



Relationships Matter: Assessing the Impacts of a Marine Protected Area on Human Wellbeing and Relational Values in Southern Tanzania

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The push to meet global marine conservation targets has significantly increased the scope and scale of marine protected areas (MPAs) worldwide. While the benefits derived from MPA establishment are often optimistically framed as a “win-win” for both marine biodiversity and for the wellbeing of coastal peoples, this assumption is challenged for several reasons, including the fact that current science and practice frequently fails to account for the full impact of MPAs on human wellbeing. This context poses a danger that the context specific, place based aspects of wellbeing, like relations to others and the marine environment, will not be accounted for, examined, or reported in evaluation and decision-making processes. To address this challenge, this research investigates how MPA implementation can change and challenge the relational wellbeing and relational values of small-scale fishers (SSFs) living in Mnazi Bay-Ruvuma Estuary Marine Park, Tanzania. Fieldwork occurred over 2019–2020 and used qualitative data collection methods, including: 140 semi-structured interviews, document analysis, and observation. Results highlight a dynamic interaction between the MPA and SSFs relational wellbeing, including how relational values inform everyday fishing practices, cultural and place identities, as well as interactions with others and connections to the marine environment. Top-down approaches used in MPA development worked against key relational values, including social cohesion, reciprocity, place, agency and self-determination to dismantle and disrupt the practices SSFs viewed as fundamental to their livelihood and collective wellbeing. Our findings serve as a starting point to better recognize the context specific factors that underlie relational wellbeing and give insight into how relational values shape social-ecological complexity within coastal communities. The paper highlights how the international marine conservation community can better account for and foster relational wellbeing and relational values to achieve the goals of both human wellbeing and marine biodiversity conservation.

Keywords: human wellbeing, relational values, marine protected area, small-scale fishers, conservation

INTRODUCTION

The push to meet global marine conservation targets has significantly increased the scope and scale of marine protected areas (MPAs) worldwide (Jones et al., 2013; UNEP-WCMC et al., 2018; Ban et al., 2019). While the benefits derived from MPA establishment are often optimistically framed as a “win-win” for both marine ecosystem health and for the wellbeing of coastal peoples, this assumption is challenged for a number of reasons, including the fact that current assessments of MPA outcomes frequently fail to account for the full impact of MPAs on human wellbeing (Spalding et al., 2016; Agrawal et al., 2020; Waldron et al., 2020). Instead, researchers often focus on a few easily quantifiable indicators in the economic and material domains, such as household income or catch per unit effort (Ban et al., 2019; Rasheed, 2020). This situation poses a danger that context-specific, place-based aspects of wellbeing, such as social relations and connections to the marine environment, will remain unaccounted for within decision-making processes because they are neither examined, nor reported (Sterling et al., 2020).

A rich literature exists across the social sciences on how to measure and understand human wellbeing using an array of approaches and frameworks deployed at different scales (Gasper, 2007; Gough and McGregor, 2007; White, 2010; Breslow et al., 2016; Johnson and Acott, 2018). While there is no unified definition of human wellbeing, it is generally agreed that it consists of at least three mutually reinforcing and co-constituted material, subjective, and relational dimensions (Ransome, 2010; Coulthard, 2012; Leisher et al., 2013; Beauchamp et al., 2018). In this article, we ascribe to McGregor’s definition of wellbeing that describes it as “a state of being with others and the natural environment where human needs are met, where one can act meaningfully to pursue one’s goals and where one enjoys a satisfactory quality of life” (McGregor, 2008, p. 1). Within this view, wellbeing is described as a state, or condition that is fundamentally tied to (among other things) healthy and productive relationships with the human and non-human components of the social-ecological system and that is constructed through socially and culturally dynamic processes (Sen and Anand, 1997; Deneulin and McGregor, 2010; McGregor and Summer, 2010; White, 2010; Atkinson and Joyce, 2011; Chan et al., 2016). Accordingly, in this article, we argue that the relational dimension of wellbeing can be defined as a dynamic condition that emerges from relationships themselves, the qualities of those relationships, as well as the (held) values associated with each relationship.

In thinking about the continuous construction of one’s relational wellbeing, we also draw on insights from the emerging literature on relational values to express the nature and qualities of key relationships that are constitutive of “the good life” (Jax et al., 2018). The concept of relational values encompasses a range of values fundamental to relational wellbeing and can be described as the “preferences, principles, and virtues associated with relationships both interpersonal and as articulated by policies and social norms” (Chan et al., 2016; Himes and Muraca, 2018; Jax et al., 2018; Stålhammar and Thorén, 2019). When the concept is tied to process-oriented, context specific approaches

to understanding relational wellbeing, relational values become rooted in place and can be employed to describe the diversity and qualities of relationships that underlie one’s wellbeing (Caillon et al., 2017; Muradian and Pascual, 2018; Stenseke, 2018; Skubel and Shriver-Rice, 2019). Relational values can, at least in part, be seen through the practices and actions taken to construct, secure and reinforce one’s state of wellbeing. We refer to these practices and actions as “expressions.” This includes how people and collectives make choices, behave, relate, and interact with others and the environment (De Vos et al., 2018; Stenseke, 2018; West et al., 2018; Gould and Pai, 2019). In this article, we primarily focus on the contribution and dynamics of social relationships to human wellbeing.

Social science research in fisheries has recognized a diversity of relationship types and qualities can influence a person’s wellbeing and fishing behavior, for example, relationships of obligation, support, dependency, reciprocity, or exploitation (Coulthard et al., 2011; Coulthard, 2012; Chan et al., 2016; Klain et al., 2017; Johnson and Acott, 2018). Within the context of marine and coastal communities, one’s relational wellbeing is also influenced by the interactions among individuals and families, fish buyers, boat crews, relevant government authorities, and other international actors. These social relationships are shaped by other factors such as age, wealth, gear type, ownership structures, patron-client ties, and fishing capacity (Walley, 2010; Jadhav, 2018). As such, the range relational values and the ways they are expressed varies across stakeholders, scales, and through time (De Vos et al., 2018).

For example, fishing is frequently valued for the sense of belonging and social cohesion it encourages – two factors seen as fundamental to the construction of one’s wellbeing (Fearon et al., 2009; Leisher et al., 2013; Ishihara, 2018). Practices that help reinforce social cohesion may include, for example, teaching children to fish using the same techniques used by their ancestors. In turn, this can foster processes of learning and knowledge exchange, intergenerational interactions, as well as the transmission of local ecological knowledge, which contribute to social cohesion and to one’s place identity. Similarly, fishing can be valued by a community by promoting conformity to social norms associated with maintaining key relationships, such as the norms expressed through reciprocal practices, such as non-monetary exchanges, like gift-giving and the sharing of (sea)food (Song et al., 2013). Fishers often follow rules based on reciprocity, an important social response in contexts of uncertainty, to gain access to fishing grounds and the benefits associated with participating in the fishery. In turn, this can strengthen social relations, social cohesion and kinship bonds – fundamental aspects of relational wellbeing (Crona et al., 2010; Poe et al., 2014; Idrobo, 2018).

Similarly, both agency and the right to self-determination have long been shown to be central to the construction of human wellbeing and are particularly important to relational wellbeing (Sen, 2007; Deneulin and McGregor, 2010; Breslow et al., 2017; Quimby and Levine, 2018; Sheremata, 2018). The importance of self-determination can be expressed as a relational value through the lens of governance and decision-making (Sheremata, 2018). In small-scale fishing communities, creating and maintaining

the opportunities for fishers to speak and responsive governance systems that listen, learn, and respond to these voices support and reflect the value of self-determination by promoting feelings of agency in decision-making processes (Ribot and Peluso, 2003). In turn, meaningful participation contributes to one's relational wellbeing by enhancing perceptions of empowerment.

MPAs, like other conservation interventions, can change and challenge social relations and connections to the marine environment by applying new decision-making processes and rules of access, through the distribution of costs and benefits, or by prioritizing scientific knowledge over local ecological knowledge (Woodhouse et al., 2015). Such processes can interfere with the practices and activities (expressions) that support relational values and ultimately work to undermine relational wellbeing. This context can foster negative feelings toward marine conservation and can ultimately lead to the failure of the MPA. Despite the importance of relationships to human wellbeing, however, they are rarely accounted for in marine conservation interventions (Breslow et al., 2016; Hicks et al., 2016).

To begin to illustrate the importance of this gap, this research examines SSF communities living in Mnazi Bay-Ruvuma Estuary Marine Park (MBREMP), in southern Tanzania. Tanzania is home to nearly 55 million people and offers a good location to study the relationships between wellbeing and MPAs for several reasons. While the link between biodiversity conservation and poverty are complex and debated, it is widely agreed that poor and marginalized groups are highly dependent on the quality of, and access to, their surrounding environment to secure key aspects of their wellbeing and livelihood (Roe et al., 2013; Brockington and Wilkie, 2015). The World Bank estimates that roughly half of Tanzanians live at, or below, the poverty line of \$1.90 USD per person per day (World Bank, 2017). Additionally, the specific study site of MBREMP is located in the region of Mtwara, which is historically one of the more marginalized and impoverished regions of Tanzania, with rural communities having a high dependency on their surrounding natural resources (Liebenow, 1971; Malleret and Simbula, 2004; Mangora et al., 2014; Raycraft, 2016).

Tanzania also offers a good location to study the impacts of MPAs on relational wellbeing because of its lengthy history of conservation and development interventions. Tanzania has approximately 41% of its terrestrial and marine environments under some form of protection (UNEP-WCMC, 2021). **Figure 1** illustrates the geographic extent of protected areas in Tanzania, as well as MBREMP's location in the southern region of Mtwara. It also has an extensive coastal and marine environment recognized as one of the most biodiverse and "pristine" regions in the Western Indian Ocean, which has long been targeted by international actors for marine conservation programs (Mangora et al., 2012). Likewise, fishing in Tanzania is an essential livelihood activity, generating food and income, and plays an important role in social relations and cultural identity of coastal communities (Katikiro et al., 2013).

In this context, this paper draws on the concept of relational values to examine the impacts of MPA implementation on SSFs relational wellbeing. The research objectives of this paper are to: (1) Identify and describe the expression of key relational

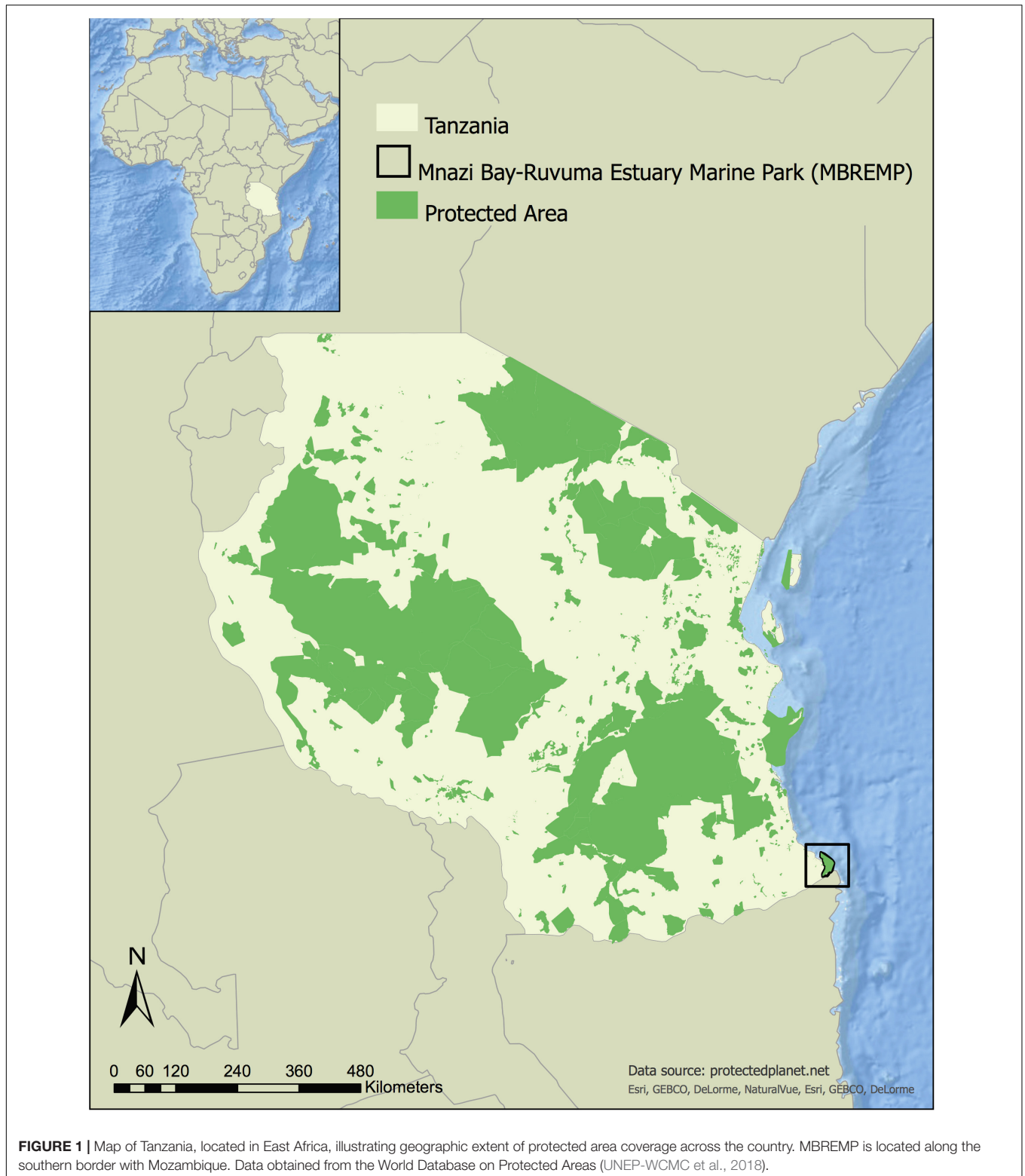
values and how each relates to the construction of SSF's relational wellbeing; and (2) Identify and describe the primary interactions between, and impacts of, MBREMP on SSFs' relational wellbeing and relational values. Our results highlight the importance of social relations to human wellbeing, the primary drivers of fishing behavior, and the contextual factors that influence the acceptance of, or resistance toward the MPA.

MATERIALS AND METHODS

Study Site Description

MBREMP is located along the border with Mozambique in the southern district of Mtwara (Liebenow, 1971; Raycraft, 2016). Interest in forming the MPA arose from a series of meetings moderated by natural resource managers, conservation scientists, and development practitioners, that took place in the regional capital of Mtwara between 1999 and 2004. In 2000, after a year of discussion, an agreement known as the "Mtwara Declaration" was approved between the regional and national level governments to formally established MBREMP (Katikiro et al., 2015). Participatory approaches to conservation planning were followed, as mandated by Tanzania's Marine Parks and Reserves Act of 1994 (United Republic of Tanzania, 1994). The project was implemented by the International Union for the Conservation of Nature (IUCN) Eastern Africa Program, with joint funding from the Global Environment Facility (GEF)/UNDP and the Fonds Francais pour l'Environnement Mondial (GEF, 2000). The IUCN ran the project for 54 months, after which MPA management was handed over to Tanzania's Marine Parks and Reserves Unit (Gawler and Muhando, 2004; Tortell and Ngatunga, 2007). Shortly after park establishment, a socio-economic baseline and an assessment of the occupational structure of MBREMP communities was completed by the IUCN Eastern Africa Program (Malleret, 2004; Malleret and Simbula, 2004). Together, the assessments found that MPA communities depended heavily on coastal resources and identified poverty as a primary threat to the biodiversity and productivity of marine resources (GEF, 2000; Gawler and Muhando, 2004; Malleret and Simbula, 2004; MPRU, 2011; Mwansasu, 2016).

MBREMP covers 650 square kilometers and consists of marine, coastal, and terrestrial habitats. The area was identified as a priority area for global marine biodiversity in 1995 due to its unique location between the South Equatorial and the Mozambique Currents, an area that has produced some of the highest diversity of hard and soft corals in the Western Indian Ocean (Kelleher et al., 1995; Ngowo, 2003). The park is registered with BirdLife International (2021) as an Important Bird Area (no. 15) and is zoned as a multiple-use marine park (MPRU, 2011). In Tanzania, MPAs encompass expansive terrestrial areas that surround coastal villages. The area inside the boundaries is sub-divided into various user zones including: core zones, within which all extractive activities are prohibited; specified-use zones where extractive activities are regulated at an intermediate level; and general-use zones where marine park residents are given priority to access resources (MPRU, 2011, p. 49). Additionally, an MPA buffer zone extends 1 kilometer from the park boundary, except along the border with



Mozambique. The original aims of the zoning scheme were to provide a clear framework for monitoring and enforcement, a geographical basis for evaluation, and a means of safeguarding traditional fishing grounds (MPRU, 2011).

In initial stages of MPA development, an estimated 30,000 people, in 11 villages, were identified to be living in the catchment area (Malleret and Simbula, 2004). Currently, MBREMP has over 40,000 people living in 17 villages inside its boundaries

(Katikiro et al., 2015). The vast majority of villagers are Muslim and identify as Makonde, a tribal affiliation specific to southeastern Tanzania and northern Mozambique (Raycraft, 2019c). Most speak both Kiswahili and their tribal language of Kimakonde and engage in livelihoods that involve combinations of subsistence farming, cashew farming, fishing of coral reef fish, and the shoreline harvesting of crustaceans (Malleret and Simbula, 2004; Mangora et al., 2014). In MBREMP, fishing is largely artisanal and cash-oriented, taking place in nearshore waters at depths of less than 40 meters, from dug-out canoes (*mitumbwi*) and other dhow-type sailing boats (Jacquet et al., 2010). Several park villages also have access to larger dhow boats, outfitted with outboard motors, and are thus able to target larger pelagic species outside Mnazi Bay (Katikiro et al., 2013). The vast majority of SSFs use a variety of gear types including handlines, different sized seine nets, basket traps, spears, long-lines, cast nets, and scoop nets. However, despite their livelihood importance to coastal communities, inshore fisheries are found to be overexploited (Guard and Mgaya, 2002; Tobey and Torell, 2006; Silas et al., 2020). This context makes the sustainable utilization of marine fisheries, and the successful implementation of MPAs, critical to reduce the vulnerability of coastal communities.

Data Collection

Two three-week scoping activities were conducted in January and August of 2018 to engage with key stakeholders involved in MPA management and to better understand priority issues facing MBREMP. Prior to starting data collection, 5 village wide community meetings were held in select village sites, and several round-table discussions with park authorities, village leaders, and district and regional officials facilitated the development of this research and determined final interview locations. Village sites were selected based on the presence of a fish landing site, the determination of fishing as primary livelihood for SSFs within the village, and sites located in a variety of park habitats (i.e., beach, mangrove, and riverine), and other logistical factors. This preparatory phase served to build strong personal relationships with key actors and allowed for a deeper understanding of the contextual factors of MPA implementation and SSF wellbeing.

Data collection occurred over two 3-month field seasons in 2019–2020 spanning both the North East Monsoon (*kasikazi*) and the South East Monsoon (*kusi*) seasons to coincide with periods of higher and lower fishing activities and the arrival and departure of migrant fishers. The primary data collection method involved semi-structured interviews using protocols adapted to the specific coastal livelihoods of MBREMP residents. Protocols were also influenced by existing wellbeing approaches including the sustainable livelihoods approach (Chambers and Conway, 1992; Scoones, 1998), the WeD/3-D Wellbeing framework (Gasper, 2007; McGregor and Summer, 2010), and the methods handbook for the “Social Assessment for Protected and Conserved Areas” (Franks and Booker, 2018; Franks et al., 2018). Interview questions focused on defining one’s wellbeing and the “good life,” social-environmental relations, and understanding SSFs perspectives toward conservation programming and the marine park and perceptions of MPA impacts.

Interview participants were purposefully selected (Maxwell, 2013) to collect perspectives from a range of individuals within selected fishing communities. Respondents were identified in direct collaboration with village leaders, with selection based on factors such as fishing gear-type used, livelihood dependence on fishing and marine resources, gender, and age. This process worked to ensure local-level permission to speak to individuals was granted and to find participants who primarily identified SSFs that fish inside marine park boundaries, using a variety of fishing gear-types. Although the act of fishing is culturally constructed as a male activity and women do not self-identify as fishers, women were included in SSF interviews due to the importance of female dominated gleaning practices across MBREMP’s intertidal zone. The village leader of each village, as well as key members of the Village Liaison Committee (VLC) and the District Fisheries Officer (DFO) were also interviewed. VLCs are comprised of village members who, in theory, serve as the primary liaison between each park-associated village and MPA management (Katikiro et al., 2017). DFOs are government officers employed at the district level to register fishing vessels, issue fishing licenses, collect revenue, and to record fish landing data. All interviews were conducted in Kiswahili and lasted from 30 to 150 min. Interviews were conducted by the lead author, who is proficient in Kiswahili, and a Tanzanian research assistant, who was hired from a local university and has significant training in social science data collection techniques. A total of 140 semi-structured interviews were conducted with SSFs located in 5 MBREMP villages, including 115 male and 25 female fishers, aged approximately 20–90 years old. To protect the anonymity of respondents, we have withheld specific interview locations.

A key realization from early fieldwork was the need to translate the notion of wellbeing into the local cultural and language context, highlighting how aspects of one’s identity and socio-environmental relations are deeply embedded within language (Coscieme et al., 2020). When translating both language and across cultural contexts important nuances can be lost and distorted. For example, the direct translation of the term wellbeing in Kiswahili is “*ustawi*,” which has a slightly different connotation in Kiswahili as compared to the English understanding of “wellbeing.” In Kiswahili “*ustawi*” is often used in the context of state welfare programs, such as food, aid distribution, education, and infrastructure, and connotes a narrow, more formal view of wellbeing focused on material qualities. The terms “*maisha mazuri*” (the good life) and “*maisha magumu*” (the hard life), on the other hand, were found to suggest a more holistic and balanced conception of one’s life and core values beyond material assets. To understand the differentiated impacts of the MPA on SSF wellbeing we therefore focused on understanding how fishers construct and imagine “*maisha mazuri*” and “*maisha magumu*.” To accurately reflect the insight and nuance language provides, we frequently draw on Kiswahili terms to articulate SSF’s worldview as close as possible to their perspective.

Data analysis included transcribing, translating, and coding each interview in QRS NVivo 12, a qualitative analysis software. Interview transcription and translation were completed by a professional transcription service and verified by the first author.

Coding used a combination of emergent codes, as well as categories drawn from the relevant literature on wellbeing, relational values, and conservation and development studies. This process organized data into key categories by identifying context specific attributes of wellbeing, associated relational values, and examples of how different relational values were expressed. Key categories were next organized based on how they interacted with and were impacted by the MPA.

RESULTS

In the following two sections, we describe five key relational value categories that emerged as important for SSFs in MBREMP, detailing how each can be expressed and related to the construction of one's relational wellbeing. Next, we describe the primary interactions between, and impacts of, MPA policy and actions on SSFs' relational wellbeing and relational values. Our results highlight the importance of social relations to human wellbeing, the primary drivers of fishing behavior, and the contextual factors that influence the acceptance of, or resistance toward the MPA.

Understanding SSF's Relational Wellbeing

There is a common cultural identity among Makonde fishers, rooted in a shared dependence on ocean resources and a desire to maintain autonomy in the everyday choices they make regarding natural resource utilization. SSFs often described daily life using the term *uwezo*, which translates to one's ability, strength, and capacity. SSFs, however, also use it in a broader sense to describe their community as having the capacity to resist when they believe their autonomy is being interfered with. The desire for autonomy and agency becomes apparent and is expressed as a relational value when they narrate the region's collective history, extensive relational networks, and their ongoing struggle to maintain the customary right to resource access and occupancy. Elders, for example, often described this history by using the idiom "*hii ni bahari yetu na uwanja wetu*" [this is our sea and our fishing grounds]. This particular phrase alludes to how people define, and legitimize, resource access rights through historical experience, including their long occupation of the area and their continued use of ocean resources. This phrase was often followed with detailed accounts of complex trading and marriage networks that connected Makonde fishers to inland areas as far as the Democratic Republic of the Congo and Malawi and to areas reached through ocean routes leading to Madagascar and Oman. The retelling of this history suggests how MBREMP's fishing communities have never existed in isolation and that many fishers intimately understand the importance of building, and maintaining, productive and diverse social relations across contexts and scales.

Enmeshed within these historical narratives, SSF often discussed the impact of conservation programs in other parts of Tanzania, frequently referring to the experience of fishers in Mafia Island Marine Park, where the ocean now exists to benefit the "*wazungu tu*" [tourists and/or foreigners only]. Yet, SSFs

made clear they did not necessarily, or inherently, reject state intervention, or the idea of an MPA in and of itself. Rather, they objected the processes used to make decisions on their behalf, which had direct consequences for how they maintained their livelihoods, transforming the practices and expressions of key relational values they believed were fundamental to their survival and a desire to retain a sense of autonomy in how social relationships are arranged and the processes of decision-making. Elders often described inclusive and collaborative decision-making processes that included lengthy discussions where each community member was given the opportunity to express their opinion. In turn, these processes reinforced the relational value of social cohesion by directly shaping social relationships within the community.

Coastal communities in MBREMP have a multi-generational interactions with marine resources, where fishing gear, fishing grounds, and local knowledge are passed down within and among family clans and communities. The transmission of knowledge often takes place in everyday lived experience in close relation with others. For example, in the intertidal zone, women glean a variety of small fish and other invertebrates to sell, eat, or to dry and store for later use. They often glean with their children, friends, and family and referred to these activities as a way of life and as a way to learn about themselves and others. As one female gleaner expressed,

I glean because it is what my mother and grandmother taught me. When I was a child, my mother would send my grandmother and I to the ocean to catch crabs, small fish, and sea cucumber. I remember I was afraid of the ocean back then, but working alongside my grandmother, I stopped crying and gained the strength to quickly fill our pots for fish stew! As my grandmother grew weaker, she no longer went with me to gather in the ocean, but I'd go along with friends and show them what my grandmother taught me, so they too could learn how to provide for themselves, their brothers and their sisters. Even today, I take my children when I go gather, in this way they will learn to not be afraid and will build the strength to survive.

In this context, the intertidal zone served as a key space to reinforce shared cultural identities and practices important to maintain one's relational wellbeing. The woman's grandmother taught her important life lessons through the practice of gleaning, including how to be self-sufficient and resilient when faced with challenges and changing circumstances. The expression of relational values within the intertidal zone included various forms of learning and knowledge exchange, environmental stewardship, place identity, and kinship.

Clearly, many daily practices undertaken by SSFs maintain basic qualities of life, such as food, shelter, medicine, and access to education. As one fisher explained,

Fishing is what drives my life. So, for me, the good life is to own the right fishing equipment. . . Money is scarce and you only make enough for today. So, we must go back to the ocean to eat tomorrow. And because of this, I have not reached the good life.

In one sense, this fisher is noting that his household's survival is tightly tied to his fishing gear, which represents some of the most important material assets for his household. However, it

also became clear that the good life is also accomplished by SSFs pursuing livelihood strategies that included culturally embedded forms of sharing and reciprocal exchange. Fishers often asserted “*wavuvi hawanyimani*.” This phrase translates to “fishers do not deny one another” alluding to another wide-spread belief that the ocean and marine resources are to be shared by all and used for collective economic development. SSFs believe it is unjust to deny another the right to access and to benefit from marine resources. To deny this right, as one village leader explained, is to be “complicit in the oppression of their own people.” This widespread claim to ocean space illustrates the importance of maintaining the collective right to access marine resources through practices that maintain social cohesion and reduce conflict.

Reciprocal and cooperative relations for SSFs in MBREMP create a safety-net beyond village boundaries and many view expressions of reciprocity as fundamental to their survival. This fisher explained,

If you create conflict with other fishers, you'll only be killing yourself. We all fish in the same ocean and we all need help now and again. We cannot be successful every day, so we must share our fuel, and sometimes our catch, so others can get home for dinner. I do this even if it is our first-time meeting. But, I know if I need help tomorrow, I can call on my fellow fishers to help me.

For this fisher, reciprocal relations extend into ocean spaces and to other fishers he does not personally know, illustrating the importance of building robust social networks for SSFs in MBREMP. He shares his fuel because he knows that 1 day in the future he will likely need the help of others. The importance of reciprocal relations for SSFs in MBREMP is also demonstrated in practices (expressions) like the redistribution of food, livelihood resources, and labor based on need. If someone is unable to fish for reasons such as age, sickness, or other household issues, *sadaka* [gifts of fish and food] are given under the premise that the giver will one day be in a similar position of need. Literally translating to religious offering or alms, *sadaka* symbolically represents a generalized form of reciprocity that fosters respect and trust within and among fishing communities. For example, bringing *sadaka* to an elder's home serves as a means of ensuring they have food, to check on vulnerable individuals, and nurtures relationships between different generations within a community. Likewise, *sadaka* is also used as a form of hospitality and is often extended to guests and newcomers in a village, such as migrant fishers. Migrant fishers are often provided with basic food staples, like *ugali* [a thick cornmeal porridge], and are often introduced to the rest of the village, extending social relations to other coastal fishing villages, which can be tapped in times of need.

MPA Impact on SSF Relational Wellbeing

When discussing the impact of the MPA on their wellbeing, many SSFs simply express “*wameishatudhulumu na wanatudhulumu*” [what they have done is unjust and they have wronged us]. Over time, residents have come to see the MPA and, more generally, the notion of conservation, as a direct threat to their wellbeing and to their way of life. In 2013, this frustration culminated in a handful of residents using dynamite to destroy a newly built MPA

gatehouse, that had been funded by the World Wildlife Fund (see Raycraft, 2019a, p. 12).

On the other hand, many described hopeful memories when the marine park was first introduced, that over time turned into frustration and resentment. As this fisher described:

Initially, when the marine park came their intentions pleased us. They said, 'We will improve your lives. We will give you working tools. We will educate you.' It was apparent that the Marine Park was supposed to co-work with the community, but after they arrived, they wanted to make decisions without discussion, so we refused to be involved any more. Since then, they have come just once to give us education, but our education is different from theirs. Theirs comes from books, ours comes from a point of knowing each other.

While participatory and socially inclusive approaches to marine park development were used in theory, such processes did not facilitate positive social relations, nor did they facilitate the long-term participation of residents in the co-management of the MPA. While there are clear budgetary limitations that explain why MBREMP staff have come “just once” to provide education, the fact that many SSFs felt decisions were made without discussion reflects the exclusionary nature of decision-making used in initial stages of MPA development. The fundamental importance of developing good social relations to SSFs is clear when this fisher described his education as coming “from a point of knowing each other,” as opposed to the implied education of MPA authorities, which comes “from books.”

When residents discuss the original conditions of participation they agreed to at the outset, they often described the MPA as a form of social contract and in reciprocal terms. Residents agreed to MPA implementation in exchange for the provision of social services and local-level development. As this village chairman elaborated,

We agreed to something we should not have. Prohibiting traditional fishing without an alternative is a very serious issue. Today, we see no reason of helping them in their work, because they have not helped us, they have not kept their word and we have disengaged, so they can operate by themselves. They should have shown us respect.

The reference to the fact that “they have not helped us” refers to the initial claim that park residents would share in the economic and other benefits of the MPA. Despite early emphases on eco-tourism related development, poverty alleviation and benefit sharing, infrastructure inside the park remains virtually non-existent. This quote further reflects the importance of reciprocal exchange as a shared value for park communities—they will follow the restrictions and adhere to the rules of conservation— if marine park management fulfill their promises of direct benefits in return.

Many fishers discussed how they felt forced and/or were paid to collaborate in planning discussions and remained critical that open meetings were not held in their villages—a key process used to maintain social cohesion and to reduce conflict at the village level. Instead, meetings only included a few select individuals from each village. Despite the intentions of donor agencies involved in project development, the methods used

to facilitate participation were perceived to have circumvented local norms of decision-making and participation. This fueled feelings of mistrust and disrespect between park communities and MPA authorities.

Likewise, the MPA implementation process circumvented local norms of decision-making with the creation and execution of Village Liaison Committees (VLCs). In theory, VLCs were to serve as the primary liaison for communication between marine park authorities and every MPA village. VLCs were intended to be the lowest level of the governance structure and are comprised of select villagers, who are directed to undertake MPA patrols, resource permitting, and to help with the overall protection of marine resources. In practice, VLCs parallel and overlap village-level elected authorities, which created confusion about who reports to whom. This fisher elaborated on the situation,

What they [the marine park managers] want is vastly different from what we want. They [the marine park] only make life more difficult, so if someone does something that we feel is against the rules, we just deal with it on our own. Our village has elected officials who were born here and they will go to the person who acted wrongly and ask their reason. They will talk to them to understand their circumstance and personal conditions. Afterwards, there will be a village meeting to discuss the situation, so we can offer help and find a solution. In this way, we know they will not break the rules again.

This situation illustrates a clear gap between the ideal of collaborative management and reality, as well as how the MPA challenges local level power dynamics and the right to self-determination. When discussing VLCs, residents expressed a shared sentiment that they do not report illegal resource use and non-compliance because, from their perspective, the punishments given by the MPA are harsh and morally unjustified.

The increasing number of conservation regulations has further impacted SSFs' right to self-determination and agency in decision-making processes. For example, when the marine park was formed, all of the land inside its boundary was reclassified from "village land" to "reserve land" in accordance with Tanzania's Marine Parks and Reserves Act of 1994 (Section 16). As such, all new development and land allocations within the park must be reported to park officials in writing 30 days prior (MPRU, 2011). The reallocation of property rights, however, has challenged and undermined customary occupancy rights. This elder explains the emotional impact of the reallocation of land,

We are told this area now belongs to the marine park. I do not have much except for a small piece of land and my canoe. If I want to do anything on my land, or even if I wanted to sell it, I have to ask permission. If you fail to ask permission, park authorities will claim you are invading the marine park. They let us live here but only under certain conditions. . .

This quote illustrates how the reallocation of land rights produced new rules of authority and control over people's lives, undoing one's sense of power and autonomy. The impact of these new rules was exemplified when SSFs discussed their ongoing frustration with the MPA's zoning system. Most of Mnazi Bay is zoned as a specified use zone, with key fishing grounds designated as no-take core zones (see **Figure 2**). This made legally fishing

inside the bay difficult and, without any form of demarcation between zones, has created lasting confusion and anger. This fisher explained,

If you look at the type of fishing we practice, we do not have the capacity to go into the deep sea. When the marine park tells us to fish in the deep water, it is similar to asking us to choose between life and death.

Many SSFs feel the zoning scheme does not consider the everyday constraints of poverty, nor how difficult it is to adopt and learn to fish with new gear, in new fishing grounds, reflecting a disconnect between MPA design and everyday livelihood needs. Many SSFs cannot afford to lease, rent, or buy the bigger boats and engines needed to fish in the deeper waters outside the park's specified use zones. This context reveals another widespread sentiment held by many SSFs whereby the marine park values marine biodiversity over human life.

The impact of banning fine-net fishing on SSFs' relational wellbeing is particularly evident when examining the role of female fishers in MBREMP and highlights the fundamental misalignment between MPA design and reality. When the marine park was formed, the use of fine-mesh nets was banned in the park's intertidal areas, as well as in core and specified use zones. Yet, the banning of fine-mesh nets also prohibited a customary female practice known locally as *kutanda*, whereby women use a fine mesh pull-net called a *tandillo* to harvest from shallow, intertidal environments. The practice was banned because it was viewed as destructive by conservation scientists who argued the practice captures juvenile fish. Yet, the decision to ban the practice reflects the top-down nature of decision-making used to develop MBREMP and worked against the villagers' right to self-determination to make decisions about resource use and access. The restrictions minimized women's economic mobility, their ability to contribute to their family's material needs, and interfered with their sense of self and identity as a provider of their household—all key components to relational wellbeing. However, the women interviewed for this research remained adamant they know the difference between a juvenile fish and a small adult fish. As such, they continue to widely, and often very visibly, engage in the practices of *kutanda* out of what they describe as both economic necessity and a moral right. As this woman explained,

They told us that our nets were banned and took them. How were we to feed our children? The marine park made this decision without involving us. This offended us. So, we came together, made new nets and we will continue as our mothers and grandmothers did.

The intertidal zone is one of the only marine spaces women can access and thus the ban on fine-net fishing had cascading impacts on a woman's relational, material, and subjective wellbeing. Similarly, women no longer had reason, or access to a shared location in the intertidal zone to gather and reconnect, transforming how social relations and kinship bonds were constructed and maintained. Yet, this context also reflects a moral statement about SSFs' collective right to benefit from marine resources.

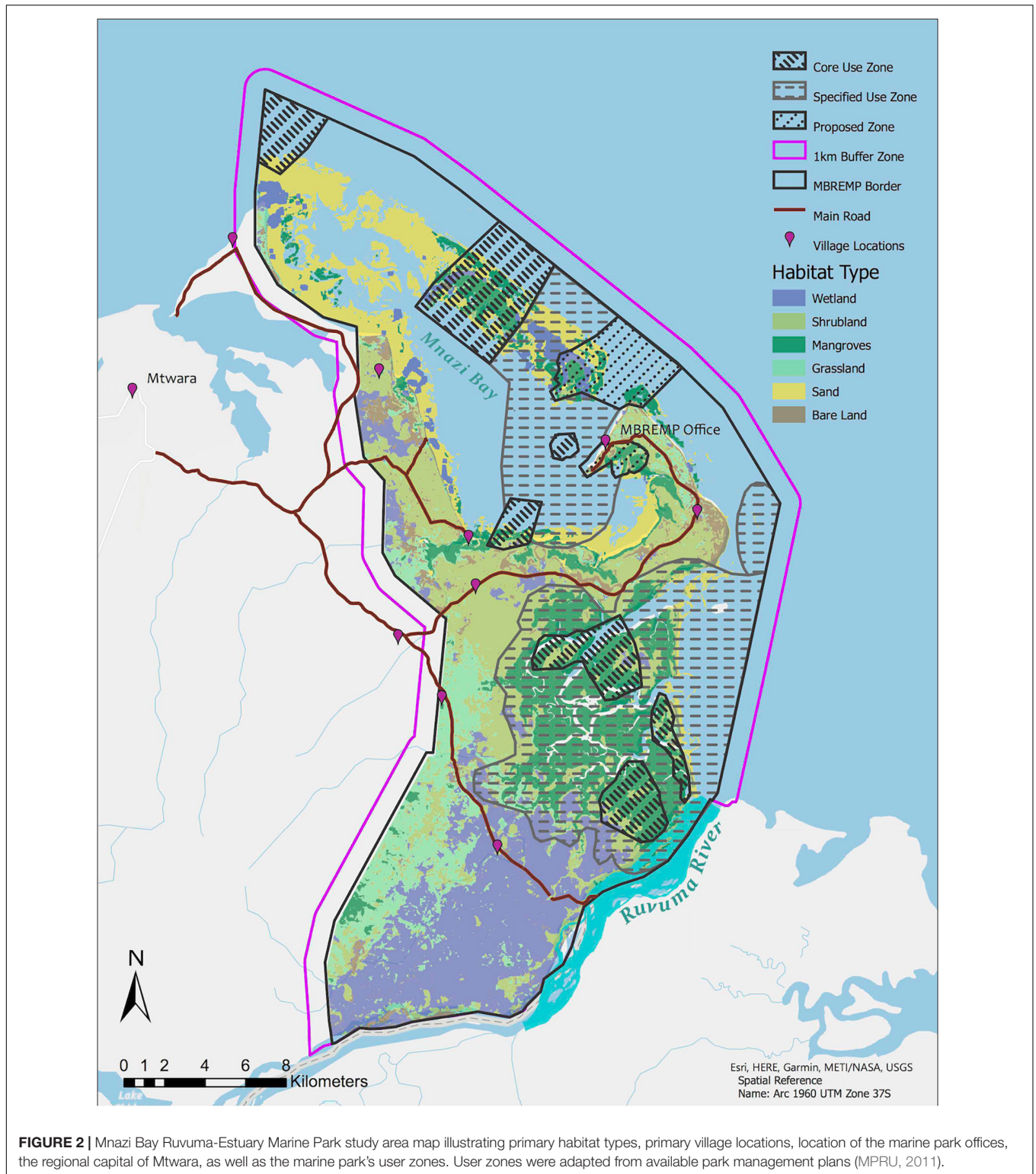


FIGURE 2 | Mnazi Bay Ruvuma-Estuary Marine Park study area map illustrating primary habitat types, primary village locations, location of the marine park offices, the regional capital of Mtwara, as well as the marine park’s user zones. User zones were adapted from available park management plans (MPRU, 2011).

DISCUSSION

These findings resonate with other work showing how social and environmental relationships are critical to human wellbeing in the rural small-scale fisheries sector (Crona et al., 2010;

Chan et al., 2016; Masterson et al., 2017; Sterling et al., 2020). In MBREMP, the multiple values SSFs associated with others and with marine spaces were described through rich narrative discussions that highlight the social history of the Makonde tribe. **Table 1** summarizes the key relational value categories

TABLE 1 | Key relational value categories that emerged as important to SSFs in MBREMP with associated practices and expressions.

| Relational value category | Examples of expression |
|--|---|
| Freedom, agency and self-determination | Meaningful participation in decision-making practices; building responsive governance systems; expressed desire to maintain individual and collective autonomy. |
| Identity | Promotion of cultural practices, rules, norms, beliefs, and ceremonies; protection of important sites, monuments, or environments; learning and knowledge exchange. |
| Social cohesion | Practices that foster multi-generational interactions and social memory; acts of cooperation, like labor exchange and community workdays; participation, civic engagement and collaborative decision making to foster collective action and shared values; expressing shared visions of the future; avoiding and mitigating conflict through collaborative decision-making. |
| Place | Restricting, or promoting access to key spaces and/or resources; rules and norms regarding resource access, tenure, and occupancy; maintaining cultural resources and practices tied to specific environments, or species through engagement in rituals, or ceremonies; maintaining and promoting traditional, customary or informal resource management systems through continued use of marine environment. |
| Reciprocity | Practices of sharing and exchange of key livelihood resources, such as fish, (sea)food, and fuel; gift giving; labor exchange; community workdays; stewardship practices and care. |

that emerged as important for fishers across MBREMP and examples of how each can be expressed. Social relationships and cultural identities associated with marine space spanned

both generations and geographies and SSFs valued the marine environment for the relationships it produced and reinforced. Overwhelmingly, fishers indicated that the long-term benefits promised by the MPA for restricting access, such as fish spillover, alternative livelihood programs, and development, did not offset the cost of displacement or prohibition of fishing, replacing confiscated gear, or the social impacts associated with creating conflict within and between park communities. It was clear that the creation of MBREMP disrupted some of the practices and behaviors (expressions) associated with valued relationships, thus impacting the ways relational wellbeing was constructed and maintained. **Table 2** summarizes the primary interactions between specific MPA policies, or action and SSF's relational wellbeing and relational values. Failure to account for relational dimensions of wellbeing, including key relational values, risks exacerbating poverty and hardship across park communities (Grantham et al., 2020) and need to be considered relation to other sociopolitical and biophysical variables (Mascia et al., 2010).

Findings also highlight the linkages between the literatures on relational values, relational wellbeing, and the wider literature on MPA governance. In MBREMP, SSF's relational wellbeing is built on a desire to retain a sense of autonomy in how social relationships are arranged and maintained. While MBREMP is theoretically founded on a decentralized, participatory model of conservation programming, there remains a clear gap between the rhetoric of participatory institutional design, often dictated by international agendas, and the realities of everyday implementation (Cooke and Kothari, 2001; Kamat, 2018; Raycraft, 2019b). The methods used in MBREMP development and the creation of VLCs directly challenged SSFs' right to

TABLE 2 | Primary interactions between, and impacts of, the MPA policy/action and small-scale fisher's relational wellbeing and relational values.

| Policy of MPA | Community level impact | Disruption to relational wellbeing | Freedom and agency | Identity | Social cohesion | Place | Reciprocity |
|--|---|---|--------------------|----------|-----------------|-------|-------------|
| Top-down decision making and exclusionary processes of participation | Circumvention of local norms of participation and decision making | Fostered negative relations with MPA authorities | x | | x | | x |
| Village Liaison Committees (VLCs) | Introduction of alternative community governance structures | Took away agency in decision-making and local-level authority | x | | x | | |
| Reallocation of property rights: "village land" to "reserve land" | New rules of authority and loss of autonomy in land-use decision making | Transformed land and resource inheritance patterns and occupancy/tenure rights | x | x | | x | |
| User zones, gear and area-based restrictions | Women no longer (legally) allowed to fish in inter-tidal zone | Disruption of multi-generational interactions and exchange of local ecological knowledge (LEK) Disruption to self-reliance, identity, and sense of self | x | x | x | x | |
| | Men required to fish in deeper water | Fishing now requires larger crew, new gear and different market relations | x | x | x | x | x |
| | SSFs less independent and work for hire on boats | Reduced agency in decision-making and livelihoods Loss of intergenerational interactions and transmission of LEK Fishery transformed: communal/artisanal to cash-oriented | x | | x | x | x |

define their own needs and wants, which are central components to human wellbeing (Sen and Anand, 1997; Deneulin and McGregor, 2010). Likewise, many SSFs felt they were not able to meaningfully, or effectively participate in MPA processes and decision making, fueling feelings of disrespect. This context resulted in a long-standing conflict, resistance, and widespread non-compliance to conservation regulations that continue to have serious implications for MBREMP's success (Raycraft, 2020).

For SSFs in MBREMP, processes of knowledge exchange and learning were central to their relational wellbeing. Everyday fishing and gleaning practices enabled fishers to connect with others and their environment, fostered the transmission of local ecological knowledge, social cohesion, place and cultural identities. Yet, gear and area restrictions required SSFs to fish in new environments and to use new techniques, which required larger boats, larger crews, and new market relations. The processes of relearning new environments and new fishing techniques devalued SSFs lived, everyday experience and local ecological knowledge directly challenging their relational wellbeing (Brueckner-Irwin et al., 2019). The shared struggle of SSFs to maintain and reassert their customary right to resource access and occupancy has united fishers in a common cause against the MPA, as seen elsewhere (Sowman, 2011). Strong social cohesion has deterred SSFs from enforcing MPA rules, or reporting illegal resource use, so they can effectively minimize conflict within and among their communities. The widespread preference of SSFs to remain silent about illegal resource use and poaching in MBREMP is rooted in the fact that it's not socially beneficial to come forward to report illegal activities. Likewise, community members often showed empathy to those who were caught, fined, or punished by the MPA, often pooling financial and material resources to help an individual pay their fine and/or replace confiscated gear. In this sense, the relational lens helps illuminate why non-compliance and resistance can persist.

These findings also emphasize how SSFs' relational wellbeing is reinforced by and connected to the wellbeing of others—what we call collective wellbeing. The importance of collective wellbeing was also expressed through long-standing community practices where non-monetary benefits of reciprocal human and environmental relations outweigh financial and material incentives (Winthrop, 2014). Sharing of resources is common practice across sub-Saharan Africa and this supports other work on how relational values can strengthen social norms and informal institutions for mutual and collective benefit (Jones and Tobin, 2018). In MBREMP, expressions of reciprocity and reciprocal exchange weave through all aspects of life, extending across the seascape to include other fishers, middlemen, migrants, friends, and family. Reciprocal relationships are rooted in a number of values such as solidarity, trust and social cohesion, which are often valued over the individual accumulation of material wealth. In this context, fishers were motivated to maintain expansive relational networks because it secured robust safety-nets that could be utilized in times of hardship, or resource scarcity (Sterling et al., 2020). In a region of the world where the safety-net typically provided by the state is unreliable, social relations and relational networks increase livelihood security and the social resilience of coastal communities.

CONCLUSION

In MBREMP, SSFs' wellbeing is driven by more than the need to secure material resources—it is also driven by a need to fulfill one's obligations to others. Using a relational lens to characterize the impacts of MBREMP on relational wellbeing highlights the ways SSFs connect with others within their environment. It illuminates how social relationships are shaped by relational values, associated norms, and codes of conduct and how these in turn shape behaviors and perceptions of the MPA. In the case of MBREMP, the disruption of multiple relational values that SSF communities view as important has worked against the goals of both marine conservation and human wellbeing (Jentoft and Chuenpagdee, 2015). SSFs were not physically displaced by the MPA but their ability to maintain and pursue valued relationships and to access and benefit from key livelihood resources was critically undermined. SSFs have effectively been “displaced in place” by conservation policies, which have left many unable to meet their basic material needs (Cernea, 2006; Lubkemann, 2008; Raycraft, 2019a).

The particular relational values that emerged as important to SSFs in MBREMP may not be applicable in all contexts, to all MPA communities, or even to all SSFs in MBREMP. They do serve, however, as an important starting point to better recognize how contextual, place-based factors and relational values underlie human wellbeing, as well as how each dimension of wellbeing is co-constituted and inseparable. Likewise, our findings show the importance of using perceptions and lived experience to gain valuable insight into the social impacts, acceptance, and the legitimacy of the MPA (Bennett, 2016). Using a relational lens provided valuable insight into the importance of social relations to human wellbeing, the primary drivers of fishing behavior, and factors influencing perceptions of, and resistance to, the MPA.

The mainstream conceptualization of an MPA is that they exist to improve ecosystem health and services, thereby providing social benefits and driving support for the overarching goals of conservation (De Vos et al., 2018). Similarly, the marine conservation community is increasingly concerned with the use of monitoring and evaluation to support evidence based conservation and to improve conservation outcomes (Bennett, 2016). However, as our case shows, the failure to recognize the multiple values and lived experience that fishing communities hold can work against the goals of both marine conservation and human wellbeing. As such, we argue employing the concepts of relational wellbeing and relational values can guide international policy makers and MPA managers to meaningfully engage with local, place-based values and to better understand the diversity and valued qualities of social-environmental relations in marine environments (Sheremata, 2018; Stenseke, 2018; Gould and Pai, 2019). This conceptual bridging could be relevant in addressing a persistent tension between obtaining international targets for marine conservation and securing the rights of coastal communities (Armitage et al., 2012; Woodhouse et al., 2015). Attaining global biodiversity conservation will only be successful if MPAs support, and not compromise, the multiple aspects of human wellbeing of coastal communities (Brueckner-Irwin et al., 2019).

DATA AVAILABILITY STATEMENT

Derived data supporting the findings of this study are available upon request from the corresponding author. However, each feature layer produced for **Figure 1** and **Figure 2** are freely available for download here: <https://dukeuniv.maps.arcgis.com/home/item.html?id=57cf6b3688fb447ba36d9e5499283750>.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Duke University Institutional Review Board (IRB Protocol Number: 2020-0035). Interview participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

DB led all parts of this research including project conceptualization, data collection, data analysis and synthesis, and framing and writing of the manuscript. JK helped with the organization of fieldwork, data collection, as well as with the writing and editing of the final manuscript. All other authors including GM, AL, DG, and EM contributed to the project's development, as well as with the framing, writing, and editing of this manuscript. All authors contributed to the article and approved the submitted version.

REFERENCES

- Agrawal, A., Bawa, K., Brockington, D., Brosius, P., D'Souza, R., DeFries, R., et al. (2020). *An Open Letter to the Lead Authors of 'Protecting 30% of the Planet for Nature: Costs, Benefits and Implications'*. Available online at: <https://openlettertowaldroneal.wordpress.com/> (Accessed February 8, 2021).
- Armitage, D., Béné, C., Charles, A. T., Johnson, D., Allison, E. H., Armitage, D., et al. (2012). The interplay of well-being and resilience in applying a social-ecological perspective. *Ecol. Soc.* 17:15. doi: 10.5751/ES-04940-170415
- Atkinson, S., and Joyce, K. (2011). The place and practices of well-being in local government. *Environ. Plan. C Gov. Pol.* 29, 133–148. doi: 10.1068/c09200
- Ban, N. C., Gurney, G. G., Marshall, N. A., Whitney, C. K., Mills, M., Gelcich, S., et al. (2019). Well-being outcomes of marine protected areas. *Nat. Sustain.* 2, 524–532. doi: 10.1038/s41893-019-0306-2
- Beauchamp, E., Woodhouse, E., Clements, T., and Milner-Gulland, E. J. (2018). "Living a good life": conceptualizations of well-being in a conservation context in Cambodia. *Ecol. Soc.* 23:28. doi: 10.5751/ES-10049-230228
- Bennett, N. J. (2016). Using perceptions as evidence to improve conservation and environmental management. *Conserv. Biol.* 30, 582–592. doi: 10.1111/cobi.12681
- BirdLife International. (2021). *Important Bird Areas Factsheet: Mnazi Bay*. Available online at: <http://www.birdlife.org> (accessed June 1, 2021).
- Breslow, S. J., Allen, M., Holstein, D., Sojka, B., Barnea, R., Basurto, X., et al. (2017). Evaluating indicators of human well-being for ecosystem-based management. *Ecosyst. Health. Sustain.* 3, 1–18. doi: 10.1080/20964129.2017.1411767
- Breslow, S. J., Sojka, B., Barnea, R., Basurto, X., Carothers, C., Charnley, S., et al. (2016). Conceptualizing and operationalizing human wellbeing for ecosystem

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fmars.2021.673045/full#supplementary-material>

- assessment and management. *Environ. Sci. Pol.* 66, 250–259. doi: 10.1016/j.envsci.2016.06.023
- Brockington, D., and Wilkie, D. (2015). Protected areas and poverty. *Philos. Trans. R. Soc. B Biol. Sci.* 370:20140271. doi: 10.1098/rstb.2014.0271
- Brueckner-Irwin, I., Armitage, D., and Courtenay, S. (2019). Applying a social-ecological well-being approach to enhance opportunities for marine protected area governance. *Ecol. Soc.* 24, 1–16. doi: 10.5751/ES-10995-240307
- Caillon, S., Cullman, G., Verschuuren, B., and Sterling, E. J. (2017). Moving beyond the human–nature dichotomy through biocultural approaches: including ecological well-being in resilience indicators. *Ecol. Soc.* 22:10.
- Cernea, M. M. (2006). Re-examining "Displacement": a redefinition of concepts in development and conservation policies. *Soc. Change* 36, 8–35.
- Chambers, R., and Conway, G. (1992). *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*, IDS Discussion Paper 296. Brighton: IDS.
- Chan, K. M. A., Balvanera, P., Benessaiah, K., Chapman, M., Díaz, S., Gómez-Baggethun, E., et al. (2016). Opinion: why protect nature? Rethinking values and the environment. *Proc. Natl. Acad. Sci. U.S.A.* 113, 1462–1465. doi: 10.1073/pnas.1525002113
- Cooke, B., and Kothari, U. (2001). *Participation: the New Tyranny?* London: Zed Books.
- Coscieme, L., Da, H., Hyldmo, S., Fernández-Llamazares, Á, Palomo, I., Mwampamba, T. H., et al. (2020). Multiple conceptualizations of nature are key to inclusivity and legitimacy in global environmental governance. *Environ. Sci. Pol.* 104, 36–42. doi: 10.1016/j.envsci.2019.10.018
- Coulthard, S. (2012). What does the debate around social wellbeing have to offer sustainable fisheries? *Environ. Sustain.* 4, 358–363. doi: 10.1016/j.cosust.2012.06.001

- Coulthard, S., Johnson, D., and McGregor, J. A. (2011). Poverty, sustainability and human wellbeing: a social wellbeing approach to the global fisheries crisis. *Glob. Environ. Chang.* 21, 453–463. doi: 10.1016/j.gloenvcha.2011.01.003
- Crona, B., Nyström, M., Folke, C., and Jiddawi, N. (2010). Middlemen, a critical social-ecological link in coastal communities of Kenya and Zanzibar. *Mar. Pol.* 34, 761–771. doi: 10.1016/j.marpol.2010.01.023
- De Vos, A., Joana, C. B., and Dirk, R. (2018). Relational values about nature in protected area research. *Curr. Opin. Environ. Sustain.* 35, 89–99. doi: 10.1016/j.cosust.2018.10.018
- Deneulin, S., and McGregor, A. J. (2010). The capability approach and the politics of a social conception of wellbeing. *Eur. J. Soc. Theory* 13, 501–519. doi: 10.1177/1368431010382762
- Fearon, J. D., Humphreys, M., and Weinstein, J. M. (2009). Can development aid contribute to social cohesion after civil war? evidence from a field experiment in post-conflict Liberia. *Am. Econ. Rev.* 99, 287–291. doi: 10.1257/aer.99.2.287
- Franks, P., and Booker, F. (2018). *Governance Assessment for Protected and Conserved Areas (GAPA): Early Experience of a Multi-Stakeholder Methodology for Enhancing Equity and Effectiveness*. IIED Working Paper. London: IIED.
- Franks, P., Small, R., and Booker, F. (2018). *Social Assessment for Protected and Conserved Areas (SAPA): Methodology Manual for SAPA Facilitators*, 2nd Edn. London: IIED.
- Gasper, D. (2007). “Conceptualising human needs and wellbeing,” in *Wellbeing in Developing Countries: From Theory to Research*, eds J. A. MacGregor and I. Gough (Cambridge: Cambridge University Press), 47–70. doi: 10.1017/CBO9780511488986.003
- Gawler, M., and Muhando, C. (2004). Development of Mnazi Bay-Ruvuma Estuary Marine Park Mid-term Evaluation, Final Report. vi-68, Stonetown.
- GEF. (2000). *Tanzania: Development of Mnazi Bay Marine Park Project Brief*. GEF: Tanzania.
- Gough, I., and McGregor, J. A. (Eds) (2007). *Wellbeing in Developing Countries: From Theory to Research*. Cambridge: Cambridge University Press.
- Gould, R., and Pai, M. (2019). He ‘ike ‘ana ia i ka pono (It is a recognizing of the right thing): how one indigenous worldview informs relational values and social values. *Sustain. Sci.* 14, 1213–1232. doi: 10.1007/s11625-019-00721-9
- Grantham, R., Lau, J., and Kleiber, D. (2020). Gleaning: beyond the subsistence narrative. *Marit. Stud.* 19, 509–524. doi: 10.1007/s40152-020-00200-3
- Guard, M., and Mgaya, Y. D. (2002). The artisanal fishery for Octopus cyanea Gray in Tanzania. *AMBIO J. Hum. Environ.* 31, 528–536. doi: 10.1579/0044-7447-31.7.528
- Hicks, C., Levine, A., Agrawal, A., and Levin, P. (2016). Engage key social concepts for sustainability. *Science* 352, 38–40.
- Himes, A., and Muraca, B. (2018). Relational values: the key to pluralistic valuation of ecosystem services. *Curr. Opin. Environ. Sustain.* 35, 1–7. doi: 10.1016/j.cosust.2018.09.005
- Idrobo, C. (2018). “Adapting to environmental change through the lens of social wellbeing: improvements and trade-offs associated with a small-scale fishery on the atlantic forest coast of Brazil,” in *Social Wellbeing and the Values of Small-Scale Fisheries*, eds D. Johnson and T. Acott (Cham: Springer), 75–96. doi: 10.1007/978-3-319-60750-4_4
- Ishihara, H. (2018). Relational values from a cultural valuation perspective: how can sociology contribute to the evaluation of ecosystem services? *Curr. Opin. Environ. Sustain.* 35, 61–68. doi: 10.1016/j.cosust.2018.10.016
- Jacquet, J., Fox, H., Motta, H., Ngusuru, A., and Zeller, D. (2010). Few data but many fish: marine small-scale fisheries catches for Mozambique and Tanzania. *Afr. J. Mar. Sci.* 32, 197–206. doi: 10.2989/1814232X.2010.501559
- Jadhav, A. (2018). “Redefining small-scale fisheries in India: challenging simplifications and highlighting diversity and value,” in *Social Wellbeing and the Values of Small-Scale Fisheries*, eds D. S. Johnson and T. G. Acott (New York, NY: Springer International Publishing AG), doi: 10.1007/978-3-319-60750-4_7
- Jax, K., Caletani, M., Chan, K. M., Eser, U., Keune, H., Muraca, B., et al. (2018). Caring for nature matters: a relational approach for understanding nature’s contributions to human well-being. *Curr. Opin. Environ. Sustain.* 35, 22–29. doi: 10.1016/j.cosust.2018.10.009
- Jentoft, S., and Chuenpagdee, R. (2015). “Interactive governance for small-scale fisheries,” in *MARE Publication Series*, eds S. Jentoft and R. Chuenpagdee (New York, NY: Springer International Publishing), 1–782. doi: 10.1007/978-3-319-17034-3
- Johnson, D. S., and Acott, T. G. (2018). *Social Wellbeing and the Values of Small-Scale Fisheries*. Cham: Springer, doi: 10.1007/978-3-319-60750-4
- Jones, K., and Tobin, D. (2018). Reciprocity, redistribution and relational values: organizing and motivating sustainable agriculture. *Curr. Opin. Environ. Sustain.* 35, 69–74. doi: 10.1016/j.cosust.2018.11.001
- Jones, P. J. S., Qiu, W., and De Santo, E. M. (2013). Governing marine protected areas: social-ecological resilience through institutional diversity. *Mar. Pol.* 41, 5–13. doi: 10.1016/j.marpol.2012.12.026
- Kamat, V. R. (2018). Dispossession and disenchantment: the micropolitics of marine conservation in southeastern Tanzania. *Mar. Pol.* 88, 261–268. doi: 10.1016/j.marpol.2017.12.002
- Katikiro, R. E., Macusi, E. D., and Ashoka Deepananda, K. H. M. (2015). Challenges facing local communities in Tanzania in realising locally-managed marine areas. *Mar. Pol.* 51, 220–229. doi: 10.1016/j.marpol.2014.08.004
- Katikiro, R. E., Namkesa, F., and Ponte, S. (2017). *Sustainability Partnerships for the Governance of Coastal Resources in Tanzania*, NEPSUS Working Paper No. 17-5. Dar es Salaam: Copenhagen Business School. doi:10.2800/978-87-93571-04-4
- Katikiro, R., Macusi, E., and Deepananda, K. H. M. A. (2013). Changes in fisheries and social dynamics in Tanzanian coastal fishing communities. *West Indian Ocean J. Mar. Sci.* 12, 95–110.
- Kelleher, G., Bleakley, C., and Wells, S. (1995). *A Global Representative System of Marine Protected Areas*, Vol. 3. Washington DC: Central Indian Ocean.
- Klain, S. C., Olmsted, P., Chan, K. M. A., and Satterfield, T. (2017). Relational values resonate broadly and differently than intrinsic or instrumental values, or the New Ecological Paradigm. *PLoS One* 12:e0183962. doi: 10.1371/journal.pone.0183962
- Leisher, C., Samberg, L. H., Van Beukering, P., and Sanjayan, M. (2013). Focal areas for measuring the human well-being impacts of a conservation initiative. *Sustainability* 5, 997–1010. doi: 10.3390/su5030997
- Liebenow, J. G. (1971). *Colonial Rule and Political Development in Tanzania: the Case of the Makonde*. Evanston, IL: Northwestern University Press.
- Lubkemann, S. (2008). Involuntary immobility: on a theoretical invisibility in forced migration studies. *J. Refug. Stud.* 21, 454–475. doi: 10.1093/jrs/fen043
- Malleret, D. (2004). *A Socio-economic Baseline Assessment of the Mnazi Bay Ruvuma Estuary Marine Park*. Nairobi: IUCN EARO Publication Service Unit.
- Malleret, D., and Simbula, J. (2004). *The Occupational Structure of the Mnazi Bay Ruvuma Estuary Marine Park Communities*. Nairobi: IUCN EARO Publication Service Unit.
- Mangora, M. M., Shalli, M. S., McLean, B., and Suguta, H. (2012). *Legal and Institutional Framework for Effective Management of Marine Managed Areas in Tanzania*. Tanzania: Marine Conservation Unit.
- Mangora, M. M., Shalli, M. S., and Msangameno, D. J. (2014). “Livelihoods of coastal communities in mnazi bay-ruvuma estuary marine park, Tanzania,” in *Vulnerability of Agriculture, Water and Fisheries to Climate Change: Toward Sustainable Adaptation Strategies*, (Dordrecht: Springer), 271–287. doi: 10.1007/978-94-017-8962-2
- Mascia, M. B., Claus, F. C. A., and Naidoo, R. (2010). Impacts of marine protected areas on fishing communities. *Conserv. Biol.* 24, 1424–1429. doi: 10.1111/j.1523-1739.2010.01523.x
- Masterson, V. A., Stedman, R. C., Enqvist, J., Tengö, M., Giusti, M., Wahl, D., et al. (2017). The contribution of sense of place to social-ecological systems research: a review and research agenda. *Ecol. Soc.* 22:49. doi: 10.5751/ES-08872-220149
- Maxwell, J. (2013). *Qualitative Research Design: an Interactive Approach*, 3rd Edn. Thousand Oaks, CA: Sage Publications, Inc.
- McGregor, A., and Summer, A. (2010). Beyond business as usual: what might 3-D wellbeing contribute to MDG momentum? *IDS Bull.* 41, 104–112.
- McGregor, J. A. (2008). *Wellbeing, Poverty and Conflict*. Bath: University of Bath.
- MPRU (2011). *General Management Plan for Mnazi Bay Ruvuma Estuary Marine Park*. Dar es Salaam: MPRU.
- Muradian, R., and Pascual, U. (2018). A typology of elementary forms of human-nature relations: a contribution to the valuation debate. *Curr. Opin. Environ. Sustain.* 35, 8–14. doi: 10.1016/j.cosust.2018.10.014
- Mwansasu, S. (2016). *Causes and Perceptions of Environmental Change in the Mangroves of Rufiji Delta*. Tanzania: Implications for Sustainable Livelihood and Conservation.
- Ngowo, R. (2003). *Appendix for MBREMP to the CBD*, Mtwara.
- Poe, M. R., Norman, K. C., and Levin, P. S. (2014). Cultural dimensions of socioecological systems: key connections and guiding principles for

- conservation in coastal environments. *Conserv. Lett.* 7, 166–175. doi: 10.1111/conl.12068
- Quimby, B., and Levine, A. (2018). Participation, power, and equity: examining three key social dimensions of fisheries comanagement. *Sustainability* 10:3324. doi: 10.3390/su10093324
- Ransome, B. (2010). Sen and Aristotle on Wellbeing. *Aust. J. Soc. Issues* 45, 1–12. doi: 10.1002/j.1839-4655.2010.tb00162.x
- Rasheed, A. R. (2020). Marine protected areas and human well-being—a systematic review and recommendations. *Ecosyst. Serv.* 41:101048. doi: 10.1016/j.ecoser.2019.101048
- Raycraft, J. (2016). *Restrictions and Resistance: an Ethnographic Study of Marine Park Opposition in Southeastern Tanzania*. Vancouver: The University of British Columbia.
- Raycraft, J. (2019a). Circumscribing communities: marine conservation and territorialization in southeastern Tanzania. *Geoforum* 100, 128–143. doi: 10.1016/j.geoforum.2018.12.011
- Raycraft, J. (2019b). Conserving poverty: destructive fishing gear use in a Tanzanian marine protected area. *Conserv. Soc.* 17, 297–309. doi: 10.4103/cs.cs_18_53
- Raycraft, J. (2019c). “In search of a good life”: perspectives on village out-migration in a Tanzanian marine park. *J. Rural Stud.* 70, 36–48. doi: 10.1016/j.jrurstud.2019.05.005
- Raycraft, J. (2020). The (un)making of marine park subjects: environmentality and everyday resistance in a coastal Tanzanian village. *World Dev.* 126:104696. doi: 10.1016/j.worlddev.2019.104696
- Ribot, J. C., and Peluso, N. L. (2003). A theory of access. *Rural Sociol.* 68, 153–181. doi: 10.1111/j.1549-0831.2003.tb00133.x
- Roe, D., Sandbrook, C., Fancourt, M., Schulte, B., Munroe, R., and Sibanda, M. (2013). A systematic map protocol: which components or attributes of biodiversity affect which dimensions of poverty? *Environ. Evid.* 2:8. doi: 10.1186/2047-2382-2-8
- Scoones, I. (1998). *Sustainable Rural Livelihoods: a Framework for Analysis*. Brighton: IDS.
- Sen, A. (2007). “Capability and Well-being,” in *The philosophy of Economics: An Anthology*, ed. D. M. Hausman (Cambridge: Cambridge University Press), 1–536.
- Sen, A., and Anand, S. (1997). *Concepts of Human Development and Poverty: a Multidimensional Perspective*. New York, NY: United Nations Development Programme.
- Sheremata, M. (2018). Listening to relational values in the era of rapid environmental change in the Inuit Nunangat. *Curr. Opin. Environ. Sustain.* 35, 75–81. doi: 10.1016/j.cosust.2018.10.017
- Silas, M. O., Mgeleka, S. S., Polte, P., Sköld, M., Lindborg, R., De La Torre-Castro, M., et al. (2020). Adaptive capacity and coping strategies of small-scale coastal fisheries to declining fish catches: insights from Tanzanian communities. *Environ. Sci. Pol.* 108, 67–76. doi: 10.1016/j.envsci.2020.03.012
- Skubel, R., and Shriver-Rice, M. (2019). Introducing relational values as a tool for shark conservation, science, and management. *Front. Mar. Sci.* 6:53. doi: 10.3389/fmars.2019.00053
- Song, A. M., Chuenpagdee, R., and Jentoft, S. (2013). Values, images, and principles: what they represent and how they may improve fisheries governance. *Mar. Pol.* 40, 167–175. doi: 10.1016/j.marpol.2013.01.018
- Sowman, M. (2011). New perspectives in small-scale fisheries management: challenges and prospects for implementation in South Africa. *Afr. J. Mar. Sci.* 33, 297–311. doi: 10.2989/1814232X.2011.602875
- Spalding, M. D., Meliane, I., Bennett, N. J., Dearden, P., Patil, P. G., and Brumbaugh, R. D. (2016). Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean. *Aquat. Conserv. Mar. Freshw. Ecosyst.* 26, 185–199. doi: 10.1002/aqc.2686
- Stålhammar, S., and Thorén, H. (2019). Three perspectives on relational values of nature. *Sustain. Sci.* 14, 1201–1212. doi: 10.1007/s11625-019-00718-4
- Stenseke, M. (2018). Connecting ‘relational values’ and relational landscape approaches. *Curr. Opin. Environ. Sustain.* 35, 82–88. doi: 10.1016/j.cosust.2018.10.025
- Sterling, E. J., Pascua, P., Sigouin, A., Gazit, N., Mandl, L., Betley, E., et al. (2020). Creating a space for place and multidimensional well-being: lessons learned from localizing the SDGs. *Sustain. Sci.* 15:12. doi: 10.1007/s11625-020-00822-w
- Tobey, J., and Torell, E. (2006). Coastal poverty and MPA management in mainland Tanzania and Zanzibar. *Ocean Coast. Manag.* 49, 834–854. doi: 10.1016/j.ocecoaman.2006.08.002
- Tortell, P., and Ngatunga, B. (2007). *Terminal Evaluation of the Development of Mnazi Bay Ruvuma Estuary Marine Park Project (MBREMP)*. Dar es Salaam: Government of the United Republic of Tanzania.
- UNEP-WCMC (2021). *Protected Area Profile for United Republic of Tanzania from the World Database of Protected Areas, January 2021*. Protected Planet. Available online at: <https://www.protectedplanet.net/country/TZA> (Accessed January 25, 2021)
- UNEP-WCMC, IUCN, and NGS (2018). *Protected Planet Report 2018*. Cambridge: UNEP-WCMC.
- United Republic of Tanzania (1994). *The Marine Parks and Reserves Act, 1994*. Dar es Salaam: United Republic of Tanzania, 1–29.
- Waldron, A., Adams, V., Allan, J., Arnell, A., Asner, G., Atkinson, S., et al. (2020). *Protecting 30% of the Planet for Nature: Costs, Benefits and Economic Implications*, Cambridge.
- Walley, C. J. (2010). *Rough Waters: Nature and Development in an East African Marine Park*, 1st Edn. Princeton: Princeton University Press.
- West, S., Haider, L. J., Masterson, V., Enqvist, J. P., Svedin, U., and Tengö, M. (2018). Stewardship, care and relational values. *Curr. Opin. Environ. Sustain.* 35, 30–38. doi: 10.1016/j.cosust.2018.10.008
- White, S. C. (2010). Analysing wellbeing: a framework for development practice. *Dev. Pract.* 20, 158–172. doi: 10.1080/09614520903564199
- Winthrop, R. H. (2014). The strange case of cultural services: limits of the ecosystem services paradigm. *Ecol. Econ.* 108, 208–214. doi: 10.1016/j.ecolecon.2014.10.005
- Woodhouse, E., Homewood, K. M., Beauchamp, E., Clements, T., McCabe, J. T., Wilkie, D., et al. (2015). Guiding principles for evaluating the impacts of conservation interventions on human well-being. *Philos. Trans. R. Soc. B Biol. Sci.* 370:20150103. doi: 10.1098/rstb.2015.0103
- World Bank (2017). *Monitoring Global Poverty: Report of the Commission on Global Poverty*. Washington DC: World Bank, doi: 10.1596/978-1-4648-0961-3

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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