ARE DIFFERING VIEWPOINTS AMONGST KEY ACTORS INFLUENCING IMPLEMENTATION OF KEY EU MARINE ENVIRONMENTAL POLICIES? CASE OF STRICTLY PROTECTED AREAS

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ABSTRACT

The transboundary nature of marine ecosystems and their more difficult accessibility create challenges for the conceptualisation of effective marine conservation, because of the complexity of the marine functioning and often unclear competences. Marine conservation thus often relies on (international) policies. The EU environmental policies are known for their high ambition levels. However, their implementation has been subpar so far. This study investigates the viewpoints of marine nature, wilderness, and strict protection in the EU seas and whether those help explain why the implementation of EU marine environmental policies has been incoherent and uncoordinated so far. The viewpoints and nature imaginaries were investigated amongst key actors in policy implementation from national to the EU and Regional Sea Conventions levels, using policy analysis, diagramming, and Living Q workshops. The results show a variety of divergent viewpoints that frame marine issues in different ways, resulting in different interpretations of common policies and definitions, as well as a variety of policy implementation priorities. The variety of different values associated with marine nature, wilderness, and the role of EU policies is thus likely to influence the way common EU policies will be implemented in the future and by extension their effectiveness.
Keywords: EU Biodiversity Strategy 2030, strictly protected areas, marine nature, wilderness, EU policies

AIMS AND BACKGROUND

Marine biodiversity is undergoing global declines, which have been linked, in large part, to human induced environmental changes and pervasive uses of marine resources. While there have already been efforts to halt and reverse these losses, so far the conservation targets have been consistently missed (Mace *et al.*, 2018). The conservation of marine biodiversity is additionally challenging given the greater complexity of marine ecological systems, which limits the abilities to manage and offset the damaging effect of humanity's uses. Due to both geographic and ecological complexity of marine ecosystems and the variety of

cumulative human pressures on them, transboundary measures and policies are needed to adequately protect them (Economou *et al*., 2020, Katsanevakis *et al*., 2011, Elliott *et al*., 2020). Yet, even after three decades since the adoption of the Convention for Biological Diversity in Rio, biodiversity levels are still declining. Subsequently, it can be shown that even the world's richest and most industrialised nations (Halpern *et al*., 2019, Korpinen *et al*., 2021, Andersen *et al*., 2020, Elliott *et al*., 2018, Boyes and Elliott, 2016, Murillas-Maza *et al*., 2020, Gorjanc *et al*., 2020), such as the EU with its considerable legislative and executive powers over its Member States (Hix, 2011, Hassler *et al*., 2019, Van Leeuwen and Kern, 2013), proper environmental policy implementation remains a challenge.

The academic literature has established Ecosystem-Based Management (EBM) as the most appropriate approach to management of environmental resources and to environmental policy-making and implementation. EBM builds on the basis that humans are part of and dependent on dynamic ecosystems and should therefore both use and support ecological processes to continue using marine resources sustainable (Katsanevakis *et al*., 2011, Halpern *et al*., 2010, Reker *et al*., 2019). While EBM is necessarily a holistic approach to the management of marine resources, these have been, and still are, managed in a sectoral way (Katsanevakis *et al*., 2011, Rouillard *et al*., 2018b). The holistic nature of EBM requires ambitious integration of different expert fields and systems (Elliott *et al*., 2020). However, this has not been fully achieved, even in the European Union (EU), which has some of the most extensive and comprehensive marine data available (Reker *et al*., 2019).

Within the EBM approach to marine conservation, marine protected areas (MPAs) have received considerable attention, as one of the most well-tested and comparatively easily applicable tools currently available for conservation of marine biodiversity (Hughes *et al*., 2005, Grorud-Colvert *et al*., 2014). However, even among the MPAs, clear differences in their effectiveness have been shown based on the level of protection that they offer. No-take areas (NTAs), sometimes also referred to as marine reserves or strictly protected areas, have been shown to have significant benefits for marine biodiversity, resulting in greater species abundances, increased biomass, fecundity, return of apex predators, reversals of regime shifts and greater resilience and recovery potentials (Edgar *et al*., 2010, Grorud-Colvert *et al*., 2014, Fenberg *et al*., 2012, Cote, 2001, Molloy *et al*., 2009, Lester *et al*., 2009, Claudet *et al*., 2006, Halpern, 2003, Lubchenco *et al*., 2003, Guidetti and Sala, 2007, Fraschetti *et al*., 2013, Huvenne *et al*., 2016, D'agata *et al*., 2016, Benyon *et al*., 2020). On the other hand, less strongly protected MPAs, so called multiple use-MPAs have often been shown to demonstrate no discernible differences compared to the surrounding areas (Frisch and Rizzari, 2019, Thurstan *et al*., 2012, Hasler and Ott, 2008, Zakai and Chadwick-Furman, 2002, Worachananant *et al*., 2008, Mazaris *et al*., 2018).

The EU has clearly tried to follow the scientific advice and has over the

decades developed a vast and complex marine environmental policy portfolio, which has been described as one of the most stringent, wide-encompassing, and comprehensive on the planet (Boyes and Elliott, 2014, Bigagli, 2015). Particularly in the last 15 years, a new wave of more holistic policies, following the principles of EBM has been adopted. Even more recently, during the current tenure of the von der Leyen European Commission, policies calling for 30% of EU's marine waters to be protected, of which a third should be strictly protected have been passed – Biodiversity Strategy for 2030 (EuropeanCommission, 2020a). However, EU's marine environmental policy framework includes more than 200 policies and 12.000 individual regulations, which makes its implementation very challenging (Boyes and Elliott, 2014, Bigagli, 2015). Therefore, it is not surprising that both academic and policy assessments have generally found the implementation of EU policies to be lacking and the policy goals set for 2020 have been missed (Murillas-Maza *et al.*, 2020, Gorjanc et al., 2020, Cavallo *et al.*, 2018, Boon *et al.*, 2020, Rouillard *et al.*, 2018a, Rouillard et *al.*, 2018b, Gómez-Limón *et al.*, 2002). Much of this poor implementation has been ascribed to limited coordination and coherence between Member States' approaches to implementation.

While this lacking implementation trends have tried to be addressed, mainly through improving data collection and coordination projects, most of these approaches have not taken into account the insights from social sciences. Authors like Bennett (2019) and Turnhout *et al.* (2019) have been critical of the primacy of scientific knowledge in policy-making and implementation, while a number of social and political factors, described in socio-psychological literature (Eisenhauer *et al.*, 2000, Broto *et al.*, 2007, Kelly, 1955, Thagard and Verbeurgt, 1998, Chirkov, 2020, Greider and Garkovich, 1994, Homer and Kahle, 1988, Friedkin *et al.*, 2016, Scheitle and Corcoran, 2020, Wei *et al.*, 2020, Guo *et al.*, 2021), have been side-lined. Particularly, Barrett (2004) focusses on the role that key policy actors retain in the policy process through the phases of policy formulation to implementation. This work outlines an important gap in addressing the effectiveness of EU marine environmental policies, which needs to be more comprehensively dealt with and explored. It can be assumed that the implementation failures in EU marine environmental policies are not simply caused by lack of evidence, poor coordination, or insufficient resources, but also due to different framings of the issues (Beunen *et al.*, 2009, Rouillard *et al.*, 2018b, Turnhout *et al.*, 2019, Chong and Druckman, 2007). Thus, serious misconceptions exist about how policies are understood and implemented, which are not part of policies themselves, but stem from the social interactions surrounding them.

Given that the EU has failed to reach its agreed 2020 targets, the new wave of EU policies, such as the EU Green Deal, Biodiversity Strategy for 2030, and others raise the ambitions for the current decade even higher (European Commission, 2020a). How can the success of these raised ambitions be assured,

since the lower ambitions for 2020 have not been reached? Apart from looking at improving evidence-bases and coordination efforts, according to Barrett (2004) and Turnhout *et al*. (2019), a key element to answering this question is how key actors perceive, interpret, and implement the policy texts. This paper will make a first foray into uncovering the influence of group dynamics on the different perceptions and viewpoint among the key actors and influence of arguments to sway the positions held by the actors in the EU marine environmental policy arena.

Group dynamics are one of the defining features of the institutional work and, in fact, any complex society (Peniwati, 2017, 't Hart *et al*., 1997, Brauner *et al*., 2018). Due to often poor understanding of peoples' background assumptions, views, and worldviews, misunderstandings can arise during group work. If these misunderstandings are not recognised, a phenomenon of "multiple ignorances" can occur (Beers *et al*., 2006). This means that the group can seemingly reach consensus on how to proceed, while still fundamentally disagreeing on key tenets of their decision, consequently sabotaging the success of the implementation of the decision (Clark *et al*., 2000, Mohammed and Ringseis, 2001, Peniwati, 2017, Pfeffer, 1981, Walsh *et al*., 1988, Wooldridge and Floyd, 1989). A familiar observation in the EU policy implementation, where common understandings, targets, and implementation documents are prepared, but the assessments keep showing incoherent implementation in practice (EuropeanCommission, 2020b).

The theory would suggest that involving a variety of participants in the group coming from as many different backgrounds as possible (group diversity) and ensuring meaningful engagement leading to a group interpretive processes, as the best way to counter the risk of "multiple ignorances" developing. However, psychological literature has also shown that while group diversity can lead towards productive results, its success depends on the use of interpretive resolution strategies (Clark *et al*., 2000, 't Hart *et al*., 1997, Byrne, 1971, Cox, 1994, Asante and Davis, 1985). At the same time, diverse groups can also feature multiple perceptions of the same data (Beers *et al*., 2006, Clark *et al*., 2000, Mohammed and Ringseis, 2001). Therefore, it is imperative for any group, but particularly very diverse groups, to reach points of participation and, at least some level of group interpretation process to begin working effectively (Clark *et al*., 2000, Brauner *et al*., 2018).

Despite the clear influences of group dynamics on the results of group work, through which much of EU policy implementation and interpretation is defined, there has been surprisingly little work done in this field. Peniwati (2017) claims that in general due to highly complex and interdependent situations, preparing and implementing coherent policies is a virtual impossibility for decision makers. 't Hart *et al*. (1997) delve into this topic more, arguing for the importance of appreciating the complexity of the situations, their context, studying interaction patterns, and balancing between inclusion of as many possible viewpoints and the effectiveness of the group processes. On the other

hand, a vast literature still supports rationalistic and linear understandings of science-policy interfaces, where the main challenge is simply communication effectiveness (Claudet *et al*., 2020, Janse, 2008, Likens, 2010, Roehrl *et al*., 2020, Sokolovska *et al*., 2019, Watson, 2005). Particularly, in the EU policy framework, the sheer diversity of existing policies leads to the existence of different discourses that can point towards a range of diverse outcomes. Consequently, it is not surprising that the result can be a divergent implementation of policies. Beunen *et al*. (2009) describe the clashes over EU policies during their enforcement procedures. A number of papers have described unambitious, path-dependent, technocratic or box-ticking implementation of EU policies, all also linked to different discourses and understandings of both policies and contexts in which they are being implemented (Dom *et al*., 2016, Di Quarto and Zinzani, 2021).

This paper will thus present a preliminary study of the group processes across different marine interest groups in EU marine environmental policies, spanning all four EU regional seas. Living Q workshops (Ripken *et al*., 2018) and diagramming approaches have been employed to follow the way arguments and social forces play out in groups, while discussing polarising policy priorities identified based on interviews (Gorjanc et al, in review) and Q study (Gorjanc *et al*., in review). The results presented in this paper, provide a first foray into this topic and outline research directions for the future to better understand the influence of group dynamics on EU marine environmental policy-making and implementation.

EXPERIMENTAL

This study utilises the overarching discourse analysis approach, by combining focus groups (Living Q) and diagramming. The diversity of methods allows in-depth examination of the socio-psychological foundations for the prevailing framings and understandings of EU policies and their priorities across the EU.

The context for the Living Q workshops was provided by the policy analysis of EU marine environmental policy implementation documents (Browne *et al*., 2019). The EU policies in this study have been evaluated as source materials to study how policy actors across the EU perceive, interpret, and implement these policies. Therefore, following Browne *et al*. (2019)'s typology of different policy analysis approaches, interpretive policy analysis has been chosen as the best method, due to its focus on representational questions (Bacchi, 2009, Yanow, 2000, Hajer and Laws, 2006, Fischer, 2003). More specifically, among the interpretive approaches to policy analysis, reflexive frame policy analysis (Rein and Schön, 2013, Yanow, 2000, Fischer, 2003) has been followed. This type of analysis focusses on questions of how policy issues are framed and represented by different actors involved in them, which forms the basis of the interpretation.
Therefore, it is possible to follow the way in which different interpretations of the

situations lead to conflicting actions and how they then shape perceptions of the world. Frames within this type of analysis are seen as ways to select, organize, and interpret complex realities (Fischer, 2003, Browne *et al.*, 2019).

The policy analysis in this study initially identified 87 policy documents and 21 papers, but the final list of documents reviewed grew to 150. All documents were reviewed and their sections coded (See Table 1). The code selection was discrete. Some documents proved inappropriate for this analysis, as they either only described the status of the environment, discussed assessment methods or various formalities, but were not associated with implementation of EU policies directly. These documents were excluded as the analysis progressed. The final number of coded documents is 107. The coded statements within each (sub)theme were discursively analysed with succinct summaries produced, and these were then used for further reflexive analysis and comparisons with results from the other methods, such as interviews (Gorjanc *et al.*, in review) and Q study (Gorjanc *et al.*, in review). The main method used were Living Q workshops (Ripken *et al.*, 2018) organised in different EU Regional Seas, with participants representing national policy-makers, their expert advisers, and representatives of EU and Regional Sea Convention institutions. Living Q focus groups were used to explore the influence of group dynamics on participants' opinions, views, and arguments. The focus group compositions mirrored the groups that exist and plan the implementation of EU policies. Living Q methodology, in particular, allows for direct insights into the process of presenting arguments and how compromises do or do not emerge when people who hold different viewpoints of the issue at hand discuss them (Creswell, 2007).

Focus groups were organised to follow the discourses that evolve during the meetings, while observing the influences of group dynamics on the processes of interpretation and implementation of EU marine environmental policies. The EU policy implementation is largely influenced by seeking consensus and agreement among the different actors or experts through working and technical groups and sectoral coordination. Therefore, it is likely that the meanings, values, and social constructions are also formed and changed in those settings. While the changed values and social constructions are likely to be captured by the individualistic methods described above, the process of their formation and negotiation is also interesting.

A Living Q methodology (Ripken *et al.*, 2018) was used to facilitate interactions within the focus groups. A Living Q methodology is an emerging method that has been developed and applied in the maritime spatial planning in the EU. The methodology is sufficiently new that it has so far only been reported in a single paper by Ripken *et al.* (2018), but it builds on well-established principles of increasing engagement and interaction with stakeholders in consultation processes. The results so far demonstrate that the systematic awareness of differing viewpoints in an interactive and communicative environment can improve

communication and interaction among participants (Ripken *et al*., 2018). Living Q was used in this study because it offers a clear and structured way to observe the influence of the group dynamics and the power of rational arguments on the convictions held by participants can be directly observed.

Table 1. Policy analysis coding categories and their sub-themes

Coding categories	Sub-themes
Coordination & Collaboration	Calls of increased coordination between MSs or EC and MSs or MSs and RSCs
	Synergies between or integration of policies
	Working together (people, countries, expertise)
	Cooperation
	Harmonisation
	Facilitating dialogue/balancing different interests
	Coherence
	Mainstreaming/standardisation of efforts
	Addressing overlaps
Successes & Gaps	Cases where implementation has been successful and we can see or expect environmental improvements
	Limited personnel and funds
	Knowledge (enough or lacking)
	Transfers of experience & knowledge
	Hard vs soft law debates
	Implementation gap
	Ecosystem Approach
	Political willingness
	Public involvement
Control & Compliance	Infractions
	Enforcement
	Regulate/implement/manage more
	Effectiveness of implementation
	EU courts
Assessments	Monitoring
	Indicators
	Thresholds
	Pressures
	Science-policy interface

Focus groups were organised as side events at larger meetings. A selection of participants (11-24 per focus group) of the larger events was invited to take part in the focus groups. The focus groups were organised together with project meetings of ABIOMMED project (Support coherent and coordinated assessment of biodiversity and measures across Mediterranean for the next 6-year cycle of MSFD implementation) in the Mediterranean, MarBlue22 conference (Blue Growth: Challenges and Opportunities for the Black Sea) in the Black Sea, while for the NE

Atlantic and Baltic Seas the focus group was convened as side event of the eMSP NBSR project (Emerging ecosystem-based Maritime Spatial Planning topics in North and Baltic Sea Regions).

All of the notes, diagrams and flipcharts were collected, photographed, transcribed and analysed. The workshops were organised with three main elements. The three elements, described below were often spread over the day or over multiple days, in a way that was most convenient also for the main meeting organisers.

Living Q focus groups revolve around discussions of statements, that were identified as salient or polarising during the preceding Q study (Gorjanc *et al.*, in review, see Table 2). Participants were given the statements and asked to first individually rank them on a 5-point Likert scale (-2, -1, 0, +1, +2), depending on their personal agreement or disagreement with the statements. They were all then invited to assume positions, statement-by-statement, at the stations around the room, marked with each rank, allowing them to physically represent their positions in the room. The positioning was then used, as a start for discussions about why they were assuming those positions and trying to convince each other of their rationales. The moderator simply guided the process and occasionally posed follow up questions. At the end of the discussion, in which anyone who wanted to speak was given a chance, participants were allowed to reposition if their viewpoints have changed based on the discussion. The discussions were recorded, transcribed, and subsequently thematically coded (NVivo) and discursively analysed. The rankings, both original and repositioned, underwent simple statistical analyses.

Table 2. Living Q statements discussed during workshops

Living Q statements	
1.	Achieving marine wilderness conditions should be a target of strict protection.
2.	EU should require MPAs to prohibit extractive activities (become NTAs).
3.	EU should prioritise passive restoration via strict protection over active restoration.
4.	Exclusions of activities in strictly protected areas should be decided on a case-by-case basis.
5.	Bottom-contacting fishing gear is very damaging and its use should be prohibited in EU seas.

RESULTS AND DISCUSSION

EU policy implementation discourses can be broadly grouped into three main categories. The first is the discourse related to Data, which included mentions of the importance of monitoring, reporting, and expertise for the proper implementation of EU policies. The second grouping is around Enforcement procedures, to make sure implementation is done properly, focusing mainly on control and compliance mechanisms. The third category focusses on the importance of Cooperation for effective implementation of policies, emphasizing the needs for greater cohesion and coordination (Fig. 1). The assessment documents thread a

precarious line. They often espouse the positive impacts and the progress made because of EU policies, as it helps build legitimacy for those policies and the EU approach in general (see Turnhout *et al*., 2015). Progress has been made, after all, since there was an expansion of MPAs, there are more collaborations now, the available knowledge is more extensive and of better quality, and there were some environmental improvements and alleviations of human pressures on the environment. However, this progress has not been sufficient to achieve the EU environmental goals and it remains unclear when those goals could be achieved. Besides failing to reach the set policy objectives, the policy implementation is often characterized as incoherent and unambitious, while the Member States report struggling under the constant reporting requirements. Therefore, while there have been successes and the environmental situation would be worse in the absence of EU policies, the failures to fully, coherently, or effectively implement EU policies are also significant and the marine environment is shown to continue to degrade.

These discourses and ideas were also clearly present during the Living Q discussions in all three workshops, only that the topics of conversation focused around different elements of conservation measures, linked to strict protection, as introduced by the Biodiversity Strategy for 2030. Discussions were led around the questions of the goals of strictly protected area, the extent of prohibitions of activities within MPAs in general, the role of restoration (passive through strict protection vs active restoration interventions), the way activities should be excluded in strictly protected areas, and finally the needs for banning bottom trawling fisheries throughout the EU seas.
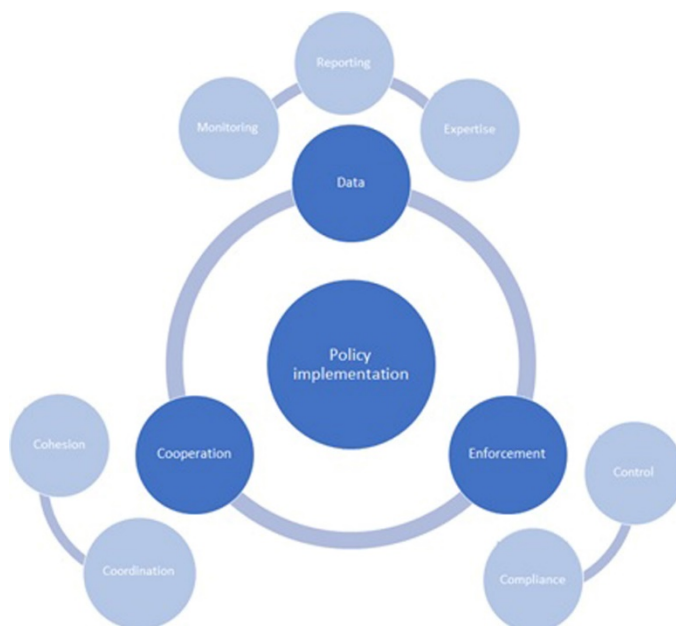

Fig. 1. Schematic diagram, representing main themes in EU policy implementation documents

Table 3 demonstrates the observed general positions and variabilities both before and after discussions. In the Mediterranean workshop, the group as a whole exhibited general agreement with pursuing wilderness conditions in strictly protected areas, prohibiting all extractive activities in all MPAs, while also supporting the case-by-case exclusions of activities in strictly protected areas, and banning bottom trawling throughout the EU seas. Only on the topic of prioritizing passive restoration over active restoration the overall position remained neutral. That being said, each statement had both strong supporters and participants strongly opposed to it. After the discussion there was a tendency observed towards more neutral positioning, but generally, at least weak agreement with the statements remained. Only in the case of case-by-case application of exclusions of activities in strictly protected areas, was the move towards neutral positioning more pronounced. In relation to the overall ban of bottom trawling, none of the participants changed their position at all after discussion. It has to be noted, that most observed repositioning happened due to participants having initially misinterpreted part of the statement, which became clear to them during the discussion, and they simply adjusted their position to reflect the full understanding of the statement. Therefore, the group shared a common understanding of what a statement calls for, but retained divergent attitudes towards it. Consequently, most changes were not because people have been convinced by arguments and changed their mind, but due to realization of the meaning of the statement. On average 15% of participants changed their positions after discussions. Nevertheless, slight reductions in variability of positions held were noted in relation to the wilderness goal for strictly protected areas and banning of extractive activities in all MPAs, suggesting at least some movement towards consensus. Regarding the case-by-case exclusions of activities in strictly protected areas, the variability in positions held even increased after the discussion (Fig. 2).

The Black Sea Living Q workshop, similarly, featured little movement after discussions and most observed movements were from people assuming the middle positions, who tended to move from neutral to weak (dis)agreement or vice-versa (Table 3). The group as a whole exhibited generally neutral attitudes in relation to the wilderness goal for strict protection, prioritizing passive overactive restoration, and case-by-case exclusions of activities in strictly protected areas. The group generally agreed with prohibitions of extractive activities in MPAs and banning bottom trawling. After the discussion the variability in positions held slightly decreased in relation to the restoration statement and slightly increased referring to wilderness target in strictly protected areas, but remained unchanged in other three topics of discussion. Most movements were again the result of initial misunderstandings of statements, but this phenomenon was less widespread than compared to the Mediterranean workshop. On average, 13% of participants changed their position after discussion (Fig. 3).

Table 3. Medians, means, and standard deviations observed in relation to each statement before and after discussion at each of the three Living Q workshops.

				Median	Mean	St. dev	
1	Achieving marine wilderness conditions should be a target of strict protection.	Med	Before	1	0.91	0.94	general agreement
			After	1	0.64	0.50	weak agreement
		Black	Before	0	0.15	1.14	neutral
			After	0	0.00	1.22	neutral
		NEA & Baltic	Before	1	0.50	0.88	weak agreement
			After	1	0.80	1.01	general agreement
2	EU should require MPAs to prohibit extractive activities (become NTAs).	Med	Before	1	0.82	1.25	general agreement
			After	1	0.64	0.50	weak agreement
		Black	Before	1	1.18	0.75	agreement
			After	1	1.09	0.94	agreement
3	EU should prioritize passive restoration via strict protection over active restoration.	Med	Before	0	0.18	0.75	neutral
			After	0	0.18	0.75	neutral
		Black	Before	0	0.20	0.63	neutral
			After	0	0.30	0.48	neutral
4	Exclusions of activities in strictly protected areas should be decided on a case-by-case basis.	Med	Before	1	0.73	1.42	general/weak agreement
			After	1	0.18	1.66	neutral
		Black	Before	0.5	0.40	1.65	neutral
			After	0	0.10	1.66	neutral
		NEA & Baltic	Before	2	1.45	0.63	strong agreement
			After	1	1.16	0.90	strong agreement
5	Bottom-contacting fishing gear is very damaging and its use should be prohibited in EU seas.	Med	Before	1	0.91	1.04	agreement
			After	1	0.91	1.04	agreement
		Black	Before	1	1.20	0.79	agreement
			After	1	1.20	0.79	agreement
		NEA & Baltic	Before	0	0.18	0.53	neutral
			After	0	0.18	0.53	neutral

Due to time and organizational constraints during the North and Baltic Seas workshop, this Living Q workshop only considered three statements and included a much larger group (24 participants). Participants represented mainly maritime spatial planners, but included representation of the Baltic RSC, national competent authorities, and experts. Participants generally agreed with the wilderness goal for strict protection and case-by-case exclusions in strictly protected areas (providing a bit of a paradox), while remaining generally neutral about banning bottom trawling across EU seas. Participants tended to assume more extreme positions after discussing in relation to the wilderness target in strictly protected areas, while there was no overall change in relation to the other two statements.

Interestingly, also the variability in positions increased both in relation to wilderness goal and case-by-case exclusions. This workshop also noted the only clear case in all three workshops, where an argument swayed a significant number of participants to change their positions (14%). On average, about 10% of participants changed positions after discussion. On average, as well, the participants responses were more coherent than in the other two workshops, with lower overall variabilities and more clustering around neutral or agreeable positions (Table 3, Fig. 4).
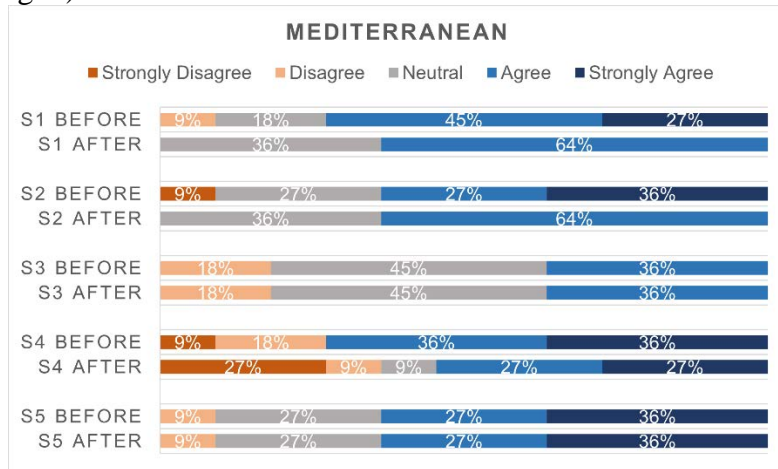
Fig. 2. Changes in mean positioning of participants of the Mediterranean Living Q workshop and associated standard deviations
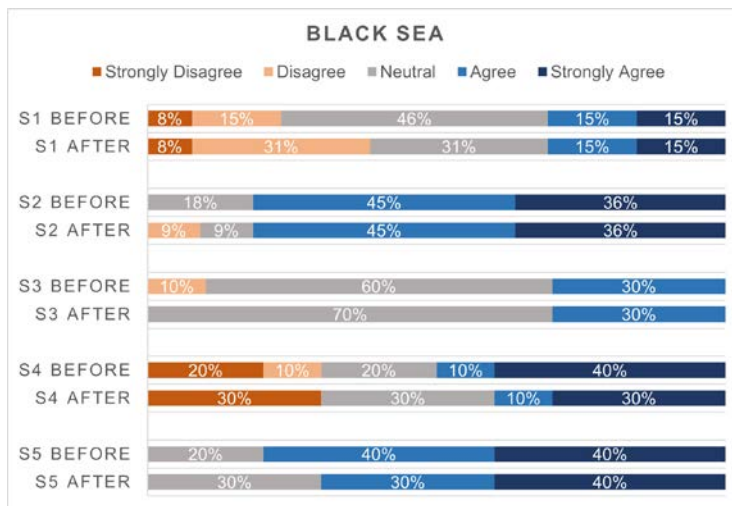

Fig. 3. Changes in mean positioning of participants of the Black Sea Living Q workshop and associated standard deviations

There is widespread acknowledgement that the implementation of EU marine environmental policies has failed in achieving the set targets, from both academia (Gorjanc *et al.*, 2020, Adriaenssens *et al.*, 2019, Gorjanc *et al.*, 2022, Murillas-Maza *et al.*, 2020, Cavallo *et al.*, 2018, Painting *et al.*, 2020, Di Quarto and Zinzani,

2021) and official EC assessments (EuropeanCommission, 2020b), with the EU policy implementation texts focusing on three main elements: data, enforcement, and cooperation. This was further corroborated by the policy analysis in this study. Such assertions are also common in marine sciences and policy literature, with Claudet *et al*. (2020), for example, outlining the ways in which science should and can lead policies in the current UN Ocean Decade, with the necessity of evidence-based policy-making emphasised.
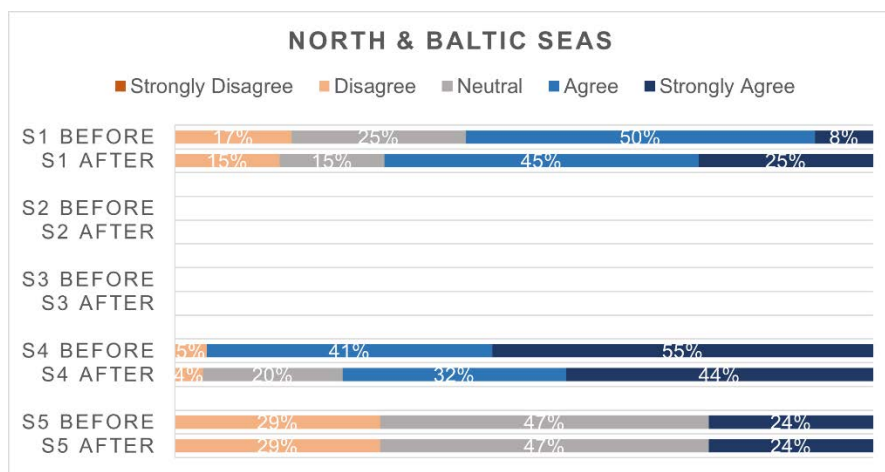

Fig. 4. Changes in mean positioning of participants of the North and Baltic Seas Living Q workshop and associated standard deviations

Likens (2010) and Watson (2005) also underlie the necessity of having excellent data to underlie policy decisions. While these texts tend to recognise some social complexities, those are usually framed as just an issue of imperfect communication (Janse, 2008, Likens, 2010, Sokolovska *et al*., 2019) or need for more participation from key actors, but within the confines of scientific discourse (Watson, 2005). Roehrl *et al*. (2020) similarly emphasised the need for objective scientific evidence to support the decisions taken during the COVID pandemic, exclusively focussing on "science". Similarly, most Living Q participants also maintained the "sanctity" of scientific evidence-bases and importance of having quantitative targets. The social sciences are thus rarely engaged with in the EU environmental policy implementation discourses, exemplified in this study, and in cases where they are they tend to refer to quantitative socio-economic data. Clear preferences have been expressed for numerical approaches, based on "hard" data, while disparaging expert judgement derived values. Thus, it seems there is a loose but widespread consensus among the key policy actors about how to move forward.

While the EU policy implementation documents continue to pursue common and coordinated way forward, based on ever improving monitoring data, there have also been calls in the social scientific literature to recognise the role of subjectivity in science and its privileged position in rendering the perceptions of the world (Lahsen and Turnhout, 2021). The evidence-based, rationalistic approach has been

criticised in both science-policy interface literature and socio-psychological literature, as too simplistic and not sufficiently cognizant of the complex social phenomena and realities that are surrounding it, while privileging positivist science and diminishing the evidence provided outside of the frames of empirical and quantitative research realms (Bennett, 2016, McCaughey and Bruning, 2010, Rose *et al*., 2020). Since environmental challenges often lack clear definition, as well as being contentious, full of uncertainty, and politically charged, Turnhout *et al*. (2019) argue that a linear, instrumentalist, and rationalist understanding of the science-policy interface is not viable anymore. Hulme (2009) and Bennett (2019) agree, claiming that science cannot exist in a detached and completely autonomous realm any longer. Bennett (2019) suggests greater engagement with political and social processes, as a way to address this challenge, particularly since marine governance involves a growing number of uses and conflicts that cannot be addressed through solely rationalistic science-policy interface. Lahsen and Turnhout (2021), likewise, claim that it is necessary to engage with a greater diversity of views and actions in biodiversity policy to avoid creating widely supported, but poorly actionable conservation targets. Yet, the EU policy implementation documents tend to still align with a linear understanding of the science-policy interface, by emphasising the need for improving monitoring programmes, and establishing common thresholds and indicators, as the only ways to effectively support evidence-based policy and decision-making in the EU. The acknowledgement of inherent biases in data production and analyses (Turnhout *et al*., 2019) are absent from EU policy implementation documents. Moreover, the role of knowledgeable actors over policy interpretation and implementation (Barrett, 2004) has not been sufficiently acknowledged, while the perception that policy actors act in a rational, dispassionate way, akin to computerised information processors persists (Beers *et al*., 2006, Clark *et al.*, 2000). While science is one of the key elements influencing policy actions, the same evidence can be used to justify very different conclusions. Marmot (2004), for example, called attention to the fact that scientific or any other kind of evidence does not fall on blank minds, which change as a result. Kørnøv and Thissen (2000) also delved into the details of how rationality works in decision-making in the field of strategic environmental assessments, finding numerous limitations of the rational model around cognitive limitations, behavioural biases, ambiguity in data, variability in preferences, time component of decision-making, and the conception of decision-making as a long-term negotiation-led process.

Such differences in framing result in different ways in which the same data is perceived and used. Living Q discussions around bottom-trawling bans illustrated this challenge clearly, where participants tended to use similar, if not the same, data sources, but using them to support very different courses of action, based on their priorities. For example, a participant who prioritised work on marine litter, accepted the arguments about how damaging bottom-trawling is from his fellow participants, but insisted that the fact that trawls collect some litter from the seafloor

make the activity worthwhile enough to oppose its ban. Consequently, different viewpoints can clearly lead to divergent policy priorities, which can result in incoherent implementation, unless all key policy actors share a common understanding of the data and policy prioritisation. Given different interpretations of the same data, simply providing scientific knowledge does not lead to effective or even necessarily desirable policies or their implementation (Wesselink *et al*., 2013, Kukkonen and Ylä-Anttila, 2020). Consequently, the rational choice principle that characterises evidence-based policies cannot fully explain the issues of bounded rationality, as decision-makers do not share the same cognitive abilities, and knowledge to commonly understand, process, and evaluate the validity of scientific evidence relevant to their policy decisions (McCaughey and Bruning, 2010, Simon, 1990, Thaler and Sunstein, 2021). The influence of framing of data and decisions (Chirkov, 2020) is thus crucial to recognise, as it provides insight into how evidence is subjectively interpreted and used. Sociological work has shown that framing can influence the way in which individuals not only relate to data and decisions, but how they perceive situations and what existing knowledge they recall (McCaughey and Bruning, 2010).

Beyond individual viewpoints that key actors clearly have and which influence their decision making, working in groups is foundational for much EU policy work and yet, so far, there has been little explicit attention paid to the influences of group processes and dynamics on EU policy formation, interpretation, and implementation. While the results presented here are preliminary, they do provide a starting point for a deeper investigation of these processes in the future. Much of psycho-sociological literature would in principle agree with the EU's approach of seeking consensus and common ground (Beers *et al*., 2006, Turnhout *et al*., 2019, Bechky, 2003, Clark *et al*., 2000), given the lack of results so far, it is worth wondering whether the current process is sufficient. The divergences in viewpoints among the Living Q participants indicate a high likelihood for the situation in which cognitive consensus has not been achieved and therefore the coherent implementation based on agreed decisions is unlikely (Mohammed and Ringseis, 2001). The Living Q discussions showed that, regardless of the rational or emotional arguments presented, only a modest number of people were swayed by others' arguments. While there were cases of the group as a whole moving towards more moderate positions and the variability being reduced after discussions, these trends were not strong. While more movement and changing of minds might have happened if more time was available for discussion and if groups were smaller (Ripken *et al.*, 2018, Beers *et al*., 2006, Clark *et al*., 2000, Mohammed and Ringseis, 2001, Perez *et al*., 2018), the results also show how deeply rooted framings of the situations are and how hard it would be to shift them, with either rational or even more emotive arguments.

Given the nature of group work in most policy settings and at the EU level, it is worth noting that while longer and more in-depth discussions could potentially lead towards cognitive consensus (Mohammed and Ringseis, 2001), there is

currently little scope for such deep engagement in the way that meetings are organised, with most groups being composed of a greater number of members, featuring less group cohesion, and not having significantly more time available to debate their positions. Greater institutional and political complexities and pressures affecting the positions that participants have to take into account have also not featured within this study design, but definitely have an influence in real world policy-making (Syed, 2019, 't Hart *et al*., 1997). Therefore, there is a need to re-evaluate the way that groups work and how they should function in order to establish common ground and cognitive consensus, as the results here clearly show that, although very different viewpoints are at play, group members are often unaware of them. This can lead to weak implementation, "multiple ignorances", and problematic mid- to long-term viability and productivity of the groups (Beers *et al*., 2006, Mohammed and Ringseis, 2001, 't Hart *et al*., 1997, Perez *et al*., 2018, Friedkin, 2011). Even within the limited scope of the group dynamics studied here, a number of trends could be identified and future research should work on deepening understanding of these topics. With only one clear case of an argument having an effect of changing people's minds, the appropriateness of relying on data and knowledge alone to shape policy-making can be questioned.

Socio-psychological literature has been pointing towards similar findings for decades and therefore the present results are not surprising (Turnhout *et al*., 2019, 't Hart *et al*., 1997, Beers *et al*., 2006, Simon, 1990, Thaler and Sunstein, 2021, Janse, 2008). While the literature has been clear that different psychological and social cognitions clearly influence decision-making, most group dynamics literature would still mention the inherent dynamic in the groups, moving the group members towards, at least surface-level, consensus (Beers *et al*., 2006). The Living Q workshops in this study demonstrated only a few and inconsistent movements into that direction. Likewise, Ripken *et al*. (2018) reported that about a quarter of participants would change their minds after discussion, while those proportions were noticeably lower in this study (10-15%). However, the beginning of the phenomenon of groupthink could be observed in less variability observed in the North and Baltic Seas workshop, where participants came from more homogeneous professional backgrounds and presented less diversity of positions and arguments (Janse, 2008, 't Hart *et al*., 1997). However, given that strict protection targets have been commonly agreed on the EU level, with considerable amount of time dedicated towards settling on a EU-wide definition of strictly protected area (EuropeanCommission, 2022), the Living Q discussions show that there persist distinct viewpoints among the key actors. Therefore, cognitive consensus has evidently not been achieved, and it is more likely that the phenomenon of "multiple ignorances" has developed. This phenomenon has already been shown to lead towards faulty and divergent implementation in the literature, so it is fair to expect that I will have a similar impact on EU marine environmental policy implementation, as well (Beers *et al*., 2006).

CONCLUSIONS

EU policy-making is still mainly characterised by evidence-based policy-making, requiring (quantitative) data and following rationalistic tendencies (McCaughey and Bruning, 2010, Roehrl *et al*., 2020, Watson, 2005). This approach is evident in policies themselves, in the recommendations flowing from assessment reports, and in much of the discourses captured in this research, including during Living Q discussions. Consequently, focussing on the deficiencies of existing monitoring programmes and lack of harmonised status assessments for the entire EU often detracts from acting, as the drive to seek more and more reliable data remains pervasive (Painting *et al*., 2020). Given that EU policies are widely supported, but demonstrably poorly implemented seems to support their claim that the current approach is not sufficient. Therefore, since the policy targets for the current decade, such as the 10% strict protection target for the EU seas, are even more ambitious than the targets for last decade were and despite them being commonly agreed, the Living Q results demonstrate that there persists lingering and widespread variability in the way these policy objectives are perceived and prioritised among the policy actors. Therefore, it is questionable whether 2030 protection objectives can be achieved with 'more of the same' approach. Instead, there is a pronounced need for more engagement, recognising underlying assumptions and for more social scientific approaches, unless we risk another decade of missed targets, while the marine biodiversity crisis deepens.

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