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REVIEW

Introductory commentary: Marine conflicts and pathways to sustainability in an era of Blue Growth and climate change

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Abstract

Worldwide, marine conflicts are growing in frequency and intensity due to increasing global demands for resources (Blue Growth) and climate change. This article introduces a collection in *Maritime Studies* on marine conflicts and pathways to sustainability in an era of Blue Growth and climate change. We posit that while conflict can be problematic, it can also play a positive role in bringing about societal change, by highlighting unsustainable and unjust practices and be a trigger for sustainability transformation. However, left unattended, festering marine conflict can hinder just and equitable sustainability transformation. We present two distinct, yet arguably complementary, lenses through which researchers working with sustainability engage with marine conflicts. First, a social-ecological systems approach engages in conflicts by examining the interdependencies between human and ecological systems and related governance arrangements, promoting collaborative learning and action, and exploring adaptive governance strategies that seek sustainability conflict resolution. Second, a political ecology approach addresses conflicts by examining power dynamics and resource (mal)distributions, arguing for fair governance, and emphasizing the need to address historical and current injustices that are at the root of conflicts. Next, we present insights on diverse sustainability transformational pathways, including the importance of searching for common ground and the need for the reconfiguration of power relations as key steps to understand and inform sustainability conflict research. We conclude by indicating that more sustainability research in marine conflict settings is needed and by forwarding intersectionality as a promising approach to productively reframe and disrupt the debilitating effects of deep-rooted marine sustainability conflicts.

Keywords Marine conflict · Sustainability pathways · Blue growth · Marine governance

Introduction

Worldwide, conflicts over marine environments are growing in frequency and intensity (Spijkers et al. 2019). This is primarily due to climate change and the increasing industrialization of the marine environment (Cohen et al. 2019; Flannery et al. 2019) sparked by increasing global demands for resources (Blue Economy/Growth) (Bennett et al. 2021; Blythe et al. 2021) [1]. As the emphasis on the role of Blue Growth suggests, marine conflicts are often incited by the introduction of new activities (e.g., marine energy exploitation and installation or conservation management), which may be perceived as incompatible with other interests, values, goals, and uses (Tafon et al. 2022) and/or lead to new enclosures or even privatization of ocean spaces (Weir and Kerr 2019). For example, new economic interests and powers often do not recognize customary

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[1] While there are numerous and diverse research-based and institutionalized definitions of Blue Growth (also sometimes referred to as the Blue Economy—see Silver et al. (2015) and Martínez-Vázquez et al. (2021) for a nuanced discussion on this)—some emphasizing multidimensional sustainability goals alongside economic growth and others that essentially see Blue Growth as economic growth in marine areas—see Bennett et al. (2021) for a more comprehensive discussion on this.

fishing rights and might exploit opportunities in conditions where rights are not formally recognized by states (Grip and Blomqvist 2020). Conflict at the procedural level can result from the non-recognition of rights and values, particularly in instances where ocean and coastal governance goals and priorities are established (Tafon et al. 2019).

Prior to the emergence of Blue Growth as a driving force, the ocean was already awash in long-standing conflict between activities like fisheries, marine conservation, coastal tourism, and oil and gas exploration (Chuenpagdee and Jentoft 2015; Arbo and Thủy 2016; Dahlet et al. 2023). Irrespective of driving forces, ocean and coastal conflicts can appear at different rates and intensities and are usually expressed as competition over resource use and space. Yet, these conflicts are not simply economic struggles over the distribution of benefits and costs; they variously involve struggles over contending values, identities, ways of knowing, access and control, ownership, sovereignty, rights, terms of use, human-nature relationships, and alienation of coastal and indigenous communities/social groups (Arias Schreiber and Gillette 2023; Boonstra et al. 2023; Knol-Kauffman et al. 2023; Martins et al. 2023; Sowman et al. 2023; Tafon 2019; Tafon et al. 2023). In short, these conflicts raise serious concerns around sustainability ideals, livelihoods, and people's autonomy (Alexander 2020). Moreover, they can manifest as transboundary clashes between states or geopolitical concerns (Daniels and Mitchell 2017; Tafon et al. 2022) as well as contests over whose knowledge/access rights count in the governance of fish stocks (Arias Schreiber and Gillette 2023), or how to balance between recognition of local values and ways of living and strategic plans to increase mining activities (Arias Schreiber and Gillette 2023; Sowman et al. 2023) or renewable energy capacity (Knol-Kauffman et al. 2023; Tafon et al. 2023).

Distinct for conflicts in our time is that they are all influenced by climate change. Climate change and resultant changes in socio-marine conditions can be seen as a contributing or even necessary factor to the emergence and/or exacerbation of conflicts. This variously occurs through the effects of climate change policy mitigation projects, such as developing offshore wind energy capacity (Tafon et al. 2023), seabed mineral extraction (van Putten et al. 2023), marine biodiversity loss, socio-natural disruptions through intensified coastal erosion, heightening of existential threats to societies through inundation from rising sea levels, and adverse effects on livelihood activities because of changing marine conditions (Frazão Santos et al. 2020; Oppenheimer et al. 2019).

The exacerbation of existing conflicts and the generation of new ones risk perpetuating social and environmental injustices (Bennett 2019), marginalization of vulnerable groups (Blythe et al. 2021), non-recognition of distinctive eco-cultural marine relationships (Arias Schreiber and Gillette 2023; Martins et al. 2023; Ntona and Schröder 2020; Tafon et al. 2023), privatization of marine common natural resources, obstructing attainment of conservation objectives (Bellanger et al. 2020), and pressure on the marine environment through multiple uses (Jentoft and Knol-Kauffman 2014), among others. Festering conflict can thus reduce the potential for just and equitable transitions to sustainability. A lack of productive ways of dealing with latent and active conflicts might also generate political inertia. It may hamper or obstruct blue economy developments that are compatible with other interests, values, needs, etc. (van Putten et al. 2023). So, conflict may also be able to play a positive role in bringing about societal change (Temper et al. 2018a, b). It can highlight unsustainable and unjust practices, question existing or emerging practices and regulations, and be a trigger for transformation (Alexander 2020; Knol-Kauffman et al. 2023; Sowman et al. 2023; Tafon et al. 2023). Conflict may thus be a catalyst for innovations that lead to more sustainable practices. It may also supply entry points for organizing and uniting communities, confronting injustices, challenging unfair decisions, and if properly leveraged, leading to more equitable and sustainable outcomes (Temper et al. 2020).

While coastal and marine governance regimes, such as Marine Spatial Planning and before this, Integrated Coastal Zone Management, have been adopted in many parts of the world to foster intersectoral and transboundary cooperation, and promote a more integrated approach to sustainability and address conflict, the evidence thus far is ambiguous about how effective these approaches have been in preventing, resolving, or transforming conflict (Tafon et al. 2019), let alone engendering or realizing sustainability, well-being, and social justice (Saunders et al. 2020). The predominant reality has been the facilitation of blue economic growth (Jones et al. 2016), while trying to manage environment:use and use:use tensions and incompatibilities (Tafon et al. 2022)[2]. In light of this past experience, transforming marine governance regimes to enable mitigation of the negative effects of conflicts on social justice and sustainability and to reorient relations towards more sustainable trajectories requires insights into (1) the different types of conflict that exist and how these relate to social and environmental sustainabilities; (2) the social, historical, and environmental conditions in which they originate and persist; (3) the heterogenous stakeholders and institutions that are implicated in how the problem is being experienced, represented, and perpetuated; and (4) the options for anticipation, mediation,

[2] We acknowledge that there are currently numerous studies examining prospects of positive synergies between different marine uses (i.e., co-location, multi-use, etc.) but more critical empirically informed research is needed to understand the circumstances under which such positive synergies can be realized in a practical, fair, and sustainable manner.

intervention, resolution, and/or transformation of conflicts (Alexander 2020; Bellanger et al. 2020; Tafon et al. 2022). Therefore, a key aim of this *Collection* is to examine the complexity of marine conflicts, their relationship to environmental sustainability and social justice challenges, and possible transformative alternative pathways. In this contribution, we explore different ways in which ocean conflicts are conceptualized and studied, drawing on broader debates over the potential contribution of resolution and transformation approaches to conflict.

Different ways of thinking about marine sustainability conflicts

While there are many ways to detect and characterize marine conflicts and potential transformative pathways, we briefly highlight two widely used ways in sustainability science research: social-ecological systems (SES) and political ecology (PE). These two approaches offer distinctive but overlapping and complementary ways of understanding conflicts. The publications in this *Collection* do not neatly fall into SES or PE categories, but several of the papers draw on concepts and strategies from these two prominent ways of thinking about marine sustainability conflicts. Here we briefly introduce readers to key insights into conflicts drawn from these two approaches.

Insights from social-ecological systems (SES)

SES considers social and natural systems as coupled, self-organizing, and co-evolving systems that interact at multiple temporal and spatial scales (Folke et al. 2005; Ostrom 2009; Ribeiro et al. 2013). When environmental change occurs through different natural and human systems, this leads to tradeoffs and opportunities in natural resource use, and can lead to conflicts (Alexander 2020; Dahlet et al. 2023; Spijkers and Boonstra, 2017). Conflict can emerge from a particular combination of social and ecological actors and institutions between and across system levels and dimensions (Boonstra et al. 2023; Dahlet et al. 2023) each with their own definitions of sustainability (Fisher & Rucki 2016).

The SES literature has built relevant connections to governance and natural resource management, which has led to a better understanding of the drivers of conflicts and their management options (Rockström et al. 2014; Stepanova and Bruckmeier 2013). Ratner et al. (2013) provide a relevant framework on collective action, conflict prevention, and social-ecological resilience, in which local stakeholder dynamics are linked to institutional and governance contexts. SES also demonstrates how conflict can open opportunities to transform to a more desired and resilient social-ecological system, incorporating adaptive governance and self-organization (Dahlet et al. 2021; Folke et al. 2005; Van Assche et al. 2022). Others have focused on how conflict can stimulate learning processes to build resilience in response to ecological crises (Galaz 2005). SES offers relevant methodological insights that can be adapted to marine contexts (e.g., Mosimane et al. 2013). While Boonstra et al. (2023) outline process tracing as a method to better understand the causal mechanisms that drive conflicts in marine socio-ecological systems, Dahlet et al. (2023) emphasize a more general need for marine social science to challenge itself methodologically and learn from broader conflict studies including SES.

Although SES has received critique for the relative lack of conceptualization and analysis of social problems (Olsson et al. 2015), such as poverty and inequity, insights through key concepts like resilience, ecosystem services, sustainability, governance, and adaptation are relevant in the study of marine conflict in times of environmental degradation and climate change (Herrero-Jáuregui et al. 2018). Resilience, for example, has been used to analyze disruptive processes, such as shock and conflict, and how these can be handled in productive or transformative ways through trust-building dialogues, mobilization of social networks, coordination, collaborative learning, and the creation of public awareness (Folke et al. 2005; Van Assche et al. 2022). Social memory of past changes in ecosystems plays a key role in relation to the adaptive co-management of resources, and where conflicts might prevail (ibid.). Some of the key literature on understanding conflicts from SES studies ranges from conflict over nature resource use in a changing landscape (anthropogenic or natural) and needs systems thinking to understand coupled human-nature relationship and dynamics (e.g., McGuire and Ehlinger 2018). SES literature has stressed the need for adaptive governance to address conflicts, thus putting into focus who makes decisions, how and why, and who are the actors that govern and shape the process of natural resource governance (Aysan et al. 2023). SES scholars have also engaged with conflict as an opportunity to understand and cultivate productive relationships between shock, conflict, and social learning in order to build more resilient social-ecological systems (Dahlet et al. 2021; Van Assche et al. 2022).

Insights from political ecology

Political ecology, a field of study and action concerned with environmental justice, sees the marine environment as an arena of contested claims, values, entitlements, knowledge, and cultural meanings (Alexander 2020). Conflict has always been central to the field of political ecology studies (Martinez-Alier 2003; Robbins 2019; Watts 2004). This is not surprising, given PE's focus on the intersection of marginalized communities/social groups and socio-environmental

justice. A central empirical concern for PE is the way that local politics are played out regarding access to, and control over, resources (Bryant 1998: 82; Martins et al. 2023; Sowman et al. 2023; Tafon et al. 2023). This focus on contemporaneous and spatially located conflicts around resource access and control, however, needs to be located in an examination of the broader context of historical relations and political economy (Gallardo et al. 2017; Sowman et al. 2023; Tafon et al. 2022).

Conflict transformation scholars (working in or inspired by the peace and conflict studies field, such as Lederach (2005), Scheidel et al. (2018), (Temper et al. 2018a), and Tafon et al. (2023)) argue that socio-ecological conflict[3] is not always deleterious, as it can represent a first step towards transformation for sustainability if properly leveraged. That is, concepts of conflict and possible sustainable transformative alternatives are tightly interlocked. This perspective argues that the dominant conventional approach to conflict scholarship—both analysis and resolution action—is overly technocratic and shallow and therefore ineffective for supporting sustainability transformations (Tafon et al. 2022), at least to the extent that it pays insufficient attention to historical context and the way that power operates in different modes and at multiple scales to create inequities across class, gender, communities, etc. The claim here is that transforming conflict requires deeper and more profound consideration of the history of the interaction of the groups involved, delving into root causes (including unaddressed historical injustices that shape current power dynamics (Bennett 2019; Sowman et al. 2023; van Putten et al. 2023)), knowledge coloniality (Kothari 2014), and how legal frameworks, market dynamics, and governance arrangements (Gallardo et al. 2017; Tafon et al. 2023) may be exacerbating material and ecological injustices and the nonrecognition and exclusion of sociocultural and biocultural values (Schreiber and Gilette 2023).

This multidimensional approach to analyzing and engaging in conflict settings reflects an emergent academic activist orientation in PE and environmental justice scholarships to co-create, together with marginalized communities and societies, movements that aim "to make their resistance more effective, proactive and transformative" (Batterbury 2018; Loftus 2015; Leach 2015; Tafon et al. 2023; Sowman et al. 2023; Temper et al. 2018a: p. 749). From this perspective, political ecology and environmental justice scholars are typically skeptical toward any a priori, unchecked claims of consensus, as the latter often masks or covers over dissenting voices and forms of resource maldistributions, procedural injustice, and misrecognition of socioenvironmental rights, identities, and values. This is not to claim that consensus-driven negotiations are necessarily maligned in and of themselves. Indeed, consensus and disagreement are both always present and/or possible in conflict contexts, but in this critical perspective how researchers, practitioners, and various actors engage with and interpret them is a matter of historical conditions, socioenvironmental interactions and power, and different standpoints vis-à-vis multidimensional justice and sustainability goals.

Exploring opportunities and leverage points to transform conflicts towards sustainability

Recent shifts in sustainability science urge researchers to go beyond critique of the current situation (but be informed by it) and in collaboration with affected and affecting actors engage in and make judgements about the possibilities for sustainability change processes (including evaluating alternatives and how they might be realized) (Harnesk and Isgren 2021; Plummer et al. 2022; Turnhout et al. 2020). In these research approaches, which are variously referred to as transdisciplinary or co-production research, collaboration with diverse societal actors directs and informs knowledge generation linked to transformation possibilities (Martins et al. 2023). The articles in this *Collection* and the brief presentations of SES and PE approaches above show that understanding and leveraging pathways for ocean conflict transformation necessitate consideration of proximate and remote (time/place) causes and drivers, including resolvability issues related to historical injustices, conflicting frames, values, knowledge, and imbalanced power relations. Articles in the collection center on ways to better understand marine conflicts (Boonstra et al. 2023; Arias Schreiber and Gillette 2023), how to scale up contextualized case-study conflict research insights (Glaser et al. 2023), and how actors embroiled in conflicts use sustainability as a frame of reference for discussing possible and desirable futures and opportunities to forge pathways towards social and ecological sustainability, with a focus on the struggles and agency of grassroots movements (Sowman et al. 2023; Tafon et al. 2023).

All the articles in this *Collection* insist that productive conflict engagement needs to consider a wide range of marine values, relationships, needs, and interests—beyond merely striving for narrowly framed, strategic interests. Furthermore, a more inclusive approach can have positive results by leading to new questions that can open up ways to reconfigure and foster relations supportive of fruitful interactions centered on overlapping notions of sustainability. While it is vital to consider remote drivers (time/space) of sustainability problems, placed-based engagements through co-production of knowledge approaches offer

[3] Which here we equate with marine conflict over resources/territory, environmental change, or marine policy.

ongoing ecological and social learning in support of fertile opportunities for political engagement and deeper questioning around situated sustainability challenges and questions (Dobson and Eckersley 2006). Related to the importance of studying cases to derive contextualized understandings of conflicts, Glaser et al. (2023) examine research design and methodological problems about how to generate actionable knowledge through a cross-case analysis.

As a number of the articles in this *Collection* emphasize, at the heart of marine conflict is that multiple actors have either implicitly or explicitly different framings of sustainability (Arias Schreiber and Gillette 2023; Knol-Kauffman et al. 2023; Sowman et al. 2023; Martins et al. 2023; Tafon et al. 2023). Some framings are given precedence over others in political wrangling over contested pasts, current situations, and imagined and aspired to futures (van Putten et al. 2023). Important to note here is that various framings in marine conflicts are likely to be underpinned and informed by differentiated material and sociocultural experiences, rights, needs, aspirations, and biocultural relations (Sowman et al. 2023; Tafon et al. 2023; van Putten et al. 2023). Drawing on these various framings, we argue that recognizing underpinning positionalities, meaning, and experiences, and searching for overlapping or mutual sustainability ground, are important steps to understand and inform the transformation of conflicts. Moreover, sustainability transformation in conflict settings is likely to require reconfigurations of power supported by instantiating such change in enabling institutional arrangements, including legal recognition and rights (Sowman et al. 2023). From this very cursory discussion of a rich debate, it is clear that any conceptualization of sustainability involves consideration of past and current injustices, a search for common ground about what constitutes sustainability in particular conflict contexts and a (re)balancing of governance arrangements that can adapt to social and environmental changes. Pathways to sustainability are likely to involve a diverse range of actions to address historical and contemporary differences and tensions, from protest action to more deliberative approaches thereby implying that "different combinations of approaches, concepts and tools will be appropriate for different issues and different settings" (Leach et al. 2007, p. 12).

Final remarks and the need for additional research

While the contributions in this *Collection* cover many of the key challenges and issues associated with marine conflict and ways to transform it, this is a crucial topic in sustainability science that requires further work, not least to advance aspirations of the Decade of Ocean Science for Sustainable Development. Making marine conflict and transformation pathways a more prominent topic in sustainability research is particularly vital if, as some argue, sustainability (and its institutionalization as sustainable development) is an inherently contested concept (see Connelly 2007; Jacobs 1999; Hallin et al. 2021; Hopwood et al. 2005; Morrow and Mowatt 2015; Saunders 2015) that is subject to divergent interpretation and appropriation in practice. It then becomes vitally important to examine how uneven historical and contemporary power relations and societal inequalities shape contests over marine sustainability. Equally vital is how these relations and institutions can be productively reconfigured to deliver more just and sustainable conditions in the turbulent and uncertain times of climate change, which is occurring alongside an unprecedented ocean rush and related industrialization.

Intersectionality is one promising but underutilized perspective that can show how the complex interplay of social, economic, cultural, and environmental aspects is implicated in creating, multiplying, and/or intensifying ocean sustainability conflicts. Most saliently, an intersectional perspective can grasp how gender, class, ethnicity, age, and other relevant factors intersect and overlap to gain insights into how power relations are manifested in shaping marine sustainability conflicts and possibilities for their equitable, inclusive, and effective transformation (Kaijser and Kronsell 2014). With its roots in radical theory and with a focus on marginalized peoples, intersectionality provides a solid foundation to de-emphasize positivist methodologies, challenge and renegotiate hegemonic and often colonialist epistemologies and ontologies, to disrupt and redefine essentialist and often anthropocentric frames of human-nature relationality, and to pursue just sustainability transformations at the intersection of cross-scalar, spatio-temporal, cross-sectoral, multi-stakeholder and, multispecies analysis (Mikulewicz et al. 2023). Furthermore, applying intersectional analysis within transdisciplinary research frameworks can enhance interventions aimed at addressing various marine sustainability conflicts. This work may involve dealing with sensitive and difficult issues, especially in long-standing conflict situations in marine environments. However, by carefully connecting analytical insights to practical and actionable knowledge using co-production research methods, it may be possible to strengthen effective intervention efforts suited for the specific marine conflict situation being examined. This can be done through various knowledge:action focuses, including legislative/policy reform (e.g., striving to secure recognition of rights), advocacy (actions that enhance the relational power of marginalized groups), and building collaborative alliances (promoting solidarity among different groups).

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Declarations

Conflict of interest The authors declare no competing interests.

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