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All that Matters are Forests and Seas? Practising Relevance in Interdisciplinary Environment-Focused Social Science Fields

Susanne Koch[1,2,3] · **Judit Varga**[2]

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Abstract
Policy increasingly requires societally relevant and interdisciplinary science, which prompts questions about science's orientation to diverse academic and non-academic actors. This paper examines how relevance is practised and negotiated in two evolving interdisciplinary social science fields: marine social sciences and forest policy research. Both fields investigate human relations with specific environments: how people use, manage and govern, live with and value seas and forests. Diverse social and political actors have stakes in the knowledge these fields generate. To whose matters and stakes do researchers respond and orient their research? Are such orientations reflexively discussed and contested? To operationalise relevance, we employ the notion of 'epistemic commitments' while adopting a Bourdieusian perspective on scientific fields. Our analysis draws on conference observation, interviews and document analysis. We find diverse epistemic commitments in both fields, but see noticeable differences in their prevalence, reflexivity and contestation. Examining the fields' socio-historical trajectories, we theorise that these differences are due to field-specific properties: their relative autonomy to negotiate relevance independently from other disciplines and external forces; and the field-specific habitus that impacts the degree to which relevance is a reflexive commitment, or an unconscious practice. The comparative analysis suggests that interdisciplinary scientific fields' specific institutional histories and relations with societal and policy actors shape relevance practices and the extent to which these are internally contested.

Keywords Relevance · Interdisciplinary fields · Marine social sciences · Forest policy research · Bourdieu · Epistemic commitments

Note: The corresponding author's affiliation changed during the research process; relevant research works underlying this paper were carried out during affiliations with the institutions indicated.

Extended author information available on the last page of the article

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Introduction[1]

'Relevance' has become a key term in science policy and related discourses on the role and purpose of science in society. Science studies have examined the multiple meanings of relevance in the context of changing systems of science. For instance, they have traced how relevance is articulated in grant applications and the impact agenda (Bandola-Gill 2019; Holbrook 2010; Rau et al. 2018; Smit & Hessels 2021); how disciplines negotiate scientific quality and societal value (Irwin 2019; Kieser 2011); or how researchers deal with competing demands for relevance in their daily work (Falkenberg et al. 2023; de Jong et al. 2016; Hessels 2010). These demands have multiplied with science funders' and policymakers' calls for science to address global challenges in support of sustainable development (Diedrich et al. 2011; Luo 2021). Scientists are increasingly required to work across disciplinary boundaries to tackle socio-ecological problems in the Anthropocene, which has given momentum to interdisciplinary fields (Keitsch & Vermeulen 2023; Padmanabhan 2018; Wanzenböck et al. 2020; Worosz 2022).

Scientists enter such fields with a mixed baggage of ideals about scientific virtues and understandings of what constitutes relevant research (Barry & Born 2013; Hessels et al. 2019; Langfeldt et al. 2020). This has been shown, for instance, for environmental science (Weszkalnys & Barry 2013), biodiversity science (Granjou & Arpin 2015), human geography (Varga 2021) and soil science (Sigl et al. 2023) – fields in which diverse strands of research co-exist, oriented to different policy, societal and scientific agendas, and competing with each other to varying degrees. These studies explored how such diverse strands of relevant science develop in specific institutional contexts and integrate or further differentiate. We add to this literature a study that asks: what accounts for differences in how relevance in interdisciplinary fields is contested and reflected upon?

We address this question by comparing how relevance is practised and negotiated in two interdisciplinary fields concerned with human-nature relations: forest policy research (FPR) and marine social sciences (MSS). Despite their different foci on forests and maritime worlds[2], the two fields are very similar in terms of the topics they explore and how they investigate them: Drawing on various social science perspectives, they study how humans use, manage, govern, value and relate to environments, and which socio-ecological effects their activities have. In the Anthropocene, a growing number of actors put demands on forests and seas, including policymakers, foresters and forest owners, fishers and coastal inhabitants, businesses, conservationists and tourists. This paper empirically traces to whose matters FPR and MSS are oriented, and how such orientations are negotiated and reflected upon. Studying how contestations and reflexivity about relevance develop within FPR and MSS helps understand how interdisciplinary fields engage with crises in the Anthropocene and shifting relations between science, policy and society.

[1] This paper is part of the special issue "Modes of Relevance in Research. Towards Understanding the Promises and Possibilities of Doing Relevance".

[2] This paper uses the terms 'maritime worlds' and 'sea(s)' interchangeably to refer to ecosystems and lifeworlds related to seas, oceans, coasts and estuaries.

The paper is structured as follows. First, we introduce the concept of 'epistemic commitments' (Granjou & Arpin 2015) and Bourdieusian theory which we use to comparatively study relevance in interdisciplinary scientific fields. Second, we describe our methods of data generation and analysis, which comprised document analysis, conference observation and reflexive interviews. Next, we present our empirical findings outlining the socio-historical developments and dominant epistemic commitments in both fields. We show that relevance is negotiated more in MSS than in FPR, and we theorise reasons for this difference. We conclude the paper by outlining the papers' contributions to existing scholarship and the fields under study.

Relevance in Interdisciplinary Research Fields

Scholars have examined 'relevance' in science for decades as science always had to be societally relevant to gain resources and maintain legitimacy (Hessels et al. 2009). However, definitions of relevance, and the focus of scholarship have changed over time along with the shift from internalist to co-productionist perspectives that foreground how science relates to societal developments (Bandola-Gill 2019; Sigl et al. 2023). Relevance practices have been shown to be highly field-specific and may also be contested within disciplines (Hessels 2010). For instance, Sigl et al. (2023) traced how different re-articulations of relevance in soil science created competition and tensions between strands of research, challenging the discipline's self-understanding. In contrast, studying biodiversity science in France, Granjou & Arpin (2015) found that different relevance regimes co-exist, complementing rather than competing with each other. The differing observations in these empirical works raise the question under what conditions relevance becomes the subject of contestation and reflexivity in scientific fields. This is what we investigate by comparing how relevance is practised and negotiated in two environment-focused interdisciplinary fields.

Relevance as Epistemic Commitments (ECs)

To operationalise relevance, we use the concept 'epistemic commitments' (ECs) proposed by Granjou & Arpin (2015). In their study on biodiversity science, the authors define these as "reflexive commitments (...) to different regimes of relevant research in interdisciplinary fields" (1022–1023). ECs comprise a combination of distinct scientific approaches (specific disciplines, methods or techniques), scenarios of environmental change (for example, for biodiversity science, ranging from a focus on biodiversity loss and environmental degradation to a belief in growing opportunities to bioengineer ecosystems) and practical contributions (such as policy advice or collaboration with societal actors). Adopting an actor-centred perspective, Granjou & Arpin (2015) point to personal and institutional factors that impact ECs and their development. Although we find that the concept of EC helps empirically grasp diverse relevance practices in interdisciplinary fields, we note that structural conditions underlying relevance practices have remained unexplored to date. To bring these into the picture, we embed the concept in a Bourdieusian theoretical perspec-

tive which shares an empirical focus on practice, but shifts our attention to field-specific properties that may shape the development and contestation of ECs.

A Bourdieusian Perspective on Interdisciplinary Scientific Fields

Bourdieu describes science as a social field in which "[s]cientific choices are guided by taken-for-granted assumptions, interactive with practices, as to what constitutes real and important problems, valid methods, and authentic knowledge" (Bourdieu 1991: 3). He thus proposes that understandings of relevance are less something researchers consciously employ, but rather something that operates more implicitly as part of *doxa*: the set of presuppositions which members of a field regard as self-evident and beyond dispute (Bourdieu 1975; 1991). Doxa implicitly shapes scholars' scientific *habitus*: their practical sense of doing science, choosing problems and selecting 'appropriate' approaches (Bourdieu 2004). During their academic trajectories, scholars learn what is considered good, valuable and relevant science through interaction with dominant agents who set the standards for 'proper' science (Albert and Kleinman 2011). These may be challenged when fields diversify and prevailing practices are put into question (Bourdieu 1975).

How fields negotiate such struggles depends on their relative *autonomy* from other disciplines and outside political and economic actors. According to Bourdieu, scientific fields never operate fully independently in the sense of being detached from the social world. However, their autonomy "varies with the intensity of constraints and controls exercised, directly or indirectly, by external powers" (Bourdieu 1991: 15). Relatively autonomous fields are free to develop orientations and stakes fairly independently: their members negotiate what topics, approaches or contributions 'count'; the less autonomous fields are, the more such orientations and stakes are determined from outside. The level of relative autonomy of fields depends on their socio-historical trajectories (Bourdieu 2004). Scholars have described autonomy as a crucial property of scientific fields as it shapes the degree of consensus and contestation, especially about implicit assumptions (Krause 2018); moreover, it has been shown to shape the extent to which interdisciplinarity succeeds in practice (Steinmetz 2017). While interdisciplinary fields inevitably 'import' assumptions and approaches from different disciplines, the extent to which they are able to negotiate and decide on their values and relevance orientations varies.

As stated by Bourdieu, and echoed by scholars using this theory, autonomy needs to be assessed empirically. This has been done, for instance, by Timans et al. (2019) and Panofksy (2011) for mixed methods research and behaviour genetics, respectively. The authors assessed the autonomy of these emerging interdisciplinary fields by sketching their institutionalisation and relations to other disciplines and external forces. We follow their approach and explore how relative autonomy – a field property resulting from socio-historical conditions – may impact how relevance is practised, contested and reflected upon in interdisciplinary fields.

Methods of Data Generation and Analysis

Our study draws on two main lines of empirical investigation: the analysis of the socio-historical development of FPR and MSS, and the analysis of relevance practices in these fields. We traced institutional development through mapping early studies, the establishment of key journals, academic conferences and scholarly networks in Europe. Our analysis of relevance practices draws on qualitative data generated as part of different research projects.[3] While they have been conducted independently from each other, they employed similar methods to examine scholarly practice in MSS and FPR. In the following, we first describe how data were generated and compiled for each field, before we explain how we analysed them for the specific purpose of this paper. A full list of materials making up the data corpus is provided in the Appendix (online supplementary material).

For MSS, Judit Varga conducted participant observation at the community's biennial annual conference, hosted by the Centre for Maritime Research 'headquarters' at the University of Amsterdam in June 2023. In addition to studying the book of abstracts, she observed conference sessions, carried out informal conversations with attendees and reflexive interviews with three scholars who play key roles in MSS scholarly networks and have authored recent agenda-setting papers. Varga shared observations about interviewees' talks and position papers to prompt views about relevance and agenda setting in MSS. The interviews were recorded and fully transcribed. In addition, she transcribed five online available public talks, in which a total of 14 scholars discuss relevant research agendas in MSS and diverse additional scholars comment during the subsequent Q&A sessions, which were especially helpful in tracing concerns, values and contestations. Finally, Varga compiled 20 recently published papers addressing the development of research agendas in MSS as a field. Papers were identified through fieldwork (e.g. mentioned by MSS scholars) and collected through a search in digital libraries for "marine social science". The author herself has had no prior relations to the field, and entered it as a science studies scholar particularly interested in interdisciplinary relations and relevance practices in MSS. Perceiving her as a colleague from a different social science discipline prompted interviewees to reflect on MSS as a field and express perceptions specific to it.

For FPR, Susanne Koch generated similar qualitative data as part of two consecutive science studies projects, while also contributing to the field herself with studies on science policy relations and valuation practices. In March 2021 and April 2022, she conducted participant observation of the International Forest Policy Meetings (IFPM 3 and 4). Due to pandemic restrictions, both took place online, which meant that some aspects of interaction could not be grasped. However, the digital format allowed her to use recordings (with explicit consent) and chat communication, in

[3] Koch generated and analysed data as part of the project "What counts in forest science? An exploratory study on valuation processes in the context of forest science conferences" funded by a postdoc fellowship of the German Academic Exchange Service (DAAD); and as part of the project "Science as a field of struggle" funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation; Project number 452021647). Varga generated and analysed data as part of the "FluidKnowledge" project funded by the European Research Council under the Call: ERC-2018-STG (Grant Number: 805550).

addition to the conference books of abstracts.[4] Moreover, she carried out reflexive interviews with 13 scholars engaged in the conference as organisers, session chairs and presenters. They comprised post-docs, senior researchers and professors working at forest-related research institutions in eight different European countries. Given that Koch had met some of them before in the context of FPR-scientific events, the interviews were conceptualised as peer-to-peer conversations (Fochler et al. 2016) in which Koch shared initial observations to prompt positionings in relation to the specificities of doing science in FPR. Her position as a sociologist of science engaging with the field (but neither coming from within nor being fully integrated into it) led interviewees to articulate what they perceived as specific or different in FPR in contrast to other fields, specifically disciplines like sociology which they related the researcher with. The interviews were recorded and fully transcribed. In addition to the conference observations and interviews, Koch compiled 18 publications entailing analyses and commentaries on the development of FPR sourced through digital libraries with a search for items with "forest policy research" in the title.

While the data corpus for MSS consists of more public talks, the one for FPR has a stronger focus on interviews, as a result of the different projects from which they emerged, and because of the recent proliferation of publicly posted discussions about relevance in MSS. However, both comprise articles, conference statements and interview narratives that entail scholars' perspectives on what 'matters' in the field. Using Granjou's & Arpin's (2015) notion of ECs as conceptual lens, we conducted a thematic analysis of these materials, with a focus on how scholars justified studies and approaches, argued for relevance, and formulated academic and practical learnings (Braun & Clarke 2012). While we reconstructed dominant ECs from such relevance positionings first independently and inductively (with only the core elements of the concept in mind), we subsequently discussed and compared our initial findings, exploring similarities and differences in the focus and contestation of ECs in the two cases. Then, we iteratively triangulated data and theory (Denzin 1978; Lewis 1998), using a Bourdieusian lens to explain the variations encountered in the two fields.

Empirical Findings

We outline empirical findings in three main parts. First, we sketch the emergence and institutionalisation of FPR and MSS. We present this as part of empirical findings – and not only as case study context – because we apply a Bourdieusian analytical lens to highlight the fields' relative autonomy resulting from their socio-historical trajectories. Second, we illustrate how relevance is practised in FPR and MSS by sketching dominant ECs in each field. Third, we compare relevance practices through juxtaposing ECs in FPR and MSS: We articulate differences in their focus and prevalence, as well as the degree to which they are subject of reflexivity and contestation, and we explain these differences with the fields' varying relative autonomy and habitus resulting from the socio-historical conditions first outlined.

[4] For details on observation focus and approach, see Koch (2021).

Socio-Historical Trajectories and Relative Autonomy of FPR and MSS

FPR and MSS comprise a variety of social sciences and humanities, including (in random order, without being exhaustive) anthropology, sociology, political science, policy studies, geography, economics, history, law, development studies, management and communication science (e.g. Bennett 2019; MARE 2023a; Springer 2024). They also incorporate approaches from environmental and sustainability sciences as well as biological and ecological research. Both consider themselves as interdisciplinary social science fields concerned with human activities in relation to environments: forests and seas, respectively. For example, Bavinck and Verrips (2021) define "the epistemic community of marine social scientists" as "the collection of scholars that is engaged with the understanding of people's relation with the coastal and marine environment" (121). In the following, we sketch how the two fields emerged and institutionalised in Europe, as indicated by the formation of journals, conferences and scholarly networks. Drawing on Bourdieusian theory, we pay particular attention to the fields' historical relations to other disciplines and external forces, which shape their relative autonomy.

Emergence, Institutionalisation and Relative Autonomy of European FPR

FPR evolved in the 1970s as a sub-field of forest science, which, at that time, had close ties to the forest sector. Hence, it was mainly "considered a means of providing systematic information for forest policy-makers" (Wiersum et al. 2013: 29). During the 1980s, as traditional forestry became a target of criticism due to increasing social and environmental concerns, professional and scientific practices got re-oriented (Wiersum 1999). Key scholars in the field induced a shift from 'normative' to 'empirical-analytical' FPR: they distanced themselves from being driven by normative demands of the forestry sector and started using theories and methods from political science to analyse forest policy and governance (Glück 1995; Kleinschmit et al. 2016; Krott 2005). This shift has been portrayed as a milestone in the professionalisation of FPR as a forest-focused social science field (Kleinschmit et al. 2012).

A core indicator for its institutionalisation was the founding of the journal "Forest Policy and Economics" in 2000 "to support the development of the disciplines of forest policy and economics as well as to strengthen their impact on solving the problems of forestry" (Krott 2005). Today, it seeks to publish forest-related policy and economics research, but also "contributions from other social sciences and humanities perspectives that (…) include, but are not limited to, sociology, anthropology, human geography, history, jurisprudence, planning, development studies, and psychology research on forests" (Elsevier 2023). This shows that FPR understands itself as a multi- and interdisciplinary social science field that is much broader than what the name implies.

The field's interdisciplinarity also manifests in the scientific events organised during the past decade to foster scholarly exchange. While regional networks and meetings have existed for some time – such as the "Forstpolitiktreffen" that connected researchers across Central Europe – larger international conferences with a focus on FRP were only set up in the past decade. In 2016, two distinct FPR conferences were

held for the first time: the International Forest Policy Meeting (IFPM), organised by two European FPR networks, as well as a conference entitled "Forest-related policy and governance: analyses in the environmental social sciences", organised by the Forest Policy and Governance unit of the International Union of Forest Research Organisations (IUFRO) as a global hub for forest-related social sciences research (Maryudi et al. 2018). The IFPM has evolved into a biannual conference series for research addressing forest-related issues from social science perspectives, hosted by pertinent research organisations across Europe.

Although the field today encompasses an international community of scholars from a wide range of disciplines, prevailing norms of 'good' scholarship are still close to that of forest and political science (Koch & Tetley 2023). In many cases, FPR institutes are incorporated in or linked with forest faculties. Organisations associated with the forest sector, like ministries, local authorities and industrial companies, are not only 'subjects' but also funders and addressees of research. Given the persisting influences of (natural) forest and political science and ties with political and economic agents, FPR can be understood as an interdisciplinary field whose autonomy is still constrained by these outside forces, even though it has become a recognizable strand of research with its own identity and institutions.

Emergence, Institutionalisation and Relative Autonomy of European MSS

In contrast to FPR, MSS did not evolve as a sub-field of another discipline, nor as an applied research field aiming to serve a specific political or economic sector. Rather, the field has expanded through curating a critical stance towards marine governance and management which are largely informed by biological and economic research (Arbo et al. 2018).

Early MSS scholarship primarily comprised anthropological and ethnographic studies of fisher communities (e.g. Malinowski 1922). When in the 1960s and 1970s, it became apparent that fish stocks were threatened with extinction, social scientists sharply criticised modernisation efforts and neoliberal fisheries governance, and showed their detrimental effects on coastal communities. The globalisation of the fishing industry, the introduction of market-based reforms and quota-based fisheries management in the 1980s set the stage for the formation of MSS as a field investigating these processes with critical approaches inspired not only by anthropology, but also, "among others, political ecology, post-structuralism, and feminism" (Arbo et al. 2018: 297).

In 1988, the community founded the journal Maritime Anthropological Studies (since 2002 titled Maritime Studies or MAST), providing the first international platform for research about maritime societies which had to date remained scattered (van Ginkel & Verrips 1988). MAST is key to the field's institutionalisation and autonomy, as it is positioned to be the only publication venue specialised in MSS. The community contrasts it with other journals that publish MSS scholarship, but either have a narrower subject matter (such as the journal Marine Policy), a broader scope (such as generic social science journals) or a subject matter that also invites studies from other disciplines (such as fisheries, marine and environmental science journals) (MARE 2023a).

Two scholarly networks founded in Europe currently play a key role in further institutionalising MSS: they foster the development of a disciplinary identity, collaborations, and establish venues to articulate and communicate relevant research agendas for MSS through papers, talks and discussions. The Centre for Maritime Research (MARE) was established in 2000 by scholars based in the Netherlands (Scholtens et al. 2021). MARE supports the journal MAST, and organises the only (biennial) conference specialised in MSS that scholars globally celebrate as a unique opportunity to meet with fellow marine social scientists. The Marine Social Sciences Network (MarSocSci), established in 2018 by scholars based in the United Kingdom supports and enhances the visibility of MSS globally through six regional chapters (e.g. McKinley et al. 2022). It also manages a popular social media account, a book club, and conducts research about the field's composition.

These networks overlap and engage with each other, for example, by attending and popularising each other's events. Founders of both have recently outlined relevant agendas for MSS in a series of papers (e.g. Bavinck et al. 2018; Bavinck & Verrips 2020; McKinley et al. 2020; McKinley et al. 2022). For instance, the journal MAST has published the crowd-sourced 'Manifesto for the Marine Social Sciences' based on a series of discussions at the community's 2019 conference. The Manifesto is accompanied by a dozen Commentaries "to realize a diversity of opinions" about relevant research agendas for MSS (Bavinck & Verrips 2020: 122).

Contrary to FPR, which emerged as a sub-field of forest science, MSS has developed largely independently from natural marine sciences (van Putten et al. 2021). Only recently, MSS scholars have called to enhance collaboration (e.g. Alexander et al. 2019; Bavinck & Verrips 2020; Dunn 2022; McKinley et al. 2022). They have also started to debate the value of the field's critical stance toward and independence from marine governance and management. Some MSS scholars aim to develop closer links with these sectors, hoping to inform them. In part due to these scholars' efforts, recent marine policy (e.g. UNESCO 2019; HM Government 2018) and management reports (ICES 2015; ICES 2018) position the social sciences as increasingly important. The two scholarly networks – MARE and MarSocSci – have differing visions about managing the field's relations with marine governance and management. Whilst MARE aims to negotiate diverse forms of relevance by "maintain[ing] a balanced mix of academic and policy-oriented research" (MARE 2023b), MarSocSci has the explicit motivation to make MSS more visible and relevant to policy-makers (MarSocSci 2023).

Comparing the socio-historical trajectories of FPR and MSS and their relations to other disciplines and external sectors, we assess MSS to have a higher degree of autonomy than FPR: it has developed largely independently from natural marine sciences and other scientific fields, and has only recently started to build ties with political and economic sectors amid contestations. While MSS emerged in reaction to socio-ecological and political developments as sketched above, its critical orientation towards these developments was prompted by the scholars who founded the field, rather than by powerful external forces.

Relevance in Forest Policy Research

In the following, we sketch three dominant ECs manifesting in FPR: addressing forest policy and governance (EC1); supporting forest management (EC2); and engaging forests and people (EC3). For each EC, we highlight the main scientific approaches, scenarios of socio-environmental problems, and practical contributions.[5]

Epistemic Commitment 1: Addressing Forest Policy and Governance

Addressing forest policy and governance constitutes the most dominant EC in FPR. It foregrounds that forests play a fundamental role in society, supplying a broad range of materials and ecosystem functions; however, they are threatened by human activities such as excessive timber exploitation and illegal logging (Maryudi et al. 2018). Research in this EC aims to assess the performance and effectiveness of policy frameworks (Arts 2021). As a senior researcher at a Dutch research institute explained:

> "What you find, overall, is that the evidence base for forest policy interventions is slim. If someone presents an evidence base for why interventions work out, everyone is very interested and excited because we know there are not many out there and we don't really have, as a field, strong evidence-based statements to make." (FPR_9)

To produce evidence, scholars adopt scientific approaches from policy sciences, applying rationalist, institutional, network theories, and more recently, also critical theories and discursive approaches (Arts 2012). They share an interest in multi-level governance processes, particularly the distribution of formal and informal power between state, market and community actors, and the interrelations of global, national and local policy-making. Dominant scholarship related to this commitment remains rooted in positivism, with scholars claiming to conduct "purely analytical" (professor's statement at IFPM4) science without a normative stance. They see their contribution in critically assessing existing governance arrangements and communicating findings to actors involved in policy and governance who are directly addressed also at conferences. For instance, at a large event in 2020, the organisers invited a department head from the co-sponsoring federal ministry responsible for forestry to give the opening speech. After her talk, the moderator thanked her for "setting the political stage for the conference" (conference quote). A public panel with scholars and EU policy actors on stage closed the event, and a science-policy workshop followed. Of course, not every event in FPR gives the same degree of voice to policy actors. However, the case illustrates the close interaction with them and the commitment to address their stakes.

[5] An overview table for ECs in FPR can be found in the Appendix (Table 2, online supplementary material).

Epistemic Commitment 2: Supporting Forest Management

Supporting forest management has been a core EC of FPR ever since its emergence as a sub-field of forest science. While members stress its evolution into an independent scientific field, the ambition to come up with practical recommendations for forest managers still prevails, as displayed by the following reaction to a conference talk about urban forestry:

> "Thank you very much for the very interesting presentation! My question is more related to the final outputs of the research (...). I would like to know, is there anything that the urban land managers can do for making these urban areas more, I don't know, building around some kind of buffer zones, or reducing the noise level, what do you plan in this sense?" (Comment to conference talk)

This EC departs from the understanding that forest managers are faced with an increasingly complex situation: while they are the ones professionally caring for forests under changing environmental and climate conditions, their work is 'wrongly' perceived and increasingly opposed by societal groups, including nature conservationists, who perceive the logging of trees for timber as detrimental (Bethmann et al. 2018). FPR scholars committed to supporting management orient their research to issues forest professionals are confronted with. Therefore, they employ structural-functional, institutional and perceptual/ideational approaches, often using surveys to grasp citizens' perceptions and take stock of forest-related practices (Eckerberg & Sandström 2013; Jakobsson et al. 2021). They often communicate findings along with practical recommendations (e.g. about managing conflicting interests and communicating with the public) directly to forest authorities which frequently commission and fund such studies.

Epistemic Commitment 3: Engaging Forests and People

The third EC – engaging forests and people – recognises that peoples' diverse relationships with forests is essential for sustainable futures. Studying meanings and values people attach to forests is seen as crucial for understanding persisting conflicts and policy implementation problems (Buijs & Lawrence 2013; Halla & Laine 2022; Westin et al. 2023). A strong focus is on communities in the Global South whose livelihoods are affected by both forest degradation and political measures against it. The people-focused scenario underlying this commitment is reflected in the following quote from a scholar whose research trajectory has shifted from a forestry science perspective to a primarily human-centred one:

> "It's even more perhaps about the people than just the forest. And I somehow, I put a lot of weight on that that they know the best. So if it's about, let's say, shifting cultivation: it's perceived really badly, and you can think that, oh my god those burnt, this cannot be good, this cannot be good. But once you

spend a bit more time there and you talk with people, you can shift your mind." (FPR_11)

To better understand how people use, relate to and value forests, scholars employ perspectives from cultural studies, phenomenology and sociology for empirical examination. For instance, they have taken up the concept of human-nature relationships to study how "personal experiences, life histories, as well as cultural and societal backgrounds and environmental settings" shape relationships with forests (e.g. Halla et al. 2023). Some have also started to experiment with action research and arts-based approaches to reach and empower societal groups that have so far been marginalised in forest-related governance processes. Education and teaching are seen as central for practical contributions, particularly targeting young people.

Relevance in Marine Social Sciences

In MSS, we find similar dominant ECs as in FPR, yet with a different focus and prevalence: fostering social justice and participatory governance (EC1); scrutinising marine management[6] (EC2); and engaging seas and people (EC3).[7]

Epistemic Commitment 1: Fostering Social Justice and Participatory Governance

Many marine social scientists aim to foster 'blue' justice, which refers to social justice in maritime worlds (e.g. Bennett et al. 2021). This EC foregrounds the scenario that climate change and the growing use of maritime worlds – for example by wind farms, industrialised fishing, tourism, aquaculture and conservation projects – have disproportionate negative impacts on coastal communities, degrading their livelihoods and cultures. Scholars draw on critical social science theories to explore ecological, cultural, economic and legal injustices often with a supportive ambition. For example, they aim to create knowledge that highlights the impact of policies on local communities (e.g. Kraan et al. 2023), fosters participatory governance that includes marginalised communities, and creates "counter-narrative[s] for the poor and vulnerable" (Bavinck & Verrips 2020). This EC continues to be central in MSS as illustrated by an exchange at the conference. In a panel on new collaborations in MSS, a scholar who played a key role in organising the conference stated that this is what "this field is all about: coastal communities are in danger, let's do something about saving them" (conference organiser).

At the same time, this EC is also increasingly debated. We discuss three lines of debate to illustrate its contestation. First, scholars take different positions regarding the actors they think should be prioritised by blue justice scholarship. Whilst MSS scholarship has traditionally focused on small-scale fishers, scholars have recently

[6] This paper refers to the governance of oceans, seas and coastal ecosystems as 'marine governance', their management as 'marine management'.

[7] An overview table for ECs in MSS can be found in the Appendix (Table 3, online supplementary material).

called for also considering other communities, such as gendered inequalities (Frangoudes et al. 2020), industrialised fishers whose employment conditions are often dreadful (e.g. Steins et al. 2020; Vandergeest & Marschke 2020) and non-fisher coastal communities (Pauwelussen 2020). Second, as we observed through discussions during the conference, some scholars question the relevant unit of analysis, arguing to shift the analytical focus from local communities to powerful global political and economic practices. Third, some consider the dominant positionality of this EC – the support of small-scale fishers – too normative, and even the reason for the field's historical lack of connection to policy-making (e.g. Steins et al. 2020).

Epistemic Commitment 2: Supporting Marine and Fisheries Management

Reacting to the field's lack of policy uptake, some MSS scholars have recently argued for better supporting national and international marine management. In contrast to EC1, this EC promotes the scenario that integrating MSS with marine management is urgent and that marine policy and management increasingly recognise the value of MSS (e.g. Kraan & Linke 2020). Scientific approaches that help formulate policy recommendations are key to this research. For example, scholars call to develop consensus among diverse strands of social science research to create knowledge usable for policy, such as indicators for marine management. At the same time, there is a debate about which social scientific traditions this EC should draw on. Some scholars associated with this EC call for more 'objectivity' in MSS, critiquing 'traditional' and dominant MSS scholarship that aims to help marginalised communities:

> "For a long time, policy-makers in for example the European Union were reluctant to engage with fisheries social scientists as they were considered to be too political (...) Being seen as 'advocates' pressing the case for one particular group or outcome is likely to damage the still fragile position the social sciences have in this context..." (Steins et al. 2020)

Others call for MSS to contribute to policy and management in a way that balances practical contributions with critical social scientific analyses (e.g. Kraan & Linke 2020). Scholars propose diverse practical contributions that can be taken up by marine policy and management, such as indicators, policy briefs and finding policy champions. In addition, some aim to transform MSS institutionally. For example, the MarSocSci network was explicitly developed to highlight the field's visibility to policy-makers and marine managers.

Epistemic Commitment 3: Engaging Seas and People

The third EC – engaging seas and people – is motivated by the scenario that changing "humanity's relationship with the ocean" is key to protecting maritime worlds (cf. UNESCO 2021). There are different visions about which scholarly approaches are best suited to reach this goal. Some advocate for transdisciplinary research with academic and non-academic stakeholders and redefine concepts, such as ocean literacy (popular both in MSS and policy) to "ensure [that] the full complexity of soci-

etal relationships with the ocean are recognised" (McKinley et al. 2023: 29). Others call for more fundamental shifts, such as reflecting on "epistemological and ontological asymmetries" present in MSS to foster collaborations among scientists and diverse maritime communities on equal terms (Pauwelussen 2020; cf. Sridhar 2020: 145). Practically, scholars are contributing through diverse societal engagement and education interventions, for example, through visual storytelling, art, fieldwork with diverse communities, and policy briefs.

Comparing Relevance Practices in FPR and MSS

Comparing FPR and MSS, we find some similarities but also differences in the focus and prevalence of dominant ECs, as well as in their reflexivity and contestation. In the following, we outline key differences, and explain these with the fields' socio-historical trajectories and resulting relative autonomy and habitus.

Differences in Focus and Prevalence of Epistemic Commitments

We assess the third ECs to be the most similar in the two fields. Scholars mobilise similar theoretical and methodological approaches, including transdisciplinarity and arts, to engage people with forests and seas. However, we find important differences in the first and second ECs. Although FPR and MSS both investigate human-nature interaction, we see a difference in the fields' basic epistemic orientations. While MSS displays a strong commitment to social justice, FPR appears still primarily oriented to the challenges of forest sector-related professionals. This is reflected in the ECs that we perceive as most prevalent: fostering social justice and participatory governance in MSS, and addressing forest policy and governance in FPR. In FPR, power and participation are primarily examined from a policy science perspective which foregrounds deforestation as the major concern and seeks to make a practical contribution through helping powerful players. MSS scholars, in contrast, primarily foreground the perspective of marginalised coastal communities. Using approaches from critical social sciences, they scrutinise the way marine governance impacts these communities whom they also seek to empower.

In both FPR and MSS, we find research committed to supporting forest/marine management, with scholars seeking to generate actionable knowledge and practical recommendations. However, while management-oriented scholarship has a long tradition and legitimacy in FPR, it is just being established in MSS amid contestations. Some see a stronger focus on management as a risk, compromising the field's widely shared social justice orientation – a concern not actively voiced in FPR. Our analytical observations refer to the *dominant* ECs practised in the two fields. Of course, there are also scholars in FPR who adopt a social justice perspective, just as there are scholars in MSS who conduct political science policy analysis. However, as mentioned above, the prevalence of ECs varies. Moreover, we found a noticeable difference in the extent to which ECs are reflected upon and contested, as outlined below.

Reflexivity and Contestation of Epistemic Commitments

In MSS, scholars actively reflect on and debate the legitimacy of ECs. For example, some scholars contest the field's historic commitment to small-scale fishers. At the same time, scholars committed to marginalised communities critique recent efforts to create policy-relevant MSS scholarship. In response to a public lecture given by a prominent scholar who wishes to support marine management with MSS, another key scholar voiced concerns about implications for social justice:

> "In Europe, fishers and governments don't always see eye to eye and they not only have different knowledge needs but perspectives as well. There is therefore choice in terms of who are we actually trying to help here. Shouldn't we be building up fisher organisations that can bring forward their views more convincingly?" (MSS_2)

The presenter's response shows scholars' aim to negotiate MSS' orientation towards diverse societal actors, whilst lamenting on scholarly agency:

> "Yeah, (*trying to find words*) I think that's a really good point. I mean as I said, you kind of work two ways in two worlds (...) So building these bridges two ways. (...) we kind of work within projects. (...) As an applied researcher, a contract researcher, you also need to be aware of that, I think." (MSS_1)

A discussion session at the policy day preceding the conference illustrates how the MSS community debates who management focused MSS scholarship should orient to. The plenary session aimed to bring diverse actors with stakes in marine management into dialogue, also exploring power differentials between them. Six chairs were placed next to each other, and four actors – a policymaker, a small-scale fisher, an NGO representative and an activist – were invited to occupy the four chairs in the middle. The fifth chair was reserved for the ocean itself, which was to be an actor in this discussion, and the sixth chair was open for all conference attendees: an explicit effort to foster debates and discussion. In informal discussions following the session, lively debates took place about diverse actors' right to speak for the ocean.

Scholars also debate the desired normativity of MSS scholarship. For example, while some argue for more 'objective' and less 'political' MSS to foster its inclusion in marine management, others seek to strengthen the field's focus on social justice toward marginalised communities as a push-back against contemporary marine management. The quote below illustrates a call for scholarship that balances between these poles by strengthening the field's critical heritage whilst producing more policy-oriented scholarship:

> "Summing up, we (marine social scientists) find that now, once we are clearly invited to join the [policy] field, we need both openness and vigilance. (...) This balancing act of problem-solving and critical research (Mahmoud et al. 2018) is not straightforward and requires trust, patience, and time investments…." (Kraan & Linke 2020: 130)

While debates on relevance seem to be a constitutive feature of contemporary MSS, they do not take place to the same extent in FPR. This does not mean that researchers do not discuss future research agendas or how FPR can contribute to society. However, these discussions rarely make ECs explicit or openly challenge the field's underlying orientation to the needs and concerns of forest policy-making and management.

This basic orientation manifests in scholarly discourse at conferences where references and practical contributions to forest policy and management are crucial to demonstrate scientific relevance. This becomes apparent especially in the reactions to studies that fail to provide such references. To give one illustrative example, a scholar presenting research on cultural meanings of forests, who introduced her study as a phenomenological inquiry, was met with the question:

> "What kind of, let's say, scientific knowledge can we get from this research that can help policy-makers, based on these types of aspects to be explored?" (Audience question to conference talk)

The recurrent question of how findings can be used by forest policymakers and managers, even when scholars commit to adopting others' perspectives, reflects a basic orientation to forestry practice that seems to persist as a tacit condition of FPR. Paradoxically, scholars tend to deny this orientation, while at the same time struggling to describe the field's ambitions and relation with practice. When asked whether the field was 'at the service' of forest policy due to the observed focus on applicability, a senior scholar replied:

> "In the past, (...) it was really in the service of politics. We don't do that now, but if, but of course, forest policy science serves that (*3 sec pause*) serves that, wait, well. Of course, wait a minute, that's – that's actually a good question." (FPR_4)

While interviewees predominantly rejected that FPR is 'close' to forest policy, they at the same time found it difficult to articulate alternative orientations of their research.

The question to whom research in the field is aimed at and whose needs it seeks to address appears to be little articulated and actively reflected upon. The practical orientation and the fact that it is taken as a given manifests in the following statement given by another interviewee:

> "We are a field that's very much engaged with social environmental issues, so it's also natural that we always connect to what's the practical issue at hand." (FPR_9)

The case of MSS, however, shows that it can be different: while MSS is also engaged with social environmental issues, it is much less focused on the 'practical issue' at hand; in fact, research oriented to practical concerns of management, for instance, is critically assessed in light of potential implications for broader questions of social justice.

Explaining Variation in the Focus, Reflexivity and Contestation of ECs: Relative Autonomy and Field-specific Habitus

In the sections above, we have shown differences in the focus, reflexivity and contestation of ECs in FPR and MSS. We explain these with two field-specific properties resulting from socio-historical conditions: the fields' relative autonomy and field-specific habitus.

As outlined earlier, FPR and MSS differ with regard to the relative autonomy from both other disciplines and 'external forces', i.e. interested political and economic actors. FPR has developed as a sub-field of forest science, strongly tied to the forest sector. When it later sought to emancipate itself from these ties, it adopted scientific approaches from political science that stressed non-normativity and 'independence' as epistemic virtues. Even though the field has diversified in terms of disciplinary perspectives, these ideals and an underlying orientation to forest practice still prevail (Koch & Tetley 2023). They are internalised and reproduced by key figures, many of whom identify as social scientists but have a background in forest science. A number of professors forming the core of the European FPR community have passed through the same institutions and acquired similar understandings of how science is to be done. Many identify with "purely analytical" science, as a professor put it. Making relevance orientations explicit is still an exception in the field, as it conflicts with the ideal of doing 'non-normative', independent science. Given the disciplinary dispositions of key figures in FPR and their objectivistic understanding of science, reflexivity on whose stakes research addresses is not an inherent feature of field-specific habitus. While manifesting in research practice, ECs are rarely explicated; the field's on-going orientation to the needs and challenges of forest-related practice seems to be part of its doxa, i.e. an undisputed condition.

In contrast to FPR, MSS did not emerge as a sub-discipline of a higher level field, but from an epistemic community of social scientists concerned with human interactions with seas, who adopted a rather critical stance towards existing marine-related policy and management. Despite current attempts to strengthen ties with the latter, MSS seems to enjoy a higher degree of autonomy allowing members to negotiate research agendas and practises independent of external norms and expectations. The disciplinary composition of dominant scholarly networks also differs from FPR. The founders of the MarSocSci network are interdisciplinary social scientists with backgrounds in biological and environmental sciences. They aim to promote "social science as the gateway to embedding wider societal views and values into policy and management" (MarSocSci 2023), which resembles a core ambition of FPR. The founders of the MAST journal and current board members of the MARE network, in contrast, are skewed towards anthropology, where the value of reflexivity has been emphasised for decades (Salzman 2002). They actively foster opportunities for MSS scholars to debate what they deem to be good and relevant scholarship, such as the value of critical, applied, policy-focused and theoretical science. This is reflected, most notably, in the recent Manifesto and invited commentaries (Bavinck & Verrips 2020). MSS scholars trained in anthropology and critical social sciences actively attempt to foster debates about the epistemological and social values associated with scientific practices (e.g. Scholtens & Bennett 2020). Comparing MSS and FPR, we

theorise that the fields' socio-historical trajectories and resulting relative autonomy and field-specific habitus are decisive properties shaping the extent to which ECs are explicated, reflected and contested.

Discussion and Conclusion

In this paper, we have explored relevance in MSS and FPR, two interdisciplinary fields studying human interactions with seas and forests, respectively. Similar in terms of their thematic interests and the diversity of social science perspectives they apply, they show noticeable differences in the focus and prevalence of dominant epistemic commitments (ECs) as well as their reflexivity and contestation: While in MSS, relevance orientations are actively negotiated and openly contested, they are rarely explicated or reflected upon in FPR. Using Bourdieusian theory, we explain this variation with the fields' relative autonomy and disciplinary habitus resulting from their socio-historical emergence.

We see the results of our comparative analysis as potentially valuable for different emerging strands of science studies: First, with a view to research on relevance, our study provides a theoretically grounded analytical perspective for studying and understanding why practices in scientific fields differ. Previous research on relevance has explored the development of relevance regimes with a focus on agents and how they, embedded in specific institutional contexts, create relevance by assigning worth to specific matters (e.g. Falkenberg et al. 2023; Granjou & Arpin 2015; Sigl et al. 2023). Our study highlights the impact of field properties on their relevance practices, thus shifting the spotlight to field-specific structural conditions that shape not only what comes to matter in a field, but also the extent to which this is actively discussed or largely undisputed. Further, the empirical findings from FPR indicate that relevance is not always a 'reflexive' commitment in a given field but may also be more of a tacit assumption and part of its doxa.

Second, our study contributes to scholarship that employs and advances Bourdieusian theory for investigating the formation of interdisciplinary and transnational scientific fields (Hess 2011; Panofsky 2011; Steinmetz 2017; Timans et al. 2019). It points to the potential of examining how field properties such as relative autonomy and habitus emerge from particular historical contexts and affect epistemic practices (Krause 2018; Schmidt-Wellenburg & Bernhard 2020). While we adopted a horizontal lens by comparing two transnational fields that have a lot in common yet differ with regard to these properties and practices, a field theoretical lens also enables multiscalar investigations – for instance, asking how relevance practices within one field may differ in national or regional contexts, and which become dominant at transnational or global levels (Krause 2020). Such analyses would also illuminate power dynamics emerging from how capital is distributed among field members and specific groups across scales, which affects whose stakes come to matter.

Due to the limited scope of this paper, our analysis has not delved deeper into the aspect of power although it is central for Bourdieusian thought.[8] In fact, it set a

[8] We thank one of the reviewers for making this important point.

focus on the 'powerful' in the studied fields: we sketched their emergence by tracing the formation of international networks and (English-language) journals; we reconstructed ECs prevailing in international scientific discourse from contributions of scholars who publish in them, hold positions in key networks and perform roles in core scientific events. The ECs we have described thus reflect relevance orientations enacted by established if not dominant actors operating in the transnational spaces of the studied fields. We have not explored in this study what Bourdieu would call 'subordinate' actors, i.e. scientists who have just entered the field, may develop heterodox positions and challenge prevailing relevance orientations. We see some indications that this is happening in both fields – for instance, through new networks emerging at national and regional levels that seek to foster hitherto underrepresented perspectives (like the MarSocSci research network in MSS, or a German network for sociological forest research established in 2023). Future research could follow such developments to examine how and under what conditions they may be able to diversify or even transform epistemic practices and relevance orientations, and thereby also reshape disciplinary power relations within the fields.

Finally, aside from contributing to different strands of science studies as sketched above, we hope that the insights from this study will inform recent debates going on in MSS and FPR and help them reflect on explicit and implicit relevance orientations underlying research in the fields. We argue that contestations around ECs can be beneficial for a discipline and actively fostered, for example through venues where different understandings of and approaches to relevance can be articulated, communicated and staged (e.g. publications, conferences, scholarly networks and discussion events). These can help scientific communities to collectively (re-) orient research to an increasing diversity of societal actors and their stakes.

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Authors and Affiliations

Susanne Koch[1,2,3] · Judit Varga[2]

✉ Susanne Koch
susanne.koch@tum.de; s.koch@cwts.leidenuniv.nl

Judit Varga
j.varga@cwts.leidenuniv.nl

[1] Technical University of Munich, TUM School of Social Sciences and Technology, Department of Science, Technology and Society, Chair of Sociology of Science and Technology, Munich, Germany

[2] Leiden University, Centre for Science and Technology Studies, Leiden, The Netherlands

[3] Stellenbosch University, Centre for Research on Evaluation, Science and Technology (CREST), Stellenbosch, South Africa