transcript, the analysis could be carried out across multiple levels. A block coding approach was deployed which allowed several themes to be captured within the text.

IPBES Definitions

Codes for values, preferences, and trade-offs were based on the IPBES definitions of these terms, which allowed a consistent approach to coding⁷.

Values

Value as importance can be the importance of something for itself or for others, now or in the future, close by or at a distance. This importance can be considered in three broad classes: 1. The importance

that something has subjectivity and may be based on experience; 2. The importance that something has in meeting objective needs; 3. The intrinsic value of something¹¹.

Value as preference can be the preference someone has for something or for a particular state of the world. Preference involves the act of making comparisons, either explicitly or implicitly. Preference refers to the importance attributed to one entity relative to another entity¹¹.

Preferences

Preferences denote stated or revealed choices of one or more alternatives over others and can be expressed in economic or sociocultural terms. Despite *preferences* and *values* being considered synonyms in some disciplines, we recognise them as distinct. *Preferences* should be understood as rankings of possible outcomes in terms of their specific value to people, such as preferences related to health and good quality of life (section 2.2.4.4)¹¹.

Trade-offs

A *trade-off* is a situation where an improvement in the status of one aspect of the environment or of human well-being is necessarily associated with a decline in or loss of a different aspect¹¹.

Governance

Five coding definitions were created to address common themes addressed in the interviews that also reflected the focus of the research. *Governance* encompasses the decision-making processes for marine planning, implementation and monitoring. *Mapping* pertains to comments related to the exercise of mapping governance actors. *Brexit* is a tag for comments regarding specific challenges to the sector or the marine space due to the departure of the UK from the European Union (EU). *Governance issues* is a label for comments regarding problematic aspects of decision making, implementation, and monitoring around marine planning. *Stakeholder engagement* refers to how the organization interacts with people and organisations interests in the planning process, who the parties are, and how they experience these interactions.

Coding

Coding took on two forms: deductive and inductive. Stakeholder values, preferences, and trade-offs were coded deductively according to IPBES definitions (see below). Governance themes were coded inductively and iteratively according to the most prominent themes which developed into governance in general, mapping, Brexit, governance issues, and stakeholder engagement. A code book was created with a total of 147 codes (see Table 6 for full list of codes and their descriptions).

Table 6 Codes and descriptions

Id	Parent Id	Depth	Title	Description
1		0	East Offshore Case Study	Findings relative to East Offshore MSP process
2		0	EE Workshop	Workshop groups during EE Meeting. Exercise consisted of dividing participants into 3 groups (fishing, conservation, aquaculture) and taking on a role in the sector.
3	2	1	Aquaculture	Stakeholder in Aquaculture Sector
4	2	1	Assigned	Perspective from assigned role
5	2	1	Conservation	Stakeholder in Conservation Sector
6	2	1	Fisheries	Stakeholder in Fisheries Sector
7	2	1	Opportunities	
8	7	2	Actor legitimacy	opportunity to demonstrate how the actor is taking into account climate change as well as environmental and social considerations

9	7	2	Adaptive boundaries for MPAs	climate smart approach will provide information that may change boundaries and adapt objectives according to climate changes
10	7	2	Arbitration Tool	Climate Smart marine planning can provide information for decision making
11	7	2	Biodiversity outcome	Climate smart approach will contribute to a positive result for biodiversity
12	7	2	Confidence in Plans	Climate smart approach increases the confidence level of actors engaged in planning
13	7	2	Ecosystem restoration	climate smart approach incorporates information that enables the restoration of ecosystems
14	7	2	Evolution of terminology used	climate smart planning contributes to enhancing vocabulary addressing marine features
15	7	2	Favorable outcome for sector	climate smart marine planning will factor the sector in terms of area size, access, employment, growth
16	7	2	Foster public support	climate smart approach may allow public to participate and better understand planning imperatives and objectives
17	7	2	Future Proofing	climate smart approach provides elements that will inform and render confident decision making for the future
18	7	2	Improve GHG emissions in transportation	Climate smart approach will favor the adoption of climate friendly transportation
19	7	2	Improve management approaches and practices	climate smart approach to planning and activities will allow assessment of management practices
20	7	2	Improvement in marine planning practices	climate smart approach will nuance approach to decision making as a function of actor
21	7	2	Improvement in marine plans	Climate smart approach provides necessary information to improve marine plans (details, specificity, clear designations)
22	7	2	Incorporation of new technology in practices	climate smart approach will favor the adoption of new technologies for positive outcomes for a specific sector
23	7	2	Lower prices	Climate smart approach may increase produce and lower purchase prices
24	7	2	Operations	An opportunity to improve the sector's operations(setting priorities, creating efficiencies, enabling effectiveness)
25	7	2	Planning advantage	
26	7	2	Policy enhancement	climate smart marine planning provides necessary elements to enrichen policy
27	7	2	Positive contribution of actor	
28	7	2	Prioritise UK Actors	Designation, prioritisation should be made to privilege UK actors in any of the sectors
29	7	2	Prioritise climate refugia for food security	
30	7	2	Privilege local community livelihood and heritage	climate smart approach will favor local community life
31	7	2	Privilege preferences of consumer	climate smart approach will allow actors to provide preferred products to consumer
32	7	2	Reduce negative impacts	Climate smart approach allows to improve sector practices having a negative impact
33	7	2	Resilience	climate smart approach enhances resilience of natural habitat
34	7	2	Revise practices to incorporate non-'spatial considerations	marine smart approach provides the opportunity to incorporate social values and economic insights at different scales
35	7	2	Risk Identification	Climate smart approach allows actor or sector to identify risks and their impacts
36	7	2	Scientific contribution to knowledge	climate smart approach will deepen understanding of environment
37	7	2	Visualize and understand status of areas	climate smart approach will allow location of areas and their status for different purposes

38	2	1	Professional	Perspective of professional role
39	38	2	Aquaculture	The stakeholder is employed in this sector
40	38	2	Conservation	Stakeholder holding a position in conservation
41	38	2	Fisheries Sector	The stakeholder is employed in this sector
42	38	2	Govt Agency Marine Planner	stakeholder holds a position in the field
43	38	2	Research	The stakeholder is employed in this sector
44	38	2	Seabed Regulator	Stakeholder employed in this sector
45	38	2	Windfarm / Renewables	Stakeholder from offshore windfarm sector
46	2	1	Risks	Identification of risks pointed out by stakeholder
47	2	1	Synergies	
48	47	2	Allows adaptation measures to be taken	Climate smart approach informs sectors in a way that favors alternate ways of organising the marine space to adapt to climate change
49	47	2	Balance space for activities and space for nature	climate smart approach allows a balanced distribution of space for natural activities and for natural habitats to exist
50	47	2	Big picture view in planning for all parties	climate smart approach applies to all sectors
51	47	2	Co-'-location	Areas suitable for co-'-location
52	47	2	Informs other mapping activities	Climate smart approach contributes to mapping carried out by other agencies
53	47	2	Mobilise other sectors for data updates	Sectors work together to update data in certain areas
54	47	2	Model validation with additional data from other sectors	Climate smart approach allows additional data to inform, support or disprove model
55	2	1	Tensions	Stakeholder comments that point to tensions within or between sectors and actors
56	2	1	Trade-'-offs	
57	56	2	Accept Uncertainty	From this stakeholder's perspective regulator uncertainty should be accepted
58	56	2	Accepting Arbitrary Negative CC impacts	CC may affect certain areas more than others or certain marine resources more than others
59	56	2	Access	This sector has access to areas
60	56	2	Change in activity criteria	The way the activity of this sector is conceived will change due to the climate smart approach. Therefore, the trade-'-off is in the criteria for assessing the activity
61	56	2	Change in mode of operating	The sector or sectors will need to change the way they operate in a climate smart era
62	56	2	Change of location of activity	The sector may physically move its activity to a different area to continue
63	56	2	Change of orientation of sector	The sector may have to change their activity and diversify
64	56	2	Change policy	From this stakeholder's perspective there should be a willingness of actors to change policy and legal requirements
65	56	2	Consumer spending	Consumers may changing their spending on the product (decrease)
66	56	2	Consumption changes	Consumers will change the content and quantity of products
67	56	2	Effective Application of Policy	the trade-'-off for taking a climate smart approach is to implement policy in an effective manner
68	56	2	Forced stop of activity	From the standpoint of the stakeholder in the sector that is negatively affected, the stopping of the sector's activity is due to the climate smart approach and should be taken into consideration, seen as a tradeoff.
69	56	2	Higher operating Costs	Costs may rise if operating costs take into account sustainability and ecological impacts

70	56	2	Inclusive	The decision making approach will include ecological, economic and social elements
71	56	2	Increased Information and Awareness Levels	a climate smart approach has the trade'-off of increasing and broadening the levels of information and awareness previously only enjoyed by certain stakeholders
72	56	2	Just and Fair Decision making	Given that CC will result in losses and opportunities generating winners and losers (in sectorial activity), the process of making decisions should be just (morally based) and fair (based on fact or reason '-') including evidence)
73	56	2	Loss of cultural heritage	the trade'-off to a climate smart approach would be the loss of cultural heritage of areas or sites
74	56	2	Loss of nice sectoral relations	The tradeoff is giving up cordial, productive relationships
75	56	2	Loss of traditions, skills in community	Due to climate changes and the effect on planning, if this sector's activities stop, the result will be a loss to the community.
76	56	2	MPA Network and designation	From the perspective of a stakeholder outside the conservation sector, the MPA network or designation will be modified (positively or negatively) thus constituting a trade'-off taking into consideration the climate smart approach
77	56	2	Offshore Floating Wind	From the perspective of this stakeholder/sector, this activity should not continue to be paused
78	56	2	Offshore wind designation	From the perspective of this stakeholder and sector, Offshore wind designation should be made in areas where little of this sector's activities take place
79	56	2	Operations not inhibited due to conservation concerns	From this stakeholder's perspective their operations should not be prevented (ie maintenance) due to conservation concerns
80	56	2	Preservation and Flexibility	Balancing the preservation of climate resilient areas and flexibility given the uncertainty due to climate change
81	56	2	Prioritisation and Policy Now	Decisions will need to be made in a more immediate time frame for policy and for which sectors/government agencies get the priority in spatial planning
82	56	2	Privileged Sector over Conservation	This sector's activities should be privileged and preserved
83	56	2	Privileged Sector's Development	From the perspective of this stakeholder, the sector in which the stakeholder is employed should be privileged and prioritised in planning
84	56	2	Prioritise marine recovery	Government and regulating bodies should privilege marine recovery to enable sustainable development of industries
85	56	2	Regulation of sectors	Additional regulations for sectors to respond to climate smart approach to marine planning
86	56	2	Short term loss	The sector stakeholders would have to accept a change in their activity in the short term for a long term opportunity
87		0	Governance	Decision making processes for marine planning, implementation and monitoring
88	87	1	Brexit challenges	Specific challenges to sector and area due to Brexit
89	87	1	Governance issues	problematic aspects of the decision making process, implementation and monitoring around marine planning
90	87	1	Mapping	Comments relative to the exercise of mapping governance actors
91	87	1	Stakeholder Engagement	How the organization engages with stakeholders, who the stakeholders are and how they experience this engagement

92		0	Interviews Extra Characteristics/Comments	Additional characteristics or comments added to the text boxes on the survey. Picked up in the interviews. This is regarding what is valued, preferences or tradeoffs.
93		0	IPBES Preference	They denote stated or revealed choices of one or more alternatives over others and can be expressed in economic or sociocultural terms. Despite being considering synonyms for value in some disciplines (economics), preferences should be understood as rankings of possible outcomes in terms of their specific value to people (e.g. preferences related to health and good quality of life) (section 2.2.4.4).
94		0	IPBES Tradeoff	IPBES Glossary A trade'-off is a situation where an improvement in the status of one aspect of the environment or of human well'-being is necessarily associated with a decline in or loss of a different aspect. IPBES glossary
95		0	IPBES Value as importance	A value can be the importance of something for itself or for others, now or in the future, close by or at a distance. This importance can be considered in three broad classes. 1. The importance that something has subjectivity and may be based on experience. 2. The importance that something has in meeting objective needs. 3. The intrinsic value of something IPBES Glossary
96	95	1	Based on experience	The importance that something has subjectivity and may be based on experience.
97	95	1	Intrinsic value	The intrinsic value of something
98	95	1	Meeting objective needs	The importance that something has in meeting objective needs.
99		0	IPBES Value as Preference	A value can be the preference someone has for something or for a particular state of the world. Preference involves the act of making comparisons, either explicitly or implicitly. Preference refers to the importance attributed to one entity relative to another one IPBES Glossary (Value as Preference)
100	99	1	Negative	A value that is thought to be negative in its application to this sector
101	99	1	Positive	A value that is thought to be positive in its application for this actor
102		0	Northern Ireland Case Study	Findings relative to Northern Ireland MSP process
103		0	Orkney Workshop	Focus group discussion results from each case study workshop written up
104	103	1	Additional Attributes	general criteria (concepts) that could help specify designated criteria (operational definitions) in subsequent scenario planning sessions.
105	103	1	Aquaculture	Aquaculture Stakeholder
106	103	1	Broader Elements Considered	Additional key elements that characterize relationships between stakeholders
107	106	2	Assumptions	assumptions about other stakeholder questions
108	106	2	Underlying antagonisms	Points of tension or contention
109	106	2	Willingness to collaborate	demonstrated will to work with other stakeholders
110	103	1	Clarification of Attribute	Additional descriptions of how attribute should be considered. Nuanced definitions.
111	103	1	Conservation	Conservation stakeholder
112	103	1	Fisheries	Fisheries Stakeholder
113	103	1	Industry	Wide definition of a sector involving industrial operations in the marine space
114	103	1	Non'-Negotiable	Criteria embedded in the sector, may be statutory

115	103	1	Operational Definition of Criteria	Moving from an additional attribute to an operational definition of criteria that could be used in the MDCA
116	103	1	Target Audience	Target Audience for Climate Smart Criterion Appeal
117	103	1	Windfarm Sector	An actor within the Windfarm sector
118	103	1	Workshop Fear	Responses to question of what stakeholder fears
119	103	1	Workshop Sacrifice	Stakeholder response to what will be sacrificed due to MSP
120	103	1	Workshop Trade Off	Stakeholder response about the tradeoffs that will occur due to MSP
121	120	2	Measure of tradeoff	A metric used when talking about a tradeoff
122		0	Orkney/Scotland Case Study	Findings relative to Scotland and to Orkney MSP Process
123		0	Sector	Domaine of activity of the actor interviewed
124	123	1	Aquaculture	Sector of activity of the interviewee. Aquaculture includes seaweed, finfish and shellfish farming
125	123	1	Challenges	
126	123	1	Competing Sector	Domaine of activity that conflicts with interviewee's sector of activity
127	123	1	Conservation	Activity of the interviewee. Concerned with the preservation and health of the marine space. Does not exclude activity in the marine areas.
128	123	1	Fisheries	Activity of the interviewee. Fisheries includes small and larger vessels fishing for commercial purposes.
129	128	2	Seafood Processing	Activity of interviewee. A subsector of fisheries.
130	123	1	Government Agency	Activity of the interviewee. An agency working for and funded by the government in a specialized area.
131	130	2	Aquaculture	Activity of the government agency
132	130	2	Conservation	Activity of the government agency
133	130	2	Fisheries	Activity of the government agency
134	130	2	Marine Planning	Activity of interviewee. Marine planning on a national or regional basis. Involved in the activity of planning.
135	123	1	Overlap	When there is considerable interaction between sectors '-' here the sectors are fisheries '-' aquaculture '-' conservation
136	123	1	Renewable Energy	Activity of the interviewee. Renewable energy includes offshore wind farms, tidal and wave devices.
137	123	1	Research	Activity of the interviewee. Research includes academic and industry.
138	123	1	User of Marine Space	Sector of activity of the interviewee. User is a club, association, or marine based activity community. This may include leisure, recreation, sports, cultural outings.
139		0	Survey Comments	Comments provided on the survey linked to interview conversation
140	139	1	Additional Preference Areas	Suggestions on areas that have an importance to individuals in the marine planning process
141	139	1	Area not taken into account due to type of activity of organization	This area was not rated because not part of the organization's mandate
142	139	1	Clarification	Additional information or clarification question
143	139	1	Distinctions to make for an activity	
144	139	1	Issues in additional category	Specific issues relevant to this additional category are highlighted in the comment
145		0	Wales Case Study	Findings relative to Wales MSP Process
146	145	1	Mapping Exercise for Wales	An interview that concerns the mapping process '-' it does not include values and preferences
147	145	1	Welsh Government priorities	Priorities for the Welsh marine space

Codes were created inductively to analyse the stakeholder engagement workshop in Phase 3 documents (codes 1-86; 102-147) and the Phase 2 interviews (codes 87-101). Table 7 shows this coding distribution.

Table 7 Distribution of codes

Phase 2 Event	Code Numbers	Number of Codes Generated
Workshops	1-86; 102-147	133
Survey Interviews	87-101	14
Total Codes		147

A memo was written after the coding of each interview and along the process to record impressions and create an audit trail (75 memos in total). Workshop data in the form of feedback forms and discussion transcriptions were summarised and coded inductively in Dedoose to draw out key insights around values, preferences, and trade-offs. Extracts were then downloaded from Dedoose into a spreadsheet identifying sector, nation, and specific code.

Each downloaded group of extracts was summarised line by line to capture the essence of the respondent's point. These summarised points were transferred to a word document with tables regrouping the themes by nation and sector. This step highlighted evidence for each nation and sector and allowed cross-national comparison.

The analysis below has been organized according to devolved nation cases (East of England Offshore, Northern Ireland, Orkney Islands/Scotland, Wales). Excerpts were extracted and regrouped by code and nation case in Excel to carry out higher level thematic analysis. Narrative extracts (evidence) have been used to illustrate key points. The information from these interviews has been analysed to build knowledge to inform a wider survey of each sector related to the scenario building work package. Additional insights in stakeholder engagement as well as IPBES classification of values, preferences, and trade-offs have been regrouped and may constitute findings worthy of publication.

Further products of this work, in the form of publications, reports, and stakeholder memos, may refer to different subsections of the data, such as only interview responses or only workshop comments. Each output identifies specifically the source of the data analysed for that output.