(En)gendering Change in Small-Scale Fisheries Science and Policy

by

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor
of Philosophy in
Marine Science and Conservation in the Graduate School
of Duke University

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ABSTRACT

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Abstract

Increasingly the challenges of environmental governance are understood as global in nature and scope. Within fisheries, industrial fisheries have long been the global priority in fisheries science, policy instruments, and management techniques. Meanwhile, small-scale fisheries (SSF) have historically been relegated to the margins, framed as local, place-based, static practices from the past rather than global priorities. This dissertation examines the conditions and consequences of transformation in SSF governance, as SSF are becoming a global concern. The passage of a recent internationally negotiated policy for the small-scale sector signifies this monumental shift underway in global fisheries governance priorities: The Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines).

By 'following the policy,' this research examines the dynamics of policy mobility (e.g., who and what came together to make and implement this policy) across multiple sites and scales of policymaking and implementation as the SSF guidelines are mobilized at global, regional, and national levels. The movement to transform fisheries governance is examined against past patterns in fisheries science and policy, including through analysis of a large-N dataset. The mixed methods used provide needed insights into how different actors (e.g., scientists, policymakers, civil society organizations) have

grappled with the questions "governance of what, by whom, to what ends" in SSF through time.

While the passage of the SSF Guidelines in 2014 was considered a landmark moment for the SSF sector, attention has now shifted to what they will become; whether and how this policy will 'scale down' and to what effects. Studying policy implementation is critical to understanding how transformative change happens in fisheries governance and environmental governance more broadly. Developed with ongoing input from civil society organizations, the SSF Guidelines are the first global policy designed explicitly for SSF. Endorsing gender equality, decent work, and human rights as necessary tenets of sustainability, this policy's core principles stand in stark contrast to the status quo in fisheries governance. But what these principles will become is uncertain because policy implementation was left intentionally open-ended in the text of the SSF Guidelines which were written without pre-determined implementation targets or definitions of success.

This dissertation addresses the central question: How is such an unconventional and unlikely policy mobilized in practice, and how are the ideas within translated in place? To this end, this research engages with the literature on global environmental governance, theories of scale from human geography and common-pool resource scholarship, and the emergent field of critical policy studies, extending these insights to

the dynamics SSF governance, an understudied common-pool resource system undergoing transformation here and now.

Amidst the wider movement to transform fisheries governance to be more equitable, this research focuses on the principle of gender equality within the SSF Guidelines. Emphasis is placed on how the principle of gender equality came to be part of a global policy instrument in the first place, and later, articulated as the focus of national policy implementation. While this is a multi-sited and multi-scaled story, the dynamics of national-level implementation are followed in the context of Tanzania, one country working to implement this policy in their vast inland and marine fisheries with a chosen focus on gender. Tracing the multi-stakeholder process of developing a national 'roadmap' to implement the SSF Guidelines there, this dissertation reveals how the goal of gender equality was translated into specific strategies determined in place, including through a collaborative effort to 'map' existing women's fishing organizations and networks among them. Conclusions demonstrate that flexibility intentionally built into the design of global policies can create room for new understandings of what small-scale fisheries are, how they should be governed, and what a sustainable and desirable future for fisheries looks like—making space to imagine and enact alternatives that are more just and inclusive. Following the indeterminate arc of policy mobility then is critical to determining who steps into the space created by policy change. In the story of

creating and implementing the SSF Guidelines, civil society organizations played an outsized role in affecting multi-scalar policy transformation.

Dedication

To Editrudith Lukanga and Hazel Bell Wilder. Two women who indelibly shaped my research experience, making my work possible, joyful, and hopeful.

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1. Introduction

1.1 Defining small-scale fisheries governance: governance of what, by whom, and to what ends?

From local resource conflicts to global policy instruments, the label 'small-scale' is used to refer to certain kinds of fishing activities in opposition to those characterized as industrial or large-scale fisheries (LSF). But what are small-scale fisheries (SSF)? This fundamental question is often overlooked as 'small-scaleness' is taken to be obvious, assuming "you can know a SSF just by looking at it" (Gibson and Sumaila, 2017). This implicit approach to defining SSF relies on a shared, intuitive sense of what counts as small and what is even meant by invoking scale in the context of categorizing fisheries in the first place. Instead of clarifying these fundamental definitions, their meanings are often assumed or intuitively inferred by different actors engaged in SSF governance. Debate instead revolves around the design and implementation of the 'right' systems to steer, order, and regulate SSF. In short, how SSF should be governed.

Emphasis is often placed on identifying the characteristics of 'good governance', preferred ideas and practices worth replicating and becoming 'models' for policymaking that travel; 'imported solutions' to be emulated and taken up in different places and at different scales (Peck, 2011). Even as the concept moves and circulates through academic and practitioner circles alike, governance itself is rarely defined; ambiguity which has

likely only aided the widespread use and popularity of the term (Nuijten, 2004; Bridge and Perreault, 2009). In many instances, governance is operationalized in an instrumentalist sense, emphasizing the functional identification of stakeholders, goals, and procedures in efforts to 'get it right' and improve system efficiency (Nuijten, 2004). In this approach, governance is a system to be improved and engineered, "bringing 'institutional reality' into line with policy prescription" (Mosse, 2004). A future-oriented outlook premised on better theories of change and new beginnings, rarely moderated by an analysis of the past (van Ufford and Giri, 2003).

> "Despite the enormous energy devoted to generating the right policy models, however, there is surprisingly little attention paid to the relationship between these models and the practices and events that they are expected to generate or legitimize in particular contexts… At best, the relationship between policy and practice is understood in terms of an unintended 'gap' between theory and practice, to be reduced by better policy more effectively implemented." (Mosse, 2004)

For instance, in the realm of SSF development policy the World Bank—the sector's single largest funder (Basurto et al., 2017b)—pivoted after the turn of the century from decades of pushing largely failed technological inputs (e.g., ports, landing site infrastructure, fishing boats and gear) to financing governance as the model for global

fisheries development (Hamilton et al., 2021). Separating this shift was a near decades long pause on funding SSF altogether. The World Bank's global re-entry into funding SSF came under the banner of governance, a new effort to 'get it right' after internally acknowledging the failings of their previous model of development (Hamilton et al., 2021).

Even analytic approaches to governance often play out in apolitical terms, as inventories to be taken and typologies arrayed that unreflexively present SSF governance in neutral and rational terms—language which itself operates to obscure power relations in governance discourses (Shore and Wright, 1997; Nuijten, 2004). Where technical governance debates about the best ideas, data, and frameworks rarely contend with the presence of underlying assumptions and worldviews "that make evidence or consultations appear relevant", all of which impinge on the deeply normative process of envisioning what a sustainable world and desirable environmental future looks like (Beck and Forsyth, 2020). For instance, what passes for 'good evidence' in climate change policy depends on (often tacit) beliefs, assumptions, and values that motivate research agendas and position different ideas and stakeholders as relevant to the process (Beck and Forsyth, 2020). Where whether analysts adopt a global systems understanding of climate change that focuses on aggregate greenhouse gas emissions versus a concern for environmental justice and uneven development matters (Agarwal

and Narain 1991, Miller 2004). In response, Beck and Forsyth (2020) call for a more reflexive approach to knowledge production as we imagine, devise, and enact systems of governance. Where the basic questions "whose vision counts" and thus "who gets to imagine transformative change?" is an important place to start. If "to dictate definition is to wield cultural power" (Livingstone, 1992), a closer examination of who is wielding the power to define SSF, and relatedly, frame issues of SSF governance and the 'right' policy interventions, is needed.

Studying the intersection of these definitional questions, often held apart, is critical as "how we understand and represent environmental problems is inescapably linked to the ways in which we choose to ameliorate or solve them" (Jasanoff and Martello, 2004), as knowledge does not merely reflect, but performs worlds (Butler, 2011). If the boundaries of cognitive domains around concepts such as scale, governance, and SSF are less "an ontological exercise about the piece of reality" we are viewing and making claims to than a "strategy for delimiting the scope of vocabulary that will be allowed as good currency" (Livingstone, 1992), then questions of whose knowledge counts and who gets counted in the lexicon of SSF governance are brought to the fore. This dissertation examines the articulation and operation of knowledge making claims over SSF governance—what they are, how they should be governed—through time as a shifting and contested 'terrain of struggle' (Li, 1999), empirically examining the

emergence of 'historically effective practices' that become world-making—dominant patterns that become common sense (Li, 2019). But even seemingly dominant patterns are unstable, and thus I also trace transformations, moments where this emergence is interrupted by alternatives (Li, 2019). Focusing on relationships among the wider constellation of actors engaged in setting the scope for SSF governance—which I argue below is increasingly framed and understood as global—I consider the roles of scientists, policymakers, and non-traditional policy actors (including civil society) in negotiating what SSF are, and the relationship between knowledge, policy models, and governance practices.

While popular buzzwords like 'governance' or 'sustainable development' are powerful concepts that can align different actors around common objectives (despite containing different meanings), they can also have depoliticizing effects which conceal inequalities and power relations (Nuijten, 2004). To counter this tendency to frame environmental governance in managerial and neutral terms, Bridge and Perrault (2009) advocate for re-centering the politics by focusing on who influences our understanding of the fundamental questions: "governance of what, by whom, and to what end?" Interested in moving beyond instrumentalist conceptions of governance in fisheries, I am attentive to the empirical specifics of these questions as they are worked out in different domains (e.g., science, policymaking, and policy implementation). Focusing on

unfolding practices and unstable patterns again helps me to overcome the tendency to take a critical reading of governance to the other extreme conclusion: governance is domination to be resisted. A foregone conclusion that can be substituted for a closer look at real, ambiguous, or unintended effects and practices (Mosse, 2004). Understanding SSF as part of the contested and malleable terrain of environmental governance can help us think critically and "creatively about politics as a process of imagining and producing different environmental futures" (Bridge and Perreault, 2009).

Instead of accepting past patterns in SSF governance as natural, inevitable, or immovable features of what they are, I engage with the literature of environmental governance to unpack how SSF came to be framed, imagined, and enacted in particular ways and to what effects. One persistent and powerful representation of SSF is that they are the domain of fishermen; individuals that are commensurate and can thus be aggregated (St. Martin, 2005), where governance is predicated on the control of their harvest technologies and abstract fishing effort (Bennett, 2005). This generic and readily conjured picture of SSF sits uneasily with other facts we are increasingly learning about SSF as gendered and diverse spaces. Globally women comprise nearly half the small-scale sector's labor and work throughout SSF value chains (World Bank, 2012). But despite their integral roles in SSF economies, women have long been invisible in terms

of the dominant representations of SSF and priorities for governing them (Choo et al., 2008; Williams, 2008; Weeratunge et al., 2010; Kleiber et al., 2017).

We cannot merely "think away" these systems and patterns of exclusion. But by breaking down their dominance and supposed naturalness, we can work to foster "diverse present(s) and alternative futures" (McKinnon, 2010). This dissertation aims to make visible the presence and effects of past exclusions in fisheries governance and considers how recent policies aimed at realizing a more just SSF sector intersect with and potentially transform dominant patterns, creating openings for fisheries governance to be performed differently. Amidst the broader movement for 'fisheries justice' that increasingly implicates global institutions for their limitations (Mills, 2018), I focus on the role of a recent global policy that centers ethical commitments to equity and justice as central tenets of global SSF governance: The Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines).

1.2 Conjuring small-scale fisheries governance as global

Increasingly the parameters of fisheries governance debates are framed as global in nature and scope. In 1995 the Code of Conduct for Responsible Fisheries (CCRF) was adopted by the United Nations Committee on Fisheries (COFI)—the highest intergovernmental body tasked with setting fisheries governance standards and

priorities. The CCRF outlined the first global set of terms for 'good conduct' in fisheries governance. The timing of the development of a global code of conduct for fisheries tracked with a wider trend observed in the 1990s: the global was increasingly conjured as the proper scale for governing a wide range of environmental, social, and political concerns (Tsing, 2000; Miller, 2007). Although SSF were only marginally represented within the CCRF (receiving only four specific mentions; Johnson, 2006), it appears that SSF are now in the process of becoming a global concern in their own right.

"Which issues are defined as meriting the world's attention has everything to do with who has power and resources, including scientific ones, to press for them" (Jasanoff and Martello, 2004). Long considered data poor (Basurto et al., 2017a) scientific attention to SSF is on the rise. Once considered and "too trifling to bother with" for many (Larkin, 1988), recent global assessments have now demonstrated that SSF are globally significant and extensive in terms of their contributions to employment (World Bank, 2012), food sovereignty and security (Funge-Smith and Bennett, 2019; Bennett et al., 2021), nutrition and public health (Golden et al., 2016), and trade (FAO, 2020). Increasingly global governance commitments link sustainability and development goals to SSF (e.g., through the Sustainable Development Goals), and in 2014 COFI produced the first set of global guidelines specifically for SSF governance, the SSF Guidelines.

While a specific set of global guidelines designed for SSF lagged some 20 years behind the CCRF and were acknowledged to be "long overdue" (FAO, 2015), their adoption in 2014 registered SSF as a global fisheries governance concern. No small feat for a sector long overlooked and only marginally considered in conventional, scientific fisheries management and governance (Berkes, 2001; Chuenpagdee et al., 2006). If "to arrive at a global position is no small achievement" for any issue, as "the global scale is the acme of scales and the power to proclaim the globality" of an event, entity, or dilemma "is the power to put the world on alert" (Herod and Wright, 2008), this process of trasnformation in SSF merits a closer look. Given that SSF, along with the governance of other common-pool resource systems (e.g., traditionally forests, pasture, and water; Ostrom, 1990), have long been thought of as local, place-based, and traditional governance practices, registering as an issue of global governance raised new scale questions: how to 'scale up' lessons learned from local and regional cases to the global, scale down global policies and 'good governance' principles in place, and navigate the multi-layered, interlinked, and interactive nature of global environmental governance in the commons (Ostrom et al., 1999). The SSF Guidelines present an opportunity to study the making of global governance, as such processes of (re)scaling should not be presumed to be seamless and totalizing, but rather as containing contradictory and

paradoxical elements while also (potentially) unifying around a common cause (Kaplan, 1988).

In 2014 when COFI member states ratified the landmark SSF Guidelines, this moment was widely heralded by policymakers, scientists, states, and civil society as a critical turning point in the discourse of fisheries governance. The passage of the SSF Guidelines upended assumptions about who gets to make global environmental policy and what principles should be contained within. Driven by the demands of civil society, the development of the SSF Guidelines included the ongoing participation of fishworkers, led by a handful of global and regional civil society organizations (CSOs) who were engaged at every step (Jentoft et al., 2017). The thematic heart of the policy (Part 2) elevated five global guidelines for sustainable SSF governance: secure tenure, inclusion of the wider value chain, decent work, gender equality, and disaster preparedness and climate change adaptation. In addition to these five guidelines, the entire text was grounded in a set of 'guiding principles' (Part 1, Section 3) that outlined foundational, ethical commitments to human rights, respect for cultures, non-discrimination, participation, and equity and equality to promote justice for "vulnerable and marginalized groups", including women (FAO, 2015). These priorities stand in stark contrast to the discourse of existing fisheries policies, which have long been shaped by

bioeconomic principles developed for industrial fisheries (Berkes, 2001), and are critiqued for being gender-blind (Lawless et al., 2020; Lawless et al., 2021).

Gender is central to the SSF Guidelines, prefaced as a 'guiding principle' in the introduction, receiving a dedicated chapter (as one of the five governance guidelines), and as a cross cutting theme mentioned 22 times throughout the text, while 'women' are also referenced 55 times (Jentoft, 2014; Kleiber et al., 2017). While the SSF Guidelines intentionally "do not prescribe a standard definition" of SSF (FAO, 2015), they call attention to the full range of people, activities, and environments found throughout the entire value chain, including "pre- and post- harvest activities undertaken by both men and women" on land and on the water (FAO, 2015). In lieu of a narrow, pre-determined definition, this broad, flexible, and encompassing template serves as a starting point: a 'roadmap' for a definition of SSF to be determined in place through a participatory policy implementation process, emphasizing that "vulnerable and marginalized groups needing attention" should be included in this process (FAO, 2015, p. 2).

The open-endedness of the definition of SSF is mirrored throughout the structure and language of the entire text of the SSF Guidelines, where each governance principle was carefully designed without narrow definitions, standardized implementation targets, or pre-determined measures of success. The built-in flexibility in the Guidelines stands in stark contrast to the present thinking that 'being smart' about designing global

governance agreements means using SMART (Specific, Measurable, Achievable, Realistic, and Time-bound) targets (Maxwell et al., 2015), benchmarks that determine what constitutes progress towards stated policy goals universally, often accompanied by pre-determined indicators to measure success (Jacob, 2017; Maron et al., 2018; Green et al., 2019). Instead of prescribing one-size-fits-all targets that translate success through the lens of measureability, as has often been the case in target-based agreements (Hagerman et al., 2021), the SSF Guidelines are flexible throughout. An intentional (if unconventional) standpoint that underscores that cultural context matters, and pre-existing differences must be considered to determine what should count as progress towards each goal (FAO, 2015). Thus, the answers to "governance of what, by whom, to what ends" in the context of the Guidelines were not scripted. Rather this policy, global in scope, called for these fundamental questions to be (re)examined in a participatory manner: an opening that invites these questions to be reimagined at every level to identify and redress pre-existing inequities in determining what SSF are, who gets to design and enact policies for governing them, and what the guiding goals of governance should be.

Yet, such openings can be coopted. Becoming new opportunities for the same powerful actors to assert control over the terms of fisheries governance. Equally, the flexibility in this policy could create space for the rise of a new set of actors to step in

and steer governance projects to unequal ends. Openings for a new collaborative and participatory process can also stall out due to intractable dynamics, lack of institutional structure, or an inability to define a shared trajectory forward. Thus, this dissertation explores the SSF Guidelines as a global policy that creates possibilities for SSF governance to be imagined and performed otherwise without assuming what the outcomes will be. I follow this unusual policy in motion attending to who steps into the openings created along the way, tracing moments of alignment, disruption, and transformation as different actors grapple with the questions "governance of what, by whom, and to what end" within their pre-existing socioinstitutional landscapes.

To this end, three objectives guide the research presented here. First, I aimed to understand the definition of SSF as a site where different meanings and possibilities are at stake, exploring how influential actors have defined SSF over time in contrast to the alternative definition posed by the SSF Guidelines. I focused on scientists and policymakers as 'experts' with an outsized influence in environmental governance, exploring the role and politics of knowledge production wrapped up in defining SSF that are often obscured by claims of objectivity or mere observation. Second, I considered how the concept of scale shapes our understanding of what SSF are and how they should be governed. Demonstrating how common assumptions about scale (reducing it to size, level, and hierarchy; Howitt, 1998) manifest in SSF governance, I

illustrate how these commonplace notions of scale frame SSF as decidedly small, local, and at the bottom of the capture fisheries binary (e.g., small-scale/large-scale). This both naturalizes their historically marginalized place in global systems of fisheries governance and suggests that any global movement to govern them differently is paradoxical to their essence. Drawing on human geographers' reconceptualization of scale as an entity that is continuously (re)made, I read the SSF Guidelines for alternative understandings of how SSF are scaled and the possibilities for rescaling SSF governance. Lastly, I examined how the Guidelines are being 'scaled down' as they move through existing policy landscapes at different levels (e.g., global, regional, and national) under the umbrella of policy implementation. Instead of a static backdrop of orderly levels that policies move over, these levels are understood as dynamic socioinstitutional policy landscapes (Peck, 2011): a terrain that policies move through. Policy mobility is explored as a process that potentially opens both policy landscapes and policies to being remade. At the national level, I followed the national project of policy implementation in Tanzania, to understand what it meant to enact and implement this policy (designed without SMART implementation targets or measures of progress) in practice. Focusing on how the Guidelines were translated into a 'roadmap' of specific strategies to enact the goal of gender equality in Tanzania, I describe how this process spilled over into

different levels (e.g., beyond the boundaries of the nation state), reconfiguring scales of SSF governance within and beyond Tanzania.

1.3 Research questions

This dissertation addresses the following research questions:

1. How have small-scale fisheries been defined, and how are the SSF guidelines redefining what SSF are?

2. How do common assumptions about scale shape SSF governance, and how can these relationships be reimagined through the SSF Guidelines?

3. How are the SSF Guidelines scaled down and implemented in practice?

4. How is the principle of gender equality translated and performed in place through policy implementation?

To address these questions, I used multiple methods, different types of field sites and modes of data collection. This included, first, analysis of a large-N data set of peer-reviewed publications on SSF as a site to empirically examine knowledge production practices at the interface of science-policy networks which exert power in shaping SSF governance over time (see Chapter 2 for further detail). Second, I critically analyzed the text of the SSF Guidelines, reading it for (potentially alternative) answers to the questions "governance of what, by whom, and to what ends"? (see Chapter 3 for further detail). Lastly, I used a multi-sited approach to 'following the policy' (Peck and

Theodore, 2012), tracing negotiations over the meanings of the Guidelines, and in particular the principle of gender equality through a multi-sited, distended case study (Marcus, 1995; 2009; Peck and Theodore, 2012. The practice of following led me to focus on the implementation of the Guidelines in Tanzania, one country working to implement the policy in their national waters. Fieldwork in Tanzania included participant observations at key policy meetings, key informant interviews, analysis of past meeting reports and background papers, and semi-structured surveys of women's fishing organizations in coastal communities (see Chapter 4 for further details). This latter data collection effort was part of a wider national study to map women's fishery organizations as part of the multi-pronged strategy to implement the SSF Guidelines. The methods for the wider, national study are described in Chapter 4, and the specific methods I used and data I collected through the survey are presented in Chapter 5.

1.4 Theoretical approach

This dissertation is set amid concerns within theoretical and policy circles about transforming environmental governance to be more equitable and inclusive. While sustainability has been a buzzword in environment and development circles for the past three decades (Nuijten, 2004), the pursuit of policies that align environmental governance practices with the goal of sustainability has often focused on quantifiable outcomes, privileging certain kinds of information, priorities, and visions of what a

desirable environmental future looks like over others. As a 'parameter-shaping' force in the world, policies contribute to these projects, creating "the frames within which everyday life happens" (Jenkins, 2006). But policy is also a force that can maintain the status quo (Jenkins, 2006), and whatever its designers' intents, is ultimately a process worked out in particular places, generating multiple and often unintended effects. Contemporary environmental policymaking processes spill out over jurisdictional borders, influenced by a range of experts, not solely states or natural resource bureaucracies (Peck, 2011). Broader attention to who and what influences policymaking agendas is part of the wider "qualitative shift" toward studying the dynamics of environmental governance, a turn away from state-centric theories of change toward a more relational interest in institutional capacities operating at multiple scales where "formal and informal decisions are made regarding uses of nature" (Bridge and Perreault, 2009). Environmental governance foregrounds an interest in the roles of non-traditional actors (e.g., NGOs, international agencies, social movements) while the status of familiar ones are also reworked (McCarthy, 2005).

The SSF Guidelines are a global policy that was assembled and continues to be animated by a range of actors. Ratified by and largely addressed to nation states, the policy was developed through a UN specialized agency (the Food and Agriculture Organization, FAO), its development sanctioned, and results eventually ratified by a

global inter-governmental forum (the voting Member States of COFI). Non-governmental 'observers' (in COFI rule parlance) were also party to this process. But the initial movement to create the Guidelines, the drive behind their development and the unorthodox ideas they contained, was forged through emergent groups and alliances among civil society organizations, social movements, academics, and expanding networks of their supporters. The very existence of a global policy specifically designed for SSF, with fishworker and civil society organizations' input, challenged many conventions about fisheries governance: how authority to speak for SSF was claimed and what "socioinstitutional arrangements and normative frameworks were invoked" (Nuijten, 2004).

In examining the convergence between past patterns and emergent ideas about SSF governance, I do not take spatial scales of SSF governance for granted as ontologically given. While the apparent structure and existing socioinstitutional order of fisheries governance indelibly shapes the possibilities surrounding the SSF Guidelines, the very creation and mobilization of this policy can also potentially reorder or rescale relationships. Drawing on the work of human geographers and literature on the political ecology of scale (Neumann, 2009), I treat "processes of re-scaling as things to be explained", not to explain things with (Bridge and Perreault, 2009). Thus, both the meanings at stake in the Guidelines and the relationships among the wider constellation

of actors engaged in global environmental governance of SSF (e.g., scientists, intergovernmental bodies, civil society organizations) are understood as open to being reworked and potentially transformed while also conditioned by patterns, rules, and the structure of existing socioinstitutional landscapes. While a detailed theoretical treatment of the concept of scale is provided in Chapter 3, and how I think through policy mobility in Chapter 4, below I situate my research more broadly within the field of global environmental governance.

1.4.1 Global environmental governance and policymaking

Environmental policy, like any policy, is not "an organisational practice that is confined to the state and its delegates" (Jenkins, 2006). Rather it is constituted through relations between science, politics, and society. Science as the primary means through which humans "view, understand, and modify nature" has had a privileged position in environmental debates: often positioned at once as the "cause, means of detection, and possible solutions to environmental problems" (Chilvers and Evans, 2009).

Conventionally the relationship between science and policy has been understood as linear; distinct spheres with discrete linkages (Chilvers and Evans, 2009). In a linear model of policymaking, science is understood as "objective value-free and entirely separate from politics", supplying neutral information and impartial knowledge to policymakers and their networked institutions (ibid, p. 355). Across many

environmental domains, the belief in the separation between scientific, political, and social orders creates this needed distinction (Jasanoff, 2004), casting resource governance in a purely technoscientific and managerial light (Bavington, 2002). "A method, not a value" (Saul, 1995, p. 200), managerial thinking has been applied across many environmental domains, including in fisheries (Bavington, 2002; 2010), where for instance the Code of Conduct for Responsible Fisheries includes many references to 'management' but none at all to 'governance' let alone 'politics'. In this approach, the role and politics of knowledge are not explored, as knowledge "remains subservient", entering the process as a "largely pre-given reflection" of reality supplied by objective experts (Chilvers and Evans, 2009). In the managerial approach to fisheries-governance-as-usual, a few select economic and ecological indicators have traditionally been elevated as meaningful—gear, boats, target stocks, landings (Bavington, 2010; Calhoun et al., 2016), and the people within these simplified models represented as economically rational and individualistic fishermen (St. Martin, 2005). This framework was developed to meet the needs of rapidly expanding industrial fisheries in the 20th century and has been applied to SSF as an afterthought, often with disastrous results for human and ecological communities (Berkes, 2001). Understood in neutral and apolitical terms, any failings of this model in practice may occur in application, deviations from the design, or due to needed updates in calculation—with minor tweaks required to resolve errors. But

the politics and production of SSF as objects to be governed (as an afterthought on the receiving end of tools and models developed for industrial fisheries) were not seriously in question.

In contrast, critical work on the politics of environmental governance helps recast the roles and supposed separation among actors engaged in environmental governance. Ascendant since the mid-1990s, the concept of environmental governance recognized that political authority is multi-layered and dynamic, operating at multiple levels and spatial scales (Lemos and Agrawal, 2006). The framework of environmental governance is used to both describe and analyze the "qualitative shift in the manner, organisations, institutional arrangements and spatial scales by which formal and informal decision are made regarding the uses of nature" (Bridge and Perrault, 2009, p. 475). The concept has been widely taken up and used by different social theorists (e.g., geographers, political scientists, sociologists, etc.) but is still often employed vaguely, in many cases reflecting a lingering "managerial rather than analytical approach to governance that obscures the politics of definition" (Davidson and Fickel, 2004). Thus Bridge and Perrault's (2009) call for bringing the politics of environmental governance to the foreground as a central analytic, as even "high minded concepts" like 'governance', despite their well intentions and aspirations, can have multiple, contradictory, and unintended effects (Nuijten,

2004). Even reducing the ability of marginalized actors to shape their own outcomes, effectively weakening civil society (ibid).

As existing research on the SSF Guidelines and the very language of 'policy implementation' often reflects this lingering 'managerial approach' to governance, I take up Bridge and Perrault's suggested emphasis on the definitional questions of "governance what, by whom, and to what ends" in SSF within a framework of environmental governance. Because despite the ethical commitments to transforming inequities to enhance justice and inclusion in SSF governance through the Guidelines, whether those changes will take place, who has a say, and what transformations will be achieved cannot be assumed or predicted in advance.

Bridge and Perrault (2009) identify three core interrelated concerns of environmental governance. First, an environmental governance lens can de-center and denaturalize the state as a coherent and unitary actor with domain over questions of resource governance, recognizing instead that interlayered geometries of power shape administrative authority, and that the conventional roles and capacities of different actors are being reconfigured (Lemos and Agrawal, 2006). Second, the boundaries and status of given analytic categories (the state, public, private) and policies premised on them are problematized as actors are understood as part of shifting constellations or networks giving rise to "hybrid environmental governance" arrangements and

strategies (Lemos and Agrawal, 2006). In destabilizing given categories, there are also opportunities to rethink scale as an inherently political and unstable "manifestation of socio-environmental relations" rather than fixed levels or static containers for governance processes (Bridge and Perrault, 2009, p. 485). Third, environmental governance foregrounds the rise of non-traditional actors such as civil society. Taken together, the proliferation of connectivity that an environmental governance framework illuminates opens and re-politicizes 'governance issues' as

> "sets of connections between other sites and scales with attendant causes, consequences, and possible solutions. Rather than being pre-given, dominant scales of governance are seen as provisional effects of networks, which opens them up to a critical interrogation in terms of who is included and excluded" (Chilvers, 2009, p. 359).

Drawing on this framing of environmental governance, I attend to the shifting roles and relationships among actors engaged in the governance of SSF as a dynamic and contested terrain that includes networked socioinstitutional 'policy landscapes' (Peck, 2011) that are always potentially open to being questioned, reworked and rescaled, including through the creation and implementation of the SSF Guidelines. But still, who decides what policies and goals should be advanced to enact the environmental futures we want?

Policies come from somewhere. The designs of prevailing 'policy fixes' and notions of best practice in environmental governance are not "handed down on high" (Peck and Theodore, 2010). Increasingly, models of policymaking are propelled not in a straight-forward, top-down manner driven by states, but through networks of experts, international institutions, and multilateral agencies (Miller, 2007; Chilvers and Evans, 2009; Peck, 2011).

> "The modern policy-making process may still be focused on centers of political authority, but networks of policy advice, advocacy, and activism now exhibit a precociously transnational reach; policy decisions made in one jurisdiction increasingly echo and influence those made elsewhere; and global policy 'models' are exerting normative power over significant distances. Today, sources, channels, and sites of policy 'advice' extend far beyond the modern prince's earshot, encompassing sprawling, global networks of human and non-human actors/actants, from gurus to consultants and conferences to practitioner blogs, not to mention the more 'hierarchical' influence of multilateral agencies, powerful trading partners, and occupying powers." (Peck, 2011, p. 773).

While the role of 'networks of consensus' in the production of globalized policy models are often critiqued for their neoliberal origins and disciplining effects (Peck and

Theodore, 2010; Sheppard and Leitner, 2010), such networks can also be transformed, opened to more heterogenous groups of actors with transformative effects in terms of how governance is practiced. Chilvers and Evans (2009) argue that we need to extend our attention to the role and production of knowledge (or co-production; Jassanoff, 2004) in environmental governance networks through the inclusion of diverse actors, sites, and spaces. Exploring the roles of different types of actors in each chapter (scientists and traditional policymakers in chapters 2 and 3, non-traditional actors, civil society, and dynamic networked arrangements among actors in chapters 4 and 5), I explore how "knowledge-making is incorporated into governance, and governance influences the making and use of knowledge" (Chilvers and Evans, 2009). This has been described by Jasanoff (2004) as a process of co-production "as the ways in which we know and represent the world (both nature and society) are inseparable from the ways in which we choose to live in it" (ibid, p.2). While the relationships between "the networks, settings, and spaces" of scientists and policy elites have been examined in the co-production idiom extensively (Jasanoff, 2004), often the role of society and diverse publics "tends to be implicit, passive, and for the most part an imagined quantity, rather than active or explicitly present" (Chilvers and Evans, 2009). Or participation by civil society is assumed to be inherently good, enhancing democratic legitimacy and efficiency (Bernauer and Betzold, 2012). This dissertation addresses calls for expanding

the existing body of theoretically informed and empirically attentive studies of civil society organizations and the science-policy interface and their hybrid and emergent networks, amidst the polyvocal movement to transform fisheries governance globally.

If "the willingness to seek global solutions to problems of the human environment is one of the big—and as yet only partly told—stories of the late twentieth century" (Miller and Edwards, 2001), I argue that the story of SSF governance becoming global is an important if yet unfinished one. This SSF Guidelines are reverberating through global environmental governance circles, energizing different actors, inspiring new ideas and networks at different scales, and potentially recasting longstanding patterns in fisheries governance. Drawing on human geographer's conception of scale, I extend central geographic "scale questions" to fisheries to understand how SSF are scaled, how we think about such scaling, and how different actors go about the work of scaling their own activities in SSF governance in ways that advance certain causes in collaboration with others, enable their own power, constrain others, and the contradictions and possibilities in between (Herod and Wright, 2008).

Along with scale I examine under-explored questions of the politics and ramifications of knowledge-making and claims to SSF governance by focusing on science and policy as overlapping domains of expertise with purchase over notions of 'good governance'. Each chapter explores the dynamics of past practices, scalar tensions,

and potential for transformation, examining how the past, present, and future answers to fundamental questions of SSF governance are brought to bear on one another. Tracing temporal dimensions to these fraught questions serves to illustrate how influential patterns and certain ideas take hold, even becoming taken-for-granted as they achieve the status of common sense, while also revealing where there is instability and movement among them; openings for new voices and ideas to be inserted, understandings to be leveraged, and transformation to occur. Instead of understanding knowledge surrounding SSF as fixed—either a mere reflection of reality as it is, or a construction controlled by systemic and immovable hegemonic forces—I disentangle the work entailed in producing ideas that hold sway over fundamental questions of what SSF are and how they should be governed. Like other global projects and questions, this research entailed exploring different sites and scales where meanings are at stake to understand and problematize the production of SSF governance as global.

1.5 Dissertation Structure and Chapter Summaries

This dissertation is written in manuscript form, which each chapter containing its own introduction, background, theory, methods, and data. While the chapters are all broadly concerned with the SSF Guidelines and the question(s) of governance of "what, by whom, to what ends", these questions are examined in different contexts, moments in

time, and locations. Given this structure, there is some repetition among chapters and room to further explore future questions.

In Chapter 2, I deconstructed the definition of SSF, contrasting dominant characteristics used to categorize SSF with the alternative definition the SSF Guidelines put forth. Through systematic coding of a large-N dataset, I empirically demonstrated that male-dominated harvest technologies have been isolated as the essential and defining traits used to characterize the sector in science and policy in recent decades. But also, that this was not always the case. I argue that the SSF Guidelines create an opening or space of possibility to challenge existing patterns and potentially redefine SSF in place through policy implementation. Chapter 3 contrasts theories of scale from human geography with common-pool resource scholarship, drawing on the case of SSF governance to demonstrate how the concept of scale powerfully shapes our perceptions of problems and solutions in resource governance dilemmas. Through analysis of the text of the SSF Guidelines, I highlighted how this policy challenges assumptions about scale that have long overshadowed SSF governance—that they are inherently small, local, and temporally distant—understandings built upon simplistic notions of scale as equivalent to size, level, and hierarchy.

Focusing on the SSF Guidelines in chapters 4 and 5, I 'followed the policy' through multi-sited ethnographic research, including observations at formal policy

meetings such as COFI, and emergent meetings for civil society. Focusing on the dynamics of policy mobility (who mobilized the ideas within the policy, what work was entailed), I demonstrate how the Guidelines are expanding and reconfiguring networks among actors and their alignments around issues of SSF governance in ways that unsettle the existing order of fisheries governance. Chapter 4 is focused on the story of policy mobility, emphasizing the people who did the 'policy work' of mobilizing the Guidelines at multiple levels. Following the policy led me to focus on how the principle of gender equality was translated into specific implementation strategies in Tanzania. Chapter 5 narrows the focus to one specific strategy envisioned to achieve this goal: a national study to 'map' women's fisheries organizations. Analysis of the resulting survey data with women's SSF organizations in Zanzibar demonstrates how collective action has served as a strategy for women to navigate the shifting economic, social, political, and ecological conditions they face in the sector, and how gender and collective action shape fisheries value chains. It provides a view of gender in fisheries that is distinct from dominant representations in the literature.

Chapter 2 was co-authored with Xavier Basurto and was published in 2019 in Frontiers in Marine Science in their Marine Fisheries, Aquaculture and Living Resources section in a special issue "Small-Scale and Artisanal Fisheries: Insights and Approaches for Improved Governance and management in a Globalized Context". Chapter 3 was co-

authored with Xavier Basurto, Alejandro Garcia Lozano, and Lisa Campbell and was published in the International Journal of the Commons. The pronoun 'we' is used for the first-person voice in these two chapters to reflect the co-authored nature of this research. Both are re-printed here with permission. The Chapters 4 and 5 are part of my efforts to 'follow the policy', in my case the SSF Guidelines, which brought me into the policy process itself. The methods and results of the women's SSF mapping survey I describe were part of a broader, collaborative project led by state and non-state actors in Tanzania. I played a role in this collaboration by developing and testing the survey instrument and by collecting data in selected regions. The wider study was led by the multi-stakeholder National Task Team steering the overall implementation of the SSF Guidelines in Tanzania. The results I report reflect my own data collection, analysis, and interpretation of findings and do not represent the views of the National Task Team, the government of Tanzania, or the FAO. While acknowledging the collaborative and co-produced aspects of this policy work, all the data I present was collected and analyzed by me.

2. Defining Small-Scale Fisheries and Examining the Role of Science in Shaping Perceptions of Who and What Counts: A Systematic Review

2.1 Introduction

For many the term "small-scale fishery" (SSF) evokes a mental image of small, traditional fishing craft equipped with low-tech gear requiring labor-intensive fishing methods. Fishermen are typically the central subjects of this platonic scene, operating boats individually or in small crews in the pursuit of fish. Even individual fishing strategies are often presumed to follow one of several archetypical models of behavior, whether inherently ecologically and socially harmonious, and therefore sustainable, or conforming to the economically rational, competitive fisher of fisheries bioeconomic models (St. Martin, 2005). This dominant imaginary of SSF is often spatialized, presumably limited to the tropical seas of the Third World, as opposed to the fully capitalist, industrial fisheries that inhabit the First World (St. Martin, 2005).

This prototypical image of fishermen adrift in a sea of small boats is easily conjured, yet it obscures the broader assemblage of diverse livelihood activities that occur along the SSF value-chain. We consider SSF as encompassing these wide-ranging activities undertaken throughout the value chain by both men and women in inland and marine fisheries, including harvesting from boats and on foot, along with pre- and post-harvest labor that occurs on land (FAO, 2015). However, even the term "value chain" can be misleading, suggesting tidy relations organized into discrete and equivalent

links. In practice, the meshwork of actors and relationships that comprise the value chain are not so clear-cut or orderly, but are rather diffuse, tangled and contingent—assembling and re-assembling into new alignments along an uneven and shifting terrain (Li, 2007; Anderson and McFarlane, 2011). The extent of small-scale value chains is not limited to the global south: SSF are found in inland waterways and seas across the globe, spanning different freshwater and marine ecosystems, development contexts, and political arrangements. Nor are they confined to the past, despite conventional associations between SSF and traditional practices: SSF have persisted as a way of life throughout human history through adaptation to changing social, environmental and economic conditions.

In this paper we probe the gap between the heterogeneous and dynamic existence of SSF in practice and the one-dimensional caricature typically portrayed and embedded within the dominant imaginary of SSF. We take the definition of SSF as an entry point to explore this enduring paradox and consider how practices of knowledge production have shaped perceptions of what SSF are, and therefore, how they should be valued and governed.

2.1.1 The immanent rise of small-scale fisheries

Despite longstanding asymmetries between SSF and industrial fisheries, recent changes indicate that another future is possible. Scientific attention to SSF is on the rise as evidenced by a marked increase in peer-reviewed publications on SSF in the last two

decades (Purcell and Pomeroy, 2015; Basurto et al., 2017b) and the development of global partnerships for collaborative SSF research such as the Too Big to Ignore network (Chuenpagdee et al., 2017). The passage of the Food and Agriculture Organization's (FAO) Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines) in 2014 marked a historical turning point for SSF. As the first globally negotiated policy specifically for the small-scale sector, the SSF Guidelines differed from other fisheries instruments because they were developed through an inclusive, participatory process and took a human rights-based approach to fisheries governance (Allison et al., 2012; FAO, 2015; Willmann et al., 2017). While the arrival of the SSF Guidelines marked a profound departure from fisheries policy-as-usual, this shift was regarded as long overdue: fishers, fishworker organizations and related civil society organizations (CSOs) began calling for the development of a specific set of guidelines over a decade earlier (Jaffer and Sunde, 2006; ICSF, 2007; Sharma, 2008; 2011; Pictou, 2017). Discontent among fisher organizations coalesced over the passage of Code of Conduct for Responsible Fisheries in 1995—guidelines which purportedly set standards for global best practices pertaining to all capture fisheries yet only contained four mentions of the specific needs of SSF (Johnson, 2006). It took nearly 20 years to ratify a corollary set of guidelines for SSF at the Committee on Fisheries (COFI). However, in contrast to their longstanding marginal status within global policy, SSF now command their own standing agenda item at the

biennial convening of COFI, where 2022 was designated the Year of Artisanal Fisheries and Aquaculture and an expanding cohort of member states have made public commitments to implement the SSF Guidelines in their national fisheries (FAO, 2018).

As the tides of attention appear to be shifting towards SSF, we believe it is timely to ask: if SSF are on the rise as a subject of interest in science and policy, then what, exactly, counts as small-scale fisheries? On the surface, this appears to be a simple question and matter of straightforward classification: a specific fishing enterprise or wider fishery is better suited either to the small-scale or to the industrial category. Yet upon closer consideration it becomes evident that the definition beneath each category is linked to more fundamental issues about the relationship between nature, technology and society that are not so clear-cut or ethically neutral (Johnson, 2006; Arbo et al., 2018). Defining SSF is not a mere technical matter of where to draw the line between small-scale and industrial fisheries; it is, rather, a value-laden decision with political implications and material consequences both for the environment and for humans who depend on fishing for their livelihoods and food security (Johnson, 2018). Based on our own observations at different international fisheries fora, the issue of the definition often presents a stumbling block for efforts to achieve mutual dialogue and consensus agreements on fisheries governance at national, regional and global levels. While ostensibly speaking of the same category—SSF—dialogue often unravels when the definition is unpacked in practice, and divergent perspectives arise over which

characteristics of SSF are most salient and worthy of inclusion at the expense of others. Scientists play an important role in these debates as an influential community widely regarded as experts in the matters of environment and natural resource management, yet the situatedness of knowledge and the effects they produce often go unscrutinized (Haraway, 1988; Turnhout, 2018). We believe it is pertinent to explore the relationship between scientific knowledge production and the definition of SSF, asking: How have scientists navigated defining SSF as a subject of study? Can we identify any common traits among scientific definitions, and do commonalities vary over time and space? Lastly, what can a closer look at these patterns reveal about the relationship between the definition, presumed priorities and present blind spots in SSF research and policy?

One way to approach these interrelated questions empirically is to analyze the growing body of scholarship on SSF. In doing so, the overarching goal of this paper is to examine how scientific knowledge has shaped the definition and perceptions of who and what counts as SSF through a review of scientific literature on SSF.

2.1.2 The emerging global picture of small-scale fisheries

How SSF are defined is pertinent considering the recent push to scale up knowledge on the sector. Constructing a global picture of SSF requires amassing and aggregating different sources of data, a major challenge for a sector that has long been considered data-poor. Within fisheries, SSF have historically gone uncounted, underestimated, or undifferentiated—overlooked or hidden within national fisheries

statistics. The reasons for this data gap are multiple. The diversity and plurality of SSF frustrate efforts to systematically and reliably count them at higher scales, and these challenges are further exasperated by a chronic lack of institutional capacity and meager political will to prioritize SSF, their specific data needs, and unique methodological challenges (Welcomme et al., 2010; Kittinger et al., 2013; Basurto et al., 2017a). However, in recent decades global momentum is building to prioritize counting SSF through innovative methodologies to combat the chronic inaccuracies of existing data and the sector's subsequent invisibility. In 2012, the FAO collaborated with the World Bank and WorldFish researchers to generate global estimates of SSF independent of self-reported national fisheries statistics. Through use of country-level case studies and assimilation of existing data sources, the resultant "Hidden Harvest" report and the forthcoming "Illuminating Hidden Harvest" unveil previously underestimated contributions of SSF to human well-being, providing new figures on the magnitude and impacts of SSF that avoid some of the limitations of official government statistics (World Bank, 2012; WorldFish et al., 2018).

The global picture of SSF emerging from these efforts suggests that, despite the name, SSF are by no means "small." On the contrary, SSF are much larger than previously thought and appear to have an outsized impact on human health and nutrition, poverty alleviation, jobs and the structure of seafood markets (Jentoft et al., 2017). Estimates indicate that SSF likely land nearly half the world's seafood, playing a

critical role in food security and nutrition, especially for those living in poverty (Kawarazuka and Béné, 2010; World Bank, 2012; Bennett et al., 2018). The nutritional value of wild-caught fish is manifold, providing a high-quality source of protein, fatty acids and micronutrients vital to combatting malnutrition and disease (Béné et al., 2015; Golden et al., 2016). Access to fish is especially important for the diets and health of pregnant women, infants, and lactating mothers (Bogard et al., 2015; Thilsted et al., 2016), for the populations of many small island developing states (SIDS) (Béné et al., 2016), and for sociocultural groups with longstanding ties to the sea or inland waterways (McCay, 1987; Funge-Smith, 2018). Further, new evidence suggests that the nutritional value of wild-caught fish may exceed that of farmed fish (Belton and Thilsted, 2013; Thilsted et al., 2016; Bogard et al., 2017), underscoring the continued importance of capture fisheries even alongside the rise of aquaculture.

In terms of employment, SSF are by far the oceans' largest employer—greater than industrial fisheries, oil and gas, shipping, and tourism combined (World Bank, 2012; OECD, 2016). Experts suggest that inland SSF likely provide even more jobs than their marine counterparts (56 verses 52 million) and play an especially important role in local nutrition and food security (Welcomme et al., 2010; World Bank, 2012; Bennett et al., 2018; Funge-Smith, 2018). The composition of the SSF workforce is also more diverse than previously thought, with women representing nearly half of SSF workers globally (World Bank, 2012). From the net to the plate, women are found along the entire SSF

value chain and dominate the post-harvest sector in many parts of the world (Choo et al., 2008; World Bank, 2012; Kleiber et al., 2015). Once landed, fish are transformed into an array of products and become highly traded commodities—some of the most traded food items in the world (FAO, 2018). While often associated with subsistence use and barter exchange, fish landed by SSF circulate within markets at various scales, including in local fishing communities, through extensive networks of regional markets, and in an increasingly globalized system of international trade (FAO, 2018). Greater granularity is needed to better understand the distributional and nutritional consequences of changing trade relations in SSF and interactions of markets at different scales (Bennett et al., 2018).

Beneath each these new data points rests a definition of SSF that served as the foundation for tallying the size and contributions of the sector. As these facts and figures are borrowed, revised, and continue to circulate beyond their original context, the underlying definition rarely travels with them. As a pervasive yet often invisible feature, how does the underlying definition shape efforts to accumulate knowledge on SSF as the sector garners greater attention and an increasingly global status? As we begin to understand and illustrate SSF as global in terms of the sector's magnitude and scope, the question remains, what are we counting?

The growing body of scientific knowledge on SSF is an important site to explore how SSF have been defined, because "critical awareness of the categories that guide fisheries governance is extremely important" where ongoing reflection can improve

their application (Johnson, 2006). Even as the lines between science, policy and politics in the environmental sphere are increasingly interconnected and blurred, sciences maintain a privileged position in environmental debates, shaping how we conceptualize the environment and the policies we enact to manage and maintain it (Chilvers and Evans, 2009; Turnhout, 2018). Taking the performativity of knowledge as a starting point, this scientific knowledge is not merely reflecting reality "as it is" but constituting and shaping that reality while attempting to represent it (Law, 2009). Therefore, rather than assuming what SSF are, we explore how the category has been constructed from its constituent definitional parts. In this pursuit, we work to uncover interwoven patterns and simultaneous blind spots, potentially illuminating opportunities to "cast the analytic net wider" towards more inclusive approaches (Arbo et al., 2018). For example, fisheries have long been erroneously perceived as a masculine space dominated by male workers (Choo et al., 2008; Williams, 2008). The prevalence of this assumption is evident in both fisheries science and policy, where the mere presence of women has rarely been acknowledged, let alone deeper consideration of the intersections between gendered dimensions of environmental knowledge, identity, power, and occupational health and safety. Only in the last decade is the hegemony of "fishermen" starting to crack as the significant number and manifold contributions of women are repeatedly demonstrated and increasingly accepted (Neis et al., 2005; Choo et al., 2008; Gerrard, 2008; Weeratunge et al., 2010; Harper et al., 2013; Branch and Kleiber, 2017).

2.4 Debating the definition of small-scale fisheries

Debates about the nature of SSF and the role of the definition have unfolded over several decades. Early work by Kesteven (1973; 1976) and Smith (1979) acknowledged that some common attributes could be used to distinguish SSF from more industrially oriented fishing operations, but that attributes should be understood as variants along a continuum rather than as belonging to hard and fast categories. Instead of gravitating towards the ease and symmetry of singular distinctions, these scholars advocated early on for a framework based on combinations of technical and socioeconomic characteristics to define SSF (Smith 1979). The publication of Thomson's (1980) influential table depicting "two distinct world fisheries" provided the first visual illustration of a clear division between small- and large-scale fisheries. The table's two columns contrasted the size and relative value of "large-scale company owned" and "small-scale artisanal" fisheries, symbolized by different types of boats—the former large and modern-looking and the latter a small sail-powered outrigger craft. Thomson's table helped popularize the term "small-scale fishery" and has been repeatedly borrowed, amended, and expanded by scholars over the decades, including Berkes (2001), Ruttan (2000), Sumaila et al. (2001), Pauly (2006), and Fréon et al. (2014).

Over the years, many attributes essential for defining and valuing SSF have been proposed, including the size and type of boat, engine horse power, equipment type, time commitment, catch rates and disposal, environmental knowledge, significance of fishing

as a livelihood, and marginality, among others (Kurien, 1996; Berkes, 2001; Kittinger, 2013). Some lists emphasize the importance of technological aspects of SSF (Pitcher et al., 1998), while others address combinations of technological, environmental, social, and political parameters to explore finer variations within SSF and between these two, taken-for-granted categories (Johnson, 2006; de Melo Alves Damasio et al., 2016). Several in depth studies grapple with the specifics and limits of national fisheries definitions, including in India (Jadhav, 2018b), Brazil (de Melo Alves Damasio et al., 2016), Peru (Freon et al., 2014), Azores islands (Carvalho et al., 2011), and Canada (Gibson and Sumaila, 2017), while others address regional challenges such as in the EU (García-Flórez et al., 2014; Natale et al., 2015; Davies et al., 2018). Other scholars deconstruct common paradigms for understanding fisheries, including supposed divisions between "First World" and "Third World" fisheries (St. Martin, 2005) and the meaning of the term "subsistence fishing" in global fisheries scholarship (Schumann and Macinko, 2007).

To date, the only systematic and empirical study of the definition of SSF on a global scale was conducted by Chuenpagdee et al. (2006), who analyzed the definitions of maritime SSF in the national policies of 140 countries. The authors found that only 70% of countries articulated a clear definition of SSF, and where SSF were defined, the most common characteristic used was boat length (65% of definitions). Their analysis illuminates the simultaneous absence of clear definitions of SSF in many parts of the

world, and yet an overall degree of consistency in characteristics used, suggesting that sufficient commonalities exist to speak of a generalized approach to defining SSF in policy.

Still others are skeptical of systematic efforts to define SSF, finding the category too elusive and relative to warrant a common definition. From this vantage point, the search for a shared definition is an exercise in futility because SSF are too diverse and locally specific to enable any wider generalizations and useful comparisons (Béné, 2006; Johnson, 2006; Carvalho et al., 2011). However, practically, most researchers and practitioners inevitably need to draw some distinctions and categorize fisheries, whether they use the common divisions of large- and small-scale or other variants, and could benefit from the guidance of shared signposts. Most who discuss the merits and drawbacks of defining SSF strike a balance amidst this debate—acknowledging issues and limits to defining SSF but also finding it possible and useful to cull some common characteristics that bridge different contexts and scales, thus enabling wider conversations on SSF that transcend the particularities of place (Kurien, 1996; Chuenpagdee et al., 2006; Charles, 2011).

It's not clear that any definition of SSF is inherently preferable to no definition, nor that any given definition of SSF will lead to homogenously good or bad outcomes for the diverse workers and environments of SSF at different scales. Scalar specificity matters, and yet the desire to share some common language for defining SSF that

transcends scale persists, particularly given the overwhelming mandate to scale-up approaches within environmental governance. Rather than searching for an elusive and ultimately unsatisfactory fixed definition that universally applies, an imprecise definition may be preferable, leaving room to maneuver while signaling some shared traits (Gibson and Sumaila, 2017). Even imprecise definitions could help augment several interrelated issues that stem from the absence of a definition: data deficiencies, paucity of research, political marginalization, and a lingering low-status stigma that often plagues the sector (Chuenpagdee and Pauly, 2008; Carvalho et al., 2011). Meanwhile, the space afforded by an imprecise definition could enable comparisons at the global-level without imposing exclusionary and inflexible boundaries.

2.5 Scientific literature as an unexplored site to study the definition

Amidst the diverse range of actors with a stake in this debate, scientists continue to play an outsized role in categorizing, ordering and managing natural resources such as fisheries. Environmental policymaking has become thoroughly scientized in the push for more evidence-based interventions, where science is simultaneously posited as the cause, means of detection, and generator of viable solutions to a range of environmental problems (Chilvers and Evans, 2009; Turnhout, 2018). Since the rise of modern fisheries science, the conclusions and recommendations of scientists have been regarded as legitimate, expert knowledge in matters of fisheries classification and governance—in charge of the facts and the problem definitions (Johnson, 2006; Basurto et al., 2017b;

Turnhout, 2018). It's now well recognized that the narrow approach of modern fisheries science alone is insufficient to understand SSF. In response, an increasingly diverse pool of scientific perspectives have joined in the dialogue on the best course for governing SSF, including community ecologists, common-pool resource scholars, political ecologists, and post-structural approaches (Berkes, 2015; Mather et al., 2017; Smith et al., 2021).

However, despite the recent expansion of SSF as a topic of scientific interest, no systematic studies have critically examined the workings of scientific knowledge production and the role of the definition of SSF. The goal of this study was to assess how scientists have defined SSF and whether dominant ways of defining SSF have changed over time. More specifically, we endeavored to: 1. Assess the dominant characteristics used to define SSF; 2. Determine whether any patterns present in the definition have changed over time or vary by study geography, aquatic system or journal outlet; 3. Compare any patterns identified in the scientific literature to results from similar research on the definition of SSF in policy; and 4. Consider the advantages and limits of dominant ways of defining SSF alongside prospects for future improvements.

2.2 Methods

2.2.1 Study design

The methodological foundation of this study is based on the principle that peer-reviewed publications can serve as indirect measures of knowledge produced on a topic

because they are a well-established means through which scientific information is communicated and codified across scholarly communities (Van Raan, 2004). Peer-reviewed journals inevitably provide an incomplete picture of knowledge produced on any topic and are certainly not the only means through which scientific findings are communicated. Nonetheless, scientific journals are longstanding: scientists have used international journals since the 17th century (Van Raan, 2004). Further, as opposed to other tacit forms of communication and knowledge exchange, journals are codified and amenable to systematic searches—serving as an accessible and searchable archive of knowledge produced. Scientometric studies have become a popular means to quantitatively assess scientific output on a range of different topics, including fisheries science (Jarić et al., 2012; Natale et al., 2012; Aksnes and Browman, 2015; Syed et al., 2018). Such studies are typically limited to assessing available bibliometric information and quantitative article-level metrics extracted through automated modes of analyses. In contrast to existing bibliometric studies of fisheries science, this study combines qualitative coding with elements of bibliometric analysis to decode common characteristics used to define SSF and to disaggregate these findings based on other article- and journal-level metrics.

2.2.2 Systematic review data set and protocol

To retrieve relevant literature on SSF, we conducted an extensive search using the Web of Science (WOS) database produced by Thomson Reuters and the following

the keywords: "small-scale fisher*", "artisanal fisher*", "fisher folk", or "fishing communit*"—asterisks were used to broaden the search to include variations on each word stem. These keywords were chosen to ensure coverage of both common terms in use today (e.g., small-scale fisher, artisanal fisher; Johnson 2006) and terms popular in earlier decades that preceded the publication of Thomson's (1980) table that helped popularize the term "small-scale fisher." WOS is a widely used and venerated database in systematic literature searches and scientometric studies (Moed, 2006), including reviews of fisheries research (Jarić et al., 2012; Johnson et al., 2013; Aksnes and Browman, 2015; Syed et al., 2018). However, WOS has several limitations, including underrepresentation of certain social sciences and humanities research and a general bias towards English language journals (Moed, 2006). To supplement our primary search, and attain greater coverage of the social sciences, we conducted additional targeted searches to identify relevant social science journals not indexed in WOS with the help of a marine science librarian (see supplementary materials). Together, our primary and supplementary searches yielded a total of 2,653 articles. Despite our efforts to address the limitations of WOS and to identify all relevant literature for this study, no search database is complete, and our data set likely underestimates the total peer-reviewed publications on SSF and does not include gray literature such as FAO reports or long-standing specialized outlets like Samudra or Yemaya. Notwithstanding these important contributions, given our explicit focus on the role of scientists and scientific

knowledge production, peer-reviewed literature was deemed the most appropriate and accessible form of data for this study.

The full text for each reference was retrieved and evaluated to determine whether it belonged in the study based on the following criteria: sufficient coverage of SSF in the body of the article, accessibility of the full text in digital format, English as language of publication, and the article's peer-reviewed status (see supplementary materials). After eliminating articles that did not meet one or more of the study criteria, the final data set contained 1,723 articles. Qualitatively assessing the characteristics used to define SSF at the article-level required the coder to read each article until they encountered the section where SSF were defined (or not). Given the time required to locate the definition within each article, a stratified random sample was used to select articles for in-depth coding. Due to the uneven distribution of articles over time, sampling was stratified by decade and different levels of sampling intensity were used. As a rule, we sampled 20% of articles per decade with a minimum of 50 articles per strata. For strata with less than 50 articles (e.g., the 1960s and 1970s), all articles were read and coded. Across the entire data set, this mixed strategy means that 25% of articles were read and coded (n=434). By oversampling we ensured the study included sufficient literature from earlier decades when SSF publications were sparser. This stratified random sampling approach was deemed the best strategy to compare patterns in the

definition over time given the paucity of literature on SSF in the 1960-1980s and the rapid upturn in publications after the late 1990s.

All sampled articles were deductively coded against a set of common characteristics used to define SSF that were derived from the existing literature (Chuenpagdee et al., 2006; Funge-Smith, 2018) and from preliminary research done by the authors (Basurto et al., 2017b) using the qualitative analysis software NVivo 12. We used the following coding structure for each article: whether or not the SSF studied was defined, which characteristics were used to define SSF, the study location, and whether the SSF studied were inland or marine (or both). Each article was also coded for its journal's general audience (natural or social scientists), depending on which citation database indexed that journal (Science Citation Index Expanded or Social Science Citation Index) using the Journal Citation Reports.

The final coded dataset (n=434) was exported into Tableau 12 software for data analysis. Analysis focused on whether the percent of articles defining SSF and the most common characteristics used to define SSF differed by decades and other article-level dimensions (i.e., geography, aquatic system, journal type).

2.3 Results

2.3.1 Variability in definitions of small-scale fisheries over time and space

The majority (73%) of articles provided a definition and or characterization of the SSF studied (Figure 1A). The percent of articles that defined SSF varied by decade, with a

decrease in articles that defined SSF in the last two decades and an overall downward trend in the proportion over time (Figure 1B). The percent of articles that defined SSF for each decade from 1960-1990s ranged from 100% to 79%, whereas the proportion of articles that defined SSF were lower for the 2000s (65%), and 2010s (72%). Despite variations between decades, we observed an overall downward trend in the proportion of articles that defined SSF over time.

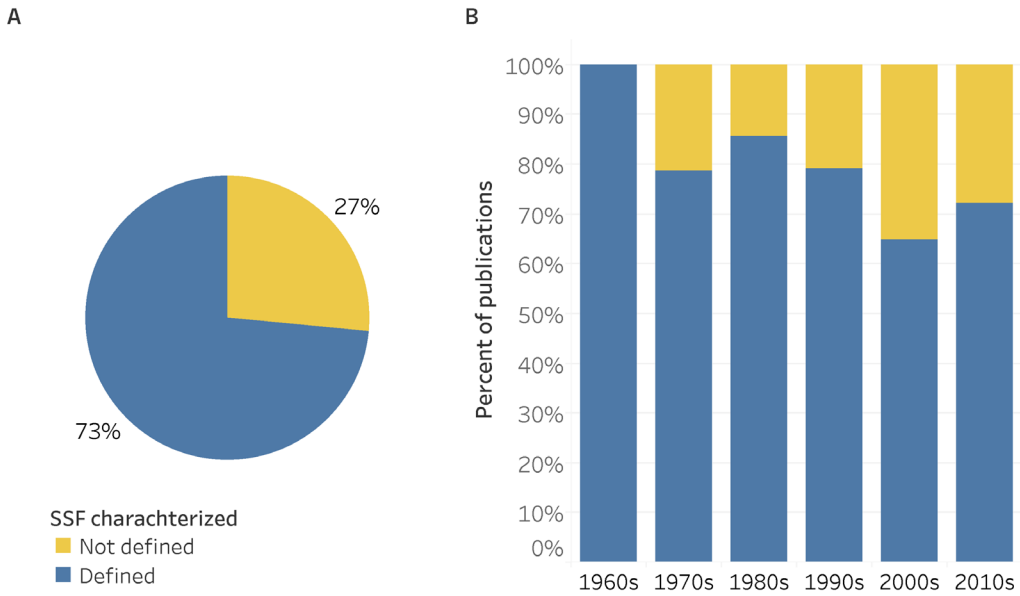

Figure 1: The percentage of articles that provided a definition for small-scale fisheries for the total sample studied (A) and by the decade of publication (B).

The percentage of articles that defined SSF varied by the geographic region of study (Figure 2A). South Asia (87%), North America (87%), Latin America and the Caribbean (78%), Europe and Central Asia (77%), and East Asia and the Pacific (75%) were regions where SSF were more often defined. All African regions were below

average, with SSF defined in 71% of articles from the Middle East and North Africa and only 68% of SSF studied in Sub-Saharan Africa. Inland SSF were less commonly defined than marine SSFs, with only 66% defined compared to 75% (Figure 2B).

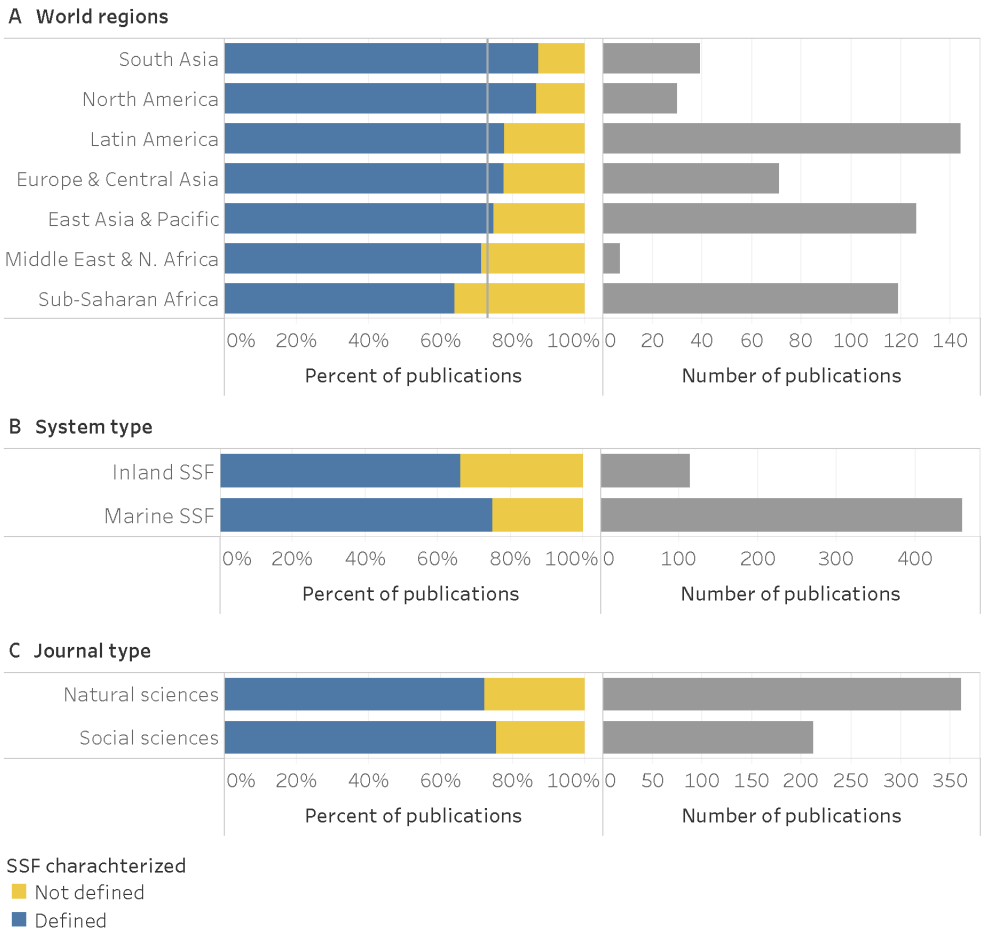

Figure 2: Percentages of articles that defined small-scale fisheries by world regions (A), aquatic system (B), and journal outlet (C). They grey vertical line indicates the average (73%) for the overall sample.

Lastly, the percentage of articles that defined SSF differed somewhat based on the journal outlet, where SSF were defined in 75% of social science journals and 72% of

natural science journals (Figure 2C). The number of articles published in social science versus natural science journals also varied over time in the sample, where social science journals were the most common outlet for SSF publications between 1960-1980s, with a marked shift to natural science journals prevailing as the most common outlet from the 1990s to present (Figure 3).

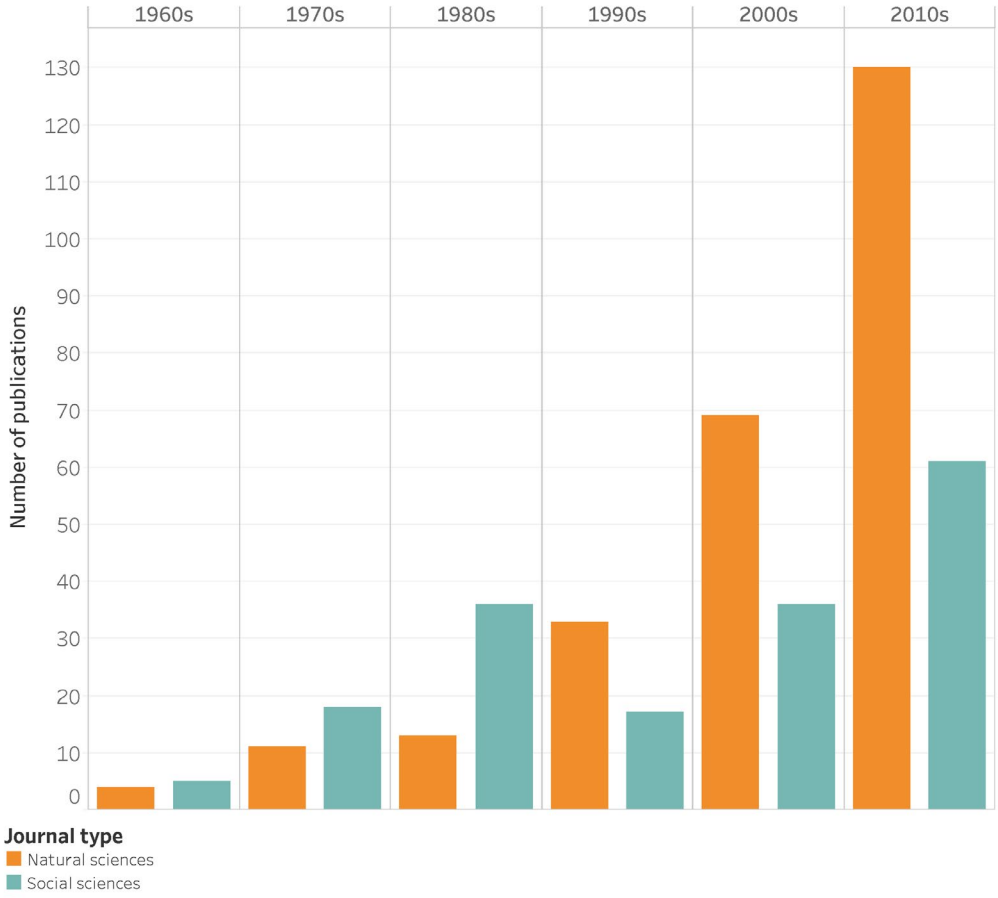

Figure 3: Total number of publications by journal type and decade published in the sample (n=434).

2.3.2 Characteristics used to define small-scale fisheries

The most common characteristics used to define SSF (Figure 4) were the type of fishing gear (58%), boat (51%; e.g. length, type or material, capacity or tonnage), or sociocultural factors (35%; e.g., ethnic group, religion, caste, class, etc.). Other characteristics used moderately (in 10-20% of articles) included species (19%), motorization (19%; e.g., presence or size of engine), catch disposal (18%), ecology and habitat (16%), distance from shore (13%), and organization of labor and crew (11%). Other characteristics—such as ownership of fishing gear or vessel (6%), trip duration (4%), value chain (4%), time commitment (3%), market integration (less than 1%), on board storage/refrigeration (zero instances)—were less commonly used to define SSF (i.e., used in less than 10% of publications).

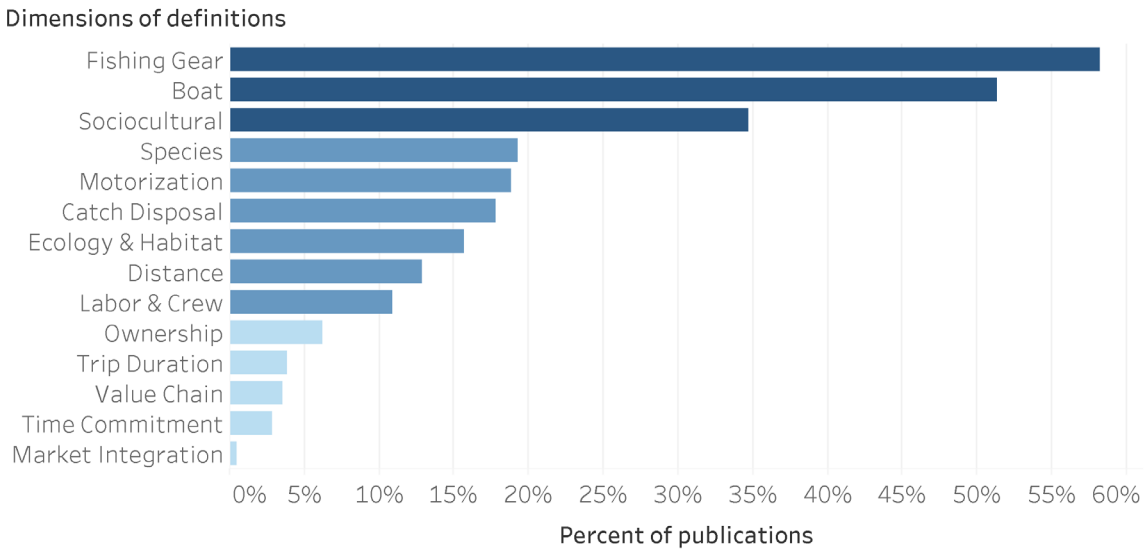

Figure 4: The percentage of publications that used different characteristics to define SSF. The blue shading indicates three natural

groupings that emerged from the data based on frequency of use: commonly used characteristics (35% or more), moderately used characteristics (10-20%), and those infrequently used (occurring in less than 10% of definitions).

The relative frequency and relationship among the most common dimensions in definitions varied over time (Figure 5). Sociocultural characteristics were the most common dimensions used to define SSF in the 1960-1980s, used in over half of all definitions, but usage declined in the 1990-2010s. Popularity of fishing boats and gear in definitions fluctuated but remained common over the decades, ascending to the top of the list by the 2000-2010s. Motorization was commonly used to define SSF in the 1960-1970s but occurred less frequently in definitions from the 1980s to the present.

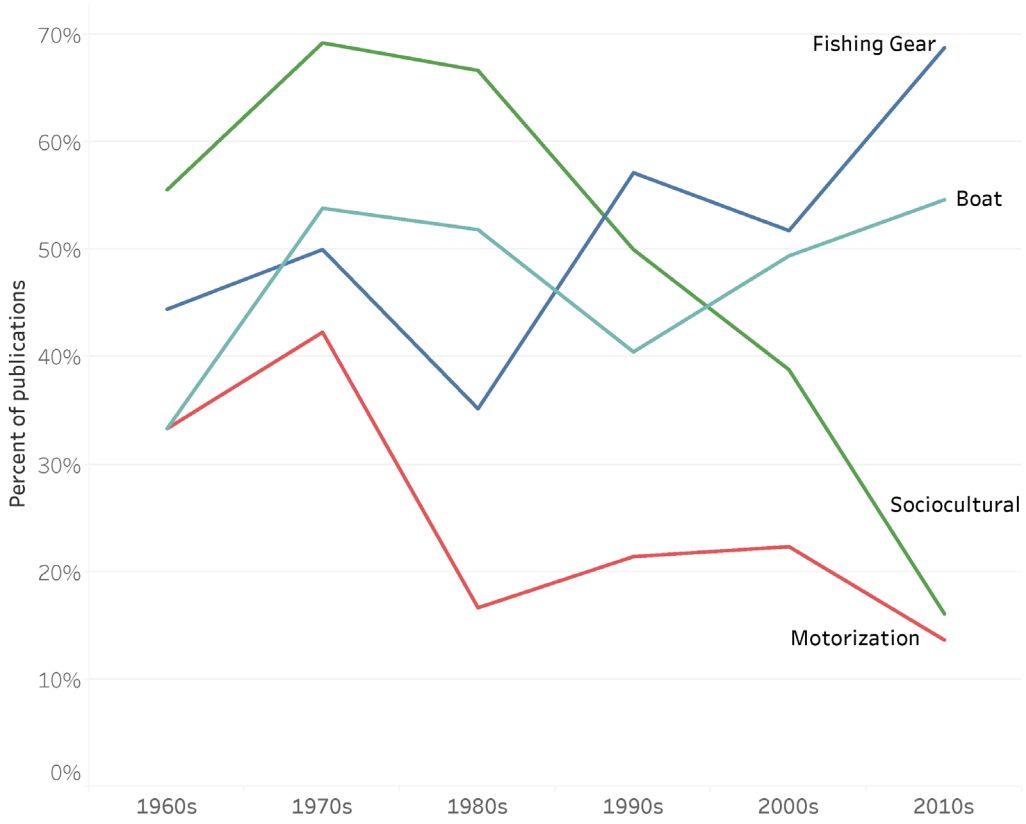

Figure 5: The percentage of articles that defined SSF by different dimensions and decade. Only technological dimensions and sociocultural dimensions were included.

Dimensions used to define SSF also varied by world region (Figure 6A), where fishing boats appeared most frequently in definitions of SSF in East Asia and Pacific (60%) and Europe and Central Asia (56%), followed by Latin American and the Caribbean (52%) and Sub-Saharan Africa (51%). Boats were less common in definitions of SSF in South Asia (38%) and North America (38%). Motorization was used most frequently in defining SSF in Sub-Saharan Africa (29%) and Latin American and the Caribbean (28%). Fishing gear was most commonly used to define SSF in the Middle

East and North Africa (100%), where all other regions had a similar percentage of articles that used this characteristic to define their SSF (between 55-65%), except North America where fishing gear was used in only 27% of articles. Sociocultural dimensions were used most frequently to describe SSF in North America (77%) and South Asia (56%), and were less common (e.g., used in a quarter to a third) for all other regions. Comparing the dimensions used to define SSF by the system type (Figure 6B) revealed that inland fisheries were more commonly defined by motorization (32%) and sociocultural factors (47%) than were marine SSFs (16% and 32% respectively). Comparing the dimensions used by the type of journal (Figure 6C), publications in natural science journals relied more on technological dimensions (boat, motorization and fishing gear) to characterize SSF, while social science journals, not surprisingly, relied more on sociocultural factors (used in 54% of definitions verse 23% in natural science journals).

Figure 6: The percentage of publications using different dimensions to define SSF by world region (A), aquatic system (B), and journal outlet (C).

2.3.3 Different features of fishing technologies used in definitions

Given the importance of technological dimensions in the definitions studied, we also coded for the use of different features of fishing boats, engines, and fishing gear used in definitions of SSF (Figure 7). Among articles that used fishing boats to define SSF (Figure 7A), the most common features highlighted were boat length (59%), boat type or material (36%), and capacity and tonnage (6%). For motorization, most articles indicated that SSF boats used engines but did not provide further detail on the engine type or horsepower. However, 25% defined SSF as boats with outboard engines of 100 hp or less, with few SSF characterized as vessels with inboard motors (Figure 7B). SSF

defined by fishing gear were most commonly described as labor intensive gear (44%), passive gear (39%), or highly active gear (10%; Figure 7C).

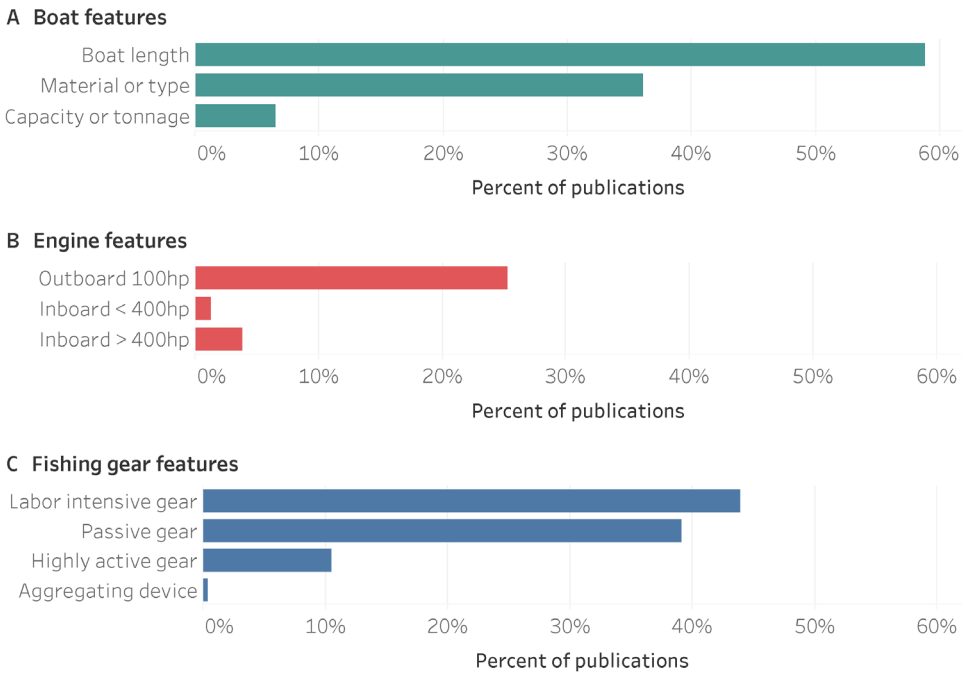

Figure 7: The breakdown of different features used in definitions that relied on fishing boats (A), engines (B), and fishing gear (C) to define SSF.

2.4 Discussion and conclusions

2.4.1 Deconstructing dominant patterns in the definition

By tracing how different assemblages of potential characteristics are deployed in definitions, our foregoing analysis uncovered several persistent themes and points of divergence in the way scientists have constructed SSF as a subject of study in peer-reviewed literature over the last 65 years. We focus our discussion on the most prominent points of convergence among definitions and consider how they serve to

stabilize SSF as a category inscribed by certain essential characteristics, such as fishing boats and fishing gear. We also highlight instances of instability where the definition appears to have shifted over time and space, and finally we consider the implications of these changes and how SSF are understood and governed in practice.

2.4.1.1 Defining patterns that cross-cut science and policy

Overall, we observed that more than a quarter of articles left SSF undefined, which echoes the findings of Chuenpagdee et al.'s (2006) study of national-level definitions of SSF in fisheries policy. Despite using different methodologies, focusing on distinct communities of experts (scientists versus policymakers), and different types of data (peer-reviewed publications versus national policies), their study found a similar proportion (70%) of documents that left SSF undefined. The results of these two studies indicate that the absence of a clear definition of SSF is a shared challenge that spans the supposed science-policy divide. Taken together, the findings of these two studies indicate that greater collaboration between scientists and policymakers is needed to clarify what SSF are and exactly whom scientific studies and policies pertain to. The present ambiguity and absence of clear definitions can obscure meaningful variations between different fisheries even within the same country. Within the same country, and even within the same fishery, resource access and dependency on fisheries' livelihoods among stakeholders varies, making it no longer "sufficient to discuss issues, concerns and challenges in fisheries without being sector- and scale specific" (Chuenpagdee et al.,

2006). Presenting scientific findings or policies on SSF without clarifying the intended social and ecological scale, portion of the value chain, and rightful stakeholders muddles national and international debates about the status and best course of action for SSF governance. In the absence of guidelines, room is left to easily repeat past patterns of excluding pre and post-harvest sector workers, especially women. Presenting scientific findings or policy prescriptions that pertain to and potentially affect SSF without clearly defining the subject of study—a common pattern we observed—can obscure important differences and inequalities between different fisheries and among actors along the value-chain.

For example, in the absence of a clear definition all coastal and inland fisheries in Tanzania are assumed to be "small", which has proven problematic. In Lake Victoria's fisheries, it makes a difference whether you are referring to the endemic dagaa (Rastrineobola argentea) fishery—where women's small enterprises dominate processing and marketing and fish is traded for local and regional consumption—versus the export-oriented fishery for the invasive Nile perch, which is controlled by foreign processors and outside money. Left undifferentiated, at present small-scale dagaa processors in Tanzania face the same permitting requirements as large-scale processors fileting Nile perch for export. Yet, whereas Nile perch are processed in immaculate facilities certified for export to the EU, dagaa processing often occurs along the beach, within individuals' homes, or in small collective compounds. Yet, regulations do not

differentiate between the different socioeconomic context, scale and needs of these two fisheries and their post-harvest sector workers. Permitting requirements are set using Nile perch as the standard, creating significant impediments for small-scale processors to gain formal registration, and therefore, to be considered legitimate businesses and rightful participants in fisheries governance. Leaving SSF undefined, and tacitly biased towards the needs of the more profitable Nile perch industry, lumps these drastically different fisheries together despite differences in their relationships to their communities, the economy and the environment. In the absence of a clear definition that distinguishes between these two fisheries, workers in the dagaa sector are disadvantaged and overshadowed by more powerful interests.

Secondly, we found that fishing gear and boats were the most common characteristics used to define SSF across our dataset, resonating with Chuenpagdee et al.'s (2006) review of fisheries policies. They found that boat size was the most common factor (65%) in policy definitions, compared to 51% of articles in our study. As a defining metric, boat size was typically formulated as fixed limits on vessel length in both studies. Meanwhile, a host of other possible characteristics proposed in the literature were not frequently observed in SSF definitions, such as organization of labor, relations of ownership, the makeup of the value chain, disposal of catch, and degree of market integration. Defining SSF through fixed technical limits on boat length and gear has

implications in the interpretation of scientific research, in policy design and implementation, and in determining who gets to participate in fisheries governance.

Returning to the above example from Lake Victoria, this case further illustrates how fixating on technological limits may fail to address substantial differences among fisheries actors and impacts. Both the Nile perch and dagaa fisheries use similarly sized small boats and labor-intensive gear, yet they differ substantially along other dimensions, including capital invested, relations of ownership, and links to markets. Ownership of fishing boats and gear for Nile perch is often highly consolidated, where local and regional businessmen may own up to 100 boats (interview comment, 2/14/18). The fact that both these fisheries are considered "small" by the rubric of boats and fishing gear underscores that, while the technological means may be similar, the "social organization of production and distribution are very different" (Johnson, 2006). Ecologically these fisheries also differ. Nile perch is an invasive species introduced under colonial rule to dire ecological consequence for the wider lake ecosystem (Pringle, 2005). While the dagaa fishery is not immune to sustainability issues, this fishery is focused on endemic cichlid species. Categorizing dagaa and Nile perch together within fisheries science and policy conceals substantial differences in the webs of social, economic and ecological relations these two fisheries are embedded within.

2.4.1.2 Temporal and geographic differences

The general downward trend in articles that defined SSF and the simultaneous increase in reliance on certain technologies to characterize them are temporal patterns that emerged from our analysis of peer-reviewed publications over the last 65-years. As SSF has expanded as a topic of scientific inquiry, marked by a prolific rise in publications on the topic, scientific knowledge produced on SSF appears to be increasingly detached from a clearly articulated definition of the term. At the same time, scientific knowledge is also more likely to be based upon a narrow conception of SSF, understood in terms of fishing technologies. The spread of technological definitions stands in contrast to the relative decline in the use of sociocultural characteristics, such as ethnicity, religion, caste, class, gender, and history or fishing culture, which were dominant criteria for defining fisheries in earlier decades. While future studies are needed to statistically confirm the significance of the temporal trends we observed, next we consider the import of these patterns in light of existing studies and theory.

While Chuenpagdee et al.'s (2006) study concluded that the patterns they observed in policy definitions were "remarkably stable," they did not explore the potential for historical differences. Our results add nuance to the role of technology in the definition of SSF—indicating that factors such as boat length were not always universal or stand-alone. Indeed, sociocultural dimensions were the most common

characteristics used in definitions of SSF in earlier decades (1960-1980s)—observed in more than half of all sampled articles.

One possible explanation for this observation is that fisheries scientists focused on industrial fisheries and largely ignored SSF during the rise of modern fisheries science in the 1950-1980s, subscribing to a popular development paradigm that assumed SSF would naturally evolve into or be replaced by an industrial mode of production (Johnson, 2006; Carvalho et al., 2011). While SSF were overlooked by fisheries scientists, who perhaps considered them too trifling to bother with, social scientists dominated the sparse literature on SSF, published their research in social science journals, and focused on understanding the sociocultural dimensions of SSF. Much of this early work applied ethnographic observation to study SSF, offering descriptive, detailed accounts of fishing methods (Craig, 1969; McCay, 1978; Poggie, 1978; Poggie Jr and Pollnac, 1988), studies of the social structure of fishing households and communities (Davidson and Davidson, 1969; Breton, 1973; Yoshida et al., 1974; Davis, 1986), and of maritime culture (Macdonald, 1973; Bundy, 1977; Byron, 1988). Our results suggest that the expansion of scholarship on SSF in the 1990s was marked by a shift towards publishing in natural science journal outlets and toward a greater reliance on technological dimensions as the defining characteristics of SSF.

Looking at patterns by study region, we also found an inverse relationship between the use of boats and sociocultural dimensions in definitions of SSF—where, for

example, North America was the region where sociocultural factors were the most common; it was also the region where boats, fishing gear, and engines were the least prevalent in definitions. Further research is needed to confirm and qualitatively understand this geographic discrepancy we observed in SSF scholarship, including why SSF in regions such as East Asia and the Pacific were more often defined by boat size rather than by sociocultural characteristics. This pattern can be interpreted as stemming from the deep-seated belief that technologies are asocial artefacts that can be isolated from their social domain, a socially constructed duality well documented by Science and Technology Studies (STS) (Barry and Slater, 2002). Treating fishing technologies as "value-neutral chunks of hardware" (Harding, 2008) denies their existence as deeply social projects, permeated with history and political consequences.

For example, in the data set, utilization of engines in definitions was popular in the 1960-1970s but declined in use after the 1980s. This peak could be explained by dominant modes of fisheries development that focused on modernizing SSF by introducing motorized engines in many post-independence development packages pushed in the global south in the 1950-1980s (Basurto et al., 2017b). Engines were incorporated into many SSF around the world during those decades, whereas development interventions in the 1990s shifted focus away from technological and infrastructure inputs of previous decades and toward addressing the "problem of property" in fisheries (Campling and Havice, 2014) through interventions such as

Individually Transferrable Quotas (ITQs) (Mansfield, 2004; Holm and Nielsen, 2007; Pinkerton and Davis, 2015). However, defining SSF by the presence and mechanics of engines alone (such as horsepower) misses the wider context of development interventions that spread their use throughout many SSFs, and also ignores the more recent shift away from technologically-centered fisheries development in favor of neoliberal governance techniques (Basurto et al., 2017b).

2.4.2 Moving beyond technological determinism

Technological determinism (i.e., defining SSF through a limited focus on certain fishing technologies) is prevalent and possibly on the rise, essentializing SSF as a category inscribed by certain fixed technological characteristics that can be separated from their social context. While dimensions of social life were central to definitions and studies of SSF in earlier decades, the sociality of SSF is presently understudied (Batista et al., 2014), treated as static or inconsequential to the definition of SSF amidst the widening field of scholarly attention. Classifying SSF this way has certain advantages for the outside observer, reducing the less-than-legible characteristics of SSF in favor of traits that are easily identified as "small" (Jadhav, 2018b). This helps stabilize our understanding of the wider field of capture fisheries, translating the unwieldy spectrum of fishing activities into discrete categories that can be ordered and described through a limited reliance on capture technologies.

Here we outline two related issues that stem from technological determinism: First, this mode of defining SSF places undue emphasis on harvesting activities at the expense of the rest of the value chain. Second, centering harvest activities and related technologies embeds a gendered bias in the definition. These two points are discussed in turn, but we see them as mutually implicated.

2.4.2.1 Linking value chains and gender relations to the definition

Centering capture technologies in the definition equates "fisheries" with "fishing," where SSF are narrowly understood as catching fish at sea, from a vessel, using certain gear types (Harper et al., 2017). Viewed within this narrow technological scope, SSF are reduced and simplified, isolated from the wider web of relations that fish harvesters are embedded within, including their bio-physical environments, management regulations, forms of organization, kinship ties, social norms, and exchange relations (Murray et al., 2006;St. Martin et al., 2007). Relational networks that extend beyond the boundaries of fishing vessels are largely omitted, as SSF are translated into a few observable, measurable traits (boats, gear and engines) that make SSF legible (Scott, 1998). However, as Reed and Christie (2008) put it, fishing enterprises are "not solely undertaken by men and cannot simply be defined in terms of people on boats." Rather, as harvested fish circulate within and between communities, and increasingly regional and global markets, it's clear that the status and future of SSF depends on more than understanding the material technologies and effort of harvesting

fish at sea (or on the lake). Rather, just as "every word in conversation is half someone else's, every fish that gets caught is partly that of others" (Pálsson, 2015). Fisheries are made possible by a constellation of livelihood activities and related labor, requisite environmental knowledge, and technologies that traverse land and sea. Moving beyond harvesting to include relationships that span the land-sea divide along the SSF value chain is one way we can expand our understanding of SSF beyond the boat and our imagination of what sustainable governance might look like.

At present, research attention remains focused on technological aspects of the male-dominated harvest sector as the key to addressing the "over-exploitation" problem in fisheries, overlooking value chain dynamics beyond harvesting including post-harvest activities (Bennett, 2005). For example, the dagaa and other small pelagic fisheries in Tanzania suffer from high rates of post-harvest loss, estimated to be upwards of 50% (Ibengwe and Kristófersson, 2012). While illegal, unregulated and unreported (IUU) fishing are considered major threats to the sustainability of these fisheries (Agnew et al., 2009;Luomba et al., 2017), little attention has been paid to improving post-harvest processing and storage capacity as an entry point to alleviate resource pressure and to meet growing food demands. Further, post-harvest loss disproportionately affects the livelihoods of small-scale processors who are often women. A single unanticipated rain event can ruin a small business enterprise and jeopardize an entire household's livelihood, leaving many women fishworkers in a state of perpetual precarity.

Supporting the social and ecological wellbeing of this fishery depends on understanding and tackling problems along the value chain like post-harvest loss—not merely manipulating fishing boats and gear. Including actors along the value chain in the dialogue on fisheries sustainability could illuminate new avenues for ecologically and socially just governance interventions.

Given that segments of the value chain beyond harvesting are where women tend to work, it's not surprising that they have been overlooked as fisheries research has historically been gender-blind (Kleiber et al., 2015). However, "gender-blind" does not mean that fisheries research has counted both men and women's efforts equally under one androgynous heading, rather fisheries research has systematically focused on and centered men. This gendered bias is not especially unique to fisheries: androcentricism is evident in the philosophies, methods, and key questions pursued by modern western sciences (Harding, 2016), including the wider fields of environment studies and resource management (Banerjee and Bell, 2007; Reed and Christie, 2008). Despite deep-seated ontological assumptions that masculinity is the default gender (of both scientists and subjects; Harding, 2016), we now know that women constitute a large share of the labor force in SSF globally, but that they work predominantly in shore-side efforts such as gear mending, trip preparation, accounting, financing, fish processing, trading and marketing (Odotei, 1992; Walker, 2002; Shannon, 2006; Weeratunge et al., 2010; Matsue et al., 2014). Women also harvest fish in many parts of the world (Gammage, 2004;

Porter and Mbezi, 2010; Hauzer et al., 2013), but men and women often interact with different parts of the ecosystem and may target different species using distinct methods and technologies (Kleiber et al., 2015). Based on a meta-analysis of fisheries research, Kleiber et al. (2015) found that in many cases women's fishing effort exceeds that of men for invertebrates, especially in the intertidal and shallow water zones. But women's fishing effort is often categorized as "collection," "gathering," or "gleaning"—activities that are excluded from what counts as "real" fishing (Pálsson, 1989). Wherever women work in the value chain, their efforts are more likely to be informal and/or unpaid, and consequently either overlooked or considered a "natural" extension of women's reproductive roles and responsibilities rather than "real work" (Harper et al., 2017).

Further research is needed that decenters masculinity as the presumed gender and default identity of fishworkers and the latent subject of scholarly attention. Thoroughly redressing anodrcentricism requires a deeper reconsideration of the underlying epistemologies of fisheries science, rather than merely tacking on gender to existing data collection and analysis strategies. However, broadening perspectives and representation within fisheries science will need to take multiple forms, and we do not advocate that all SSF research needs to explicitly focus on women and gender relations, nor take up a feminist lens (Williams, 2008). Value chains and gender merit greater attention as interlinked issues that can be addressed, at least in part, by approaching SSF beyond a limited focus on the technologies and labor of fishing at sea. Reworking the

definition to reflect a more inclusive understanding and representation of SSF is a place to start.

2.4.3 Bright spots and prospects for redefining small-scale fisheries

Despite moments of apparent stability, words are not immobile nor immutable. As words move across space and time and their meanings shift, movements which "inscribe the arcs of our past and present" (Gluck and Tsing, 2009). By tracing these arcs in the meaning of the term SSF our research aims not only to illuminate the limitations of enduring patterns in the underlying definition, but to uncover meaningful fluctuations over time and space. By exposing these different meanings and moments of instability, our aim is to deconstruct the apparent naturalness of this dominant mode of ordering and defining SSF, undermining the inevitability of technological determinism in the division of capture fisheries to make space for emergent alternatives. Two promising developments that exemplify the potential for an expanded approach to defining SSF are the implementation of the SSF Guidelines and the FAO's development of a matrix approach to relationally characterize SSF (Funge-Smith, 2018).

Since the adoption of the SSF Guidelines, the main challenge ahead is whether and how this voluntary tool will be implemented at the national-level (Jentoft, 2014). The text of the SSF Guidelines offers the framework for a common definition and shared understanding of SSF as including "all activities along the value chain – pre-harvest, harvest and post-harvest – undertaken by men and women" in both inland and marine

systems (FAO, 2015). Building from this broad and inclusive definition, the SSF Guidelines outline ethical principles that should guide SSF governance without any strict prescriptions for their implementation. Its relatively open stance makes the SSF Guidelines unique among wider global environmental policy tools; many global conservation agreements rely on universally prescribed targets, narrow definitions of success, and tight monitoring requirements (Campbell et al., 2014a; Campbell et al., 2014b). In contrast, the SSF Guidelines were intentionally designed to be flexible and broad in scope to leave room for their interpretation in place, only mandating wide-ranging stakeholder participation during the national implementation process (Jentoft et al., 2017). Amidst discussions about the promise, possibility, and challenges of implementing the SSF Guidelines, whether and how the definition of SSF might change through this process has received little attention. As countries work towards implementing the guidelines, the various stakeholders involved will be obliged to consider whether their existing definition of SSF suffices, or if it demands reconsideration. Since most national fisheries policies rely on technological dimensions like boat length, and many lack a clear definition to start with (Chuenpagdee et al., 2006), it seems likely that the implementation process will inevitably entail rethinking the definition of SSF as a first step in the governance reform process.

Another FAO tool under development is a relational matrix designed to help characterize SSF at different scales. The "SSF characterization matrix" provides a

methodological approach and diagnostic tool designed to "avoid inappropriate classifications that can emerge when relying on a single characteristic or a highly-constrained number of characteristics, such as gear and vessel length" (Funge-Smith, 2018). Developed to augment the problem of simplistic technological definitions, the matrix approach eschews singular metrics and rigid divisions between small and large-scale fisheries. Instead, the matrix is used to score a range of qualitative characteristics on a finer scale, aggregating them to an overall score that can then be used to assess SSF in a particular country or to compare fisheries globally. Decisions about the exact cut off between "large" and "small" can then be made within a given context. In the structure of the matrix different characteristics are taken into consideration and weighted together, which means that engines, fishing gear and vessel length matter, but not more than a host of other characteristics. We see the matrix tool as a positive development in the search for better ways to define and characterize SSF with applications for science and policy, and we believe it provides a practical alternative to the current limited reliance on harvest technologies. The matrix is still being field tested in several countries and adapted accordingly, based on user feedback (Funge-Smith, 2018). As it becomes available to researchers in the future, we see great potential in the SSF characterization matrix as it enables consistent but relational ways of defining SSF that work at multiple scales.

2.4.3.1 Re-envisioning small-scale fisheries in Tanzania

Lastly, we illustrate the potential for renegotiating the definition of SSF in practice, drawing upon our own research on the implementation of the SSF Guidelines in Tanzania. Here we briefly examine the central yet contested role the definition plays in fisheries fora, exposing and refracting different sets of underlying values and related politics. Yet, even as the definition rouses controversy, the saliency of the issue is generally not disputed. We highlight the potential difference the definition can make towards alleviating unsustainable and unjust policies in the sector, potentially redressing historical inequities and invisibility long cast upon the sector.

Defining a national plan of action to implement the SSF Guidelines in Tanzania has required addressing the vexing issue of how to define SSF, outlining which activities will count in relation to policy implementation. At the 2018 national inception workshop towards the implementation of the SSF Guidelines in Tanzania held in Bagamoyo, a high-ranking government official opened the workshop of over 75 participants from across the country and the sector, posing the question: "Who is a fisher? Someone pulling a net or sitting in an office in Dar es Salaam? With the SFF Guidelines implementation, we get to identify this in our own context and be one of the first countries in the world to do so" (comment from meeting participant, 2/14/2018). With this opening declaration, the definition was immediately positioned as a fundamental issue that would shape the coming days discussion and any decisive actions towards

implementation. Further, the opportunity to implement the guidelines and rework the definition were presented as dual opportunities for Tanzania to be on the leading edge of global fisheries reform.

As the workshop ensued, discussions continued to circle back to the fundamental issue of the definition. Rather than a dry topic of technical classification, discussions were animated, revealing disparities in everyday experience and underlying values placed on the sector broadly labeled as SSF. As we noted in the introduction, the issue of the definition can become a stumbling block to reaching consensus policy agreements. While the text of the SSF Guidelines mandates that wide-ranging stakeholders participate in implementation, diverse assemblages of actors may not be accustomed to working together to negotiate priorities where policy is usually set in a top-down manner. Further, in Tanzania there are significant differences across inland and marine fisheries, and even within inland fishers, between the development and dominance of Lake Victoria's fisheries compared to other inland water bodies. Actors brought different experiences from their home fisheries and positions within the sector to the table—enlivening conversations. But a lack of familiarity with each other's circumstances also created obstacles to mutual agreement. One fisher from Lake Victoria raised the issue of consolidated ownership of fishing vessels, where he claimed that one man can even own 200 boats yet be classified as "small". In response, another fisher from the coast responded: "We agree that we need to find a real definition. The rich

people aren't fishers, the real ones go to the water and land fish and work with the fish themselves to get them to market. But some of the problems raised here about Lake Victoria don't apply everywhere, like on the coast. These problems are foreign to me." This interchange reflects the simultaneous potential for identifying common ethical ground, and yet how different geographic and development contexts within one country make articulating a shared definition cumbersome. While both fishers seemed to agree that relations of ownership matter in determining who counts as a real small-scale fisher, how meaningful class differences should be articulated was controversial, where answers to the question of "how much is too much" regarding ownership differed. When actors are unaccustomed to working together, identifying shared values and common language for a nationally representative definition is a substantial hurdle to reaching consensus agreement on policy implementation. The definition can become a thorny subject that simultaneously generates common ground and reveals fault lines.

One issue that generated greater mutual agreement was the need to address the long-standing marginalization of women and post-harvest workers through the implementation of the guidelines. Here, it became clear that altering the definition of SSF beyond a limited focus on harvesting was a necessary component of a multi-pronged strategy to alter historical injustices and treatment of fishworkers, where fishermen have long been prioritized. Several ideas emerged and attained consensus as viable strategies to address the interlinked issues of underrepresentation of women and

post-harvest workers by making their presence and claims more visible. First, to conduct a national-level mapping study of existing women's organizations in the sector. Second, to use outputs from the mapping study to help build a national platform for women fishworkers. Lastly, to create a Gender Desk at the ministry to help support the platform and existing women's groups and to address gender-specific challenges present in the sector. Whether and how these activities are enacted and affect a shift in the balance of power in SSF remains to be seen, yet workshop participants from across the sector and the country mutually agreed that these steps could potentially help ameliorate the cycle of women's invisibility in fisheries research and policy if the identified tasks lead to an alternate definition of SSF that becomes the basis for data collection, decision making, and stakeholder participation in the future. The hope is that these efforts not only lead to revisions of the definition on paper, but a more substantive re-envisioning of the underlying values of SSF in place.

2.4.4 Defining small-scale fisheries for the future

While scholarship on SSF has been around since at least the 1960s, defining SSF remains an ongoing challenge even as the field of SSF studies expands and diversifies. The diversity of SSF and their illegibility to outsiders has prompted certain techniques of simplification, including the use of reductionist definitions that focus on aspects most easily identified as small-scale, such as boats and fishing gear (Jadhav, 2018b). This has led to a limited picture of SSF as reducible to harvest technologies. As perceptual guides,

definitions work as metaphorical "maps" that detail which elements are important along the infinite complexity of a given social and ecological terrain. Reading the landscape of SSF through this narrow definition places undue emphasis on male-dominated harvesting at the expense of a more expansive view of the social and ecological relations along the SSF value chain that span land and sea. In the absence of a clear definition, a blank map leaves the reader to fill in the landscape themselves, often inadvertently drawing on the same simplistic tropes embedded in our mental imaginary of SSF.

Motivated by similar research on the definition of SSF in policy, the results from our systematic review of the scientific literature echo some of the same worrying patterns while also revealing new temporal and geographic trends and disparities that are worthy of deeper consideration. The temporal shifts we observed indicate that, despite dominant practices present in both science and policy, the definition of SSF is not an immutable category fixed in time and space. Rather from a historical perspective, the definition beneath the word "small-scale fisher" is a process-in-motion, where boundaries are contested, mutable, and thus shift over time. In recent decades, these boundaries may be contracting around a tighter and more technologically determined view of SSF in the influential realms of science and policy. Yet, in addition to thinking about what the boundaries of the definition enclose—who and what is included—we can also contemplate the potential for counter hegemonic definitions and knowledge projects that expand our understanding of what constitutes SSF. Particularly as

unorthodox actors are invited to the table, such as fishers and post-harvest sector workers themselves, the space for political action and the power to shape knowledge produced on SSF is potentially broadened. Both the SSF Guidelines and the characterization matrix developed by the FAO offer an alternative conceptual "counter map" of SSF that can be read against the dominant technological definition, offering a more encompassing and dynamic re-reading of the possibilities and place of SSF (Gibson-Graham, 1996; St. Martin, 2009). The application of these tools is also a process-in-motion, one to be followed. Where these tools are applied, alternate definitions could be leveraged that reflect different sets of values or ethical coordinates (Gibson-Graham, 2006)—where SSF are depicted as more than the sum of their harvesting technologies and productivity. How these tools reshape the definition of SSF and unfold in practice, and to what effects, are key areas for future research. Here we have provided some initial insights into this process from our own research in Tanzania.

To understand SSF research priorities for the future, it is important to "review and understand science and research agendas undertaken on SSF in a historical perspective" (Pomeroy, 2016), including how the category of SSF has been constructed and deployed alongside narratives of fisheries problems and solutions (Johnson, 2006). We hope our initial analysis of the historical construction of SSF as a category in science and policy can help shift the discourse on the definition beyond current assumptions that "smallness" is obvious, where "you can know an SSF just by looking at it" (Gibson

and Sumaila, 2017). Instead of relying on old tropes that equate SSF with small boats, we beckon scientists and policy makers to take another look—and consider the wider and more lively assemblage of possibilities hidden beneath the surface of the definition.

3. Rescaling Small-Scale Fisheries Commons by Unsettling Old Assumptions and Asking New Scale Questions

3.1 Introduction

Scale is a powerful concept, offering a lens that shapes how we perceive the world and related problems and solutions to complex human-environment dilemmas in the commons. Studying how common-pool resources (CPRs) are governed inevitably entails making choices about the level of environmental and sociopolitical organization used to frame our analysis. Whether or not our various choices and related assumptions about scale are made explicit, they inflect our conclusions: notions of optimal water governance shapeshift when viewed from the perspective of a downstream village or the wider watershed; perceptions of sustainable forest use change across timescales of a decade or a generation; the stakes in fisheries management differ when framed as a local, national or regional dilemma. Consequently, even when scale appears in the background of our exploration of the commons, its outlines —taken-for-granted or merely implied—direct our focus, setting boundaries within our perceptions that distinguish what is relevant for study from what is not (Ollman, 2003).

Despite its conceptual power and ubiquitous presence, scale itself is often regarded as a self-evident and stable "thing" in many fields, with customs dictating the "optimal set standard ranges of the scale of research" (Sayre, 2005, p.283). While commons scholars have made instrumental contributions to theorizing multi-scalar

dimensions of environmental governance, in recent decades, scale itself has been treated as a relatively stable and implicit element of analysis, providing structure for the examination of other dynamics and entities of interest in the commons.

Our aim is to unsettle the concept of scale and bring it to the foreground of analyses of the commons by raising new empirical and reflexive questions about scale for scholars to engage with. The alternative scale questions we propose are rooted in a theoretical orientation to scale articulated by human geographers and political ecologists: scale is a constitutive process that is continuously produced, struggled over, and transformed through interactions of human and non-human actors that powerfully shape human-environment relations. To lay the groundwork for constructive engagement with a process-based and relational theory of scale with attention to power, we first sketch the development of scale theory in commons or CPR scholarship[1] that culminated in a shared conceptualization of scale as multi-level and hierarchical. Second, we contrast this approach with advances in scale theory made by geographers and political ecologists and leverage their critiques of commonplace assumptions about scale that equate it with size, level, and hierarchy, extending these insights to the study of CPRs. Lastly, we outline steps for conceptualizing and exploring scale otherwise, as a multi-dimensional process that constitutes the commons.

[1] Here we use the term commons or CPR scholarship interchangeably to refer to work that is centrally concerned with natural resource governance rooted in the Bloomington School of policy analysis, acknowledging that that is one direction among the diverse intellectual projects that have emerged there.

Instead of merely asking questions about which scale or level we should we choose to study or proposing a new singular framework, we raise different 'scale questions' in need of attention: How do certain recognizable scales form and come to dominate CPR governance? What are their effects? Who controls the interpretation of which scales or levels are the 'right' ones for governance interventions? Why does interpretive control over scale matter? In addition to raising new empirical questions, we outline accompanying reflexive questions that can guide scholars to critically rethink how scale is enacted through our research on the commons. To illustrate how scale alters what we see, we weave examples from small-scale fisheries (SSF) governance throughout, contrasting what is illuminated (and often what is not) through a standard approach to scale with our own efforts to apply new scale questions to understand gendered dimensions of SSF governance in the commons.

3.2 Surveying scale in the commons

3.2.1 Scale as local and multi-level

Ostrom's research on the commons has "in no small measure" transformed the field of environmental governance studies (Clement, Harcourt, Joshi, and Sato, 2019). Although the originality and merit of her work in Governing the Commons would not receive full recognition until after winning the Nobel Prize in Economics in 2009, almost 20 years after its publication, her work stood in stark contrast to conventions in economics and political science at the time both in terms of her unconventional theories

of collective action and her identity as a woman (Clement et al., 2019). Amidst these accolades we argue that her unconventional approach to scale is often overlooked.

First, her emphasis on local-level governance was unorthodox, putting seemingly "tiny events in the sea of human endeavors" at the center of her social science analysis (Ostrom and Ostrom, 2004, p.106). Gibson et al. (2000) outline how many political scientists at the time considered every day, local decision-making to be inconsequential—too mired in the tangles of context to be useful for the development of any generalizable theory relevant to higher-level phenomena, which were considered inherently more important. Ostrom's early work upended the scalar convention that "bigger is always better" and focused on the magnitude and inner workings of local-level collective action as a viable alternative (under certain conditions) to the inevitability of overuse or enclosure predicted by others. Second, her multi-level approach to scale was unconventional at a time when most political scientists specialized in studying actions and outcomes at specific scalar levels (e.g., regional or national) in isolation (Bridge and Perreault, 2009; Gibson et al., 2000) and neoclassical economists divided themselves along micro- and macro lines, deferring the challenge of integrating the "scaled nature of social phenomena across levels of economic organization" (Sayre, 2005, p. 288). While this pigeonholed scholars into specialized levels "without much attention to how the phenomena at that level is linked to phenomena at a higher or lower level" (Gibson et al., 2000, p. 223), Ostrom strove to

understand how governance functioned both within and among levels. As a result, unravelling the dynamics that circumscribed scalar levels became a critical component of understanding multi-level governance in the commons for those intellectually linked to the Bloomington School of institutional analysis.

3.2.2 A shared conceptualization of scaler in the commons as hierarchical and multi-level

Building from this foundation, the question of scale in the commons was confronted directly in Gibson et al.'s (2000) review of the term. In search of a cogent definition and shared scalar framework for commons scholars, the authors surveyed how different social and natural sciences defined and applied the term. Their review found that scale is an integral concept in many disciplines but is often treated inconsistently. To foster greater legibility and consistency within the field of the commons, the authors outlined a set of shared principles or "fundamentals of scale" that they modeled after work by ecologists (e.g., Levin, 1992). They defined scale as any dimension of measurement (analytic, spatial or temporal) used to measure and study phenomena composed of distinct levels or units of analysis (e.g., spatial levels, temporal time frames, or jurisdictional boundaries; Cash et al., 2006). Individual levels are treated as discrete entities but are also integrally linked and related hierarchically: Higher levels contain lower levels but are not simple combinations of attributes of smaller units; rather they can show new, collective behaviors (Gibson et al., 2000). We refer to these

characteristics herein as the "fundamentals of scale" (Figure 8) first outlined by Gibson et al. (2000) and since widely taken up by different commons scholars and put to use.

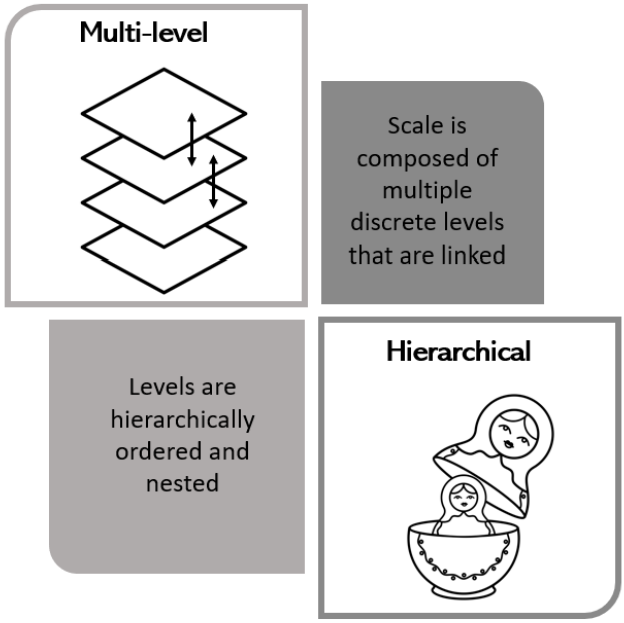

Figure 8: The influential "fundamentals of scale" for the commons outlined by Gibson et al. (2000).

While different approaches to scale invariably exist, many papers exploring scale in the commons use Gibson et al.'s definition or refer to Cash et al. (2006) (who cite Gibson et al. and define scale similarly; Vervoort et al., 2012). Amassing over 1,300 citations (Google Scholar searched on 03/12/2021), Gibson et al.'s work sparked a proliferation of papers on scale in the commons post-2000 (e.g., Young 2002; Young 2006; Cash et al., 2006; Cumming et al., 2006). While many scholars tackled scale directly, often focusing on the relationships and entities that 'link' scales or levels, the concept

has also been indirectly influential. For instance, scale as hierarchical and multi-level can be discerned in the structure of several popular conceptual tools and frameworks in the commons, such as the level of rules (Kiser and Ostrom, 1982), design principles (Ostrom, 1990), and the social-ecological systems framework (SESF; Ostrom, 2009). Widely used and applied in a variety of settings, each of these conceptual devices entail similar scalar conventions rooted in the fundamentals of scale articulated by Gibson et al. (2000)– for instance, how distinct levels of rules are conceptually ordered and related to rights, the design principle of nested enterprises in the governance of enduring CPRs, or the structure of tiered subsystems and variables in the SESF.

3.3 Human geographers and political ecologists take on scale

3.3.1 The scale debate in geography

Scale crosscuts the diverse orientations and related subfields within geography, and is widely considered to be one of the discipline's foundational concepts (Howitt, 1998). Despite its conceptual centrality, there is no singular definition or consensus on scale within the diverse field of geographic inquiry. For physical geographers, differences between cartographic scale (i.e., the relationship between the distance on a map to the corresponding distance on the ground), geographic scale (i.e., spatial extent of phenomenon studied), and operational scale (i.e., level at which a process operates; see Lam and Quattrochi, 1992) are acknowledged and used relatively consistently

(Marston, 2000). However, physical geographers generally treat scale as an implicit element of analyses rather than an object of inquiry (Howitt, 1998).

In contrast, some human geographers have moved beyond exclusively methodological debates about the "strengths and weaknesses of various scales" and the "right" level of analysis within (Purcell and Brown, 2005, p. 607). Beginning in the 1980s, human geographers broadened the meaning of the term and helped recast the importance of scale as a pillar of social theoretical reflection. Rather than a conceptual given imposed upon particular research problems, human geographers treat scale as an object of inquiry in its own right and focus on understanding the relational qualities of scale (Jones, 2017). This framing calls into question the stability of scalar categories and their inherent order (e.g., household, village, state), directing attention instead to how these categories interact and are themselves produced, reproduced, and transformed (Sayre, 2009). and focus on understanding the relational qualities of scale that interact with space, place, and environment to makeup the geographies we inhabit and study (Leitner, Sheppard, and Sziarto, 2008).

Human geographers' conceptualization of scale is shaped by distinct lineages of critical social theory (e.g., political economy or post-structuralism), but they generally reject notions of scale as a given or fixed category that pre-exists the social, ordering the world into discrete levels (Marston, 2000). Instead, scale is understood as a "relational, power-laden and contested construction" (Leitner et al., 2008, p. 158). This seemingly

simple assertion—that scale is socially constructed—has driven human geographers to theorize and explore the processes whereby scale is made, reorganized, and transformed (Marston, 2004), asking process questions about how particular scales become constituted and reconstituted in response to socio-spatial dynamics and to what effects (Marston, 2000). Attention to power is central to this approach, as different actors seek to strategically "harness, manipulate and transform scalar relations" (MacKinnon, 2008, p. 24). These actions can construct new scales or reconfigure existing ones with implications for power relations, which is broadly referred to as the 'politics of scale' (Leitner et al., 2008). As such, the identification and depiction of human and non-human activities is a political process (Forsyth, 20001), where the ability to define the 'right' scale for interventions in resource management is "inseparable from the struggle over who should define, inform, and conduct the governance process" (Sievanen, Gruby, and Campbell, 2013).

3.3.2 Theoretical blind spots and revisions to scale theory

Human geographers' attention to the socially constructed nature and power-laden implications of scale are ongoing projects marked by diversity and disagreement. Instead of a hindrance, we argue that continued debate has been intellectually productive, pushing individuals to challenge their own blind spots and assumptions about scale through dialogue. Here we highlight two moments of reckoning and revision in scale theory in geography—when blind spots on gender and ecological

processes were amended, reflecting their relevance as forces shaping scale—that we think are instructive for commons scholars.

While human geographers are broadly concerned with the ways that scale is constructed through and reinforces social relations of power, historically gender and the wider system of patriarchy were overlooked in such processes (Marston, 2000; McDowell, 2001). Questions driving geographic scholarship overwhelming focused on capitalist relations of production as the driver of scaled relationships, concentrating material relations and institutional powers at certain scalar levels where they became 'fixed' (Smith, 1992). This narrow view of political economy overlooked the role of social reproduction (Marston, 2004) and likened capitalism to a natural law with boundless causal powers to organize material life (Gibson-Graham, 1996). Women were attributed little agency in this process, and domestic spaces such as the household and sites including the body were ignored as relevant levels of political organization and analysis (Marston, 2000).

Feminist geographers have challenged this preoccupation with limited components of political economy, shifting boundaries between what is considered economic and non-economic activities (Cameron and Gibson-Graham, 2003) and demonstrating that scale is produced through political mobilizations of a whole range of social actors (Marston, 2000). While their contributions have often been discounted and their mobility constrained, women have certainly contributed to generating-wealth

(Cameron and Gibson-Graham, 2003) and have affected the construction and transformation of scale through these activities and others. Put simply, gender is a dimension of power and difference which shapes manifestations of scale that organize social, political, and economic life (Marston, 2000). These dynamics were excluded by models of the multi-level political economy that labeled these activities as 'non-economic' (Cameron and Gibson-Graham, 2003). Blind spots on gender relations and gendered spaces are also prevalent in commons scholarship (Clement et al., 2019), and we argue that this oversight is, in part, similarly rooted in assumptions about scale that influence perceptions of which levels of organization matter and what they contain (an assertion we explore further in the coming section).

A second advance to scale theory in geography came when the sole emphasis on "the social" in the construction of scale was extended to include the agency of non-human actors and ecological processes. This shifted the dialogue from "social construction" of scale to "social and ecological production" (Sneddon, 2003). Again, the boundaries around what actors and forces were seen as relevant to the construction of scale and its political implications shifted, and scale seen as "also produced through ecological means, and never solely through social processes and discourses" (ibid, p.234). Political ecology is particularly instructive in its attention to the intersection of uneven social and biophysical processes in the production of scale, as this ongoing process both reflects existing power imbalances and creates new configurations of

winners and losers in terms of resource access and control (Mansfield, 2005; Silver, 2008). On this point, commons scholars already share with political ecologists an interest in understanding conjoined biophysical and social dimensions of governance (in addition to overlapping intellectual roots; Robbins, 2011, Turner, 2017). However, by holding scale fixed, commons scholars have largely focused on other dynamics (such as interactions between said levels; Cash et al. 2006), overlooking how the intersection of social and biophysical forces produce scales and perceived levels of organization within.

3.4 Deconstructing common assumptions about scale

In challenging the conventional limits of scale theory within their own discipline, geographers have observed that several assumptions about scale are prevalent. Whether intentionally or unwittingly, the fluid and multidimensional nature of scale is often flattened for the purposes of simplification and abstraction, equating scale with size, bounded levels, or hierarchy (Figure 9). Drawing on examples from small-scale fisheries governance, we illustrate how the presence and effects of each assumption surface in the commons. Leveraging insights from geography, we deconstruct each assumption's component parts, their effects, and status as given.

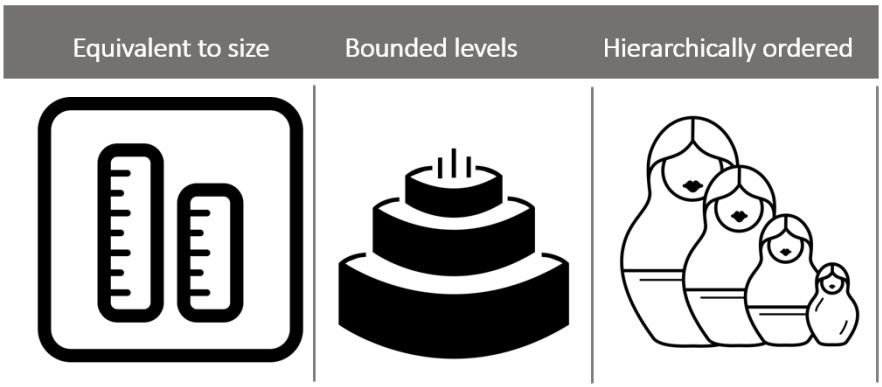

Figure 9: Underlying assumptions about scale that are prevalent in scholarship on the commons.

3.4.1 Assumption 1: Scale as size

Reducing scale to an analogue for size is a commonplace rendering of geographic scale and other relations we think of as scaled (Howitt, 1998). In the case of fisheries, scale as size is readily apparent in the very labels 'small-scale' and 'large-scale fishery' that frame governance debates and underpin discussions of the commons. While most fisheries scholars are well aware that perceptions of size are relational, as a "small-scale fishery in one location will not necessarily look similar to one elsewhere" (Charles, 2011, pp. 85-86) applying the label in practice often relies on sizing up capture technologies such as boats and fishing gear (Smith and Basurto, 2019). Often, the 'smallness' of SSF is taken to be obvious, "where you can know a small-scale fishery just by looking at it" (Gibson and Sumaila, 2017). Whether applied informally or inscribed in national fisheries laws and monitoring protocols, relying on the physical dimensions of boats and fishing gear to determine the "natural scale" of a fishery is widespread.

Reducing SSF to these dimensions eases observation, measurement, and management (Scott, 1998). However, when this reduction loses its identity as an analytic abstraction (i.e., a simplification, a choice of observation, a tool for communication), scale is perceived as the things themselves: size and scale are treated as virtually interchangeable, and therefore, small boats are SSFs (and vice versa). Geographers have noted that as these abstractions are repeated, they often circulate without accompanying attention to their limits, genealogies, or the "content of the concepts involved" and become naturalized scale labels rooted in sized-based objectivism (Howitt, 1998, p.50; Tsing, 1997). In the context of fisheries, the concepts and assumptions embedded within these scale labels have been naturalized to the point of near invisibility.

Insufficient attention has been paid to the effects of reducing scale to size in the context of fisheries and other commons. For one, this maneuver obscures the "wider complex webs" of social, technical and ecological relations "that extend beyond the boundaries of vessels" (Murray, Neis, and Johnsen, 2006). For instance, fixating on boats ignores the range of fishing activities that take place from shore and other land-based activities along the value chain where women tend to work (World Bank, 2012). The labor, technologies, environments, and social relations that comprise the value chain connect each fish caught, "from the net to the plate" (Funge-Smith, 2018). It is estimated that half of this work is done by women (World Bank, 2012). While scholarship on the role of women and gender relations in SSFs (and other commons) is on the rise, attention

to how scalar frameworks and related assumptions have contributed to the exclusion of women and erasure of gender is still needed. Reframing the 'scale question' in fisheries beyond a narrow and deterministic preoccupation with the size of male-dominated harvest technologies is one method for creating more representative fisheries science and socially and ecologically just CPR governance (Smith and Basurto, 2019).

3.4.2 Assumption 2: Scale as bounded levels

This notion that scales are composed of distinct levels is a commonplace understanding of the spatial organization of the world that often appears as a reflexive assumption in social science research (Moore, 2008), allowing analysts to "select a level a priori and then identify how it intersects with other levels" (Reed and Bruyneel, 2010). But partitioning the world this way creates several interrelated problems. First, the appropriate division of levels is often presumed, and processes are sorted into pre-ordained levels prescribed by frameworks or disciplinary norms. Second, repeated partitioning of social and ecological processes within a given multi-level framework creates the illusion that levels actually contain different things: tangible resources, ecological processes, information, knowledge, power. This reduces worlds to a 'spatial grammar of containers', where levels are metaphorically understood as "bounded, areal units encompassing and defining the people and processes supposedly located within them" (Moore 2008, p. 212). With repetition, entities appear as if already contained within certain levels and are often assumed to be relatively homogenous, purportedly

sharing a degree of cohesion and similarity (ibid). This essentializes scalar relationships, easily evoking pre-formed associations and tropes such as 'the local' is static and authentic, while 'the global' is fluid and dynamic (Gibson-Graham, 2002; Tsing, 2000).

In commons scholarship attention is often paid to vertical and horizontal linkages among fixed levels (Cash and Moser, 2000; Armitage, 2008). Issues of scalar 'mismatch' between incongruent levels within or across scales is considered the "archetypal scale problem" in the commons (Cash et al., 2006). In SSF, emphasis on mismatches between the levels at which decisions are made and actions taken has led to the promotion of co-management approaches that aim to foster new linkages among actors at different spatial and jurisdictional levels. Yet, this institutional realignment presents new scale problems, where actors unaccustomed to working together are supposed to co-produce knowledge and govern fisheries in concert, despite differences in power, ways of knowing, and daily interactions with fishing environments. Cash et al. describe knowledge itself as a scale composed of discrete levels, where "knowledge is often held, stored, and perceived differently at different levels, resulting from differences across levels about what is perceived as salient, credible, and legitimate knowledge, or what is perceived as the important scale or level of the problem." Their multi-level partitioning of knowledge imbues it with "thing-like" qualities and evokes a traditional-modern gap: knowledge "stored" at lower-levels is "experiential" and "traditional", whereas higher-levels contain knowledge produced by formal science,

depicted as "generalized and generalizable" (ibid). To resolve problems emerging from such "cross-level knowledge gaps", Cash et al. suggest knowledge co-production initiatives can facilitate cross-boundary coordination and knowledge translation, fostering new linkages among separate scalar levels.

In contrast, human geographers have cautioned that "knowledge holders" and "knowledge types" cannot be divided neatly among levels. In her research on marine co-management in Belize, Gray (2016) demonstrates that attempts to facilitate knowledge integration or co-production do not inevitably reconcile competing claims or yield their intended results. Gray observed how actors across and within groups (e.g. fishers, scientists) made different knowledge claims, yielding "no consensus on what either 'science' or 'local knowledge' indicates" in marine governance (ibid, p.1025). Whereas knowledge integration is often sought and considered a marker of sustainability in co-management (Olsson, Folke, and Berkes, 2004), it can actually serve to subjugate competing claims and erase important differences in understandings, motivations, and narratives (Gray, 2016), such as those that may occur along lines of race, class, gender. An emphasis on groups—such as "fishers", "community", or generic "resource users"—that are contained within pre-existing levels inhibits our grasp of intersectionality and analysis of difference in the commons. While commons scholars have challenged simplistic assertions for or against communities and related tropes about their innate abilities to manage their resources, the remaining tendency to operate

from an assumption that certain levels already exist "makes it difficult not to think in terms of social relations and institutional arrangements that somehow fit" their presumed contours (Marston et al., 2005, p.422). In efforts to engage diverse actors meaningfully in participatory management in the commons, this can result in persistent blind spots for analysis of fisheries governance and other commons, where what does not seem to 'fit' into mental models of scalar levels may get left out.

3.4.3 Assumption 3: Scale as hierarchical ordering frame

Assumptions about scale as size and level often dovetail with the last assumption we highlight: hierarchy. Whereas human geographers have taken up a broader exploration of the relational dimensions of scale, often in the commons scaled entities are assumed to be hierarchically related: vertically nested levels of decreasing size.

Like a Russian matryoshka doll, neatly nested scalar levels are metaphorically understood as arrayed from bottom to top, where lower levels are smaller and contained within higher/larger ones (Herod and Wright, 2008). Even where intermediary levels are presented in depictions of multi-level systems, the hierarchical schema is bound by the existence of a top and a bottom (Marston et al., 2005). Within any binary, one group invariably serves as the dominant referent to its other, bound up with assumptions about size, agency, and power (Jones, Woodward, and Marston, 2007). Therefore, when larger/higher levels are depicted as encompassing and influencing smaller ones, the agency of lower-levels appears constrained, where for example "the global is

penetrating, the local penetrated and transformed" (Gibson-Graham, 2002, p. 27). This ordered relationship suggests that "more-is-up" (Moore, 2008, p. 217), making it easy to assume that power accrues at the top and can be "read off" in advance (Allen, 2011). The tendency to conflate size, agency, and power in hierarchically scaled systems makes it easy to discredit supposedly lower-level places and processes while overplaying the efficacy and absolute power of things supposedly global (Gibson-Graham, 2002). Working from a hierarchical schema, it is easy to conclude that in order to make a political movement, scientific conclusion, or policy recommendation powerful, it needs to be scaled up.

Initially commons scholars largely used hierarchical frameworks to examine scaled processes from 'underneath', revealing the often-overlooked importance of the local-level in multi-level systems. In recent decades, commons scholars have been increasingly called upon to scale up and demonstrate whether observations and principles derived from studies of small-scale CPR systems apply at higher scales (Agrawal, 2003; Ostrom, 2009). Like many other CPR systems, efforts to scale up knowledge on SSF are underway in the search for the "right" scale to govern them. As existing studies are synthesized, internalized assumptions about hierarchical scale and the exclusions they entail are only magnified. As Kleiber et al. (2015) demonstrate in their review of the relationship between gender and ecosystems in the context of ecosystem-scale fisheries governance, "the fact that they [women] are overlooked is

often embedded in biased sampling methods" and efforts to synthesize this knowledge lead to an "underestimation of human catch, and an underestimation of the diversity of animals and habitats" fished, creating data gaps on women's ecological knowledge and fishing practices related to marine invertebrates. As this knowledge is used to shape management and policy agendas, it has political effects, contributing to the exclusion of women from decision-making spaces and consideration of their specific practices, needs, and rights (Weeratunge, Snyder, and Choo, 2010).

As the charisma of "globalisms" captivated a range of social sciences at the turn of the century (including the commons), the imperative of scaling up flourished, inadvertently attenuating the role of the local and the small-scale in the wider task of understanding planet-wide interconnections and avenues for action (Tsing, 2000). Human geographers by contrast, reject the necessity of a hierarchical framework for the foundation of scale, and instead the "production of scale and inter-scale relationships becomes a matter for empirical investigation rather than a theoretical assertion" (Howitt, 2002, p. 305). As such, we do not argue that hierarchy is not a relevant component and often present dynamic of scaled relationships in the commons, but rather that the "tendency to partition the social world into hierarchically ordered spatial 'containers' is what we want to explain – not explain things with" (Moore, 2008, p. 212).

3.4.4 From epistemological choices to ontological assumptions

While much of the of the earlier work on scale and the commons explicitly conceptualized scale as an epistemological construct rather than a real entity (see Berkes et al., 1998; Gibson et al., 2000), this distinction was increasingly obscured in the proliferation of commons scholarship. Ingrained in popular frameworks (such as the design principles, levels of rules, and the SESF), it becomes "difficult not to think in terms of social relations and institutional arrangements that somehow fit" presumed scalar contours as "events and processes appear to come pre-sorted, ready to be inserted into the scalar apparatus at hand" (Marston et al., 2005, p.422). As a result, current conceptions of scale in the commons are often saddled with a host of assumptions which can be problematic, leading to unintentional reliance on size-based objectivism, use of tropes, and attendant blind spots on power dynamics and critical forms of social difference. Treating scale as given forecloses empirical questions about how particular scales come together, why some scalar configurations come to dominate, and whether and where new alignments are possible. Further, this elides epistemological questions about the limits and potential effects of how we choose to observe, measure, and represent our systems of study. To disrupt this pattern, we propose asking new scale questions.

3.5 Exploring the production of scale in the commons

Scale is a relational process: the organization of widely recognized scales and constituent levels in the commons may appear stable and inevitable in a given moment, but in shifting our own perspective we can understand these as the products of social and ecological relationships "that assume different configurations under changing conditions" (Zimmerer and Bassett, 2003, p. 288), which are "constantly made, negotiated, and transformed as people interact in specific times and places" (Gezon and Paulson, 2005, p. 14). To explore the dynamic production of scale in the commons we draw on theoretical developments by Sayre (2005) and Rangan and Kull (2009) to differentiate between three moments that come together to produce scale: "operation (Sayre's ontological moment), observation (Sayre's epistemological moment) and interpretation (the moment of translation)" (Neumann, 2015, p. 479). We add a distinction between these three dimensions of scale and the moments of action that produce them, and couple each with new reflexive and empirical scale questions they unlock as a typology for commons scholars to engage with (Table 1).

Table 1: A typology for commons scholars to disentangle the production of scale through the lens of three distinct dimensions and moments of action (Rangan and Kull, 2009). We link each dimension of scale to reflexive questions it raises and possible empirical questions to apply in research on the commons.

Dimensions of scale	Moments of action	Reflexive questions	Empirical questions
Operational dimensions of scale are related to the physical	Produced through moments of everyday interaction with the world,	How do my own everyday understandings of scale shape my	How do historically and geographically specific socioecological

properties of things and biophysical and social phenomena that we experience and perceive as real.	material processes, and the apparent ordering of things.	perceptions of the commons and my research?	processes produce scales that are recognized in the commons? How do different actors in the commons understand and experience scale through everyday acts of commoning?
Observational dimensions of scale arise as an attribute of how one observes something.	Produced through moments of observation and measurement as the parameters (e.g., grain, extent, identification of levels) within which phenomena are examined are set.	How do the parameters I choose to observe and measure in the commons affect what is made visible/invisible in my research? How do my everyday experiences of scale impact my choice of observational scale?	Who controls moments of observation and measurement in the commons and what are the effects of their chosen parameters? How are observational dimensions of scales negotiated or contested in the commons?
Interpretative dimensions of scale translate complex relationships into forms that are generalizable and affective and have normative implications (i.e., tell us how we should feel or	Produced using interpretive devices (such as narratives, models, metaphors, symbols, and performances) that abstract as they communicate what aspects of scaled relationships matter.	What normative hierarchies am I invoking through my choice of interpretive devices and what are their effects?	How are interpretive devices used by different actors to make claims about scale in negotiations over environmental governance in the commons? What normative hierarchies are

what should be done).			invoked in narratives, models, metaphors, symbols, and performances used to interpret the commons?

3.5.1 Three distinct dimensions and moments of action that produce scale

The operational dimension of scale is related to the physical properties of material things and the social and biophysical relationships that create the structures of everyday life (Rangan and Kull, 2009). We interface with and perceive scale in this sense as real (i.e., not a mere social construct) through our everyday interactions, which Sayre (2005) describes as the "ontological moment" of scale. While the material manifestations and operational dimensions of certain scales may be recognizable, these forms are never completely determined, rather they are particular configurations of time, space, and power (Rangan and Kull, 2009). In the context of the commons, this leads to empirical questions about how recognizable operational scales are produced in complex-adaptive systems and how actors in the commons encounter, perceive, and negotiate them through everyday moments of commoning (Nightingale, 2019). For researchers, this also raises questions about how our own everyday experiences shape our understanding of scale.

The observational dimension of scale is produced as institutional actors involved in the measurement, analysis, and management of the commons select social and biophysical units and parameters for observation (Rangan and Kull, 2009). Scale is, in this sense, partly an attribute of how one observes something, what Sayre (2005) calls the 'epistemological moment' of scale. As analytic focus shifts between units or levels during observation, what changes is not the "'the elements themselves' (the features on a landscape, the ecological process affecting a social formation, the cultural practices performed by people)" but "the relationships we perceive between them and the ways in which we might emphasize specific elements for analytic attention" (Howitt, 1998, p. 55). While moments of observation are often paired with claims to objectivity (i.e., neutral choices based on operational or 'natural' scales), where boundaries are drawn and what is included are often the subject of contention (Rangan and Kull, 2009). As different actors question each other's choice of "categories, their resolution, the delimiting of extent and boundaries, and presumed order and disposition of relationships among them" claims to the 'right' or 'best' observational scale are contested and can change over time (ibid, p.12). This second dimension of scale raises questions about who controls moments of observation and measurement in the emergence or persistence of commons, what the effects of their repeated performances are for different actors and entities within, and how competing claims are negotiated and contested in collective action processes. Further, given the performative effects of

observational scale (i.e., that repeated moments of observation can give rise to new material orders), researchers should also reflect on how their own analytic choices shape what is made visible through the production of knowledge on the commons.

The interpretive dimension of scale is produced as explanations of spatiotemporal difference are "articulated, challenged or defended" through interpretive devices such as narratives, models, metaphors, symbols, and performances (Rangan and Kull, 2009, p. 8). These moments translate scale in two senses, simultaneously abstracting relationships, making them generalizable, and appealing to normative hierarchies and existing orders that evoke feelings like urgency, dissonance, familiarity, or outrage. Hardin's "Tragedy of the Commons" exemplifies the power of the interpretive dimension of scale to impart both truth and emotion: a simple story about a grazing pasture, herders and the calculus of sheep became an abstract, scalable model of human behavior and environmental inevitability that purported to apply from the local to the global. The Tragedy of the Commons is a story built on "essential logics and relationships of a limited number of abstracted causal factors – rational self-interest, limited resources, population growth," that incites anxiety and the supposed necessity of abandoning the commons (ibid, p. 14). The interpretive dimension of scale is enacted through discourses and performances by established experts and institutions (including scientists such as Garret Hardin) but is also contested through alternative performances that can challenge such representations and their authority (ibid).

Distinguishing between the operational, observational, and interpretive dimensions of scale provides language that can bridge gaps in understanding, both within and across disciplines, about the meaning of scale that can often be traced to conflation among these (Sayre, 2009). While distinct, recognizing the interrelationships among these dimensions of scale is also critical to understanding the intersecting biological and social processes that produce it: existing interpretive frames influence choices of observational scale and can also influence our perceptions of operational scale through our everyday experiences, and vice versa. "Holding the moments of scale apart" is a common problem Sayre identifies, especially in the biophysical sciences, where operational scales are treated as objective while observational scales are independent and subject to disciplinary norms. Equally problematic is the tendency of some human geographers influenced by post-structuralism to collapse all moments together under the banner of "social construction" (Sayre, 2005, 2009). Among the diverse theoretical orientations to scale in geography and political ecology, we elevate this approach because it resonates with commons scholars' shared interest in the environmental dimensions and physical sensibilities of scale while addressing the representational power of scale within a critical realist frame (i.e., biophysical reality is 'externally real' to human experience, but our ability to comprehend that reality is partial and socially constructed; Forsyth, 2001).

3.5.2 Moving forward: practical steps to critically rethink scale in research on the commons

Finally, we ground these dimensions, moments of action, and empirical scale questions within a series of steps commons scholars can apply in their research process to help critically rethink scale (Figure 10). First, we encourage scholars to ask themselves, what assumptions about scale am I already making? Beginning from this basic question creates space to reflect on assumptions we bring from our own everyday experiences (e.g. operational dimensions), disciplinary conventions, or the structure of models and frameworks in use. As discussed previously, equating scale with size, level, and hierarchy are widespread assumptions that pervade many disciplines which, when left unchallenged, contribute to blind spots. Therefore, pausing to reflect on these assumptions (and what they might already be excluding from analytic consideration) is an important first step in determining research scope.

Second, we can ask, what dimensions of scale can I identify? Upon closer examination, likely we can notice all three dimensions of scale at play in common-pool resource governance (Table 1). Third, we can search for instances where each dimension of scale is enacted and performed, whether past or present, and how these actions stabilize, challenge, or transform existing scalar forms.

Lastly, reflecting on the limitations and tradeoffs inherent to our chosen approach to scale effectively communicates that scale is not objective or external to the research process. This step also invites a pause to consider alternatives before

proceeding to analysis. We propose these steps as iterative, where ongoing exploration of our own assumptions raises new scale questions, and vice versa, as different facets of the complex connections and relationships that constitute the commons are revealed throughout the research process.

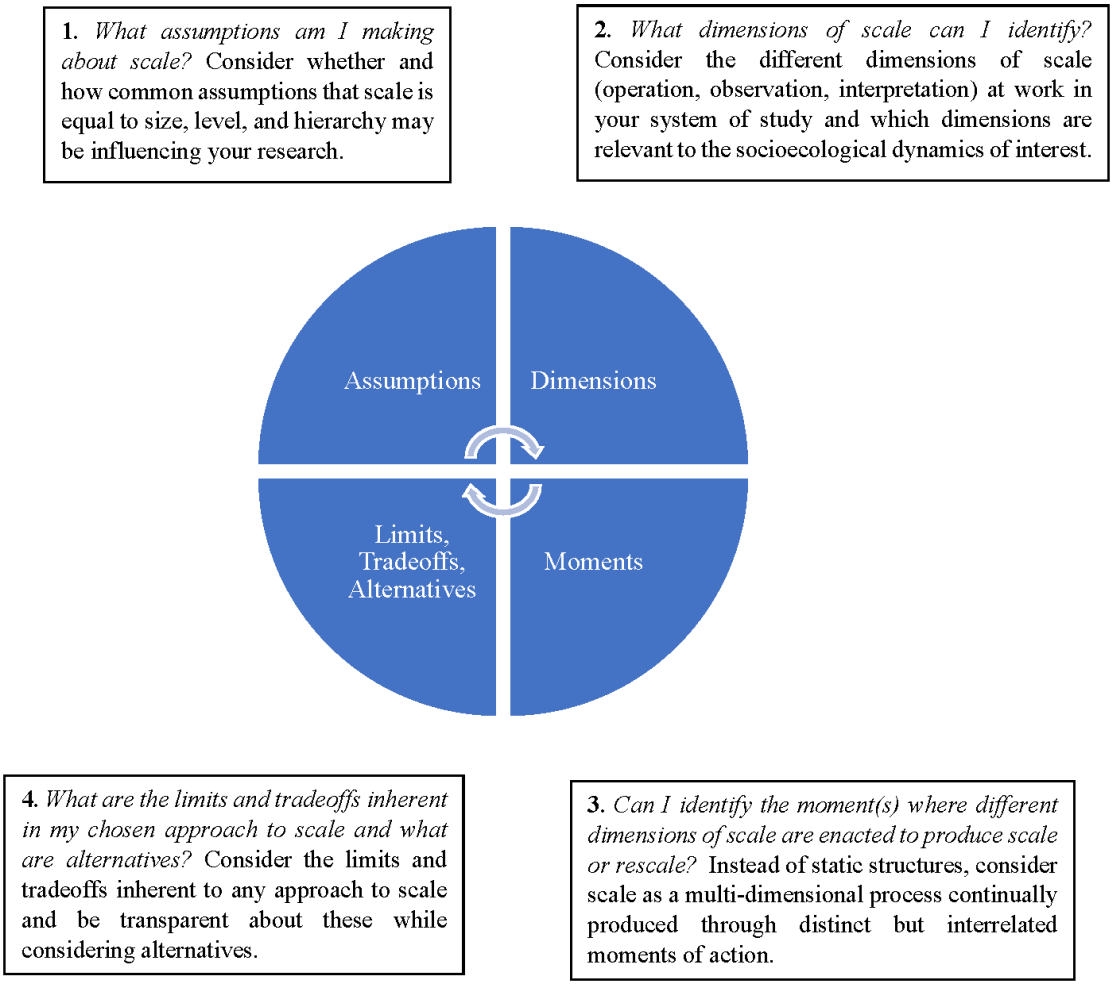

Figure 10: Steps to critically rethink scale in our own research and praxis in the commons.

3.5.3 An illustration: Rereading scale and gender in smalls-cale fisheries policy

Here, we briefly demonstrate our own efforts to apply these steps in our research on gender and SSF policy change, focusing on the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (the SSF Guidelines or Guidelines). The passage of this policy by the United Nations in 2014 was widely celebrated, marking a monumental shift in the discourse of fisheries governance by centering the needs of SSFs within a framework of social and ecological justice instead of bioeconomic rationality. Civil society organizations (CSOs), academia, and policy circles alike have endorsed the SSF Guidelines both for the wide-ranging participatory process through which they were developed and the unorthodox and decidedly ethical principles they espouse. For instance, the SSF Guidelines were developed through a global consultation process with over 4,000 representatives including fishers and their organizations, and the text itself rests on a human-rights based approach to fisheries governance that fisherfolk organizations had been advocating for and struggling to insert into global policy tools for decades (FAO, 2015; Pictou, 2017). The five thematic sections of the SSF Guidelines highlight ethical principles for responsible governance, including tenure security, decent work, attention to the value chain, gender equity, and climate change adaptation. Each of these principles was left intentionally open-ended in the text, to be determined through the process of policy implementation guided by a participatory and representative cohort of

actors from across the sector in each place (Jentoft, Chuenpagdee, Barragán-Paladines, and Franz, 2017).

The process of policy implementation has the potential to realign power and existing orders that structure CPR governance. Thus far, the main questions that have been posed in relation to scale have been whether or not the Guidelines will scale down in practice (Jentoft, 2014), and as it is mobilized, how it will cohere with pre-existing policy frameworks at different scalar levels (e.g., national, regional) (Song, Cohen, Hanich, Morrison, and Andrew, 2019; Song, Cohen, and Morrison, 2017). These questions presume that scale itself is apolitical and immobile—a multi-level, hierarchical backdrop—focusing on whether and how the policy tool will move across scalar levels and interact with the entities already contained within the 'policy landscape' (Blythe, Armitage, Bennett, Silver, and Song, 2021). Instead of replicating these assumptions, we search the text of the policy itself for traces of alternative performances of scale that might challenge the status quo of multi-level hierarchical order. Through the three dimensions of scale (Table 1), we consider how the SSF Guidelines subvert presumptions about the 'natural' scale of SSF (their operational dimension), the 'right' scale to observe and organize them (their observational dimension), and how SSF are translated as a domain of social, ecological and economic concern (their interpretive dimension). We couple this reading of each dimension with parallel moments of action we have observed in our own research on policy implementation in Tanzania.

First, we consider the historical production of scale in SSF governance. In relation to industrial fisheries, issues of SSF governance have often been overlooked or erased as longstanding local institutions were frequently disregarded and replaced by national oversight. SSF were marginalized, and their lowly status normalized, by powerful actors repeatedly framing them as an economically backwards activity from the past, located at the bottom of an evolutionary ladder in the inevitable march towards an industrial fishing future (Jadhav, 2018). This evolutionary narrative created a normative rationale for action: develop SSFs into industrial fisheries or wait for their inevitable replacement as they are outcompeted. Development actors such as the World Bank followed this logic in their investment strategies throughout the 20th century, supplying technology and infrastructure inputs to transform SSF into supposedly more rational and efficient modes of production (Hamilton, Basurto, Smith, and Virdin, 2021). Coupled with acts of observation and management that relied on the physical dimensions of fishing boats and gear (H. Smith and Basurto, 2019), SSF were positioned as small, local, backward, and politically insignificant—located at the bottom of sociospatial, jurisdictional, temporal, and economic hierarchies. Rather than natural or inevitable, we can unpack this ordering as an effect produced through interrelated moments of operation, observation, and interpretation. Operationally, SSFs were reduced to physical units of boats and gear that could be measured, aggregated, and organized by states who governed them. Repeated performances of observation by powerful institutions produced knowledge

and related management practices that relied on these dimensions which were presumed to be fixed and essential (and purportedly objective), and evolutionary narratives and imperatives for action followed dictating how they should be governed.

The text of the SSF Guidelines challenges these conventional scalar configurations of time, space, and power that have dominated SSF governance. First, the SSF Guidelines counter assumptions about their operational dimensions or 'natural scale'. The preface of the Guidelines defines SSFs as "encompassing all activities along the value chain – pre-harvest, harvest and post-harvest – undertaken by men and women" in inland and marine ecosystems (FAO, 2015, p. ix). Opening with this alternative definition avoids fixing the meaning of the term to standard techno-physical dimensions and acknowledges that SSFs are a lived and ongoing practice open to new configurations. Through this definition, the boundaries around the operational dimensions of scale are broadened and rendered more flexible, inclusive of a wider range of actors, environments, economic activities, and possible relationships among them. Through the policy implementation process in Tanzania, actors along the value chain including women have been brought into the fold of formal fisheries governance. The policy implementation process is led by a National Task Team (NTT) of actors unaccustomed to working together, including representatives from women's post-harvest processing cooperatives together with fisheries scientists, managers, and NGOs. Through NTT meetings and wider sector consultations, the operational dimensions of

SSF are being challenged and performed differently, as different sets of technologies, knowledge, identities, and means of organizing labor in SSF are acknowledged and incorporated into the policy process.

Based on this alternative definition within the Guidelines, different observational dimensions of SSF also become possible. If SSFs are not defined by small boats and gear, then the parameters we use to observe and govern them look different too. Unlike most global environmental governance tools that impose narrow targets for policy implementation, measurement, and evaluation (Campbell, 2019), the "Guidelines do not prescribe a standard definition of SSF nor do they prescribe how the Guidelines should be applied in a national context" (FAO, 2015, pp. 1-2). The "Nature and Scope" section (2.4) specifies that implementation should be guided by a transparent and participatory process, where actors from across the sector come together to collectively reexamine how SSF have been defined, counted, and managed. In particular, the text calls attention to the longstanding marginalization of women and the necessity of redressing systematic exclusions in the definition, measurement, and management of SSF (Kleiber et al., 2017). In the implementation process underway in Tanzania, that pattern of counting boats and gear types to render official fisheries statistics is being challenged. As an alternative, the first national study to 'map' women's fisheries organizations was commissioned by the NTT to gain a better picture of the landscape of women's organizations, how they formed, what their capacities and needs are, and how gender

relations shape the value chain. This study will include both formal and informal organizations representing harvesters and pre- and post-harvest workers, making different observational dimensions of scale in SSF visible as the structure and function of women's networks of collective action and brought into relief.

Lastly, the interpretive dimension of scale is evident in the different stories told about the value and future of SSFs in the Guidelines. Part 1 of the policy grounds SSF governance within an ethical framework of human rights and Part 2 outlines further commitments to achieving gender equality and climate justice. While in past decades (and in some circles, at present) SSF were interpreted within the neo-classical framework of economic rationality, the SSF Guidelines are normatively concerned with social and ecological justice, noting that SSF "commonly suffer from unequal power relations" that marginalize them and leave them subject to the negative environmental effects of other industries (FAO, 2015, p. x). Rather than a backwards practice from the past, the Guidelines position SSF as imperative to a just, sustainable, and food secure future. Further, rather than merely speaking of empowerment, the Guidelines acknowledge that power cuts both ways: "existing power imbalances between different parties" should be recognized, and existing hierarchies between actors along the value chain and between SSF and other industries should be considered in light of human rights obligations (FAO, 2015, p. 3). Often, when gender inequality is acknowledged in the context of SSF governance, the story stops at recognition of women's relative invisibility. However,

through the implementation of the Guidelines in Tanzania, women's SSF organizations are being mapped, not as a singular entity with a one-dimensional presence, but as a complex patchwork of women's organizations formed through different modes of collective action. Both the act of mapping and the resulting map itself are alternative moments of interpretation of scale in SSF (i.e., performances and symbols).

Future research is needed to understand how scalar dynamics unfold as the SSF Guidelines are implemented and performed in place. While the text of the SSF Guidelines is rooted in ethical principles that were developed in a participatory manner, how they are enacted and to what effects remain to be seen. Through our initial research, we highlight moments where alternative readings of the dimensions of scale in SSF and related performances are possible. However, enactment of the Guidelines could be subsumed by existing definitions, observational metrics, and interpretive devices that already structure governance debates about SSFs in different nations. Our iterative process of questioning assumptions, asking new scale questions, and reflecting upon what they make visible continues as we study gender and policy implementation of the SSF Guidelines.

3.6 Conclusions

Commons scholars are increasingly interested in the dynamics of multi-level governance and cross-scalar institutional arrangements in CPR governance. The concept of scale is central to this and other areas of research in the wider field of the commons,

yet the dominant approach to scale has limitations. The purpose of this paper was to trace influential treatments of scale by commons scholars, analyze resulting patterns, and explore the relevance of some elements of scalar thinking from outside fields to enrich the ways we conceptualize, study, and imagine the commons. Early commons scholars broke disciplinary norms and boundaries in economics and political science by charting an unorthodox approach to scale, studying local processes and multilevel dynamics, eschewing restrictive scalar silos that pigeonholed theorists into a singular frame of reference. As the field further developed the focus on CPR governance in collaboration with natural scientists post-2000, a relatively stable approach to scale was established that conceived of scale as multi-level and hierarchical, fundamentals that became embedded in conceptual frameworks that remain popular.

The popularity and consistency in this approach to scale has had several advantages for commons scholarship. However, a lack of ongoing dialogue and critical reflection on the use of scale has substituted epistemological choices about how to treat scale for ontological assumptions that often equate scale with size, fixed levels, and hierarchical order. To move beyond these confines, we have endeavored to inflect new perspectives on scale to transform the ways we study and understand the commons as open-ended configurations of time, space, and power. Borrowing notions of scale from outside the current terrain of commons literature can destabilize reified notions of scalar levels and hierarchically ordered relationships while prompting a new wave of attention

to the production of scale in the commons. To unsettle the concept of scale, we suggest focusing on scale as a process and offer tangible theoretical and methodological steps as an entry point to rethink scale in the commons.

4. Mobilizing Policy Implementation: Following the Work of Translating the Small-Scale Fisheries Guidelines in Place

4.1 Introduction

What does the ideal of 'gender equality' mean in fisheries governance and how are policies aimed at realizing this goal enacted in practice and in place? These questions are urgent as gender equality is among the central tenets of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines, or the Guidelines), the first set of global guidelines for small-scale fisheries (SSF) governance. Formally negotiated and ratified by United Nations member states, this policy was ratified in 2014. The passage of the Guidelines was widely celebrated by policymakers, academics, and civil society organizations (CSOs) alike, both for the unconventional principles they contained and the participatory process through which they were developed. Now expectations have shifted to whether and how this landmark policy will work to enact or advance the principles it contains—gender equality, decent work, tenure security, climate change adaptation. The overriding question has become, what will this policy become in practice?

In the realm of fisheries and global environmental governance more broadly, the SSF Guidelines are an unusual policy. The explicit focus on SSF and the ethical orientation of the Guidelines—grounded in a commitment to human rights, inclusion,

and justice—stand in stark contrast to most existing fisheries governance instruments that have been shaped by the priorities of industrial fisheries and the bioeconomic principles of western scientific fisheries management (St. Martin, 2005; Johnsen et al., 2009; Bavington, 2010). Further, the process of policy development aptly mirrored the principles of participation and inclusion the Guidelines espouse. Instead of being negotiated exclusively by traditional policy actors and communities of experts, the development of the Guidelines proceeded slowly, allowing for a diverse range of civil society actors and representatives of fishing communities to engage in their scoping and negotiation. Broad participation is also mandated in their implementation. But despite the accolades and praise accrued so far, how the principles within the Guidelines will scale down and be performed in practice are outstanding questions. While the very language within this policy has power to model and communicate the world we want, doing "symbolic and affective work" in its own right (Clarke et al., 2015), others have stressed that "the ultimate test is whether states will really 'walk the talk'" and translate their commitments into meaningful change (Jentoft, 2014). While the unprecedented language and principles within the Guidelines have been widely celebrated, many fear that the aspiration to transform fisheries governance will fail to materialize.

> "The document itself, however, is worthless unless the words and previsions it contains are able to find their way into the real world. The place of the SSF Guidelines is not in the selves of public offices or

ministerial departments, but at the beaches, aboard the canoes, in the hands of fishers, by the sea" (Jentoft et al., 2017).

Will the SSF Guidelines, voluntary in nature, be translated from global agreement to transformative changes to governance in practice?

While meaningful change through policy implementation is clearly the hope, resolute optimism would be naïve. The range of ethical commitments the Guidelines contain hold unsettling implications for existing power relations that structure fisheries-governance-as-usual and the hierarchy of policy landscapes. As such, the implementation of the Guidelines was never predicted to be straightforward (Jentoft et al., 2017). As "promoting justice" is one of the policy's core guiding principles (outlined in section 1.3), the need to consider and promote equity and equality in fisheries governance is discussed throughout, where these two terms are used in tandem and at times interchangeably. This language signals that accounting for existing differences is a necessary starting point as implementation may entail "using preferential treatment where required to achieve equitable outcomes" (FAO, 2015). Thus, while historically references to equality and vaguer notions of empowerment have been preferred in UN parlance and many environmental and development policies (typically without much consideration of power relations; Rowlands, 1995), the Guidelines explicitly discuss power and equity along with empowerment and equality.

As anxious speculation about the looming question of policy implementation suggest, endorsement does not automatically guarantee policy implementation: the SSF Guidelines must move beyond the halls of the United Nations (UN) Committee on Fisheries (COFI), where the policy was ratified, to become meaningful in place. But landing on the bookshelf at the Ministry of Fisheries is not what advocates of the Guidelines had in mind either. Making the Guidelines meaningful in place would necessitate a more dynamic and embodied mobilization.

Often in policy studies, policy mobility is simplified into metaphors of lateral transfer over space or scaling policies up or down (McCann and Ward, 2013). Empirical attention is placed on studying policy impacts, outcomes to be measured after the fact. Depicted in this abstract sense, you can easily miss the work entailed in making a policy move, the simple fact that "people move them around for particular purposes" (Temenos and McCann, 2013). The very fact of this movement is itself unsettling, as the relationships among people, ideas, and things are (potentially) remade as policies travel, potentially reconfiguring policy designers' intentions and the structure of existing 'policy landscapes' (Tsing, 1997; Peck, 2011). While often omitted in the telling of 'what really matters' in terms of policy (i.e., post-implementation effects), this movement is central to the transformative potential of the Guidelines as it is what "makes things happen" (Clarke et al., 2015)—the SSF Guidelines have to be mobilized by people in particular places if they are to achieve their desired results and create a more just future

for SSF governance. But like any policy on the move, exactly what the Guidelines will become cannot be foreseen. The results of the best policy designs are unpredictable, as policy mobilization does not guarantee intended results (Clarke et al., 2015). Thus, empirical attention is needed to unpack what happens to policies while they are 'in motion' (Peck, 2003; Ward, 2006). An important focus for 'forward-looking policy studies' according to McCann (2011a), as "the paths traveled and the things that happen to policies along the way are just as important as the policies themselves and the places they affect" (Temenos and McCann, 2013).

Therefore, while the text of the SSF Guidelines was fully formed in 2014, their contents carefully crafted through a multi-year participatory process, their meaning was not fixed. This policy still had to be "made to mean something in its new context" as it moved (Clarke et al., 2015), a "profoundly geographical process" (Ward, 2006) as the ideas and unorthodox principles within the Guidelines would be interpreted into an actionable set of strategies in place. Immediately after their formal adoption, different actors were already working at multiple levels and locations to mobilize the people, resources, and organizational relationships needed to realize the goal of policy implementation. In 2017 the Food and Agriculture Organization (FAO) provided technical and financial assistance to a handful of countries to initiate policy implementation as test cases, including in Tanzania. Each test case country would highlight a specific theme from the five thematic core principles or 'guidelines' for

governance within the SSF Guidelines to give this lofty task preliminary direction. In Tanzania, gender equality (section 8 of the Guidelines) became the focus of national-level policy implementation, a scope not imposed but rather determined through the process, an acknowledgement of the outsized role of women in both marine and inland SSF value chains and their simultaneous marginalization in fisheries governance-as-usual (Medard et al., 2002; Porter et al., 2008; Bradford and Katikiro, 2019; Medard et al., 2019).

I approach policy implementation in Tanzania as an empirical and indeterminate process to be followed, where attention to policy mobility is critical to understanding the transformative potential and material possibilities of the Guidelines, and for enacting alternative global environmental governance models more broadly. Attending to the problematic of policy mobility entails tracing connections "between different organizational and everyday worlds" (Shore and Wright, 1997). Tracing the movement of the Guidelines included travelling both 'forward' from where they originated (e.g., COFI, although this is not the only possible starting point) and 'backwards' from where they arrived (e.g., implementation in Tanzania; McCann and Ward, 2012, p.49). This interlayered approach of tracing is about unravelling the story of interconnections and 'laying bare' "the places a policy has traveled through and interrogating how a policy has mutated or been transformed along the way" (McCann and Ward, 2012a). Rather than trading managerial metaphors of 'policy transfer' for a fetishized notion of global

movement as a hyper-state of flows, I ask who and what is assembled (e.g., came together) through the process of moving the Guidelines from global commitment to national project, and to what effects.

While no policy is a finished product to be simply picked up and moved here or there, the implementation of the SSF Guidelines appears particularly open-ended, written to be subject to revision and inflection by design. For instance, in section 8 which outlines the goal of Gender Equality, readymade implementation benchmarks and evaluation metrics are not prescribed (which is true of all the five main goals or governance guidelines). Instead this section acknowledges that the "strategies to achieve gender equality require different approaches in different cultural contexts" and this process should "create space for CSOs, in particular women fish workers and their organizations, to participate" in determining, enacting, and monitoring implementation strategies (FAO, 2014, p.12).The loose specifications for implementation baked into the Guidelines are themselves an ethical choice, a potentially transformative invitation to do 'policy otherwise' (Clarke et al., 2015) by moving against the grain of the supposedly SMART (e.g., Specific, Measurable, Achievable, Relevant, Time-bound) policy orthodoxy of recent years, where adherence to target-based policy making constitutes 'best practices' in global environmental governance—a model which fails to take equity seriously while also falling short on many of its own targets in practice (Law et al., 2018; Campbell and Gray, 2019).

To disentangle the story of the implementation of the Guidelines in Tanzania, I employ the methodological practice of "following the policy" (Peck and Theodore, 2012). Instead of taking gender equality as the starting point of implementation, I traced backwards to ask how gender equality came to be articulated as the focus of national-level implementation amongst the many principles contained within the Guidelines and amidst the diverse actors involved in the process. Tracing forward, I also followed the principle of gender equality in-motion, asking what strategies were imagined to achieve it? And how did this move towards gender equality in fisheries intersect with existing practices and policy landscapes? This research employs multiple 'techniques of following' (McCann and Ward, 2012a) and sources of data, including participant observations at key policy meetings at multiple levels (global, regional, national), analysis of meeting documents (minutes, reports, background papers, platform statements), and key-informant interviews. I go on to "follow the mapping" (both here and in greater empirical detail in Chapter 5) through a national study to 'map' women's fishery organizations, an initiative that became a central strategy of policy implementation in Tanzania, showing how the study itself was assembled from different meetings, stories, methods, and the labor of different actors.

Theoretically I put the transformative possibilities of the Guidelines in conversation with two fields of scholarship that seek to de-center and denaturalize the state—global environmental governance and critical policy studies. Informed by these

theoretical sensibilities, I widen the scope of national-level policy implementation beyond the agency of typical state sanctioned actors or the confines of jurisdictional boundaries to disrupt a linear understanding of how policy moves or 'scales down' in practice. Instead, I treat the making and doing of policy as something more disorderly: an iterative, multi-level, multi-sited process that interrupts the 'scene' of policymaking and sites and spaces often assumed to be separate (e.g., the halls of power where policies are made by 'global' actors and the places where policies supposedly land and affect 'local' people; Clarke et al., 2015). I refer throughout to the 'making and doing' of the Guidelines (or making/doing) to signal that the policy itself is unfinished, as meanings are (re)made through movement and entanglements with place. Implementation is not what comes after a policy is made, it is central to the making of policy worlds. Thus, the project of "following the policy" is inherently a multi-sited one, encompassing data collection in multiple sites in Tanzania, at global meetings in Ecuador and at the UN, and within the halls of the FAO Fisheries Aquaculture Branch Head Quarters in Rome.

What emerged through this inductive process was an unexpected storyline: civil society organizations (CSOs) have and continue to play an outsized role in the world-making possibilities of the Guidelines, troubling assumptions about the typical sorts of agents and agency in play as policies move (Clarke et al., 2015). For instance, while the diversity and roles of non-state actors in global environmental governance are increasingly recognized, states are typically characterized as "remaining firmly in the

'driver seat'" directing the process, while the diversity of 'passengers' (including civil society) expands (Bernauer and Betzold, 2012). Those tasked with implementation are not typically given much agency in the meaning-making processes entailed in policy projects, as agents responsible for the 'transition' of ideas from one setting or scale to another, a 'like-for-like' exchange where original meanings are left intact (Clarke et al., 2015; Tsing, 1997). In the case of the Guidelines, CSOs were not merely consulted or invited into the process at the behest of a more powerful actor—they demanded the inclusion of SSF in global governance agendas, articulating the absence of SSF in global policies and governance discourses as a problem. They did not stage their critique outside the global halls of policymaking, a story of local or place-based resistance to global power, rather they worked from within (and worked their way in) through unlikely alliances in order to transform the language and order of global fisheries governance.

In the story that follows, I highlight how different kinds of 'policy work' (Clarke et al., 2015) initiated and sustained this project of transformation. Setting the creation of the Guidelines in motion required the 'policy work' of convening global meetings, lobbying for inclusion of SSF in COFI's priorities, building a shared CSO platform and global agenda for change, and maintaining pressure on COFI members to act. The work of policy implementation overlapped with and built on many of the same organizational networks, relationships, and ideas forged through the creation of the Guidelines, while

also further reconfiguring the fisheries 'policy landscape' (Peck, 2011) at multiple scales. The Guidelines were also transformed by this journey (as policies are not unitary and complete objects but always unfinished and in-the-making; Clarke et al., 2015), although arguably, this is how they were made by design. Thus, imposing a definitive analytic separation between the influential role of CSOs (and their networks of supporters) in developing versus implementing the Guidelines rang partial and problematic. The story of the Guidelines has more than one possible starting point. Here I tell the story of national policy implementation from multiple starting points, moments of action, and scalar perspectives.

In the coming section, I first contextualize the Guidelines within existing literature on global environmental governance and critical policy studies, highlighting what these perspectives can add to broader discussions on sustainable and just futures for the commons and possibilities for transformative societal change through policy projects. In section 4.5, I describe my methodological approach to "following the policy" and the different types of data that emerged through this process, including multi-sited ethnographic observations at meetings, analysis of meeting reports and background documents, key informant interviews, and institutional ethnographic observations at the FAO.

"Following" became more than an analytic approach, it became an embodied research praxis and ethical choice as I followed invocations for researchers to join the

process and aid in the project of implementation, enrolling me in the collaborative design and enactment of the strategy of mapping women's SSF organizations. My results (sections 4.6-4.8) are narrative, tracing the policy work that went into developing a national movement to implement the Guidelines and the articulation of gender as the focus, but not without first foregrounding the foundational work of CSOs in creating the conditions for change in the global policy landscape. I then focus on the work that went into determining specific implementation strategies in Tanzania, describing the specific methods and moving parts of one such initiative: a national study to map women's fishery organizations, composed of different actors (myself included), ideas, and motivations. Lines of difference, sources of exclusion, and moments of tension which remained without inhibiting alignment around the common goal of implementing the Guidelines.

4.2 Mobile policy designs: The rise of SMART targets as a preferred 'policy idea and technique' in global environmental governance

As the exchange and emulation of certain 'policy ideas and techniques' within increasingly interconnected global networks is heightened, certain models for policymaking become mobile, extended into new domains, jurisdictions, and geographies (Peck, 2011). In the realm of global environmental governance, there is a recent policy model and belief that has gained traction: 'good policies' should be

targeted-based, and ideally these targets should be SMART (Specific, Measurable, Achievable, Relevant, Time-bound) (Maxwell et al., 2015; Hagerman and Pelai, 2016).

Global frameworks and agreements across different domains (e.g., conservation, sustainable development) increasingly anchor their agreed upon policy goals to a series of pre-determined targets, as these "statements of shared aspiration" (Campbell et al., 2014) supposedly enhance transparency and "hold authorities to account" in achieving their stated goals (Kauda-Parr, 2016) by making standards for progress towards implementation universal and measurable. Targets offer up pre-determined benchmarks that are supposed to eliminate flexibility, as any room to maneuver is an opportunity to 'manipulate' a policy's meanings and their designer's intentions through implementation (Maxwell et al., 2015; Jacob, 2017). As supposedly reliable and standardized units that should be measurable, targets are often coupled with commensurable indicators that can be used to track progress universally, purportedly offering policymakers mutual accountability and transparency (Campbell et al., 2014; Campbell and Gray, 2019; Hagerman et al., 2021). Narrowly defined by design, any bulti-in flexibility or 'wiggle room' in targets supposedly leaves opportunities for signatories to later 'wiggle out' of their commitments (Maxwell et al., 2015) while also making universal surveillance of progress more challenging (Green et al., 2019). Thus, targets are thought to be best practiced in their SMART form, policy designs intended to reduce this potential for change.

The spread of supposedly ideal characteristics or 'policy innovations' are often presumed to travel on their own merits (Peck, 2011), where 'their use' indicates their 'usefulness' (Campbell et al., 2014). As the preference for SMART targets has become the global standard for 'good governance' agreements, a widely replicated and prescribed model for policymaking, any missteps in realizing policy targets in practice are typically explained by lax implementation limiting the fulfillment of goals (Bucthart et al., 2016, Maxwell et al., 2015; Perrings et al., 2011) or the targets not being SMART enough (e.g., measurable, scalable, unambiguous, and specific in particular; Green et al., 2019). The 'quality of the performance measurement system' (i.e., the ability to measure the success of a target) becomes the definition of success (Jacob, 2017). Any limitations of SMART targets in practice are framed as minor tweaks to be improved in design or application—not invitations to reconsider the wisdom or underlying logic of target-based policymaking itself (Hagerman et al., 2021).

Campbell et al. (2014, 2019) by contrast, inserts a critical perspective in their research on the relationship between targets and the Convention on Biological Diversity (CBD), where imposing scientific regimes of measurement has had powerful effects in terms of how conservation is pursued as a global strategy. For instance, targets that are more easily measured (such as expanding protected area coverage to a fixed level) are favored over more "complicated, contested, and expensive" targets that pertain to equity (Campbell and Gray, 2019). As notions of 'success' towards policy goals is

increasingly defined in terms of the measurability of targets (Jacobs, 2017), and targets that are most easily measured gain the greatest traction (Hagerman et al., 2021), the global policymaking landscape is increasingly steeped in the revolving governance logic of 'measurementality' (Turnhout et al., 2014).

Yet, despite their supposed SMART-ness, global assessments indicate that most of these targets are unlikely to be met (Secretariat of the CBD, 2014; Tettensor et al., 2014; Hagerman et al., 2021). Others have noted that SMART targets do not only prefigure metrics of success and requisite knowledge, they also shape narratives of who is successful, where countries in the Global South are more likely to be labeled as failures as universal targets and indicators are often shaped by and favor developed country contexts (Easterly, 2009; Jacob, 2017). Thus, while targets are endorsed as science-based and therefore neutral, these critical perspectives highlight how targets are not natural or merely technical but are always produced though political contexts, privileging certain kinds of knowledge, evaluative techniques, and stories over others (Campbell and Gray, 2019).

Applied uptake of critical perspectives on target-based policymaking has been limited, as global bodies like the CBD continue to revise, whittle, and hone the practice, now in its third round, despite persistent failure to meet many of their own targets in practice. Thus, are SMART targets really smarter (as in, do they make for better global policy designs)? Or are they just easier to measure and track universally, qualities that

are valued given the uptake of business and managerial thinking (Turnhout et al., 2014)? Is the uptake of SMART targets in global agreements driven by policy rationality (where the best models win, demonstrated by their widespread adoption)? Or are other factors and motivations at work in producing 'policy ideas and techniques' that move and circulate globally? Existing critical scholarship has attentively examined the co-production of targets and related scientific and technical work, which are more than isolated instances of 'metrological practices', rather their co-replication amounts to more systemic 'metrological regimes' (Campbell et al., 2014b). Here I direct attention instead to what happens as policies of different designs move, tracing both forward and backwards to contrast the design and practice of supposedly SMART target-based policies with the SSF Guidelines: an alternative global policy on the move.

4.2.1 Not SMARTer but more just? The SSF Guidelines as an alternative model for doing 'policy otherwise'

The SSF Guidelines are decidedly not a SMART global policy in the narrow sense outlined above. Carefully crafted without pre-defined targets, supposedly SMART characteristics, or universal indicators of success for each goal, the Guidelines challenge the conventional wisdom about what makes for 'good' interventions and policy designs in global environmental governance (see Figure 11).

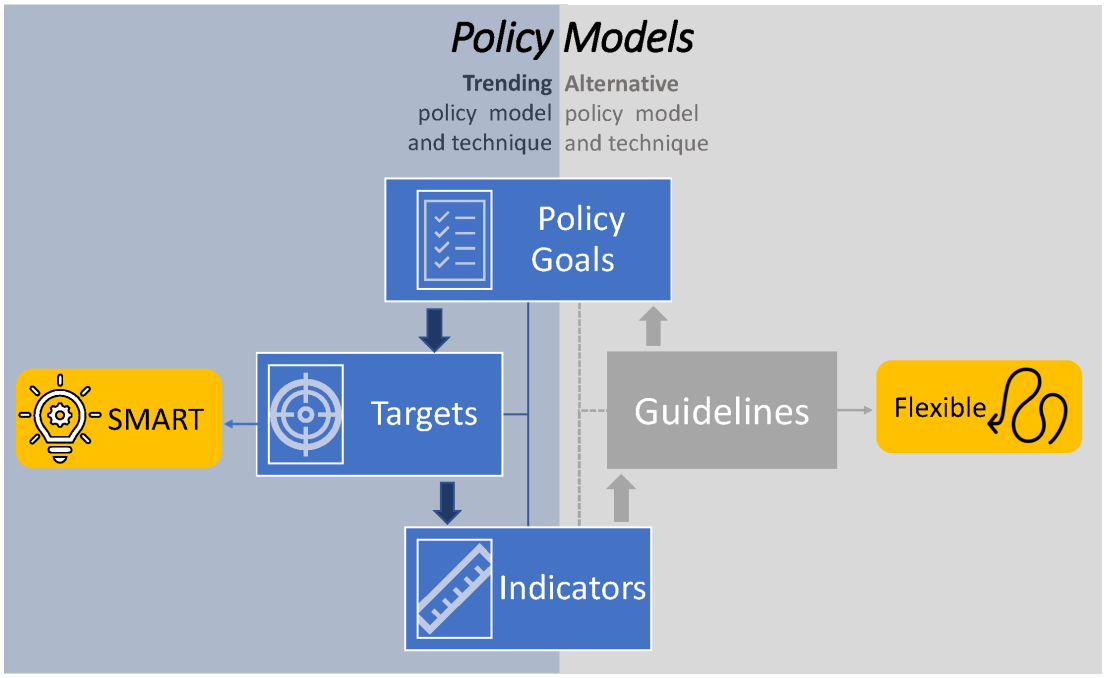

Figure 11: Two general types of policy models, each representing different 'policy ideas and techniques': target-based policies (e.g., the present trend) determined top-down ideally with SMART characteristics, and alternatively, a set of guidelines with flexibility left for bottom-up determination of specific strategies to enact them and indicators of progress.

The five thematic chapters of the SSF Guidelines, each outlining a different policy goal for governance (e.g., responsible governance of tenure and sustainable resource management, decent work, inclusion of the wider value chain, gender equality, disaster preparedness and climate change), are structured with built-in flexibility to be determined through bottom-up processes of implementation. Each governance guideline (e.g., policy goal) contains statements about process for those tasked with implementation to follow; flexible implementation guidelines rather than specific, measurable, timebound targets. The requisite paragraphs elaborating on each goal stress

that either "states should" or "all parties should" consider issues of access, recognize overlooked groups and types of labor, and take equity and inclusion into account in determining appropriate strategies to achieve policy goals in place. I characterize this as an alternative model built on a radically different set of 'policy ideas and techniques' as compared to SMART targets.

Rather than being wedded to universal, pre-determined prescriptions, the SSF Guidelines mandate a decidedly loose process concerned with justice, where implementation strategies must include room for bottom-up participation of actors from across the sector while ensuring that historically marginalized groups have a say in determining new directions for fisheries governance (mirroring the participatory development of the policy itself; Jentoft et al., 2017). This flexibility was intentional, not the result of an inability to craft precise targets. This flexibility allows for cultural context to figure in and existing "unequal power relationships" (FAO, 2015, p.10) between actors in the sector to be accounted for. The translation of policy goals into specific strategies and indicators cannot be universal if these pre-existing differences are to matter in working towards greater equity in the sector. Thus, universal, one-size-fits all targets and indicators of success are incongruent with the thoroughly alternative approach to global governance the SSF Guidelines advance, one premised on the transformation of existing practices for a more just future.

While policies that are not SMART have been castigated as "vague", "weak", "ambiguous, and "lacking in detail and quantification" (Maxwell et al., 2015), the 'wiggle room' left in the Guidelines was an ethical choice: the strategies to achieve the overarching goals and metrics to track progress needed to be translated in place. While the Guidelines stop short of actually stating "a policy is not a singular and complete object" or a "technical and apolitical domain" (Clarke et al., 2015), the signals are there if you read closely. The flexibility left in the text suggests that this policy is unfinished, as new meanings will and must be made, shaped by local contexts, existing differences, and widespread participation. The absence of any universal targets, indicators, and measurement tools acknowledges the diverse characteristics and needs of the sector and the risk of imposing external assumptions about what constitutes 'progress' towards these goals, which as Tsing (1997) cautions, often occurs along lines of Global North/Global South—where supposedly 'universal' ideas are Western-defined. Therefore, while in the current language of global environmental governance the Guidelines are not SMART, I counter that they offer an alternative model for how we might imagine and practice 'policy otherwise': as an ethical and indeterminate project for a more equitable future that we want, but do not have yet (Clarke et al., 2015).

If policies are produced and the 'ideas and techniques' advanced are a political and ethical choice (not a mere technocratic calculation), then supposedly preferred characteristics and designs like SMART targets are not natural, inevitable, or necessarily

stable. If global environmental governance guided by SMART targets is failing to meet policy goals pertaining to equity, we should consider this outcome as more than unintended "byproducts, but rather, systematic features and consequences" of the policies we make and move around the globe in practice (Clarke et al., 2015). If, as others have shown and I argue here, that SMART policy designs are not working (particularly if we are concerned with social and environmental equity), the SSF Guidelines could provide 'guidelines' for how to do policy otherwise for other environmental domains. In this sense I argue that the SSF Guidelines matter in global environmental governance beyond the realm of fisheries, as their implementation offers a critical opportunity to understand how transformative change happens: How did the unconventional principles (e.g., policy ideas and techniques) of the SSF Guidelines make their way into a global agreement against the status quo of SMART targets? And as they are mobilized and scaled down, how will the principles within translate 'on the ground'?

If we hope to transform existing systems of multi-level governance in the commons for livable and just futures, then we may find some answers in reading the implementation of the Guidelines for "glimmers and signals" of the kinds of deconstructive projects we need (Cameron and Hicks, 2014).

4.3 Theorizing policy mobility

4.3.1 Traditional approaches to policy study: Transfer literature and its limitations

As the Guidelines unsettle conceptions about what makes for good policy, studying their implementation calls for a theoretical approach to policy mobility that also unsettles assumptions. In policy studies, there are a handful of intertwined lineages that dominate the conventional thinking about how and why policies move, known collectively as "orthodox policy" literature, "traditional policy studies", or just "transfer literature" (McCann and Ward, 2013; Clarke et al., 2015). While there is a sprawling literature on policy movement and transformation, many of the dominant frameworks for understanding policy mobility have their origins in political science (but also extend into sociology, anthropology, and comparative institutionalism; Peck, 2011). While these lineages are diverse and have contributed heterogenous insights to questions of policy mobility, ample room remains to understand the "how, why, where and with what consequences policies circulate globally" (McCann and Ward, 2012b).

In traditional transfer literature, policy movement between actors supposedly located at the same scalar level (e.g., between states or municipalities) is described as 'transfer' and policies moving up or down supposedly distinct scalar levels are 'scaled up' or 'scaled down' (an assumption explored more closely in Chapter 3). Whether moved up, down, or across, policies are depicted as things that can be transported across

space along a linear path, seemingly unaffected by the fact of this movement (Peck, 2011).

4.3.1.1 Three critiques of transfer literature

McCann and Ward (2011) outline three limitations to this approach to policy mobility that dominates the 'orthodox policy transfer' literature. First, that the description and identification of agents engaged in policy transfer comes at the expense of grappling with agency. The fundamentally social—"practical, interpersonal, institutionally embedded, yet fluid and processual" (McCann and Ward, 2011, p.326)—work of policymaking is flattened by the predilection for typologies. The multi-dimensional and dynamic social relations that animate policy movement from the centers of policymaking outwards (e.g., through practices of borrowing, emulation, coercion, imitation, and persuasion) are missed (Peck and Theodore, 2011). The orthodox focus on typologies of actors, narrow definitions of movement, and overly prescriptive models "of what is or is not policy transfer" results in the models and typologies themselves being "reified, becoming the objects of debate rather than facilitating analyses of the social processes that constitute policy transfer" (McCann and Ward, 2013). Second, policy transfer tends to focus on the national scale and retains problematic separations between supposedly discrete scales, sites, and the reach of different actors, missing how seemingly disparate places and people in policymaking are relationally interconnected, exceeding our expectations of who can affect policy

transformation (McCann and Ward, 2012b). Third, the notion of transfer itself is built on an "implicit literalism", which "tends to suggest the importation of fully formed, off-the-shelf policies, when in fact the nature of this process is much more complex, selective, and multilateral" (Peck and Theodore, 2010). Thus, transfer literature leaves little room for transformation through movement. Lastly, agents engaged in policymaking and negotiating the movement of policies are often portrayed as rational actors scanning the 'policy market' for the best solution, picking among different finished policy products.

Many economic metaphors about policy movement are at work here: policies are finished products that travel intact across borders, sent and received (e.g., exported and imported), as actors pick amongst competing products, and the agents on each end of this transaction (e.g., policy makers and receivers) are maximizers that search and update strategies along a learning-and-consumption pattern (Peck and Theodore, 2010; Peck, 2011; McCann and Ward, 2012b). The overall effect is that policies are treated as essential objects—bounded things with a self-evident and stable meaning that travels well (Tsing, 1997; Clarke et al., 2015). These products have free-floating qualities, unmoored and waiting in the ether (a true free market!), occasionally getting picked up, exported, and touching down somewhere (Peck, 2011).

Even in updates and revisions to this overall theory of policy change (e.g., variants include diffusion studies, policy learning), where more nuance is added to depictions of policy mobility, policies are generally understood in disembedded and

asocial terms "floating in abstract analytical spaces or boxed inside of descriptive taxonomies" (Peck, 2011). Movement itself doesn't seem to matter much in this framework, it's a fact: an innate quality of 'good policies' is that they are on the move. While 'transfer models' still reign in political science, the

> "notion of policy transfer, narrowly defined, has lost a significant amount of intellectual currency outside political science, the emergence of multidisciplinary perspectives on how, why, where and with what effects policies are mobilized, circulated, learned, reformulated and reassembled highlights a wealth of opportunities for further conceptualization and empirical investigation" (McCann and Ward, 2011, p. 326).

Interdisciplinary interest has turned to policy mobility as something more dynamic and constitutive then the "literalist" notions of policy transfer, diffusion, or learning.

4.3.2 Critical policy studies lends new insights into the dynamics of policy mobility, assemblage, and translation

Against the backdrop of orthodox transfer literature and more traditional approaches to policy studies, a new group of scholars entered interested in developing an "anthropology of policy" (Shore and Wright, 1997). Rather than leaving policy studies to the usual disciplines, metaphors, and frameworks, these scholars set out to "radically reconceptualize" policy by attending to processes of social construction and cultural context (Shore and Wright 1997). Applying tested techniques of observation and thick description, anthropologists used ethnography to understand "policies as political

phenomena disguised as objective, neutral, legal-rational idioms" (Shore and Wright, 1997). Their initial efforts evolved into something more interdisciplinary, attracting geographers, development scholars, and political scientists dissatisfied with the orthodox policy transfer literature, forming more of a "rolling conversation than any coherent paradigm" (Peck, 2011).

Loosening the positivist grip on policy studies, critical policy scholars are generally influenced by the constructivist turn in the social sciences, approaching policy as a meaning-making process (Clarke et al. 2015). In this way, policies are not pre-packaged containers for travelling designs, but always unfinished and in the process of being assembled: made and remade as different elements are brought together (e.g., people, places, infrastructure, technologies, ideas, data; Clarke et al., 2015). Rather than merely disembodied singular objects then, policies are assemblages that are 'bended are blended' through movement (Clarke et al., 2015), as the "practices, codes and categories" that makeup and give policy meaning are open to being remade as they travel (Tsing, 1997; Clarke et al., 2015). Thus, policy mobility entails translation, as policies are always "made to mean something in its new context" (Clarke et al., 2015). While critical policy studies continues to grow and expand, the field has elevated the lenses of translation and assemblage, which "enable us to see the conditions that are mobilized in making policy move – and that result from such movements" (Clarke et al., 2015).

4.3.3 The where and how of policy movement: attention to policy landscapes and labor

A focus on meaning alone (from the anthropological roots and linguistic-discursive influence of the post-structural turn) did not supply the "critical wedge" needed to dislodge all the spatial assumptions of policy transfer literature (Clarke et al. 2015). If policies are not transferred, but transformed as they travel, what was missing was the grain against which meanings are remade (Peck, 2011).

Drawing on relational ideas about space and the social construction of scale (Massey, 1992; Marston, 2000; Marston et al., 2005; Jones et al., 2007; Massey, 2013), geographers added needed insights on the difference space makes to policy movement—policies do not travel across empty landscapes, moving over frictionless terrain and smooth space, they are dynamically remade through movement and friction (Tsing, 2011; Temenos and McCann, 2013). This process of transformation does not cut one way: as policies move their "form and their effects are transformed by these journeys, which also serve continuously to remake relational connections across an intensely variegated and dynamic socioinstitutional landscape" (Temenos and McCann, 2013, p. 793). Just as existing policy landscapes are conduits, providing pathways that enable and constrain policy movement, this terrain is also 'mobile', potentially reordered or rescaled in the process (Peck and Theodore, 2012). Instead of a static backdrop that policies are transferred over, policy landscapes are a dialectical terrain that matters to the process (Peck, 2011). It is the interplay of this friction between the policy itself (the

ideas, codes and categories contained) and the terrain of existing policy landscapes (e.g., the institutional environments and agents inhabiting them) that (potentially) gives rise to new meanings and possibilities of rescaling policymaking 'worlds' (Peck, 2011).

And still yet, what makes a policy move? Meanings do not spring forth fully formed from the text of a policy, and the assemblage of ideas, people, sites, and relations that come together do not form naturally or inevitably. If free market forces and natural laws are not afoot, then the critical energy needed to mobilize policies must come from the labor of different actors and of different kinds. Eschewing all the disembodied spatial metaphors of scaling policies down/up/across, we are reminded (again) that "people move them around for particular purposes" (Temenos and McCann, 2013). Clarke et al. (2015) describes distinct types of policy labor as including: the "cultural work" of imagination that problematizes—identifying a point of contestation and problem framing; the "political work of articulation" that brings together different perspectives, aligns interests, and builds alliances; the "organizational work of coordination" which crafts techniques and technologies that try to ensure the realization of stated commitments and compliance with implementation; and lastly, "the work of translating" that gives "the policy life and meanings as it moves from context to context" (Clarke et al., 2015). These meanings matter because they are "wrapped up in practices of making and remaking the worlds in which people inhabit" (Jenkins, 2006). These different types of policy work are not sequential steps in an orderly policy assembly line:

policy work is always 'unfinished' (Clarke et al., 2015), blurring any hard lines between supposedly separate domains of policy 'making' and 'doing'.

4.3.4 Situating my project 'following the policy' within existing research on the SSF Guidelines

Against the backdrop of SMART targets and present conventions about 'best practice' in global governance, the unlikely movement to create and implement the Guidelines unfolded. Making the Guidelines was not an automatic process or inevitable result of a steady march towards progress and increasingly liberal values—this policy was forged through and reworked the contours of existing fisheries policy landscapes, upsetting them in the process, powered by the work of different actors. The transformative potential of the Guidelines is not (only) in the words themselves, despite the unprecedented nature of terms within (such as 'human rights' and 'gender equality') in a fisheries policy in lieu of the typical parlance of catch limits, input controls, and harvest technologies. The Guidelines are not just the principles within, or the work entailed in the moment of their adoption—formal votes cast on the floor of COFI. The Guidelines are an unlikely and unconventional global policy assembled through movement that brought into (unstable) alignment different stories, actors, places, technologies, and organizational networks.

While many of the unprecedented qualities of the Guidelines have been duly noted and widely praised (e.g., their participatory development, the principles they contain), what's missing in my assessment is a deeper consideration of the

transformative potential and indeterminate effects of this policy in motion. Existing research on the Guidelines has left many orthodox policy assumptions untroubled, and none have articulated the radical possibilities of eschewing the trend towards SMART targets through the lens of the Guidelines. Existing research has largely focused on questions of 'policy coherence' (Cohen et al., 2017; Song et al., 2017; Song et al., 2019), how and whether the SSF Guidelines will 'cohere' with the existing policy landscape of rules and regulations at multiple scales, whether the Guidelines will 'align' and 'harmonize' with other instruments such as the SDGs, or focuses on specific conceptual issues and terms within (such as human rights), trying to resolve issues of meaning a priori (Song, 2015; Song and Soliman, 2019).

A recent assessment of the transformative potential of different ocean governance initiatives mapped the trajectory of the SSF Guidelines onto a three-step model of social-ecological transitions, where implementation hinges on a process of "building resilience" and "fine-tuning" newly institutionalized system changes (Blythe et al., 2020). In this ecologically-minded typology of policy change, transformation is defined as "deliberate changes in system structure" in response to "unfavorable conditions", where building resilience is a process that sets systems onto their "new trajectory" (ibid, p. 244). While I share with Blythe et al. (2020) an interest in understanding the conditions under which transformations occur, their conceptual three-phase model of system change (rooted in ecological thinking coupled with rational

actor assumptions) seems to fall into the pattern that McCann and Ward (2013) described, where the typology becomes the object of analysis rather than "facilitating analyses of the social processes" that affect transformations (McCann and Ward, 2013).

The emphasis on coherence, harmony, and deliberate rationality as qualities of policy change come with (often unspoken) assumptions about scale, power, meaning, and policy mobility that limit readings of the potential for the Guidelines to disrupt, transform, and rescale existing relationships in fisheries governance. While nearly all scholars who study the Guidelines are explicitly concerned with realizing just governance and supporting the needs of fishers, it seems the inevitability (or at least potential) for friction and the unexpected is side-stepped. The language of "preparing for", "navigating", and "fine-tuning" transitions as a deliberate process to be analyzed or aided along seems incongruent with "radically new approaches" that affect transformation (Blythe et al., 2020). The unprecedented project of making and implementing the Guidelines is ripe for "awkward, unequal, unstable and creative qualities"; characteristic that Tsing describes as part of interconnections across difference that serve to make collaborative projects work (Tsing, 2011).

As the implications of implementing the Guidelines are powerful, introducing unconventional principles and edicts into the mix of fisheries governance-as-usual, then disruptions, dissonance, and incoherence seem predictable, even inevitable if change and transformation is the intent. I am not advocating that we predict whether, how, or to

what effects the Guidelines will affect widespread change. Rather, by attending to the dynamics of policy mobility empirically, we can remain open to the (potentially) disorderly, non-linear, and unexpected dimensions of policy mobility that play out through the project of implementation, following the bending and blending of different intentions and ideas among the different actors involved along the way. Many scholars and practitioners are presently studying the unfolding process of policy implementation in different places (see the edited volume Jentoft et al., 2017). I count myself among them but argue that an alternative approach to policy studies itself is useful to think with and grapple with different possibilities and politics entailed in making the Guidelines move and the embodied 'doing' (e.g., performance) of policy in place (Newman, 2013).

4.4 Research questions

I use the framework of policy mobility to understand the Guidelines as something always in the making: a project being assembled (e.g., put together from a variety of elements; Allen, 2011; McCann and Ward, 2013) and translated in place in potentially unexpected and disorderly ways. As the meaning of the Guidelines is "malleable, moveable, and contested" (Clarke et al., 2015), so is the policy landscape encountered: as they move, the sites, levels, institutions, and actors can also become "unsettled, reformed, and reconnected" through the process (Clarke et al., 2015). A performative understanding of policy (itself informed by feminist theories of power) allows for tensions between the co-presence of creativity and constraint, inclusion and exclusion, 'power over' and 'power to' (Newman, 2013; Allen 2019). Therefore, I ask:

1. How was the making/doing of the Guidelines assembled—who did the 'policy work' required, and who and what came together in the process of their creation and implementation?
2. What does it mean to implement the principles within the Guidelines in practice? How are meanings (re)made as the text is translated into strategies in place?
3. How is policy implementation entangled with existing 'policy landscapes'?

4.5 Methods and data

4.5.1 "Following the policy" through a distended case study approach

The SSF Guidelines were formally endorsed in the global setting of the UN Committee on Fisheries (COFI) in 2014, but they did not emerge from one site, level, event, moment, or the agency of any one actor. Their implementation is not bound or defined this way either. Neither a purely 'global' or 'national' phenomenon, the Guidelines are well suited to a multi-sited 'distended case study' method, enabling me to follow movement that occurs through changing policy landscapes or "mutating policy networks" (Peck and Theodore, 2012, p.22).

This approach builds on earlier methodological innovations by anthropologists to extend the ethnographic method to accommodate multiple field sites treated unevenly, using "both thick and thin" description strategically to understand messy and mobile global processes (Marcus, 1995; 2005; 2009; Tsing, 2011). Multi-sited ethnography is not wedded to the traditional ethnographic subjects or notions of field sites of earlier works, but emerged to grapple with global processes, different conceptions of 'community' (e.g., experts), and distributed knowledge systems (Marcus, 2005). By extending the case study method, ethnographers were able to study phenomena on the move by tracing or following different entities, which depending on the question and intended intervention, could mean following the people, thing, metaphor, story, life (e.g., biography of a person), or conflict (Marcus, 2005). This intervention has expanded beyond anthropology, surviving insular critiques and methodological anxieties, to become "a distinctive paradigm of alternative research practice" (Marcus, 2009) taken up

by others, including within the growing field of critical policy studies. Described by Peck and Theodore (2012) as a 'distended case study' approach, the method was (again) expanded to include "following the policy" through "globalizing networks and across transnational jurisdictional spaces". In my case, this method included following the Guidelines through national and international policy meetings, another unconventional type of field site where ethnographic observations can help inform our understanding of how and why certain ideas travel within global environmental networks (Campbell et al., 2014).

The distended case study approach to "following the policy" entails connecting the "spaces of circulation and centers of translation"—where global policies are made and notions of what makes for 'good policies' produced—with the "prosaic netherworlds of policy implementation" (Peck and Theodore, 2012). The latter (the places and practices of implementation) are "persistently overlooked or downplayed" in orthodox approaches to policy that rationalize and scientize the "making" of policy but downplay the "doing" as a managerial act, merely administering the designs of others (ibid, p. 24). As I "follow the policy" I knit together the worlds of policy making and doing that are often held apart, demonstrating how the labor of different actors and shifting ideas, alliances, and emergent networks among them came together to make the Guidelines move through multi-scalar policy landscapes. Tracing this process draws disparate places, meetings, and institutions together, circumventing supposedly distinct

scalar levels and common notions of 'who has power' to affect policy change and how that power might be deployed. While I focus on the case of policy mobility in Tanzania, this process is inherently multi-sited, mobile, and mutating, spilling over into regional processes and 'downstream sites' of adoption and enactment. The story that follows reflects the interplay between the national, regional, global, and local without ordering them hierarchically or treating them as inherently distinct.

I adopt this approach to studying the Guidelines because, among other things, it "undoes traditional understandings of the field, `as a single and (relatively) geographically bounded place" (Peck and Theodore, 2012) allowing instead for me to trace "loosely connected actors with varying degrees of institutional leverage" (Wedel et al, 2005, pg. 39) located in multiple sites that are not inherently geographically fixed (Ferguson and Gupta, 2002). However, this choice did not come (only) from theory, rather it emerged through the fieldwork process, marked by experimentation, emergence, and "muddling through" in terms of research design (Marcus, 2009). The ambiguity in research design (i.e., the absence of a set of predetermined sites, timeline, and even questions) in this approach is intentional, an attempt to take the mutability/mobility of policy seriously (Peck and Theodore, 2012), where the design does not emerge from theory or frameworks, but through the research itself.

In the coming section I describe how my work "following the policy" (unexpectedly) began at a global forum convened by fishworkers in Ecuador. In

attendance as a Research Assistant for a larger project well before any clear dissertation designs of my own had taken shape, my presence at this meeting was auspicious. Sitting in a room for 3 days with delegates from over two dozen countries who self-govern their own global CSO platform was a rare opportunity to listen to how fishworkers characterized the Guidelines, including where they came from, who made them, why they contained certain principles, why their implementation mattered, and what work lay ahead. The disconnect between what I learned and heard in this global space convened by CSOs and the current academic writing on the Guidelines bothered me, a dissonant feeling that would only later develop into fully formed questions about the transformative possibilities, practices, and politics wrapped up in the Guidelines. This meeting also forged critical connections with key actors that would shape the trajectory of my research, enabling access and extending invitations that would allow me to follow the policy.

4.5.2 Study sites and sources of data

Following the Guidelines primarily entailed ethnographic observations and participation at key global and national meetings (sensu Campbell et al., 2014a). As several of these important events in the life of the Guidelines took place outside of the timeline of my dissertation, I "followed them" at a distance by reviewing meeting background documents and reports, and in some cases, by conducting key informant interviews with actors who were present. The empirical art of "following" I found did

not transpire tidily or evenly. It required staying open to unexpected possibilities and getting comfortable with "muddling through", which included gaps in fieldwork and needing to seize on unexpected or evolving opportunities to follow.

Below I present my data organized by different types of sites: global meetings, regional meetings, national meetings, other fieldwork in Tanzania, and institutional ethnographic observations within FAO. In addition to meetings and time spent with more conventional notions of global policy experts, the three field seasons I spent in Tanzania brought me into countless informal conversations and encounters with representatives of fishing communities, fisher organizations, and non-state actors which influenced my understanding of how fisheries governance works in practice. In some cases, I draw on key informant interviews with actors involved in the Guidelines that I collected during these trips. The methods of the women's SSF mapping study (one specific implementation strategy in Tanzania I follow later) are described in a later section (4.8), as the process of designing the study is data—part of the implementation process assembled. Alongside the more orderly description of field sites and related types of data I provide below, Figures 12 and 13 below depict the geographic points and uneven temporal dimensions of my data collection. Maps of the inherently messy, multi-directional, and patchy process of following a project on the move through space and time. (Read the map against the timeline below to get the sense of flow, starts and stops, and movement between sites).

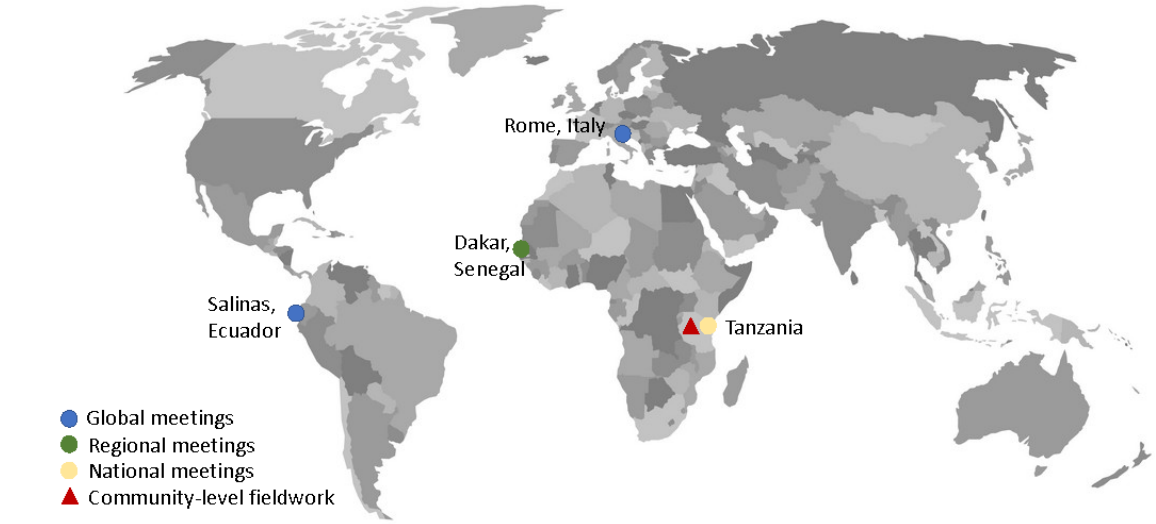

Figure 12: Map of multi-sited fieldwork carried out.

Figure 13: Timeline of multi-sited fieldwork carried out.

4.5.2.1 Global meetings

I "followed the Guidelines" through three different global meetings where both this specific policy and other policy tools and related questions of SSF governance were debated. These included meetings convened by fishworker CSOs and by the FAO.

WFF General Assembly

I attended the World Forum of Fish harvesters and Fishworkers (WFF) 5th General Assembly meeting in Ecuador, January 2016. In this meeting, I was able to listen to how CSO leaders (coming from nationally representative SSF organizations in over 20 countries) described their relationship to the SSF Guidelines, both collectively as a global platform and as representatives of different countries and their national fisherfolk organizations. The meeting was formal, replicating many aspects of a UN forum, with country delegates seated around a U-shaped table with their respective flags on display and simultaneous in-ear translation in three languages provided. I captured audio recordings of plenary discussions and observational notes and was also able to conduct key-informant interviews with 8 delegates of the assembly between sessions and during breaks. Data from this meeting particularly shaped my understanding of how CSOs saw the task of initiating policy implementation, as a continued problem and opportunity to enroll the support of other institutions (e.g., the FAO and other technical partners) and their own governments to make meaningful change and further movement happen.

FAO Meetings

I attended the 33rd session of COFI at the FAO headquarters in Rome, Italy, July 9th-13th, 2018. I arrived in Rome the week before COFI at the start of my fellowship with FAO's Fisheries and Aquaculture Branch (elaborated on below under the 'institutional ethnography' subsection), allowing me to observe internal FAO meetings leading up to the conglomerate that is COFI. During COFI, I took both my own observational notes of the plenary discussions and official notes for the Director General Summary (an internal report FAO produces for every session). I attended side-events related to SSF, including helping with the preparations for one such side event involving CSO leaders, academics, NGOs, and government officials. Observing COFI provided insights into the structure of the Committee and the relationships between member states and observers in the meeting's flow (which helped me make sense of meeting reports from previous COFI events I was not present for). I observed member states from different geographies make both strong and thinly veiled commitments to SSF governance and implementing the Guidelines and also witnessed several changes CSOs had been lobbying for since they began mobilizing to create the Guidelines happen (e.g., the announcement of a new sub-committee structure, SSF being performed as a standing agenda item at plenary).

I also attended a high-level symposium hosted by FAO (the first of its kind), the "International Symposium on Fisheries Sustainability: Strengthening the Science-Policy Nexus" in Rome, November 16-22, 2019. At this meeting, I observed the presentations

and panel discussions on key themes related to SSF governance, and the comments and interactions on the floor among actors from academia, NGOs, CSOs, states, and intergovernmental bodies. This high-level meeting both conformed to many COFI conventions (held in the very same plenary hall) and was more dynamic and disorderly in other ways. For instance, it was not structured with central members (e.g., nation states) and observers (everyone else), allowing for more dynamic exchanges among diverse actors with a stake in global fisheries governance, where in particular scientists and NGOs were outspoken on the topic of the future agenda for sustainable fisheries governance.

4.5.2.2 Regional meetings

As an FAO fellow (described below), I went on mission with FAO to co-facilitate a regional workshop on the implementation of the SSF Guidelines for central and west Africa, held in Dakar Senegal, July 23-25, 2018. As a representative of the FAO, I delivered presentations, facilitated working group discussions, and took notes on the plenary presentations and debates on the floor about the path forward for implementing the SSF Guidelines in the region. My research is not focused on the regions of western or central Africa, but this meeting gave me personal insights into the regional meetings Tanzania was involved in that took place before my research began (on the implementation of the SSF Guidelines in East Africa, and Southern Africa and Indian Ocean Islands—reports which I reviewed relying on meeting documents and key-

informant interviews instead). The Dakar meeting also included discussions of gender and women's organizations in fisheries, including the development of the African Union Women's Fishworkers Network (AWfishNET), and regional AU-wide fisheries policy instruments and reform processes underway—two initiatives that would intersect with the implementation of the Guidelines in Tanzania.

4.5.2.3 National meetings

National Inception Workshop

I attended the National Inception Workshop Towards the Implementation of the SSF Guidelines in Bagayomo, Tanzania, February 14-16, 2018. I observed the National Task Team planning meeting the day before, and the dynamics of the 2-day workshop that followed, taking notes about the presentations, floor discussions among participants, and outputs from various working group sessions. How the meeting participants arrived at a set of strategies or next steps to implement the Guidelines in Tanzania and what those plans contained are central to my analysis and results.

4.5.2.4 Other fieldwork in Tanzania: Key informant interviews and focus group discussions with inland and marine fishing communities and stakeholders

Over three fieldwork seasons, I spent time in different marine and inland fishing communities in mainland Tanzania and on Zanzibar. This included visits to fishing landing sites and markets, informal conversations with individual fish vendors and processors, and both formal and informal focus group discussions and surveys of women's fishing organizations (e.g., associations and cooperatives). I conducted 26 key

informant interviews with stakeholders involved in the SSF Guidelines or the broader goal of achieving gender equality in fisheries governance, including representatives of CSOs, environmental NGOs, both natural and social scientists from local universities, current district-level and central government Fisheries Officers, former officials from the Ministry of Agriculture, Livestock and Fisheries (MALF), and Ministers from related departments (e.g. Ministry of Cooperatives, Ministry of Women, Children, and Social Development). During my time in the field in February 2018 (immediately following the National Inception Workshop), informal focus group discussions with women's SSF organizations evolved into the development of a draft survey tool to map the presence and capacities of women's SSF organizations (described in greater detail in the results, section 4.8), and included field testing of the initial draft survey with five women's fishing organizations.

4.5.2.5 FAO fellowship

In July and August of 2018, I was in Rome at the FAO headquarters as a fellow in the Fisheries and Aquaculture branch. The purpose of this fellowship was to assist with data analysis and synthesis needs of the FAO towards the development of the SSF Guidelines implementation and monitoring mechanism. The secondary objective was to provide feedback on my current dissertation research in the SSF Guidelines implementation process in Tanzania and to learn more about ongoing implementation efforts in other countries and the role of the FAO in national-level implementation. In

my role as a fellow, I was able to observe and participate in the day-to-day workings of FAO and how actors within the organization support the implementation of the SSF Guidelines. I attended meetings and had conversations with staff related to the implementation efforts ongoing in multiple countries. This position afforded me a better understanding of the institutional mandate, organization, and inner workings of FAO.

The blurring of my role as an observer/insider in FAO has continued: the process of "following the policy" led to opportunities to work for FAO as a consultant, affording me a better (although still partial) view of how FAO works to implement policy change in fisheries at multiple scales. This privileged but complicated position extends on the work of other geographers, anthropologists, and sociologists who have drawn on their experience as a relative 'insider' to conduct ethnographies of aid (e.g., Goldman, 2005; Mosse 2004, 2008) and assessments of neoliberal governance through ecosystem services assessments and wetlands banking (Robertson, 2004, 2006). This dissertation is not an institutional ethnography of FAO, but my experiences working alongside and in some cases within FAO inform my understanding of how this UN body operates in the wider assemblage of actors engaged in fisheries governance transformation and policy change.

4.6 Making the SSF Guidelines move

4.6.1 Assembling policy implementation in Tanzania: where to begin?

The focus of this chapter is national-level policy implementation, but when and where does this national process begin? On February 15th, 2018 more than 70

participants from across the SSF sector met in the town of Bagamoyo for the "National Inception Workshop Towards the Implementation of the SSF Guidelines in Tanzania". Opened with ceremonial songs, prayers, and encouraging speeches delivered by high-level politicians, the Permanent Secretary sanctioned the process and officially opened the workshop by announcing that "national-level policy implementation has begun". The difficult work ahead would ultimately be left to the larger group, as several of these high-level politicians hastily departed after performing their official opening duties. The workshop itself was organized by two women: one from civil society and another a mid-level Fisheries Officer. Not the typical face of formal policy processes and fisheries governance in Tanzania.

In the realm of fisheries governance, something unusual was happening in that unassuming hotel conference room. Politicians and bureaucrats from central and local government, the FAO, donors, NGOs, CSOs, and fishworkers were all assembled at the same table. These different actors, unaccustomed to working together, were tasked with developing a national vision for what policy implementation of the SSF Guidelines should look like, working from a text that contained radically different principles than currently governed Tanzanian fisheries in many respects, and which required deeper participation, not mere consultation with representatives from fishing communities. Collaboratively defining the priorities and elements of a national plan of action for policy implementation would require reconciling different perspectives on the meaning

of the principles within—such as gender equality, participation, decent work—and whom they were for (see Chapter 2 for discussion on the definition of SSF). These different perspectives would need to be worked into alignment around a set of strategies or policy 'technologies and techniques' to translate the principles and enact them in place.

The meeting would be considered a success on many dimensions, marked but not inhibited by the inevitable tensions and differences among the diverse actors involved with a stake in Tanzanian fisheries. But it would not ultimately produce a final national plan, rather the meeting would yield a set of intermediary strategies or 'roadmap' to move forward, allowing for needed time to 'scope' and produce more information, initial steps towards constructing a common understanding of what needs to happen next. If this process was slow, as one participant from civil society put it, "their contents [the Guidelines] are pretty radical, it takes a while to understand what they really mean". The work of doing policy implementation would not end here. The agreed upon strategies would need to be applied. Once set-in motion, what these strategies would become was not obvious, as they could be diverted, stalled, or become something else entirely as they were performed in place.

Despite the name—National Inception Workshop—the work of making the Guidelines move did not begin here either: this meeting was not the starting point of a discrete and linear process of implementation, an inflection point dividing the 'making'

and 'doing' of policy. Policymaking is unfinished and "spills out beyond established centers, circuits, and boundaries" (Peck, 2011) where the work of policy implementation is livelier and more substantive than the mere application of targets or a managerial to-do list.

4.6.1.1 Mobilizing how and where? Starting from labor and existing policy landscapes

I begin (instead) by tracing the work—the labor, the practices—entailed in making this policy move. Stripping away the abstract metaphors of policies 'scaling down', propelled forth by natural or inevitable forces, I center the people who initiated and sustained the momentum to make transformative change happen. I call attention instead to how "labor of different kinds" (Clarke et al., 2015) went into assembling the Guidelines and the ethical principles that they contain against the grain of existing policy landscapes. This included the work of imagination, articulation, coordination, and translation which provided the energy to move the Guidelines through particular policy landscapes: movement which did not leave the meaning of the Guidelines or the structure of existing policy landscapes untouched (see Figure 14).

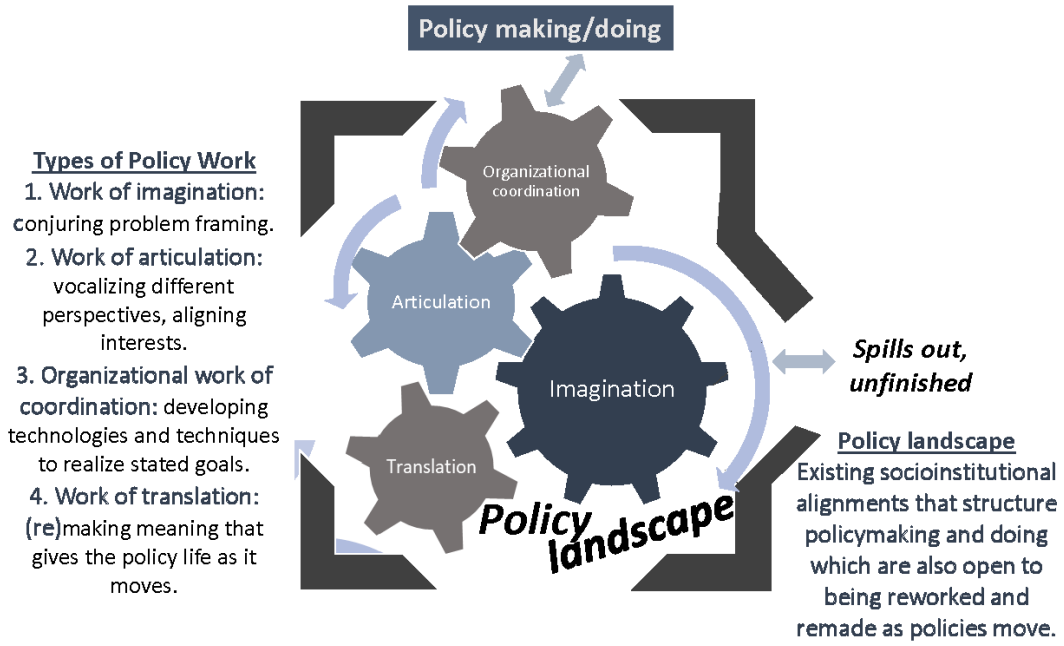

Figure 14: Visual depiction of the relationship between different types of policy work needed to propel policy movement (Peck, 2011) through the terrain of policy landscapes, dynamics that I elaborate on in my results section as I describe how the Guidelines moved (e.g., were formed and implemented).

In the coming section, I first describe the labor that went into setting the SSF Guidelines in motion, foregrounding the pivotal role of CSOs in assembling the actors, ideas, and political will needed to alter the course of global fisheries policymaking and create the Guidelines, and later to perform them in place (work that is ongoing). Globally, two CSOs representing the SSF sector existed at the outset of the making of the Guidelines: the WFF (described earlier) and the World Forum of Fisher Peoples (WFFP). Each organization is self-governed, comprised of dozens of member countries represented by leaders of national fisherfolk organizations (2 delegates from each country). Countries are not supposed to be members of both global CSOs, rather they

pick which organization they wish to be part of and want to represent their interests in global affairs. Thus, these two global CSOs are complimentary in nature and often work together in international and regional policy processes, but not without tensions. The relationship between these two global CSOs would change over time through the life of the Guidelines, as the common need to address the imbalance in global fisheries policymaking would itself transform the global landscape of CSOs, ruptures and realignments I discuss below in the coming sections. While containing conflict, it was the sustained attention of these CSOs and their coordination (both among CSOs and with other actors and institutions like the FAO) that compelled the political will to create the Guidelines, and later, the momentum to build a multi-stakeholder implementation process in countries like Tanzania. The work that went into making/doing the Guidelines reconfigured the policy landscape of global fisheries governance, transforming the global civil society space and reconfiguring institutional arrangements at multiple scales.

4.6.2 The work of making SSF a global concern

I begin (again) at the UN Committee on Fisheries (COFI), the intergovernmental body that formally endorsed the SSF Guidelines, propelling them into the realm of international soft law. The moment of the SSF Guidelines adoption at COFI would be one time and place to start. But instead, I trace the process backwards through the shifting policy landscape within COFI because the idea to develop a specific set of global

guidelines for SSF did not emanate from an orderly agenda within the body's regular priorities or inertia. It was the absence of SSF at COFI that set the Guidelines in motion, driven not by the Member Nations who formally comprise this UN body or by the FAO, but by CSOs who have historically been excluded from global policymaking and are often overlooked by scholars of global environmental policy. While different CSOs have been engaged in making and implementing the Guidelines at different moments and scales, I trace the specific efforts of a handful of global CSOs that did much of the policy work needed to assemble the ideas, organizational and institutional relationships, and political will needed to make the Guidelines happen, altering structures and practices within COFI in the process. Outlining this initial policy work is useful as it spills out and is carried forward by CSOs active in implementing the Guidelines in Tanzania.

4.6.2.1 Reimagining the role of SSF in global fisheries governance: working to frame the problems with COFI

COFI is the global intergovernmental forum where international fisheries and aquaculture problems are raised, issues examined, and agreements formed. Established in 1965, the body meets biennially in Rome at the FAO's headquarters to discuss the state of the world's fisheries. The meeting's agenda is comprised of several standing discussion items, including updates from the body's various sub-committees, a review of progress made on the agreed upon Program of Work from the last meeting, and the adoption of new priorities for the future (i.e., updates to the Program of Work) for the FAO to work on in the coming years as the technical, coordinating agency that hosts

COFI. The 127 Member Nations who comprise COFI (also known as the Committee) were the actors who formally endorsed the SSF Guidelines in 2014, pledging to follow its guiding principles in all their fisheries activities. Despite this formal institutional structure (as a UN body and Committee comprised of Member Nations), neither the creation nor implementation of the Guidelines was mobilized by conventional global governance actors like nation states. CSOs would do much of this work, calling for and convening new global meetings, arguing for greater conceptual space and inclusion of SSF in the global dialogue on fisheries governance as an issue of equity and justice, and enrolling powerful supporters to affect change.

While they would succeed, and ultimately see their demands met as the Guidelines were created and other changes they articulated put in place, the pace of change and their strategies would be shaped by the structure of the global policy landscape (e.g., COFI as a UN body and FAO as the technical organization that oversees the Committee's priorities). Formally, CSOs can participate in any of COFI's meetings as 'observers', a status they share with intergovernmental organizations and a range of other non-governmental organizations (e.g., academics, philanthropic foundations, NGOs). Committee rules allow these observers to attend and speak at plenary sessions (and any other meeting) after states have had the floor at the discretion of the Chairperson, they can speak (without a vote) on behalf of the organizations they represent. The rules allow for CSOs to speak up, but to affect change, their message

would have to be crafted to convince member states to act (as the voting members of the Committee).

At the 27th session of COFI in 2007, CSOs spoke up, making a joint civil society statement (between WFF and WFFP) for the first time at plenary calling for the Committee to reflect on and remedy the longstanding under-representation of SSF. 'The problem' of SSF underrepresentation was framed both in terms of COFI's agenda and the policies it produced. For most of COFI's existence as a UN body, SSF did not figure into the framework of standing agenda items regularly discussed at its biennial sessions, and none of the permanent working groups dealt with SSF (directly or indirectly). The Code of Conduct for Responsible Fisheries (CCRF), ratified by COFI in 1995, was the global policy tool for fisheries at that time, purportedly representing all fisheries, but the text only contained four mentions of SSF (Johnson, 2006). It is in this sense that I argue SSF were not yet a global concern or problem in fisheries governance as the socioinstitutional workings of the policy landscape did not specifically address SSF through its existing tools or mechanisms. CSOs did the 'cultural work' of imagining fisheries governance otherwise and made this absence a problem, operating within the existing rules of COFI (about who can speak and how) to articulate the imbalance in global fisheries governance.

CSOs backed up their new problem framing with the requisite 'policy work of articulation'—incorporating their different perspectives into a joint vision needed to

realize their project of transformation. Working with their allies and supporters CSOs worked to construct a common agenda for change to lodge at COFI, assembling meetings, and identifying new ideas in the realm of fisheries governance that would go on to shape the thematic heart of the Guidelines. They also worked to build the organizational networks (i.e., the 'organizational work of coordination') needed to apply political pressure on voting Member Nations at COFI to act and formally move the policy process forward.

4.6.2.2 Doing the organizational work: assembling global meetings, building alliances, and identifying a common agenda for change

In response to CSOs shared problem statement lodged at COFI in 2007, the FAO and World Fish organized what is described on the FAO's website as "the first global conference on SSF" to discuss the specific concerns and needs of the sector[1]. The "Global Conference on Small-Scale Fisheries – Securing sustainable small-scale fisheries: Bringing together responsible fisheries and social development" met on the 13-17th of October 2008 in Bangkok, Thailand (herein, the 2008 Bangkok Meeting) bringing together academics, policymakers, and civil society leaders to discuss issues related to the rights and needs of SSF workers. Meeting participants shared their different viewpoints and together identified "several critical ways forward" for fisheries

[1] In contrast, the "International Conference of Fishworkers, and their Supporters" a self-organized meeting convened by SSF fishworkers and their CSOs was held in Rome, July 4–8, 1984. Held decades earlier, this is considered by many to be the first global SSF meeting, which I discuss below.

governance reform, stressing that change must be guided by a human rights-based approach "not really as a matter of choice but of obligation" (FAO, 2009). The need for widespread stakeholder participation in fisheries governance reform was central to these discussions, where participants stressed that the ongoing involvement of CSOs and fisher organizations and attention to equitable representation of historically marginalized groups (including indigenous people and women) was needed (FAO, 2009). At this pivotal meeting, both unconventional principles of fisheries governance were articulated—human rights, equity, gender, ongoing participation—and alliances formed that would go on to shape the SSF Guidelines. A shared problem framing and agenda for change was identified as necessary conditions as the movement would "need solidarity at the global level to put pressure on UN agencies" (FAO, 2009), where getting COFI to either modify their existing global fisheries policies (e.g., the CCRF) or craft a new tool specifically for SSF would "be difficult to achieve" but that "COFI needs to take the challenge" (FAO, 2009, p. 23).

The 2008 Bangkok meeting, while pivotal, was not the first global meeting convened for SSF. A dynamic and increasingly global socioinstitutional landscape for civil society had been growing in fisheries for decades but was long excluded from formal UN proceedings. According to CSOs (and in contrast to the timeline shared on the FAO website), the first global meeting for SSF was held 24 years earlier in Rome convened by CSOs without any external support (nearly 30 years before the 2008

Bangkok Meeting). The "International Conference of Fishworkers and their Supporters (ICFWS)" was held in Rome in 1984 against the backdrop of the "World Conference on Fisheries Management and Development" which was organized by FAO, a meeting that overemphasized industrial fisheries and excluded small-scale fishworkers and their organizations (Nisa, 2014). According to one participant, this was organized as an intentional "parallel counter-conference" which actually succeeded in attracting greater media attention than the formal FAO fisheries conference, demonstrating the power of CSOs to assemble and attract attention at a global level. According to two former FAO staff sympathetic to these efforts, while the ICFSW was the first global meeting the momentum to hold it was built on broader, ongoing organizing efforts by civil society in multiple sectors (not just fisheries) that fomented throughout the 1970 and 1980s in response to repressive state policies and techniques, and the full exclusion of civil society from UN processes (which at that time only permitted official representatives of country delegations). Out of the common ideas identified by the ICFSW, the International Collective in Support of Fishworkers (ICSF) would form and craft its mandate, as an international non-governmental organization that provides technical support and coordination to fishworkers' organizations and "helps to create the space and momentum for the development of alternatives" in the SSF sector (ICSF website). From this same meeting, the first global CSO for fishworkers would later (in 1997) form

its mandate, quickly splintering into two global CSOs—WFF and WFFP—in 1999 over internal conflicts.

While the 2008 Bangkok Meeting was arguably not the first global SSF meeting, it further built on the earlier 'organizational work of coordination' that had been building at regional and global levels among fishworkers, their CSOs and their supporters for decades. The 2008 Bangkok Meeting also critically brought these two global CSOs (WFF and WFFP) back into dialogue, building on and further reconfiguring a dynamic global landscape of organizational networks and ties. While these two global CSOs would remain separate organizations (often employing different rhetoric in relation to development), WFF and WFFP would go on to maintain a working alliance in the movement to transform fisheries governance and continue coordinated lobbying for needed policy changes, including through their co-leadership of the International Planning Committee on Food Security's (IPC) Fisheries Working Group[2], an autonomous self-organized platform that works on food sovereignty issues at regional and global levels. In addition to the growing coordination within the global CSO space, the 2008 Bangkok Meeting and the momentum going forward would strengthen alignments among supporters in the sector concerned with creating more equitable

[2] The IPC is an "autonomous and self-organised global platform of small-scale food producers and rural workers organisations and grassroots/community-based social movements whose goal is to advance the Food Sovereignty agenda at the global and regional level" according to their website. The IPC Fisheries Working Group represents CSOs that have been engaged in the SSF Guidelines process since the Global Conference on Small-Scale Fisheries held in Bangkok, Thailand, in 2008.

governance arrangements, including among actors in academia, NGOs, and within the FAO.

Among the broader common ground identified and relational networks formed, the 2008 Bangkok Meeting participants articulated specific recommendations to COFI. Across their vastly different experiences in local, national, and regional fisheries contexts, the meeting produced a joint statement targeting specific changes participants wanted to see in global policymaking spaces. Their report was included among the background documents for the following COFI meeting in 2009 (the 28th session), where SSF also appeared as an agenda item only for the third time (cementing their inclusion as a standing agenda item moving forward, a pattern that has held up to present). The 2008 Bangkok Meeting recommendations read:

> "At the international level, there was a call for an international instrument on small-scale fisheries. This could be a special chapter on small-scale fisheries in the Code of Conduct for Responsible Fisheries or an international plan of action (IPOA) or international guidelines. There was also the call for a dedicated global programme on small-scale fisheries under the purview of FAO which would be guided by COFI, or if members so wish, a special Sub-Committee on Small-Scale Fisheries" (COFI2009/7).

The decades of policy work that had gone into imagining fisheries governance differently up this point was now on display at COFI, where the ongoing 'work of articulation' had produced a shared and clear set of demands: make a global policy that reflects the needs of the SSF sector and include SSF in the agenda and sub-committee structure at COFI to be reflected in the purview of FAO's program of work. All these recommendations would eventually come to pass, dramatically altering the presence and status of SSF at COFI and the priorities of FAO, demonstrating the power of CSOs to act collectively and build alliances with other actors, including the FAO, to reshape the existing global fisheries policy landscape.

4.6.2.3 Developing and negotiating the Guidelines: Translating ideas into international soft law

At the 29th session of COF in 2011, the Committee formally recommended that a separate set of international voluntary guidelines be developed for SSF, setting in motion a series of consultations that CSOs remained active in. The formal SSF Guidelines consultation process that ensued (led by the FAO) entailed 21 national and regional [3] consultations between 2009-2012 with stakeholders from across the sector to raise awareness about the need for a global policy for SSF and to seek input on the core thematic issues and principles such an unprecedented tool should contain. The recommendations that came out of these consultations (also shaped by the initial

[3] The national consultations included one in Tanzania in 2012, organized by CSOs and the FAO.

recommendations made by the 2008 Bangkok Meeting) were incorporated into the Zero Draft of the Guidelines, drawn up in May 2012.

While the process of seeking input, aligning interests, and constructing the initial text of the Guidelines was intentionally slow (allowing for input from a range of actors, especially fishworkers), their technical negotiations were fast. The Zero draft was revised through two rounds of technical negotiations held in May 2013 and February 2014. In these, 87 Member Nations, 4 international NGOs, 11 governmental organizations and 59 representatives from CSOs participated in technical negotiations at FAO headquarters (COFI/2014/Inf.10). These final rounds of technical negotiations were described as "short" by FAO staff considering the length of the text and the need to agree on the final contents, line by line, with the literal translation of each word scrutinized. As noted by Jentoft (2014), terms that appear throughout the text such as "'communities (mentioned 77 times), culture (19 times), customary rights and practices (10 times), and indigenous peoples (10 times)…were not viewed as controversial concepts during the Technical Consultation. Indeed, delegates had no problem with the 's' in peoples" which acknowledged collective rights" (not just individual rights) (ibid, p. 6).

The inclusive, multi-year process of the development of the Guidelines seemed to enable swift negotiations—years of organizational work of coordination enrolled support along the way, first by CSOs, the FAO, and COFI member states, and later

through more regional and localized efforts to engage with SSF actors and communities through stakeholder workshops and consultations. The diverse perspectives sought, and modes of participation enabled though this process found alignment around a set of shared principles by leaving the guidelines the policy would contain intentionally flexible. All the input from prior meetings, national and regional consultations were translated into the final text which contained five core thematic principles as necessary for sustainable SSF governance (secure tenure and responsible management, value chain governance, decent work, gender equality, and disaster preparedness and climate change adaptation), based in an overarching commitment to the principles of human rights, respect for cultures, non-discrimination, equity and participation, among others. Such a text stood poised to shakeup fisheries-governnace-as usual, and yet the Guidelines found support among COFI member states who had formally sanctioned the process.

But last-minute objections at the full meeting of the Committee in summer 2014 would imperil the final moment of their adoption—casting drama over their contents and inflecting new points of tension around the implications of translating them in place. The final text containing over 100 paragraphs and nearly 10,000 words was presented to the Committee at COFI 31 in June 2014. All but one paragraph (6.18[4]) was

[4] The original paragraph read (6.18) "All parties should protect the human rights and dignity of small-scale fisheries stakeholders in situations of occupation to allow them to pursue their traditional livelihoods, to have access to customary fishing grounds and to preserve their culture and way of life. Their effective participation in decision-making on matters that affect them should be facilitated."

readily accepted. The phrase 'situations of occupation' in paragraph 6 of the document was met with strong objections, where according to some who were there, a few countries did not like the implication that human rights must be observed for the residents of occupied territories. The objection stemmed from some countries interpreting the implications of the paragraph beyond the realm of fishing communities, to refer to any resident of an occupied territory. Could an endorsement of the Guidelines be translated into international human rights violations in situations of conflict and occupation beyond fishing communities? This potential translation of the meaning and reach of the Guidelines seemed to be the concern.

"Until the final hour of the COFI meeting" this phrase "threatened to overturn the adoption of the SSF Guidelines" which was so many years coming (Jentoft et al., 2017). When an agreement could not be met over paragraph 6.18 in the regular plenary, an extended late-night session was called where debate and side negotiations ensued. Although not formally captured in the COFI report, CSOs played a part in moving the Guidelines across this final threshold, making calls that garnered the attention of their local news organizations at home. This put pressure on their Member Nation's delegation to finally approve the text and pass the Guidelines, as they did not want the image of their country holding up this highly anticipated and celebrated policy splashed across the news media. A final wording change and addition of a footnote found consensus—the SSF Guidelines were finally adopted on June 14th, 2014. The final text

would memorialize the pivotal policy work of CSO leaders; the first internationally agreed upon instrument for SSF would be dedicated to Chandrika Sharma, one of the leaders of ICSF, for her instrumental role in the process of developing the Guidelines[5].

4.7 Making policy implementation work in Tanzania

4.7.1 "Reading between the lines" CSOs work to fill in existing knowledge gaps to mobilize national implementation

Official representatives from Tanzania were present at COFI when the Guidelines were adopted in 2014, but the state was not involved in many of the steps entailed in the multi-year process of their development. Despite casting their official vote in favor, state representatives were not knowledgeable about the development or contents of the Guidelines at that time (or the workings of global governance processes generally according to civil society leaders).

Tanzania was not unique in this regard. At the General Assembly meeting of WFF in 2016, CSO leaders identified this problem broadly: "government representatives did not participate in COFI" in the case of many countries, which posed a "serious problem" for CSO leaders with a stake in their implementation, as they knew that they would in their words "need national support." CSO leaders described their dilemma as this: we need "states to participate to understand [the Guidelines] so we can work together." States needed to be enticed to act, educating their governments about the

[5] Chandrika Sharma was instrumental to the development of the Guidelines but would never see their adoption as she was tragically among the 239 people who went missing when Malaysian Airlines Flight 370 disappeared on March 8th, 2014.

Guidelines so they would take ownership in the project of implementation. Where this knowledge and related motivation was lacking initially in Tanzania (and in other countries), it did not prevent the Guidelines from finding traction—rather it was a problem to be solved: "we [CSOs] need to read between the lines and understand it [the Guidelines] very well. Then, we need to lobby to get the support to make it happen and bring Rome home" (CSO leader, WFF General Assembly).

CSOs continued to do much of the policy work to "make it happen", which despite having a finished text in hand, still entailed the uncertain policy work of imagination (how would the concepts and ideas within converge upon a problem framing that resonated in the sector?), articulation (how to follow the mandate of broad participation and also find alignment?), organizational coordination (how to build representative cross-sectoral national networks to mobilize the process where none existed?), and translation (how to interpret the ideas in the text within the contours of national and local contexts and find strategies to enact them?).

At the 31st session of COFI in 2014 when the Guidelines were ratified, a Tanzanian non-state actor who is central to the story of SSF Guidelines was present. Editrudith was attending this meeting as a "International non-governmental observer" of civil society, formally registered in attendance on behalf of WFF. But her role as a CSO leader representing the SSF sector is not singular or passive, her agency spans multiple platforms and jurisdictional levels. Locally, she is the founder and director of an

environmental non-governmental organization (ENGO) that operates in and around Lake Victoria and works directly with fishworkers on social development and environmental sustainability. While the work of this ENGO is centered around a geographically limited range of inland fishing communities in Tanzania, her ENGO was Tanzania's official member organization party to WFF. Editrudith also served as one of WFF's co-presidents, which also positioned her was one the members of the IPC Fisheries Working Group. Therefore, while her attendance at COFI was in the role of observer on behalf of WFF (as per COFI rules), she was anything but passive in the process of making the SSF Guidelines. In addition to her role as a CSO leader of multiple groups and networks that made the Guidelines happen, she would be central to the work of mobilizing the project of policy implementation in Tanzania.

4.7.2 "Championing the Guidelines": Who leads the way?

While she is not the formal leader of the NTT (the team assembled to steer national-level implementation in Tanzania, described in section 4.5.3), Editrudith is widely regarded as the national expert of the Guidelines as her involvement in their development extends further back in time than anyone else involved in fisheries governance in Tanzania. Nicknamed by her colleagues "Mama Guidelines" her leadership is acknowledged by the NTT and other government officials. In the national implementation process, Editrudith is accorded more power than would typically be tolerated in formal, hierarchical fisheries governance processes. She described how her

ongoing participation in Rome-based governance processes (including but not limited to the many moving parts that went into the development of the SSF Guidelines) afforded her this role: "my expertise is acknowledged, and I am able to move with different levels of authority than would typically be given to me". According to officials at the FAO, this seemingly remarkable fact—that a non-state actor is the expert and instigator of national-level policy implementation—is not uncommon in the context of the Guidelines; in most cases, the countries that have made progress towards implementation are led by an individual who "champions the Guidelines". The project of national implementation was not an orchestrated and methodical plan designed and led by the state, rather it was led in many cases by individual non-state actors, who along the way, invited individual state representatives into the process, eventually eliciting broader support and institutional buy-in, cemented through bureaucratic (co)ownership over the project of implementation.

Treating the Guidelines as a "demand-driven process," the FAO responds to requests to implement the Guidelines by providing technical support (and in some cases resources through their Global Assistance Programme), but FAO does not reach out to states directly to try and initiate policy implementation. They have found universal and uniform implementation cannot be the singular goal, as each country needs real energy and a genuine multi-stakeholder movement to sustain the project of implementation. By FAO staff accounts, implementation efforts currently underway have not been a state-

led or initiated process in most cases. At the WWF General Assembly, this unlikely role and responsibility (of Non-State Actors leading the way) was described with pride: "It's our baby now. We [CSO leaders] need to find a way in every country" (CSO leader, WFF General Assembly comment). In Tanzania, CSO leaders led the way as they involved different types of participants and mobilized initial support among different actors, including the state, convincing them to formally take-up the project of implementation and act on their global commitment.

Below I outline some of the policy work that CSO leaders did to move the Guidelines from theory to practice in Tanzania, convening meetings that brought different stakeholders into the fold, resulting in new collaborations and agreements that would become an evolving national plan for policy implementation. In this process, the focus on the principle of gender equality emerged through multiple scoping meetings before becoming formalized through an agreement with FAO.

4.7.3 "Finding the way" in Tanzania through assembling meetings, forging alliances, and articulating the scope of national implementation

At the WFF General Assembly, CSO leaders representing different nations shared their experiences working to implement the Guidelines. One leader from South America spoke up, pressing the body to provide a set of shared indicators for tracking progress towards implementation. One of the body's co-presidents responded "indicators are important, but this actually happens at the country level. It is all

contextual, not like a one-size-fits-all jacket" (CSO leader, WFF General Assembly). The space left in the Guidelines to interpret the principles within and the path for implementation is unusual in global governance agreements, flexibility to define specific strategies in place. But this same flexibility could potentially pose a challenge if the process unravels for a lack of structure or an inability to find an alignment along the way. Below I describe how the strategies and indicators of policy implementation came together and were contextually defined in Tanzania without the structure of universal, predefined targets or evaluation metrics. Common ground was found around three strategies, but not without tensions that reflected the many differences among the actors and interests involved.

4.7.3.1 "Setting the stage" for policy implementation through regional and national meetings.

CSO leaders and their supporters organized multiple regional workshops following the adoption of the SSF Guidelines, including one for East Africa in 2015 and for Southern Africa and Indian Ocean Region in 2016—both were attended by representatives from Tanzanian state and NSAs, including Editrudith. Two national consultative workshops focused on Tanzania followed, led by different civil society actors for coastal and inland fisheries. A dissemination workshop to raise awareness about the SSF Guidelines for coastal fisheries was held in Bagamoyo in August 2015, organized by a local NGO based in Zanzibar, Mwambao Coastal Community Network (MCCN), with support from the ICSF. This first national awareness raising workshop

brought 36 participants from marine fishing communities and policymakers from mainland Tanzania and Zanzibar. A parallel workshop for inland fisheries was held in Mwanza in 2016 with 52 participants from the major lakes (Victoria, Tanganyika, Nyasa) including government Fisheries Officers. While these efforts were separate (and it appears that no participants attended both) both awareness raising workshops were organized by civil society and "aimed to set a stage for implementing the SSF Guidelines in Tanzania" (Lukanga, 2017). Both workshops included government representatives among their participants, but not as experts about the SSF Guidelines. Government representatives delivered presentations on existing legal instruments governing fisheries and their views on the state of sector and its present challenges. These workshops were an opportunity to lobby government officials by familiarizing them with the Guidelines (many of whom were previously unaware of them) and involve government actors in the (already underway) movement towards policy implementation. Given the size and geographical separation of Tanzania's sizeable marine and inland fisheries, separate workshops provided initial space for actors with more closely related experiences and networks to discuss the potential scope and touchpoints for implementation. However, their uncoordinated nature and the divide between inland and marine fisheries in these initial meetings would remain a theme that would run through the implementation process.

At both workshops, but particularly the inland fisheries workshop, issues related to the undervalued role of women in the sector and conditions of political and economic precarity that result from gender inequalities were discussed at length. Both workshops identified the "lack of a platform for voicing the rights of small-scale fishers" as a problem, where the government's current strategy of requiring a fixed level of women's participation in local fisheries governance bodies (e.g., BMUs) insufficient, mandated at 30% by law (Slade, 2016). At the inland fisheries workshop, they intertwined these issues and imagined a different approach, to "facilitate the formation of national level platforms/networks [for women in SSF]", which also pointed to the "need to conduct a baseline study" of gender in fish value chains as a related, foundational assessment (EMEDO, 2016). The present lack of gender disaggregated data and information on gender roles in fisheries were also identified as problems, and the uncoordinated state of existing cooperative societies a key challenge to meaningfully enhance the capacity of women to participate in fisheries governance beyond existing and ineffective quotas. At the inland fisheries workshop, the focus on gender (among the five thematic areas of the Guidelines participants discussed) was particularly pronounced. This emphasis was shaped, in part, by the presentation of several videos developed by the ICSF that were designed to raise awareness about the role of women in fish value chains, using individual women's stories to illustrate the various challenges they faced, and the possibilities to improve their situation (Lukanga, 2017). The real stories presented were

affective; the workshop attendees were moved by what they heard and framed the Guidelines as an opportunity to generate attention to gender and create new policies to change the social, economic, and environmental conditions women experienced in fisheries in Tanzania (CSO, interview comment).

Alongside multiple efforts to raise awareness and seek input about the Guidelines in Tanzania, Editrudith was also working at the regional level with state and NSAs at the African Union on the implementation of a new continental strategy for fisheries reform. As an active participant in the African Union Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa[6], Editrudith was working with other women from the continent to establish a continental network for women in fisheries, the African Women's Fish Processors and Traders Network (AWfishNET). Establishing platforms like AWfishNET aligned with the new African Union fisheries policy framework, which outlined promoting and developing networks among organizations in the sector as a strategic goal. The value of organizational networks was stressed particularly for women and other marginalized groups to create a wider system of governance that would be inclusive of SSF actors throughout the value chain as women working in post-harvest processing and trade are often excluded (AUC-NEPAD, 2014).

[6] A framework developed through a Comprehensive African Fisheries Reform Strategy (CAFRS) supported by the Partnership for African Fisheries (PAF) and the Strategic Partnership for Fisheries Investment fund, an initiative of AU-IBAR and World Bank

While Editrudith was working with other CSO leaders to build this continent-wide network for women through the AU[7], Tanzania still lacked its own nationally representative association for women in fisheries (which would technically be needed for Tanzania to become an active member of AWfishNET). This absence (of a nationally coordinated network of women's groups) was identified by the participants of both the marine and inland fisheries awareness raising workshops around the Guidelines in Tanzania. Drawing on her existing relationships with the FAO, Editrudith reached out to seek technical and financial support to develop such a network—the Tanzania Women's Fishworkers Association (TAWFA). The FAO responded positively to the idea but encouraged her to connect this specific initiative to a broader effort at national-level implementation of the SSF Guidelines and to include state representatives in the process.

4.7.3.2 Centering gender and crafting a concept note formalizing the path forward

At this point, Editrudith partnered with an official from the Ministry (a mid-level Fisheries Officer who had attended the inland fisheries national workshop) to write a concept note to the FAO describing a framework to formally begin a process of national-level policy implementation. This government official Editrudith contacted (with the authority of the FAO behind her) would go on to become the point person for the SSF Guidelines process within the Ministry.

[7] Including hosting the first consultation for the process of developing an AU wide network (AWfishNET) in Dar es Salaam in April 2017 and serving as the secretariat for the new regional network.

In drawing up the concept note for FAO, the CSO partners responsible for mobilizing the coastal fisheries workshop in Tanzania (MCCN) were not included. The divide between ongoing policy mobilization efforts in coastal versus inland fisheries (the latter even further dominated by Lake Victoria over other inland water bodies) would remain a challenge to an inclusive and comprehensive policy implementation process (see discussion of this issue in relation to the definition of SSF in Chapter 2). This omission appeared to be less an intentional act of exclusion than a disconnect among social and organizational networks[8]. The implementation process already underway (before the formal LoA with FAO) was energized by multiple CSOs, but existing organizational networks among CSOs working in different regions (inland and marine fisheries) were not well developed. Being the champion of the Guidelines is a monumental task. Editrudith represents multiple CSOs simultaneously and is an active player involved in fisheries policy change at multiple scales. But ultimately, she describes how she is "always thinking and speaking from" her experience locally around Lake Victoria, where the "fishers really are" (the communities she knows; interview comment). In the absence of a pre-existing national network to tap-into or any systematic knowledge of women's groups on behalf of the state, Editrudith's professional relationships shaped, in many cases, who was selected from different

[8] The two CSO leaders who had been instrumental in organizing each of the national consultation workshops had never even met.

constituencies to participate in the process, including women fishworkers and their organizations. The resources, infrastructure, and facilities to build CSO connections in Tanzania, at least in fisheries, are extremely limited in comparison to the socio-institutional networks built regionally and globally among SSF CSOs over decades (or for instance, the relationships among big NGOs or BINGOS). This divide was in many ways reinforced rather than remedied by the inclusion of the state as the implementation process moved forward; Lake Victoria already dominated national fisheries policymaking and the energies of the Ministry, as an export-oriented fishery which generates the greatest revenue nationally.

The resulting concept note to the FAO outlined an explicit focus on gender equality among the thematic principles of the Guidelines and two initial strategies to realize this goal—establishing a Gender Desk at the Ministry and building a national association for women in fisheries (TAWFA)—as well as outlining a leadership structure (the National Task Team or NTT) to guide the national implementation process. The NTT would be composed (it would later be worked out) of 15 individuals representing central government, local government, fishing communities (with representatives from local BMUs and women fish processors), NGOs (which included MCCN), and academics and researchers. The job of the NTT would be to 'steer' the policy process, including by doing advocacy and awareness raising about the Guidelines, coordinating planning and development of a national plan of action, soliciting community-level

feedback on the plan throughout the country, and overseeing the implementation of specific strategies.

The FAO provided feedback on the concept note and eventually approved their request for support in November 2017. A formal letter of agreement (LoA) was drawn up between the FAO and the Ministry and financial support for the outlined activities supplied by FAO through their Global Assistance Program to support the SSF Guidelines (funded by the government of Norway through the Norwegian Agency for Development Cooperation)[9]. At this point, the state became the formal partner in the process of implementation: signing the LoA with FAO, administering the funds, and taking on the responsibility of reporting back on progress. With control over the money and reporting, this undoubtedly vested a lot of power with a handful of people at the Ministry, whom were arguably not the individual people or institutions who championed the initial process. I pressed FAO staff about the limitations of this arrangement, shifting power to the state when CSOs had arguably driven the process, which they acknowledged. But this is the FAO's mandate as a specialized UN agency: to provide policy and technical assistant to Member Nations. CSOs efforts to garner wider support for their initiative had worked, they effectively lobbied the state who entered

[9] The FAO SSF Umbrella Assistance Programme was developed to support the implementation of the SSF Guidelines and is part of the complementary mechanism, the SSF Guidelines Global Strategic Framework (SSF-GSF). The SSF-GSF is a framework that was developed with the "full and effective participation of all regions and in consultation with all small-scale fisheries stakeholders" (COFI, 2018; http://www.fao.org/3/MW692EN/mw692en.pdf) to support the implementation of the Guidelines.

into and sanctioned the process of implementation to move it forward. With the concept note signed, Tanzania became one of only a handful of countries to receive technical and financial support from FAO for policy implementation in 2017—three years after the SSF Guidelines were endorsed at COFI. In addition to forming the NTT leadership structure, the LoA outlined a National Inception Workshop as a starting point to develop a national plan for implementation with broader stakeholder participation.

4.7.4 "A national plan of action doesn't make itself": Developing a roadmap for 'plan for the plan'

And so, I return to where I first started; in the hotel conference room in Bagamoyo. The "National Inception Workshop Towards the Implementation of the Small-Scale Fisheries Guidelines in Tanzania" (herein, the National Inception Workshop) convened on February 15-16th 2018 to formulate a distinctly Tanzanian path for national policy implementation from the decided focus on gender equality (laid out in the concept note with input from the earlier regional and national workshops). More than 70 participants were gathered, crowded together in a conference room at a hotel in the coastal town of Bagamoyo that had seen better days. The historic significance of the diverse group gathered was never directly named; fisheries policy priorities are not normally openly debated by representatives from local fisheries governance bodies (e.g., Beach Management Units, BMUs), women's fishing organizations, scientists from fisheries research centers, academics, the FAO, local ENGOs, district and central government officials, and representatives from other government ministers sitting elbow

to elbow. The historic significance of the meeting's location was acknowledged; participants were reminded that Bagamoyo is the former colonial capitol of German East Africa and a site of the Indian Ocean slave trade. Today, Bagamoyo remains a large fish landing site and seat of traditional dhow boat building, but most of the shoreline is dominated by hotels and conference centers that have fallen into disuse[10]. The mood in the room as the workshop convened was both tentative and expectant, as one of the opening speakers foregrounded the historic task ahead of them, "today's inception workshop is one of the first steps to implement the SSF Guidelines…and Tanzania is the first country to develop its own national plan of action. In this capacity, Tanzania will be a champion. As we learn, others will follow".

At the National Strategic Planning Meeting of the NTT members held the day before, 13 of the 15 members of the NTT and 2 representatives from FAO met to discuss the agenda for the days ahead. Representatives from the FAO were encouraging the meeting to focus on the task of developing a 'roadmap', a plan that would include "checklists of activities and agreements on what is to be done, by whom and when", rather than pushing participants new to this process to produce a final implementation plan or NPOA. FAO staff summarized the overall implementation process as containing

[10] Once the destination for everyday ministry meetings, keeping conference rooms in constant use, the current president of Tanzania had recently cracked down on the practice of holding regular government meetings out of town (Bagamoyo is about two hours travel time from the de facto capital, Dar es Salaam, meaning that Daily Subsistence Allowance stipends kick into effect when meetings are held there). In this case, the cost of gathering participants form across the country to meet in Bagamoyo is less (I am assured) than meeting in Dar es Salaam.

four steps: scoping, plan formation, doing, and monitoring/revisiting. However, these steps were described as non-linear, as "actions can be parallel and repetitive, or happen in a different order". Tanzania was held up as the first country on this path in several respects: the first to form its own NTT and work towards an NPOA. Tanzania was characterized as "in the first two steps" at the same time: both scoping immediate needs and identifying the elements of a final plan for implementation. NTT members elaborated on the idea of the 'roadmap', describing it as "the plan for the plan": an agreement about the tasks needed to be able arrive at a final NPOA. However, even among NTT members there was often slippage between 'the plan' (e.g., the NPOA) and the 'plan for the plan' (the roadmap), creating some confusion about which step in the implementation process they were collectively in, or even talking about in a given moment. FAO staff reassured the NTT leaders that some confusion was to be expected given the iterative nature of the implementation process.

The potential for confusion among participants at the full workshop was anticipated (along the lines that emerged in the NTT meeting the day before), and during the national workshop the FAO representatives stressed that some tasks may fall under the scope of the roadmap of "activities for the coming year" and also be an element of a final NPOA. The fuzziness and possible overlap between the two steps were normalized, "it may feel a bit messy" (FAO comment, 2/15/18). The message was echoed by representatives from CSOs: "This isn't just one step, or two, it's an ongoing

process. Everyone has a role to play and that takes time to navigate". A PowerPoint presentation on the concept of the roadmap was presented by FAO to clarify, laying out the reasoning for this step: "the NPOA [the final plan] doesn't make itself—there needs to be a process to agree on what goes into the NPOA. We are calling this the 'roadmap'". The roadmap was characterized as a foundational part of the process of policy implementation because it serves as "a mutual agreement to do the work" and "ensures that we don't miss steps along the way, and only later realize that we skipped something important that we needed" (FAO comment, 2/15/18). Thus, the roadmap included space for scoping—taking stock of what was known, and what knowledge might be missing. Exactly what activities the roadmap or final NPOA should contain was never dictated by FAO, even as some workshop participants pushed back, seeming to expect more top-down control from an actor like FAO:

> "It would help to have guidance on what goes into an action plan. We are preparing for a safari; we want to travel. When we want to implement the safari, are we going to Arusha or are we going to Europe? After we get there, what are we doing? If it is possible to be guided on what the main elements are, please. I have not learned this in school. What is a roadmap? I am only learning it now" (workshop participant comment, 2/15/18).

The FAO representative, unruffled by this request, responded by stressing the intentionally open-ended nature of the process, asking reflexive questions rather than giving directives:

> "Step back from the final ideas typed up in a document. Apart from typing it, what else goes into it? What do you need to get there? As you know the SFF Guidelines are very strong on participation, so we need to get the views of fishworkers into the plan, the voices of fishers and fishworkers need to be included. So how do we do that? What do we do this year so that we can all arrive at an NPOA we can agree on? Some examples might include consultations, studies, training, and capacity development" (FAO comment, 2/15/18).

With this guidance, workshop participants were split into working groups for multiple sessions to discuss the roles and responsibilities of different actors and possible activities for the coming year. The outputs from group work were used to identify immediate challenges that needed to be addressed as candidates for inclusion in the 'roadmap'. Multiple groups identified the need for different kinds of studies to gather baseline information, including both desk-based reviews (for instance, of existing policy instruments that were relevant to the Guidelines) and field-based studies entailing primary data collection, particularly on the role of women in SSF. The language of 'mapping' came up multiple times and seemed to garner support, but what did it mean?

Participants used the term mapping to describe a general need to understand women's diverse contributions to fisheries and the division of gender roles in fish value chains, a means to assess the capacity of existing women's organizations, a tool to connect organizations and build a regional network for women in fisheries, and to more literally "see" women in fisheries through a physical map. Rather than impeding, I argue that different ideas about what mapping meant enabled participants to see its value and agree to its inclusion as part of the 'roadmap' that lay ahead. Rather than being eliminated, these differences were allowed to remain and helped the diverse actors involved in the process align around the mapping assessment as one implementation strategy determined in place.

4.7.5 Beyond 'adding on' or 'counting in' women: standard fisheries metrics and the possibilities of mapping differently

While no one-size-fits-all approach for measuring SSF or monitoring implementation of the SSF Guidelines is prescribed in the text of the policy, it was evident at the National Inception Workshop that alternative metrics would be needed to understand how gender relations and inequality take shape across inland and marine fisheries and throughout different value chains.

Many individuals spoke up to share experiences and reflections on "the problem" with gender relations in the sector from their standpoint, coming from different landing sites and districts across inland and marine fisheries and mainland Tanzania and Zanzibar. In Lake Victoria's archipelago of islands, illegal seasonal fishing

camps crop up and go unregulated, typically financed by "big men" from out of town who employ a rotating cast of fishermen often using illegal gear types. These illegal fish camps tend to create exploitative relationships between women who work in post-harvest processing and the male fishers employed on these remote islands, including trading-fish-for-sex and resulting high rates of HIV and unsupported children (workshop participant comment, 2/15/18). A woman from Zanzibar spoke up to describe a different situation. In her region, there are more equitable dynamics of trust and respect among local men and women in the fishing communities. Instead, she stressed that women do not only "do" post-harvest processing of small pelagics in Tanzania (as is common in Lake Victoria and was often discussed at the meeting), they also fish and farm seaweed. The problem in small-scale seaweed harvesting is that the trade is dominated by a handful of foreign and domestic export companies who use middlemen to enroll the labor of women in the poorest communities on the islands, extending loans for equipment and installing patron-client relationships that trap women in a cycle of debt while also fixing the prices for their products artificially low (workshop participant comment, 2/15/18).

At this point, workshop participants shared a general interest in increasing the participation of women in fisheries governance, and most explicitly wanted to strengthen their relative power in fish value chains. But it was also evident that no "one problem" existed which inhibited gender equity and equality in Tanzanian fisheries.

What the workshop participants could agree on was that their lack of shared and comprehensive knowledge on gender relations in the sector was a problem, which stemmed in part from the sheer diversity of the sector and their inexperience in working together, but this was also a systematic and institutional knowledge gap. This gap was on display in several PowerPoint presentations delivered by government officials at the workshop which aimed to provide an authoritative overview of the state of Tanzania's capture fisheries. While acknowledging the "important role of women" in fisheries, these presentations simultaneously did not show them. The slides presented all relied on traditional fisheries science and economic measures to characterize the sector—the number of fishing boats, fish biomass, estimated fisheries resource potential, exports, and contributions to GDP. While these official characterizations of the sector and the metrics they relied on were never openly critiqued (nor the dissonance between these presentations and the stated goals of gender equality and transformation acknowledged), the responses from participants and the feedback from working group sessions was clear: an empirical study to assess the un/undervalued role of women was needed, and this effort was never framed as counting boats, GDP, or catch (i.e., examples of 'counting in' women using existing measurement tools; Cameron and Gibson-Graham, 2003). No one was proposing that gender simply be 'added on' as a variable to any existing evaluative tool or standard metric.

Instead, the 'roadmap' that came together outlined a need to 'map' the role of women and gender relations across different geographies and value chains to understand their present needs and challenges. This was a tool that would need to be developed, not adapted from existing fisheries indicators and evaluative techniques. Further, emphasis was placed on mapping the capacities of women's organizations, given that strengthening the capacity of existing organizations was identified as an immediate priority and step towards the larger goal of building a national platform for women in fisheries (TAWFA). The convergence of mapping and the focus on women's SSF organizations acknowledged that the present strategy of 'adding on' women to existing governance structures in Tanzania through prescriptive means (e.g., 30% representation of women in BMUs dictated under the current fisheries policy) was insufficient. Given existing sociocultural gender differences and power imbalances that vary throughout the sector (exemplified by the stories shared at the workshop), the value of joining and forming an organization run by and for women was recognized as one strategy to alter the balance of power in fisheries governance. Understanding the existing organizational landscape and their struggles (which were not presumed to be uniform across the sector) was a baseline that was missing to work towards a more just and equitable sector.

The 'messy' nature of the implementation process (as prefaced by the FAO) was embodied by the mapping strategy, which spanned several steps in the policy

implementation process and supported multiple agreements and concurrent strategies to achieve the goal of gender equality (Figure 15). Meeting participants agreed to mapping as a strategy, a tool which technically did not yet exist (its methodology would need to be worked out). Substantively, mapping was described by workshop participants as part of the scoping function of the roadmap, a means to gather new information and fill existing knowledge gaps on the interplay between gender, fish value chains, and power across different geographies and value chains in Tanzania. Mapping would also become a point of contact with existing women's groups, and an opportunity to inform them about the Guidelines as a policy, to seek their input on proposed strategies to enhance gender equality in fisheries, and to gauge their interest in joining a national platform for women in fisheries (TAWFA). The knowledge produced through this study would feed into other elements of a future NPOA, including establishing the Gender Desk and building TAWFA (providing a database of organizations to contact for the Gender Desk and draw on to build TAWFA). Without assuming where women were located in fish value chains (e.g., post-harvest only), or what types of organizations they might have found or formed (e.g., formal or informal, what types of groups), the mapping study acknowledged the political nature of fisheries work and sought to illuminate the previously invisible landscape of gendered organizational networks in fisheries governance, including these as part of the existing policy landscape moving forward.

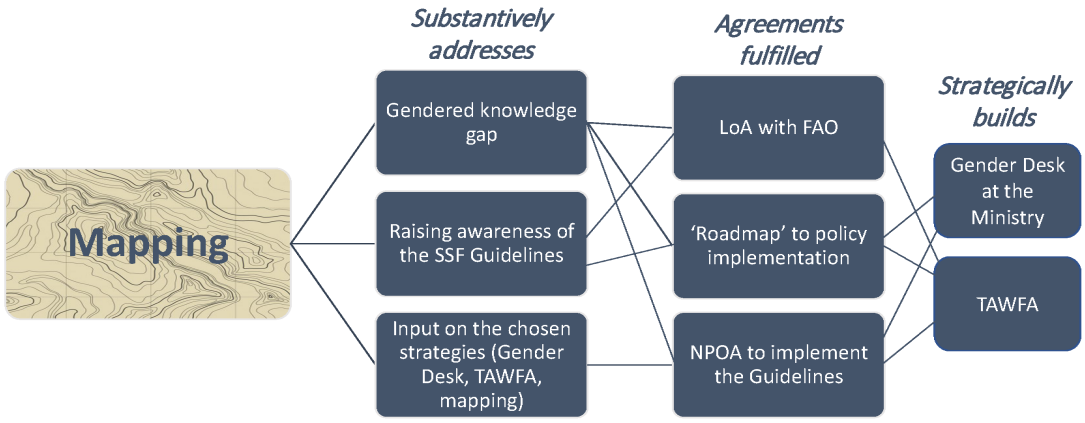

Figure 15: The strategy of mapping women's SSF organizations in Tanzania addressed different substantive needs identified in the ongoing policy implementation process, aligned with existing agreements among the actors involved, and bolstered other strategies to achieve "gender equality".

4.8 Assembling mapping: Survey development and study methodology

4.8.1 Navigating working relationships to co-produce mapping as a method

At the National Inception Workshop and throughout the text of the SSF Guidelines, it is stressed that all partners with an interest in realizing equitable and sustainable SSF governance had a role to play in policy implementation. On a personal-level, I was already invested in the goals of the SSF Guidelines—I was no neutral observer, I actively wanted to see them implemented. I was invited to attend the National Inception Workshop as an observer studying the process of policy implementation, but breakout sessions during the workshop included working groups for both "Academia and Researchers" and "Non-Tanzanian Actors". I was asked to

participate in these discussions, identifying areas where researchers could strategically contribute to the implementation of the SSF Guidelines (a constituency identified as a key stakeholder in implementation in the text of the Guidelines). I was the rapporteur summarizing our working group's discussion back at the plenary, sharing with the wider group what "we" (as researchers and non-Tanzanians) "should do" to help implement the Guidelines. Actively assisting with the studies needed was one of our recommendations, one I decided to follow.

As the National Inception Workshop convened, I had 10 days of time in the field remaining and used them to help develop the mapping survey instrument in partnership with Editrudith. Drawing on a prior season of fieldwork together where I had met several women fish processors and their organizations around Lake Victoria, we held follow-up open-ended conversations with women engaged in SSF as well as government and non-governmental stakeholders in communities around the lake (e.g., in Mwanza, Muleba, Musoma, Bukoba, and Ukerewe island). We spoke with women who worked as both independent processors and as collectives to listen to how gender relations shaped their work in SSF, why some women were members of groups while others are not, and what the advantages and limits of working independently and collectively were as a woman in the fishing sector. These initial discussions revealed the heterogeneous structures and histories of women's SSF groups and gender relations throughout the region. Through these open-ended discussions, we reviewed our

qualitative data and co-developed a draft semi-structured survey instrument for mapping women's SSF organizations. We tested this first draft of the survey instrument with six women's SSF organizations in February 2018. We shared the initial results and draft survey instrument with the other members of the NTT. Editrudith and I met again 5 months later (in a coffee shop during COFI) and incorporated the NTT's feedback as we further revised the survey instrument as well as drafted a concept note outlining the motivations behind and purpose of the women's SSF mapping study.

We shared these draft materials with the wider NTT, who went on to develop a formal concept note and the study design, designating two of its members—one representative from civil society and one from the government—to lead the study and report back to the NTT. The final concept note and study methodology were developed and completed by the NTT; the NTT also led the training of enumerators (most of whom were NTT members often working with local District Fisheries Officers) and the data collection in the priority regions they had identified for inclusion. I would not be actively involved in those steps in the study's development, as our collaboration was strained during this time as formal communication between myself and the NTT broke down over distance and through email, where cultural and institutional differences led to an impasse in agreeing on how we should formally work together.

4.8.2 Arriving at the final concept and methods for mapping women's SSF organizations

The final concept note produced by the NTT described the purpose of the "Mapping Women's Non-State Actor Organizations in Small-Scale Fisheries" (herein, Women's SSF Mapping) study as identifying organizations and mapping their capacity to understand their "status, weaknesses, gaps, strength, and needs, so as to inform interventions strategies" to support their participation in fisheries governance (Final report on LoA from Tanzania, 2019). Further, the survey would include a section where enumerators would inform groups about the SSF Guidelines, and also an opportunity for groups to give input on the value of the three strategies proposed to achieve greater gender equality (e.g., the mapping study itself, Gender Desk at the Ministry, and formation of TAWFA). Lastly, the study was an opportunity for existing groups to elect to learn more about TAWFA and receive follow-up information on how to join.

The concept note identified 8 priority regions for mapping spanning both major and minor inland water bodies and coastal marine fisheries, focusing on a total of 19 districts for data collection. The study methodology stated that 30% of women's SSF organizations in each district would be surveyed (when possible). Funding was approved for the study as part of implementing the 'roadmap' (funding from the LoA with the FAO, administered by the Ministry) and members of the NTT were tasked with heading up the data collection efforts in the regions they were familiar with. My research funded data collection in 6 additional coastal regions, particularly in Zanzibar

(5 regions on Unguja and Pemba islands) and one on coastal, mainland Tanzania (Pwani region), covering two districts (one which was not already covered and one where the designated NTT member had not completed the desired number of surveys). Data collection for the study occurred at different times. NTT members collected data between September-October of 2018, and I collected data between December 27th, 2018 and January 30th, 2019. The data collected by the NTT totaled 147 surveys, and the results were later analyzed by two NTT members from the Ministry and appear in a final report submitted to the FAO. In addition to these surveys, I conducted 34 surveys in Zanzibar and mainland Tanzania (the results of which are described in Chapter 5).

The study was a collaborative project, one I played a part in helping co-develop with civil society leaders. Like other aspects of the implementation process surrounding the Guidelines, the Ministry would go on to play a dominant role in the process, administering the funding, reporting, and data access. The work of implementing the survey was carried out by a handful of NTT representatives from local and central government and NGOs. My role in the study was never formally acknowledged in reports. Our working relationship would be strained at times, and ultimately happened through a more loosely coordinated collaboration (between myself and individuals within the NTT), rather than a formal institutional partnership. An inability to arrive at a formal MoU between my university and the NTT on data sharing prevented our data collection efforts from more closely aligning (although NTT members were supportive

and worked with me as I collected data), and our data sets were never integrated as was originally intended.

4.9 Discussion

> "Translation changes how we might think about the contexts that are at stake in the movement of policies in at least two ways. Contexts are neither the 'background' from which policies emerge nor the receptacles into which policies arrive. Rather, contexts animate translation in different ways." (Clarke, 2013)

By tracing the story of implementing the Guidelines through multiple starting points, I attempted to illustrate the iterative nature of policy mobility and dynamic context of policy landscapes: the people, places, order of existing norms and rules (and room to maneuver within) that animated the translation of the SSF Guidelines and 'made things happen'. Movement which opened up possibilities for performing fisheries governance differently in place. That 'place' is Tanzania in the context of the project of national-level implementation, but this is not a state-centric story. Actors that spanned supposedly distinct levels and policy landscapes called for meetings, formed or reconfigured regional and global forums, and built new networks and scales of organizing that reconfigured fisheries governance and affected the national project of implementation. Taking Tanzania neither as 'background' nor 'receptacle' for the Guidelines, I aimed to knit different sites and spaces together, not as part of a linear arc

of scaling down, but as a still unfolding story of hope and transformation that is "ever not quite completed" (James, 2016). The creation of the Guidelines did not spring forth from COFI fully formed, it was forged through the contours of existing rules and structures in place in this decades old body, while also conjuring changes to the procedures and patterns at COFI that had long marginalized SSF in global governance.

So, how is an aspirational global policy full of ethical commitments with troubling implications for existing systems of power in fisheries governance implemented in practice? Especially one that was structured without SMART targets or typical top-down directives to dictate the way? Slowly, unevenly, unexpectedly, and incompletely. The fact that policy implementation unfolded at all in Tanzania was unlikely, as the Tanzanian state did not play any significant role in the development of the SSF Guidelines nor were Ministry officials particularly knowledgeable about its contents despite formally endorsing them at COFI in 2014. Mirroring their global development, the movement to implement the Guidelines would be initiated and led by CSO leaders in Tanzania who did much of the policy work required of imagining fisheries governance differently, convening meetings and forming organizational alliances, bringing together diverse actors to articulate a common agenda, and finally, to translate the principles within the Guidelines into specific strategies to enact them in place. Some of these CSO leaders were simultaneously involved in the global process of their creation and concurrent regional efforts at policy transformation. Meanwhile, other

civil society leaders active in raising awareness and support for the Guidelines early on would end up being left out.

What of the national scale and the role of the state? The project of national policy implementation was not contained by the jurisdictional boundaries of the state or national scale. The policy labor of making/doing the Guidelines in Tanzania overlapped global and regional level policy developments (e.g., the global development of the Guidelines, regional AU policy reforms) and was largely propelled by the labor of non-state actors. The national-level implementation process in Tanzania was multi-scalar, but not in a hierarchical top-down manner of 'scaling down' driven by conventionally powerful actors. The project of implementation would challenge and extend the existing fisheries policy landscape in Tanzania, inserting issues like gender into the dialogue and CSOs at the table, and would also produce new scales of political organization for women in fisheries: TAWFA as a national platform and AWfishNET as a continent-wide network.

Moving the Guidelines from global commitment to national project was inherently non-linear, a fact no one involved was attempting to hide. This was named and normalized—"it should be iterative", "it might feel a bit messy" reassured the FAO. It still is messy (from what I hear), as the process continues to unfold against the difficult odds of political dynamics in Tanzania and during the COVID-19 pandemic. The implementation of the Guidelines is unfinished but has already been successful in many

regards while also containing its disappointments. The LoA was signed with FAO, an NTT formed, and national meetings convened. Participants agreed on a roadmap in 2018, those activities were undertaken, and in 2020 they endorsed their final NPOA after holding multiple community consultations for further input. While Tanzania led the way globally in several regards (creating an NPOA, forming an NTT), Tanzania's state delegation would miss the following session of COFI to claim their 'time to shine' on the global stage and share their progress formally with the body. This process was not conflict-free, devoid of judgment, misunderstandings, or exclusions, but it was something different in terms of fisheries governance in Tanzania, as progress towards implementation would reconfigure ideas of who participates in determining priorities, policy strategies, and evaluative criteria in fisheries governance. Rather than eliminating all differences, many remained, enabling diverse perspectives to co-exist which may have helped facilitate alignment around common strategies among the diverse actors involved.

The flexibility built into the Guidelines did not mean the process of implementation went unmeasured in Tanzania. Rather, they built their own 'policy techniques' and technologies of observation (Peck, 2011), developing a new means of measuring fisheries: mapping gendered political networks to see their present distribution, capacities, and needs. This flexibility allowed for a collective process of imagining alternatives to present policies and ways of doing fisheries governance across

difference. These organizational relationships, networks, and experiences of working together can be built upon through future implementation activities and governance initiatives. Thus, the politics and results of transformation are not something far off in the distance, which can only be captured by measurements taken years from now on 'what the Guidelines really did' or achieved. They are here and now. My hope is that other global policymaking projects and multi-level initiatives for change could learn from this process and hear a constructive story about loose policy designs—not as negative space (e.g., 'wiggle room to 'wiggle out' of commitments) but as productive and imaginative capacities for difference and for doing 'policy otherwise'.

4.10 Conclusions: What is policy implementation, a hammer, or a mirror?

After following the Guidelines across multiple sites and scales, what exactly is policy implementation? I asked two CSO leaders involved with the SSF Guidelines for their take on the term 'policy implementation'. Neither proposed an alternative, but both used metaphors that hinted at the deficiency of 'implementation' and its managerial connotations. One said it made it sound too simple; "It's not like they handed me a hammer, and all I have to do is swing it". Policy implementation involves multiple types of 'policy work' that is non-linear, iterative, and ongoing, and this CSO leader found the seemingly straight-forward directive implied by 'implementation' (e.g., execute the policy designs) obscured the varied labor required, especially as no predetermined targets or roadmaps were given to implement the Guidelines. Instead, these had to be

found (or really, imagined and articulated through new organizational networks, as they did not yet exist). Another described policy implementation as a reflexive process, where the Guidelines can be "a mirror to look in and ask 'what are our policies' and reflect on what we want. We can start by asking what is and is not present. Such as, why aren't women included? Why isn't decent work included?". This CSO leader went onto to describe how Tanzania's fisheries policy was revised and updated in 2016, and given that the implementation of the SSF Guidelines did not formally start until late 2017, it was unlikely that they would be able to change the national fisheries policy and formally 'align it' with the Guidelines (which is often the focus in literature on 'policy coherence'). But the Guidelines still provided this mirror, revealing the limits of the current fisheries policy (e.g., 30% participation of women in BMUs) and created possibilities for imagining fisheries governance otherwise.

Based on a strict definition of policy implementation, the evolving network of actors involved in mobilizing the Guidelines in Tanzania set out to do an impossible task: they would likely not move the new national fisheries policy, and the Guidelines would therefore not 'cohere' with this recently passed policy instrument. But with a less rigid notion of policy implementation, the view looks different: the mobilization of the Guidelines is an ongoing project that is reworking ideas about what principles should guide fisheries governance, who gets to participate and have agency in the process, and how fisheries are depicted, measured, and evaluated.

CSOs, the FAO, the state, and the other actors who came together through the implementation process are still doing the 'policy work' of translating the Guidelines into meaningful change. The Gender Desk has been created, but it is unclear if it will become an active means of support and dynamic mode of communication between the government and women's organizations operating in both inland and marine fishing communities. The national platform TAWFA has been launched and sent delegates to AWfishNET's two regional meetings. The strategy of mapping has provided information, momentum, and resources to these emergent initiatives, and in turn, helped make gendered dimensions of fish value chains and collective action more visible. But TAWFA's membership is decidedly stronger among inland fishing communities, especially from Lake Victoria, and the results of the full mapping study were never integrated or fed back to communities (at least not yet). But if

> "nothing includes everything, or dominates everything. The word 'and' trails after every sentence. Something always escapes. 'Ever not quite' has to be said of the best attempts made anywhere in the universe at attaining all-inclusiveness" (James, 1912).

Perhaps policy implementation might best be thought of as an 'engaged pluralist' project that is 'ever not quite' complete (Barnes and Sheppard, 2010).

The project of policy implementation has contained inevitable tensions and imbalances while working for greater equality and equity in the sector overall. But does

acknowledging the existence of these power dynamics condition its success? Consensus arrived at through the elimination of power differences is a fantasy, "because what counts as consensus, or even difference, is itself an effect of pre-existing power relations. You cannot arrive at consensus without exclusion, since this would imply the eradication of the political" (Barnes and Sheppard, 2010). Policy making/doing is always a political project, which the text of the Guidelines and its designers explicitly named, implementation was never predicted to be automatic or straightforward. As the principles the Guidelines contained were unconventional, they inevitably would not align or cohere with existing ways of doing fisheries governance. If they did, how would anything change? By reworking elements of existing policy landscapes and the relationships of power that characterize them, policy implementation would inevitably entail some of its own exclusions; this is part of the pluralist project of working together across difference and working for transformative change.

Attention to policy mobility has enabled me to display some of these intertwined dynamics of "creativity and constraint" and "activism and incorporation" that better capture how power operates through policies and projects for societal transformation (Clarke et al., 2015). The interplay of these moments of alignment, slippage, ambiguity, and friction underscores the performative fact of policy, as a more 'lived and embodied conception of 'doing'" than merely faithfully interpreting and implementing a policy that others designed (Newman, 2013, p. 527). In this process, who is in the room and

part of the organizational networks enrolled in the project matters, as the performance of policy will always be mediated and "translated, refused, inhabited, or reworked" by those summoned or assembled in the process (Newman, 2013). Rather than eliminating differences and tensions among actors engaged in the process, these points of friction may enable diverse groups to work together while maintaining different stories about the project at hand (Tsing, 2011). The project of implementing the Guidelines has held space for different stories and intentions as actors came together into (at times) uneasy alignments to do the policy work of mobilizing, translating, and performing the Guidelines across Tanzania's vastly different fisheries and aquatic environments. This movement has, in turn, shifted the policy landscape: produced a national scale platform for women in fisheries in Tanzania, linked the national with a regional platform for women on the continent, built alliances among local and national CSOs in Tanzania, developed new 'technologies and techniques' for seeing fisheries as a gendered space, elevated Tanzania (to a certain degree) into the global arena of fisheries governance as a leader working towards gender equity and equality. A performative lens on policy mobility helps cut across the "illusions of order" that these policy landscapes are naturally scaled and decidedly so in order to see these effects of policy mobility (Clarke et al., 2015).

Considerable transformation has taken place through policy mobility but shifts in this policy landscape also have limits: actors at the National Inception Workshop

positioned implementation as their 'time to shine' on the global stage. But as I described in Chapter 2, at the following COFI after this workshop, Tanzania would not send a formal delegation to the meeting. The slow-moving gears of bureaucracy would prevent travel approval, a gap in formal representation and missed opportunity to share the results of the implementation process underway. Thus, while the state remains a central figure in environmental governance through the implementation of the Guidelines—through their voting power in COFI's global forum, FAO's need to partner with the state formally to support implementation, and in their control over the budgeting, reporting, and much of the work of the NTT—their role is also reconfigured. In the absence of the state, a CSO leader would again step up to maneuver a statement of Tanzania's progress towards implementation into the forum while working creatively around COFI's rules about "observers" capacity to speak. Given that state involvement in implementation was the problem CSOs worked to resolve post-ratification, as they set their sights on "bringing Rome home" and pressing their governments' to act, this problem was also a reflection of their successful policy work. The actions of both the state actors and influential CSO leaders are not monolithic, but would ultimately reflect the priorities of the individuals acting on behalf of their organizations. The powerful roles of both state and certain CSO leaders in shaping the implementation process would reflect the relational networks of those individuals involved, their experiences and interests, which were geographically dominated by Lake Victoria over the looming but more remote

miles of marine coastline and scattered islands. The continual reminder of this gap would eventually lead to the acknowledgement that Zanzibar would need its own, parallel implementation process to avoid being eclipsed by mainland Tanzania's policy process.

The effects of Tanzania's efforts go beyond their national fisheries. The method and survey instrument for mapping women's fishery organization is being adapted currently (by myself and other actors at the FAO) and expanded to other countries in Africa and will become part of a 'toolkit' made available to other countries interested in implementing the Guidelines, not as a pre-determined implementation measure, but as an option that can be borrowed and further translated in different places. Thus, as the Guidelines are on the move and being 'scaled down', they are also inspiring other uses and evolving into emergent "mobile policy technologies" (Peck, 2011) as the mapping study is picked up, adapted, and performed in other places. The extension of the mapping study to understand how women's fishery organizations are forming in five other African countries is currently underway, a subject for future research in the ongoing story of policy implementation which is 'ever not quite complete'.

5. Performing Mapping as an Alternative Policy 'Technology and Technique' to See Gender and Collective Action in Fisheries

5.1 Introduction

Despite longstanding androcentrism in representations of fisheries (Smith and Basurto, 2019), it is increasingly understood that women play an outsized role in fish value chains, making up nearly half of the global small-scale fisheries (SSF) workforce (World Bank, 2012). And yet, how should gender be accounted for, measured, and managed through fisheries governance? The need to account for gender differences in SSF has become part of a broader movement to transform existing systems of governance in the sector to be more just, equitable, and sustainable (Mills, 2018; Cohen et al., 2019). The efforts of overlapping social movements and organizing efforts (e.g., agrarian, gender, environmental and climate justice) have converged and increasingly implicate global governance systems for their limitations (Mills, 2018). In the case of SSF, this movement has succeeded in shifting the global conversation on what constitutes 'good governance', where the goals of gender equity and equality are among the recent global guidelines for governance advanced in The Voluntary Guideline for Securing Sustainable Small-Scale Fisheries (SSF Guidelines). The SSF Guidelines are an unprecedented in multiple senses: the first internationally negotiated policy for SSF, driven by the demands of civil society, developed through widespread participation, encompassing a range of ethical commitments to govern fisheries differently. All 147

member states of the United Nations Committee on Fisheries (COFI) signed onto these novel global governance guidelines when they adopted the SSF Guidelines into international soft law in 2014.

The Guidelines contain a dedicated chapter on gender equality, and references to gender crosscut the document, where gender is mentioned 22 times and 'women' 50 times (Jentoft, 2014; Kleiber et al., 2017). The prominence of gender in the Guidelines was a source of contention during certain moments of their development, as representatives of several countries were reluctant to include gender as such a conspicuous theme, but CSOs lobbied for its inclusion and continued prominence (Kleiber et al., 2017). As many countries are now scaling down this global commitment through national projects of policy implementation, the question has become, what will this policy and the principles it contains (such as gender equality) do in practice (Jentoft, 2014)?

The prospect of acting upon the global commitments made through the SSF Guidelines creates possibilities for fisheries governance to be performed differently, as the relationships among people, ideas, and things are (potentially) remade as policies travel (Tsing, 1997). The pending question of policy implementation then speaks to the uncertain possibilities of performativity. There is a shared sense that while the 'words on the page' in the Guidelines matter, framing fisheries governance beyond the dominant language and practices of fisheries science and management (Snyder and St Martin,

2015), they alone are not enough: just believing in them does not make them so. Neither does officially endorsing them (which all the member states of COFI did, even those originally reluctant to include gender). "Signing up to conventions, declarations, or, in this case the SSF Guidelines, has symbolic value: it shows goodwill. But it may also be an effort of window-dressing" (Jentoft, 2014). While language has the power to shape our understanding of the world and is intimately linked to what we imagine is possible and how we act (McKinnon, 2010), performativity is not achieved "by words alone" but through "actions, entities, and representations that are intertwined" (MacKenzie et al., 2007). Thus, my interest in the Guidelines is in how the unconventional ideas within are performed in place through intertwined strategies that (potentially) enact SSF governance differently.

Tanzania is one country experimenting with their own path to implement the Guidelines within an emergent focus on gender. But how can 'gender equity and equality[11]' be the guiding goal of governance transformation in a place where no common baseline exists on gender in fisheries? This is the challenge that actors involved in the implementation of the SSF Guidelines in Tanzania faced. Participants active in initial scoping workshops expressed a shared sentiment that gender was an important dimension of power shaping the governance of fish value chains and saw the

[11] While the SSF guidelines use the terms 'equity' and equality' throughout, and at times interchangeably, herein I use 'gender equality' when referring to the policy goal in the SSF Guidelines as this is the term most consistently used in the policy's text.

implementation of the Guidelines as an opportunity to rework existing imbalances (a process described in Chapter 4). But as the implementation process progressed, divergent perspectives about 'the problem' women faced in the sector surfaced, representing the diverse standpoints and geographies that participants inhabited (see discussion in Ch. 4). What these different actors could agree on was that they lacked a shared understanding of the inevitably variable conditions women worked in throughout Tanzania's vast inland and marine fisheries. They needed data, but not in the mold of typical bioeconomic representations of the sector and means of measuring fisheries (e.g., GDP, counting boats, total landings, exports). If the standard scientific fisheries management metrics would not work, how would they go about collecting the needed data and determining a baseline to envision more equitable fisheries from? The Guidelines would not prescribe the answer either.

The policy they were tasked with implementing, unprecedented in nature and scope, contained a set of ethical guidelines for achieving more just and equitable governance but no structured implementation targets or evaluative metrics (as is often the case in global governance agreements, see Chapter 4). Instead, throughout the policy, and in the context of the goal related to gender specifically, there were only general process-based considerations for implementation outlined. Of the five core guidelines for governance, the section on gender is the shortest, containing only 4 brief paragraphs. The brief text provided emphasizes the critical right to organize and role of

organizations: “States should adopt specific measures to address discrimination against women, while creating space for CSOs, in particular for women fish workers and their organizations” through policy implementation (FAO, 2014, p.12). Further the Guidelines read “women should be encouraged to participate in fisheries organizations, and relevant organizational development support should be provided” through implementation (ibid, p.12). While its repeatedly stressed that cultural context matters, requiring different strategies in each place, the project of implementation should “challenge existing practices” (ibid, p.12). Women’s access to organizations and space for their inclusion in fisheries governance were outlined as means to enact gender equality, where strengthening these existing organizational networks was envisioned as part of more equitable futures for SSF. Lastly, this section states that “all parties should encourage the development of better technologies of importance and appropriate to women’s work in small-scale fisheries” (ibid, p.12). While this may have been conceived in the narrower sense of harvest and post-harvest technologies, the pursuit of a baseline of information on gender and organizations in fish value chains would rely on the development of new and ‘better technologies’ for measuring and envisioning the sector as a gendered and diverse space.

The present policy landscape and order of fisheries governance in Tanzania prescribed that local fisheries management organizations, Beach Management Units (BMUs), ensure 30% representation of women (Slade, 2016). Through the Guidelines,

participants saw the possibility for more than a quota that 'added on' women to existing fisheries management structures or 'counted in' women using present assessment techniques and technologies. Instead, alignment was found around a series of alternative strategies to 'feminize fisheries': forming a Gender Desk at the Ministry of Fisheries to respond to gender-specific challenges, building a national platform for women in fisheries, and mapping existing women's SSF organizations to understand their present capacities and needs and enhance their connectivity. In this chapter, I describe the strategy of mapping women's SSF organizations as a 'policy technique and technology' (Peck, 2011) that performs fisheries differently, challenging existing knowledge and representations of fisheries by revealing SSF as a social landscape marked by gender and collective action.

Mapping was pursued without 'strict boundary drawing' premised on pre-existing economic assumptions demarcating where women should work in fish value chains, what types of organizations ought to count, or how labor should be divided, and assets shared. Rather, this iteration of mapping was a 'counter-hegemonic project' that performed fisheries differently (St. Martin, 2009). Instead of merely 'adding on' or counting in' women to existing means of evaluating and representing the fishing economy (Cameron and Gibson-Graham, 2003), there was a collaborative and alternative effort to develop "better technologies of importance and appropriate to women's work" in SSF (FAO, 2014, p.12). Like other countermapping projects (e.g.,

Harris and Hazen, 2006; St. Martin and Hall-Arber, 2008; Safri, 2015; Snyder and St Martin, 2015) mapping in this case was an empirical act (to collect data) and would produce alternate representations to act on—knowledge to animate existing strategies to implement the Guidelines and future governance practices (e.g., the Gender Desk, the national platform, and others yet to be determined in the process). Countermapping fisheries in this way releases them from narrow and singular understandings of what they are—individual fishers, small boats, resource units—opening them to a variety of "possible economic experiments, performances and futures" (St. Martin, 2009, p.499). In this case, building a national platform among the diverse organizational forms already present (built by and for women), while encouraging the growth and development of new scales of organizing and means of 'being-in-common' (Gibson-Graham, 1996).

In the coming section, I first contextualize the significance of the recent movement for gender equality in fisheries governance and the transformative potential of the SSF Guidelines. Summarizing existing literature on gender and fisheries, I describe how scholars have sought to counter the longstanding invisibility of women through particular strategies to 'feminize the economy' (i.e., make women's presence and labor visible). I draw on feminist theories of the economy and science studies to outline how the implementation of the Guidelines in Tanzania is working towards a more transformative feminist project, including through the strategy of mapping. I then describe the methods of the mapping study and the results from surveys in Zanzibar,

where I led data collection. In the discussion, I consider the empirical survey findings on the form, function, and needs of women's SSF organizations in the context of what becomes possible by seeing fisheries differently.

5.2 Existing strategies to see women and 'feminize fisheries'

Without hindsight, the inclusion of gender equality among the tenets of the SSF Guidelines might seem obvious, as gender has become a trending topic among fisheries science-policy networks in recent years (Choo et al., 2008; Kleiber et al., 2015; Williams, 2015; Branch and Kleiber, 2017; Kleiber et al., 2017; Williams, 2019; Gopal et al., 2020; Lawless et al., 2020a; Mangubhai and Lawless, 2021). But just a few decades ago "accounts focusing on women as major actors in fishing economies were relatively rare" and the representation of women as actors with a relevant stake in fisheries governance unusual (Davis and Nadel-Klein, 1992). Women, if mentioned at all, were "relegated to a passing comment, paragraph, or discrete section on the household and/or family" (Davis and Nadel-Klein, 1992). In response, emphasis has been placed on 'counting women and beyond' in fisheries (Kleiber et al., 2015), but what exactly are we counting?

5.2.1 Past efforts to 'add on' and 'count in' women by demonstrating the gender division of labor in fisheries

A small but dedicated cadre of scholars, activists, and practitioners have been working to "expand the horizons for women in fisheries" and contest androcentrism (i.e., the assumption that men and masculinity are the dominant categories) by producing knowledge that shows women's participation and diverse contributions to

the sector (Gopal et al., 2020). Several reviews of gender and fisheries literature have summarized the existing body of research and concluded that it is primarily descriptive, working foremost to "prove that women are engaged in fisheries" through case studies which "outline the different ways in which they are" (Alonso-Población and Siar, 2018). Given that the prevailing assumption had long been that fishing is a male domain, the basic premise—that women do work in fisheries—was arguably a needed baseline. Demonstrating the presence, different contours, and effects of the gender division of labor in fisheries appeared to be the task at hand.

Anthropologists and other social scientists have for decades documented the lives and work of women in fisheries—their environmental knowledge, their roles in production, processing and distribution, their identities and relationship to fishing as a 'way of life'—captured in early edited volumes like To Work and to Weep: Women in Fishing Economies (Nadel-Klein and Davis, 1988). But this strategy is not new. In 1885, Joaquín Díaz de Rábago described the importance of women's labor in fisheries in the Galician region of Spain. Taking a class perspective, this classic ethnography presented a wider picture of what constituted fishing by including women's labor throughout the value chain, especially in post-harvest-related activities, an uncommon perspective of what counted as relevant fisheries work at that time (Alonso-Población and Siar, 2018). Despite this early effort to include activities beyond harvesting, conceptualizing SSFs as more than fishing remains uncommon (Alonso-Población and Siar, 2018; Basurto et al.,

2020), and progress towards gender equity and inclusion in fisheries science and policy has been "far from linear" (Britton, 2012).

While empirical evidence of women's diverse roles and contributions in fisheries were obviously needed, just 'putting the information out there' has not been strategically sufficient to affect a widespread transformation in thinking around what constitutes the economy (Cameron and Gibson-Graham, 2003); in the case of SSF, whose labor and which activities count and should be counted in the design of fisheries governance and calculation of the fishing economy (e.g., metrics and representations used). Thus, the SSF Guidelines cannot be understood as the logical outcome of a mounting bibliography of descriptions of women's work in fisheries, translated into gradual progress towards more progressive viewpoints and values in fisheries governance. Both their development and deployment would rely on different feminist strategies.

In an FAO report, Alonso-Población and Siar (2017) describe three main feminist strategies that scholars have relied on to make women and gender visible in fisheries: ethnographic description of women's work, conceptual broadening of fishing to include "non-sea-hunting" tasks throughout the value chain, and ontological expansion of what constitutes the economy beyond bipolar spheres of production/reproduction. These strategies are not inherently discrete or necessarily deployed in isolation; illustrative case studies can bring "into view something that had been previously hidden"

(Cameron and Gibson-Graham, 2003) and encourage rethinking what constitutes the fishing economy and the diverse actors and activities entailed within might be governed. But, as described above, the primary focus in fisheries has been invested in the former strategy: ethnographic cases and empirical description of different activities along the value chain where women tend to work, such as gear mending, preparing meals for fishers, gleaning, fishing on foot, aquaculture, value addition, trade, accounting (Choo et al., 2008; Weeratunge et al., 2010). Much of this research draws connections between the undercounting of women's diverse contributions to the sector, their absence in fisheries policy and exclusion from participating in fisheries governance, and their economic precarity (Frangoudes, 2013; Kleiber et al., 2014; Rohe et al., 2018). But while unequal relationships of power are acknowledged and identified as a problem, often power itself is treated as a static property—a resource unequally distributed (Allen, 2011; Allen, 2018) to be reallocated by 'adding in' previously excluded groups to be 'empowered' through their new recognition and inclusion.

But through this approach women's work remains generalized in aggregate, too easily compartmentalized to the post-harvest end of the value chain (Lentisco and Lee, 2015; Bradford and Katikiro, 2019), activities still relegated to a secondary, subordinate role within the simplistic emphasis on harvesting resources in the commons (Basurto et al., 2020; Basurto and Lozano, 2020) and notions of what constitutes economic productivity (Gibson-Graham, 1996). Thus, while women and other marginalized

groups are increasingly acknowledged in fisheries, this recognition has not necessarily or seamlessly been translated into material differences in terms of access to fishing assets, tenure rights, credit, and extension services—resources which have historically been unevenly distributed in terms of gender and which influence the operation of power in fish value chains (Kleiber et al., 2015; Lentisco and Lee, 2015). In fisheries it seems that "empiricist arguments for inclusion and accuracy" have fallen short of "generating a feminist politics of transformation" (Cameron and Gibson-Graham, 2003) that helps us enact alternative systems of governance premised on a different set of ethical commitments to equity and community wellbeing.

5.2.2 Countermapping as an alternative strategy to perform 'policy otherwise' and envision fisheries differently

Diverse economies scholars have characterized common approaches to 'feminize the economy' in different economic domains. Cameron and Gibson-Graham (2003) characterize the primary strategies practiced as 'adding on' or 'counting in' women and their activities which were previously ignored or hidden, hoping to shift the boundary between what counts as non-economic/economic activities[12] (e.g., the inclusion of reproductive labor through 'wages for housework' campaigns; Cameron and Gibson-Graham, 2003). These strategies rely on a "realist project of analytical completion and

[12] Their characterization resonates with what Alonso-Población and Siar (2016) described as the main strategies employed in fisheries.

empirical measurement", building onto existing models of the economy by adding new attributes for inclusion (ibid, p.150).

While not seeking to diminish what has been accomplished by previous scholars and efforts to 'mainstream' gender into fisheries policy or other domains of the economy, I agree with the observation of feminist political economists; that historically, these strategies "do not necessarily help us think differently about the economy", as the added-on sectors often remain locked in a subordinate position (Cameron and Gibson-Graham, 2003, p.151). This certainly seems to be the case in fisheries. We may now 'see' women's work (e.g., the staggering and widely circulated estimate that women make-up half of the global workforce; World Bank, 2012), but by attempting to enumerate the missing parts of the 'real economy', a 'politics of the whole' is maintained by these strategies, where dualistic thinking about production/reproduction remains intact (Gibson-Graham, 1996; Cameron and Gibson-Graham, 2003). Thus, while women may no longer be invisible in fisheries, they remain "locked in the subordinate, under/devalued position vis a` vis the 'core' economy" (Cameron and Gibson-Graham, 2003, p.151), where women's labor 'supports' and 'supplements' the real work of male-dominated harvesting activities (Bennett, 2005).

In Chapter 2, I demonstrated how definitions of SSF still (and even increasingly) rely on male-dominated, technological, harvest-centric definitions of fisheries even as there is growing recognition that women comprise nearly half the sector's workforce

(Smith and Basurto, 2019). I argued that an under-appreciated dimension of the transformative potential of the SSF Guidelines is that this policy entails possibilities for redefining SSF: what they are, how they should be governed, and what they can become. This presents an opportunity to disrupt and deconstruct essentialist understandings of SSF and to make visible existing forms of difference and practices already in place here and now (Gibson-Graham, 2011). Here, I argue that instead of 'adding on' or 'counting in' women using existing means to enumerate the fishing economy (e.g., counting boats, GDP, total landings), the possibilities of mapping as a strategy are larger.

Mapping is not a neutral technology and being 'seen' in not inherently liberatory or empowering. Mapping can be deployed to extend neoliberal rationality and state control (Scott, 1998). A technology used to extend territorial claims, assign fixed property rights while dispossessing others, and a means to administer resources in a top-down manner under the control and interpretation of outside experts (Dalton and Stallmann, 2018). A policy technology to incorporate ordinary people or marginalized groups into the existing logic and project of being governed (Clarke et al., 2015). But mapping is also a technology that can be used to different ends, including to perform 'policy otherwise' (Clarke et al., 2015) when enacted in a situated, bottom-up manner that is productive and generative of alternatives to the status quo (Dalton et al., 2018). It is in this sense that I argue that the study to map women's SSF organizations was a countermapping project; conceived through a collaborative process, its development

challenged existing ideas about the relationships between gender, labor, and collective action in fish value chains. Mapping in this case was not a mere extension of existing ideas about the fishing economy and how they should be measured, it was an empirically generative performance of a different set of ideas, values, and possibilities for fisheries governance.

The term 'countermapping' was coined by Peluso (1995) to describe alternative mapmaking practices of indigenous peoples and has gone on to encompass a wide set of critical cartographic ideas and practices. Harris and Hazen (2006) define it as "any effort that fundamentally questions the assumptions or biases of cartographic conventions, that challenges predominant power effects of mapping, or that engages in mapping in ways that upset power relations" (ibid, p.115). Countermapping is productive and generative in the sense that it can open up alternatives to the status quo (Dalton and Stallmann, 2018), not only re-presenting and re-producing knowledge but opening new possibilities, relations, spaces, and subjects (Deleuze and Guattari, 1987). But these representations themselves are not 'complete', rather the purpose is often "to map in new ways, producing new worlds of social and material relationships" (Dalton et al., 2018, p.96). Diverse economies scholars have illustrated the productive capacities of maps—as metaphors, as actual representations, and as mediums to create new economic futures (St. Martin 2005)—without reducing these projects into the power over/to dichotomy. For example, by countermapping First World fishers' environmental

knowledge and practices (St. Martin, 2005; St. Martin and Hall-Arber 2008), mapping solidarity economy networks in Brazil, Massachusetts, and New Jersey (Safri, 2015), among others.

Countermapping can help envision and enact an alternative fishing economy: one that centers the resilience, creativity, solidarity, shortcomings, and troubles of women's economic wellbeing and interdependence in the sector, the patchwork of present organizational gaps and connections, and emergent networks among them. I argue that this is a transformative strategy to 'feminize the economy' that maps in new ways; representing women not as supplemental or supporting actors to men's primary economic activities and related technologies that constitute fisheries, but as agents of collective action working within their own networks and scales of organizing which are shaped by gender relations while also reworking them.

5.3 Methods and data

5.3.1 Implementation of the women's SSF mapping assessment in Zanzibar

The women's SSF mapping assessment was a collaborative effort, with different actors engaged in developing the survey design, the concept note, the methodology, and data collection. The details of the methods and results described below come from a subset of that study, led by me, which complimented the wider assessment conducted by the National Task Team (NTT), implemented as part of the formal policy implementation process, where the mapping study was identified as a needed 'scoping'

strategy as part of the 'roadmap' towards developing a National Plan of Action (NPOA) for policy implementation. (For the full details and methods of the NTT's study see URT, 2019).

Data collection for the women's SSF mapping assessment in Zanzibar consisted of myself and one member of the NTT (Ali Thani, a CSO leader of the ENGO Mwambao Coastal Community Network) and one representative from the Ministry of Fisheries in Zanzibar (Omar Foum). Surveys were facilitated by our team of three people with two enumerators facilitating and translating, and one recording responses[13]. Depending on the district, we were aided by representatives from the local government who granted us permission to collect data and also assisted with contacting groups and arranging for interviews. Data collection took place between December 27, 2018 and January 29, 2019.

Groups were eligible for inclusion in the survey if they identified as a group (whether formal or informal), most of their group members were women engaged in the fishing sector, and their leadership was majority women. Surveys were not administered randomly to 30% of groups (as the NTT concept note and methodology prescribed), because no existing lists of women's groups were available. Instead, we followed a mixed-methods snowball sampling approach (Bernard and Gravlee, 2014) relying on the expert knowledge of project team members and their contacts in the government, academia, and NGOs to identify women's groups, expanding the survey to more groups

[13] Surveys were facilitated in Kiswahili and responses were translated and recorded in English.

opportunistically as we were introduced to or encountered them at landing sites. In the opinion of our local collaborators knowledgeable about gender and fisheries on the island, it is likely that the survey reached most existing groups in Zanzibar. While our results provide the best picture at present of women's SSF groups in the region, we do not to use statistical methods to extend our observations to other groups, as no list or database of the universe of all possible groups exists at present to ensure our survey was truly representative. Rather, the results that follow are descriptive of the 17 women's groups we surveyed on Unguja and Pemba islands (see Figure 16).

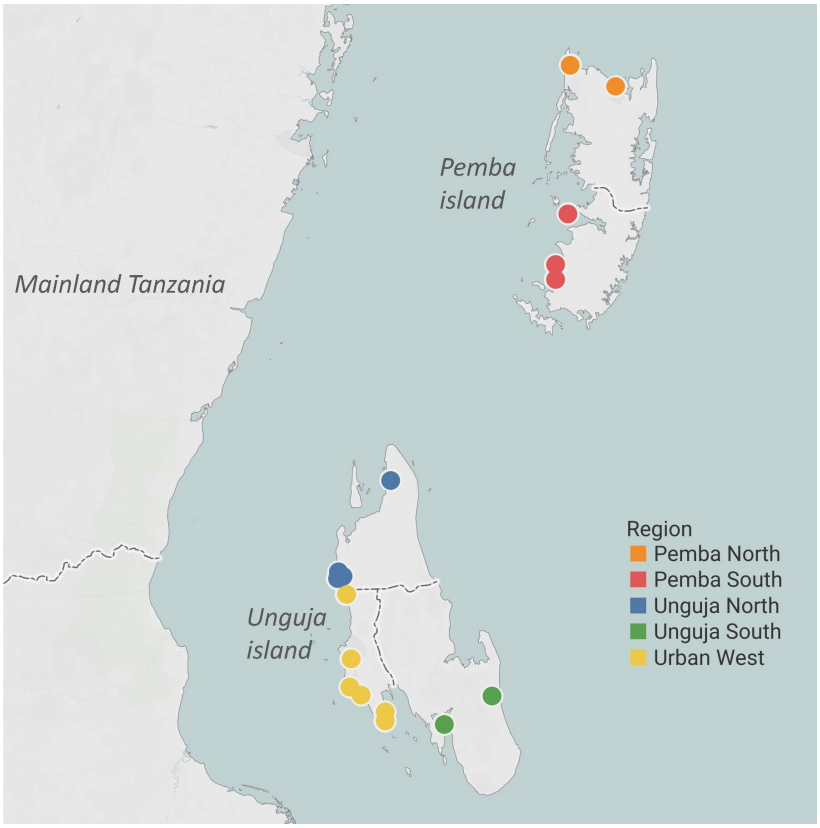

Figure 16: The location of the 17 women's SSF groups interviewed in Zanzibar by region.

Surveys were a hybrid focus group/interview format with 5-8 group members present answering questions from the semi-structured survey. Interviews represented both group leaders and regular members from their respective groups. Interview participants were encouraged to discuss answers to each question until a consensus was reached, or where different experiences or opinions remained, these differences were recorded. Each survey took an average of 1.5-2 hours to complete, often involving longer informal discussions after the survey was completed, and in many cases, tours of landing sites, group facilities, and invitation to observe their work in action. Survey questions were designed to gather information on group-level characteristics and general experiences (rather than individual members' opinions or activities) and their surrounding context (e.g., political environment, markets, relationships with external organizations, and gender relations). The survey was organized into sections covering group structure, history, membership, communication, primary activities, barriers, needs, and levels of support received. These categories and groupings of related questions replaced the typical focus on fishing boats, gear, fishing effort, and landings that are often the focus of fisheries measurement. To understand current gender dynamics, group members were also asked to describe any gender-specific challenges they face in the SSF sector using open-ended questions. Members were also asked if women had any advantages relative to men. Lastly, groups were introduced to the SSF

Guidelines and presented with three possible interventions to support women in SSF and then asked for their feedback.

5.3.2 Key informant interviews

Insights from 10 key informant interviews are used to contextualize the results of survey data. Key informant interviews were conducted with government officials from different ministries (e.g., Fisheries, Cooperatives, Women and Social Development, Food Security and Nutrition), NGOs, and academics involved in fisheries governance, issues of gender, or related themes of organizations and food access. All key informant interviews were also conducted between December 2018-January 2019.

5.4 Results of mapping women's SSF organizations in Zanzibar

Women's SSF groups in Zanzibar are part of a different history of organized labor in comparison to mainland Tanzania. While the SSF sector is not organized in a top-down manner anywhere in the country, Zanzibar has a "deeper history with cooperatives" than mainland Tanzania, rooted in workers' rights movements that emerged in spice plantations under the colonial rule of the Sultanate of Oman, and later the British Empire, and (informally) Indians, where coconuts and cloves were important and valuable cash crops (representative from the Ministry of Cooperatives, interview comment).

Citing Karl Marx and Herbert Spencer, a high-level representative from the Ministry of Cooperatives described how this "universal value" of organized labor contributed to anti-colonial struggles on the islands in the early 20th century, but was also suppressed after the independence movement, fractured along lines of race. Cooperatives became a part of Zanzibari law through a series of acts (1979, 1986, 2018), which designated different categories of cooperatives including agricultural cooperatives, which includes farming, livestock, and fisheries. But still "awareness about the benefits of cooperatives is lower in fisheries" in comparison to agriculture in general, as a sector which never experienced plantation labor according to the representative from the Ministry of Cooperatives. But they also described how both gender relations and the organization of labor has changed in fisheries in Zanzibar with recent government support:

> "Fisheries used to be male dominated, but now women are coming up. This is a notable shift, starting about 15-20 years ago, and now women even go in boats and have advanced techniques in value addition…Part of the change is due to joint efforts among the Ministries who are encouraging women to join groups and become powerful players in the sector. Also, women in Zanzibar are very intelligent, they are supported by the government and they support each other to strengthen their livelihoods. Even while they respect Muslim traditions and culture,

> things are also changing and they [women] are becoming powerful, and that is not a contradiction" (representative from the Ministry of Cooperatives, interview comment).

This analysis was corroborated by a Fisheries Officer, who agreed that "fisheries are late to organize, but this is changing fast". The backdrop of organized labor in agriculture and general knowledge of cooperatives has influenced the formation of women's SSF groups in Zanzibar, especially recently.

I see these shifting historical patterns of labor and gender reflected in the results of the survey: Nearly all groups identified as cooperatives (82%)—two were informal associations (12%), and one was a group-based enterprise[14] (6%). The year groups were established ranged from 1996 to 2018 (aligning with the timeframe described by the Minister), with an average group age of 10 years. Most groups (70%) were formally registered with the Ministry of Cooperatives and had their own constitution or by-laws in place. Unregistered groups were younger on average (2 years old) and most indicated their intention was to register, but they were still in the process of forming and formalizing as a group (the cost of registration was around 17 USD).

All but two groups had a formal governance structure in place (typically consisting of a chairperson, secretary, and treasurer) while 59% of group's executive committees also consisted of additional members and positions (e.g., vice treasurer,

[14] A registered enterprise owned by the four workers.

assistant chair). The Ministry fo Cooperatives told us that become a registered cooperative, groups must have some executive committee structure in place in their constitution, but how they should be formed is not dictated. Yet evidently many replicate models seen elsewhere on the island, consisting of similar leadership roles (e.g., chairperson, secretary, etc.) but often in different configurations.

Despite these commonalities in the history and identity of groups as cooperatives, groups still varied in their internal organization and economic activities. Women's groups in Zanzibar primarily worked in small-scale seaweed harvesting, bivalve gleaning and mariculture, and small pelagic post-harvest processing and trade. Traditionally, these are all species that can be fished or collected on foot at low tide. Women also have traditionally hunted octopus in Zanzibar, but we did not encounter any groups who did this collectively. Groups focused on seaweed or bivalve harvesting were older on average (14-15 years) whereas groups of small pelagic post-harvest processors are newer groups (average age of 5 years).

While nearly all groups identified as cooperatives, how groups allocated earnings varied as there is no single set of guidelines dictating how a cooperative should be financially structured according to the Minister of Cooperatives (Figure 17). Most groups required a fixed monthly contribution from each member (either a flat amount or percent of sales of fishery products; 59% of groups), a flexible contribution from each member (determined depending on monthly sales and the group's needs; 18%),

collectively retained all profits in the group account and periodically disburse dividends to members (savings groups; 18%), or required labor inputs only (e.g., upkeep of equipment; 6%).

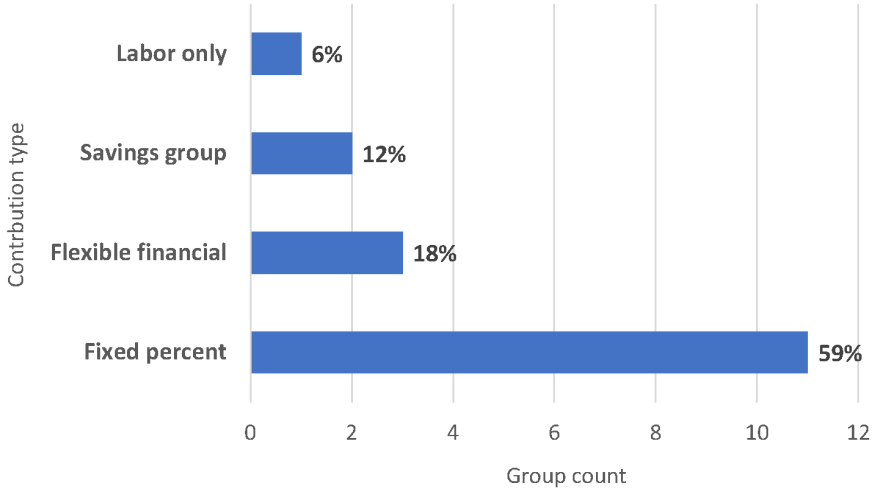

Figure 17: Different models of required contributions from members. Savings groups require all money from sale of fishery products go to the group account (later distributed as dividends).

All groups also expected their members to make voluntary financial contributions to other members in times of need to help cope with unexpected expenses and life events (examples included funerals, weddings, or medical bills). The level of individual contributions was small (around 2-5 USD on average), but in aggregate this could amount to hundreds of dollars in times of need. In this way, in addition to the income earned (and allocated in different ways) through their fishery activities, group members have access to emergency capital, creating a safety net that members can draw on in times of need. Many groups also make formal loans from the group account to

individual members as their capital allows. As women often lack access to traditional collateral backed loans (since most family assets will be under their husband's name), having access to quick capital and soft loans are significant benefits of group membership.

5.4.1 Gender composition and gender roles

Groups ranged in size from 5-45 members with an average size of 20 members. The gender composition of groups varied: Half of the groups (52%) were all women while the other half were mixed gender groups, ranging from 60-95% women (the average proportion of women in mixed gender groups was 89%). Most mixed gender groups described an internal gendered division of labor, although this varied depending on the focal species and portion of the SSF value chain groups were engaged in. Small pelagic (dagaa) post-harvest processing groups did not report any major differences in the type of work that men or women did within the group, whereas groups harvesting bivalves and seaweed often had a gendered division of labor. These latter groups practiced a hybrid of capture fisheries and mariculture, where they collected seaweed and bivalves and transplanted them in small plots (usually in shallow water just below the low tide mark in bays or on sandbars). Men are more likely to be able to swim in Zanzibar (a cultural, gender norm), a task required to transplant bivalves and seaweed in deeper water or at high tide. For groups that work with these focal species, the ability to dive is useful for accessing deeper water and having a few male members to perform

these specialized tasks benefitted the larger group. Mixed-gender groups with a gender division of labor were still led by women, and women participated in harvesting, but the variety of tasks required by their work and cultural differences make complimentary gender roles within these groups an advantage.

5.4.2 Objectives and history

Groups identified several common objectives[15], including fighting poverty and supporting household welfare through livelihood improvement (88% of groups), women's empowerment and fighting gender discrimination and harassment (42%), expanding their business (24%), learning new skills related to harvesting, processing and marketing (24%), and creating collective capital and mutual savings (24%; Figure 18a). Groups that specifically referenced women's empowerment often described their desire for greater financial independence from their husbands, the specific hardships women face working alone in the fishing sector (including harassment experienced at the beaches), or past experiences with gender discrimination in village governance and fisheries organizations. For instance, several groups described how village-wide organizations for fisheries (e.g., governance bodies and producer/processors associations) were inevitably male-dominated, where male leaders continuously

[15] The question on group objectives was an open-ended question that was later coded inductively around common themes that emerged from the dataset.

nominated themselves to represent the group for trainings and tradeshow opportunities, repeatedly capturing these benefits for themselves.

The history of how groups formed varied, but most groups identified as 'self-started', forming on their own initiative (71%; Figure 18b). Half of these self-started groups reported that they copied their peers (i.e., were inspired to form by seeing other fisheries groups or agricultural cooperatives, or in some cases, driven to form their own group based on the politics of existing fisheries groups). The remaining groups formed through outside initiatives led by academia, specifically two female professors from the University of Dar es Salaam's Institute of Marine Sciences (UDSM-IMS; 23% of groups). One group was formed with outside help from the NGO CARE International (although this help was only initially a factor, and the group has sustained itself). Many groups did not initially form with a focus on fisheries, but first on other economic activities including chicken rearing, broom making, or soap making, or began as rotating savings and credit groups, later evolving to either include or focus exclusively on small-scale fishing related group enterprises.

(a)

Purpose	Group Count
Improve livelihoods	15
Women's empowerment	7
Grow business	4
Learn new skills	4
Collective capital	4
Educate their children	3
Environmental sustainability	1
Government visibility	1
Eliminate middlemen	1

(b)

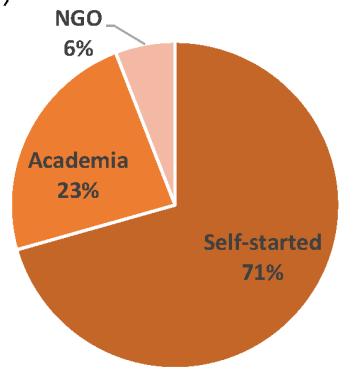

Figure 18: The primary (a) purpose motivating groups to form and (b) history of how women's SSF groups formed.

5.4.3 Value chains, species, and joint activities

Groups conducted a range of activities through different fish value chains, with most groups (57%) engaged in activities that span more than one segment or step in the value chain (e.g., harvest and post-harvest). All groups undertook post-harvest activities, and most also harvested (59%), and performed pre-harvest work (53%; Figure 19a). About half of groups worked with seaweed, and about a third engaged in bivalve or small pelagic fisheries (19b). As described earlier, groups that work with seaweed and bivalves practiced a hybrid of wild capture and mariculture but identify as part of the SSF sector (i.e., did not see aquaculture as a separate category).

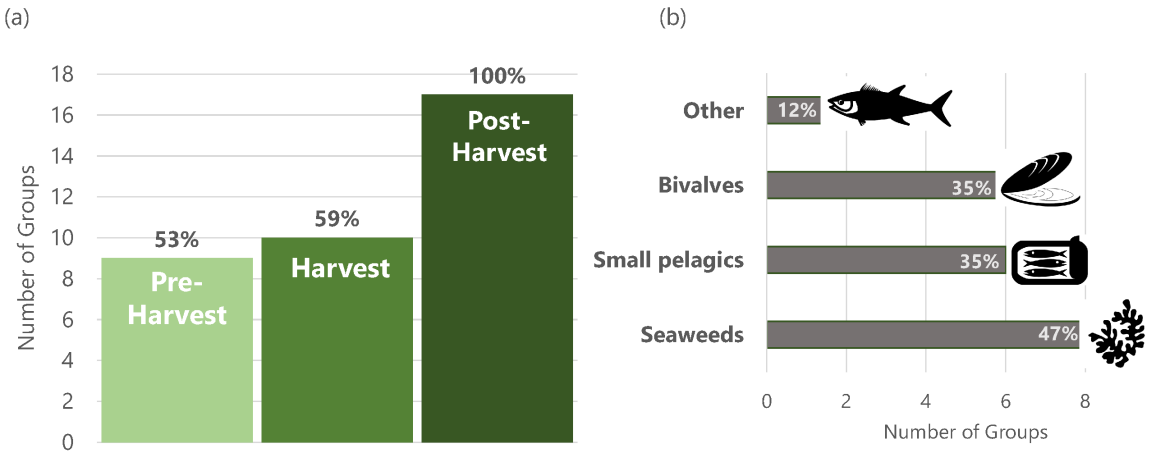

Figure 19: Groups participation (a) along the SSF value chain and (b) by species type.

How different types of labor were divided among groups members (as either individual or collective undertakings) varied greatly by group (Figure 20). Some groups shared the work of nearly all the activities along the value chain, while others conducted most of their activities individually and shared only certain activities collectively while pursuing their processing and marketing activities individually (returning some portion of their individual profits to the group, depending on their groups financial structure). The most common activities that groups undertook collectively were purchasing product inputs for value-addition in post-harvest processing (82%), ownership and use of equipment (82%), the labor of processing (77%), facilities (65%), the sale of fishery products (53%), and labor of harvesting (53%). However, for harvesting in particular (considering that only 59% of groups were engaged in this step in the value chain), nearly all who undertook harvesting activities did so collectively.

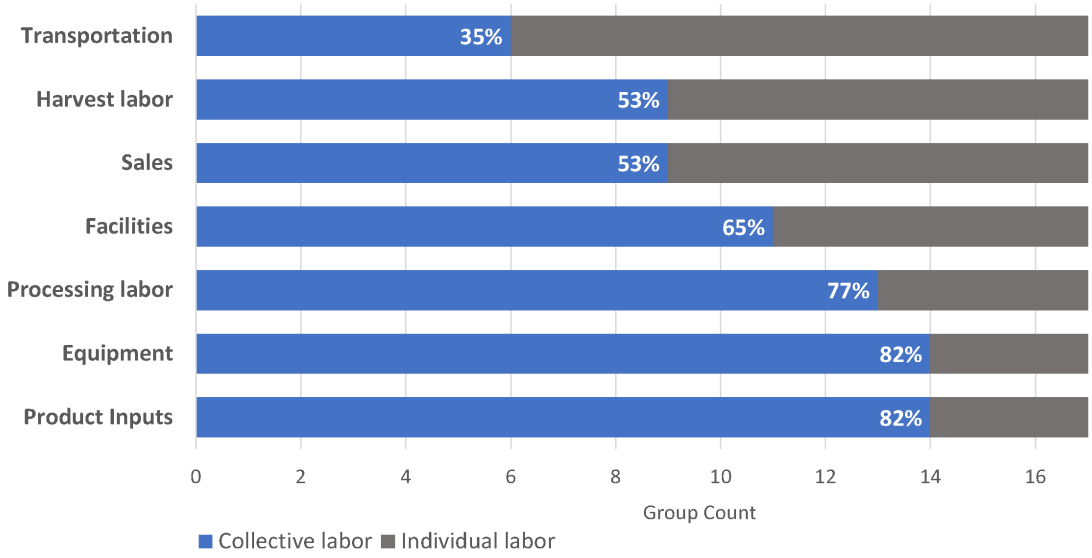

Figure 20: All groups conducted a mix of individual and collective activities in their SSF work. This figure depicts the most common collective assets and joint activities undertaken by groups (by count and proportion of groups that shared the labor entailed in those activities versus those who undertook these activities individually).

Most groups (70%) worked with only one focal species, while 30% had diversified their fishery activities, often working with seaweed and bivalves, or seaweed and small pelagics. The level of value addition and types of final products groups produced varied by species, ranging from relatively low levels of value inputs added to small pelagics (e.g., sundried or boiled and dried dagaa with minimal packaging), to groups working with seaweed and bivalves who employ a variety of value addition techniques and sell a diverse array of products (Table 2). However, the degree of value addition and range of products sold in seaweed and bivalves depended on the groups access to training, equipment, and markets, which varied across groups with their

degree of external support and connections (see section below on external support). Many expressed an interest (but present inability) in producing higher-quality products that would appeal to tourists.

Table 2: Focal species women's SSF groups harvest or process and the level and types of value-added products made.

Species groups	Species names (scientific or common)	Level of value addition	Final products produced
Seaweeds	Euchema cotonii, Euchema spinosum	Advanced	Sun dried, powder, soap, oils and body lotions, prepared and packaged food (fried snacks, sauces, juice, jam)
Small pelagic fish	Dagaa	Low	Sundried, dried and boiled
Bivalves	Pearl oyster	Advanced	Handicrafts with half-pearl shells (necklaces, earrings), prepared food (dried meat, meat skewers)
Other	Octopus, tuna	Low	Fresh or cooked octopus, tuna soup, prepared meals for fishers

5.4.4 Assets, external support, and benefits

Group assets varied, with some groups owning their own means of production (such as boats and fishing or mariculture equipment and post-harvest processing machinery) and a concrete office, while others had only basic equipment such as tarps, pots, and drying racks, rented their land, and lacked office space (Table 3). Some groups owned little collective equipment and only pooled their labor (of harvest or post-harvest activities), with individual members using their own tools and equipment to conduct

their work, often working in their own homesteads. In general, groups focused on post-harvest processing of dagaa owned fewer assets than other groups.

Table 3: Collective assets owned and description of items.

Assets owned	Group Count	Description
Processing equipment	11	• Raised drying racks for dagaa • Hand cutting tools for processing oyster shells • Grinding machines for seaweed powder, soap molds, juicer • Packaging and labelling equipment
Office	8	• Cinderblock office space
Harvest equipment	8	• Ropes and pegs for growing seaweed • Mariculture growing infrastructure for bivalves • Fishing gear
Boat	7	• Fiberglass boats (some in disrepair, one was presently stolen) • Outboard engine
Vehicle	1	• Van for transporting products to market
Shop	1	• Shopfront to sell products where tourist buses stop

Levels of external support groups have received varied. Groups that tended to have the most support were also members of larger of existing umbrella organizations, which most groups surveyed were (88%). Umbrella organizations tended to be species

specific such as the Zanzibar Seaweed Cluster Initiative (ZaSCI), Chaza Cooperative Society (for bivalve harvesters), a government created platform for women dagaa processors (WADAZA), while others were also members of their village-level fisheries organization or regional-level savings and credit groups for women. However, only ZaSCI and Chaza Cooperative Society appeared to be active umbrella organizations providing ongoing support to women's SSF groups, where for instance, WADAZA was a new initiative by the government but did not appear to be providing tangible benefits to its member organizations at the time of data collection. None of the groups received any ongoing financial support through subsidies from the government (a practice common in some countries and in most industrial fisheries).

However, all groups have received some form of external support through grants, loans, training, or equipment and all groups have received some form of training, including on value addition, entrepreneurship skills, or improved harvesting techniques (Table 4). Most groups (82%) have received outside support acquiring equipment to enhance harvest or post-harvest activities, such as improved drying racks, fishing or mariculture equipment, or boats. Loans and grants were less common forms of support received, with only 29% groups reporting receiving an outside grant or loan. ZaSCI is the only umbrella organization providing external loans to women's SSF groups, while some groups have received one-off grants for specific projects and equipment from a range of governmental and non-governmental bodies. Groups that

are members of ZaSCI also reported receiving information on tradeshows to exhibit their products.

Table 4: Types of external support received and sources.

Support received	Group Count	Sources	Description
Trainings	17	Ministry of Fisheries, ZaSCI, Milele Zanzibar Foundation, USAID, SMIDA, Ministry of Cooperatives, UDSM-IMS	Entrepreneurship and microfinance, bookkeeping, marketing, improved growing techniques, value addition, food safety and fish handling
Equipment	14	UDSM-IMS, SMIDA, USAID, FAO, Ministry of Cooperatives, Ministry of Fisheries, MIVAF, Milele Zanzibar Foundation	Packaging equipment, processing equipment for improved products, boat, mariculture equipment, metal roofing for office.
Loans	5	ZaSCI	Loans from 400-900 USD
Grant	5	UNDP, USAID, FAO, Sea Power, central government, German embassy	For specific purchases such as boats or office buildings
Information	4	ZaSCI	Tradeshows and market information

Groups were also asked to list the types of benefits members receive through their group (as opposed to working alone in the sector; Figure 21). The most common

benefit of group membership was access to trainings (100%), followed by social support (94%), having a voice in decision-making (65%), access to technology and equipment (65%), and access to information on markets and tradeshow opportunities (59%), among others. Other less common benefits included improved purchasing power as a group and access to better-priced fish, greater confidence and more respect from the community, and the opportunity to travel through knowledge-exchanges with other groups (the latter typically facilitated by their higher-level organizations they are part of, e.g., ZaSCI).

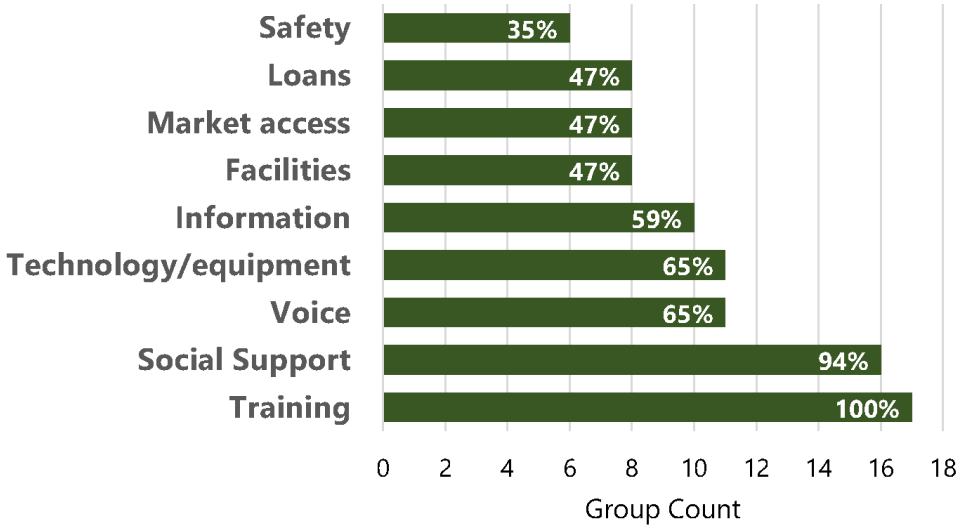

Figure 21: Primary benefits of being a member of a women's SSF group.

5.4.5 Barriers and related needs

Groups were asked to describe the main internal and external barriers that impact their group's ability and what their related needs are for each (Table 5). Internal organizational challenges included poor group management and leadership skills.

Groups need training on group governance and leadership to enhance the capacity of members to run their group effectively. Groups also lacked access to needed equipment for post-harvest processing or found maintaining their equipment difficult (for instance, broken drying racks, boats, or engines). They need access to improved drying racks (e.g., raised, covered), tools for value addition and packaging (grinders, cutting tools), and assistance with equipment maintenance. Groups reported that they do not have enough value-addition skills or suffered from poor or unreliable market linkages to sell their value-added products. Better access to training on value addition coupled with information and support accessing markets to sell their value-added products would help, particularly among tourists on Zanzibar and in markets in Dar es Salaam. For instance, seaweed harvesters requested help getting molds to make smaller-sized seaweed soaps to sell to hotels, while bivalve harvesters have the tools to make jewelry but lack access to tourist markets the (especially the further they are from Stone Town). Adequate storage for group's products was also a significant issue, particularly for dagaa processors and seaweed farmers, where inadequate dry storage space led to higher post-harvest losses from rain or when middlemen did not arrive on time to purchase their products. Groups need secure storage space to keep their products dry, safe from theft, and to be able to store products when volatile markets fluctuate to wait for better prices. Local village politics negatively impact some groups where village leaders have at times interfered with the operation of women's groups. For instance, one

group reported that their boat was stolen by a local politician who claimed that the group "owed him" because he initially supported their formation. With greater recognition and support from central government, groups could resolve local issues more easily and with greater accountability. Lastly, groups felt they did not receive enough support from the government and do not feel they are listened to. For instance, when requesting assistance with access to equipment, groups were often given the wrong item (e.g., a grinder for bread flour instead of the correct type to make seaweed powder). Or were given covered drying racks but one so small that no one even used it, as given its dimensions (just a few feet), they could not all use it. In addition, groups were hindered by receiving only one-off forms of support from the government and outside organizations. Consistent support and communication are needed from the government, technical organizations, and donor foundations to further develop women's SSF organizations, where the relative success of organizations like ZaSCI demonstrate the benefits of consistent, long-term engagement.

Table 5: Major barriers limiting groups capacity to do their work at present and related needs.

Barriers	Description	Needs
Equipment	Maintaining boats is expensive. Lack equipment for post-harvest processing.	Need improved drying racks, tools for value addition. Support with equipment maintenance.

Value-addition	Lack knowledge (or consistent knowledge among members) on value addition.	Trainings on value addition for all members
Organization management skills	Issues with bookkeeping and leadership.	Leaders need training on running meetings and bookkeeping.
Storage space	Weather and fluctuating markets create greater post-harvest loss because groups lack secure and sanitary storage spaces.	Need secure and dry storage space for products.
Packaging	Consistent access to high quality packaging and labelling materials is limited and costly.	Need external support (e.g., government) to secure contracts or purchase these in bulk to ensure fair prices.
Capital	Group lacks enough capital to make enough loans to members and to invest in improving their products.	Need access to external credit and more grant opportunities.
Market linkages	Lack access to tourist markets and markets on mainland Tanzania. They are unable to sell some value-added products like pearl oyster shell jewelry. Markets for dagaa in Congo are volatile and middlemen exploit them.	Better information on access to markets on mainland Tanzania and in Congo. Government or other outside support to facilitate access to tourist markets. Government support to manage dealings with middlemen.
Local politics	Local political leaders create undue influence on groups, affecting their internal governance.	Better recognition and support by the government would create more respect by local leaders. Ability to report issues and get them resolved.

Security	Groups that lack secure storage and workspace experience theft of infrastructure like drying racks and their products.	Access to secure workspace and land ownership.
Government support	Not enough ongoing support from government and they don't seem to listen to group needs.	Regular contact with government. Accountability with government and knowing who they can contact about issues.
Transportation	They lack reliable transportation that they control to get perishable goods to market and to be able to bypass middlemen.	Owning their own vehicle.
Ongoing support	Patchwork of one-off support from different entities.	Groups need ongoing support rather than one-off support.

5.4.6 Gender relations in the sector

Most groups felt that women are acknowledged as an important part of the SSF sector in Zanzibar, citing that seaweed farming and dagaa processing are big industries on the island and are typically considered women's work. Government recognition of women's role in fisheries has improved over time, especially since implementing recent programs to provide direct support to women's groups (often directed as seaweed harvesters and dagaa processors). However, others reported that their treatment is not equal still, and they would like the government to listen and respond to their needs with greater accountability.

Groups working with different focal species described different gender-related challenges they encountered. For example, seaweed farming is dominated by women in Zanzibar, and women reported that they have more knowledge, better access to technology, and have better-organized groups than men, which also enhances their access to capital. Seaweed farmers note that while their technical and organizational capacities are greater, environmental working conditions are hazardous for women as they work long hours in the sun and in ankle to chest deep water without proper protective equipment. The conditions for seaweed farming are especially hazardous for women who cannot swim (which is common) but must wade into chest deep water to harvest and maintain their plots. Warming waters are also imperiling their crop, as seaweed is increasingly getting diseases that make it "spoil". Growing seaweed in deeper water could help address this issue, but an inability to swim and limited access to boats limits many women's ability to experiment with new methods. An exception to this is several groups in the ZaSCI platform have received boats and support from scientists at UDSM IMS to experiment with adapting their growing technologies for deeper water in response to climate change using what they call 'tubular net technology'.

For bivalve harvesters, they reported that men have better access to capital to purchase boats and can swim and dive deeper for bivalves, which gives men better access to resources. However, women are better organized and have greater knowledge

of value-addition through their membership in groups and access to technical trainings. By adding a few men to their groups, most groups that harvest bivalves have overcome this challenge.

Women who worked in dagaa post-harvest processing and trade reported more significant gendered challenges, including verbal harassment when trying to buy fish at the beaches, fishermen giving preferential treatment and prices to male fish buyers, and that male fish buyers have better access to capital and can out compete them by buying fish in greater quantities, often leaving women without fish to purchase for daily processing (and therefore no income). Being a member of a group enables women to overcome some of these challenges, by pooling their capital to purchase fish collectively, but dagaa groups had lower-levels of outside support, were younger on average, and thus still lacked sufficient access to capital, equipment, and trainings that could help them navigate these present challenges.

5.4.7 Benefits of possible interventions to support gender equality in fisheries

Groups were asked about the possible benefits of the planned interventions to enhance gender equality through the implementation of the SSF Guidelines, including the creation of a regional or national platform for all women's groups in SSFs, establishing a Gender Desk at the Department of Fisheries, and the mapping study itself. Groups generally thought creating a larger platform for women's SSF groups was a good idea and could strengthen women's voice in the sector, raise awareness about the

presence of women's organizations in SSFs, and bring attention to gender-specific issues in the sector. Most groups were already involved in species specific umbrella groups, and therefore were aware of the possible benefits of establishing such networks. They saw a national platform as an opportunity to share information about new products, markets, and enable peer learning exchange visits beyond their species-specific knowledge bases. Groups also thought that a larger platform could help attract donor support (especially from actors outside Tanzania) and create new training opportunities. However, some groups were skeptical that they would be fully included in a nation-wide platform that included mainland Tanzania, and several noted that a separate platform for Zanzibar would be preferred.

Groups overwhelmingly supported the idea of forming a Gender Desk at the Department of Fisheries, as this would designate a point-person to contact regarding gender-related issues and the needs of women's groups in SSFs, and hopefully create a clear line of communication between communities and the government. They hoped that a designated Gender Desk would create more accountability and ongoing support from the government. The Gender Desk could also provide needed information (e.g., training and tradeshow opportunities), connect groups with national and international donors, and help them access new markets.

The mapping study was seen positively by all groups, as nearly all described their interest in increasing their visibility at different levels to "help promote existing

work groups are already doing and elevate their perceived status in the government, at the national-level and also abroad" (Group 17, survey comment). Group members were generally very aware that gender equality and empowerment were areas of interest to international donors and development initiatives and were eager to be seen and recognized for their efforts, especially as this recognition might put further pressure on the government to act.

5.5 Discussion

The results of the women's SSF mapping assessment in Zanzibar reveal that an existing network of women's SSF organizations, largely cooperatives, is already present, and that most of these groups are already connected within wider species-specific platforms (e.g., for seaweed harvesters, bivalve harvesters, or small pelagic processors respectively). The existence of groups appears to be bolstered by the history of labor and organizing on the island (with roots in spice plantations), where the value in collective labor and coopertavisim is widely acknowledged although historically less commonly practiced in fisheries. But this appears to be changing; women in fisheries have been organizing in their own groups for the last 10-20 years, with many newer groups also emerging (although less commonly formalized). Government officials described how during this timeframe they began to understand the value in supporting women's organizations, especially as gender norms about women's work outside the home were changing more broadly on the island. But despite these shifts in formal recognition and

attitudes towards women's work in fisheries, most groups we encountered formed on their own (not through government initiatives or support), identifying as self-started.

Without top-down organizing or rules on what constitutes a cooperative, being a cooperative has been realized to different ends. Cooperatives (and other types of groups) divide their earnings, share assets, and perform their work in different ways, organizing their labor throughout different fisheries value chains. Yet some species traditionally fished by women such as octopus do not appear to be organized at present (at least not in gender-specific groups). But all these diverse groups provide informal cash assistance to their members, and many also serve as a source for individual, soft loans. Most groups are engaged in more than one step in the value chain, where half were involved in harvesting in addition to either pre-harvest or value addition activities working with seaweed harvest/mariculture, bivalve harvest/mariculture, and small pelagic processing.

Groups have received a patchwork of different types of external support from government, NGOs, academics, and higher-level platforms. While support to women's groups in Zanzibar is coming from a mix of external partners, projects, and strategies, they have generally benefited from higher levels of overall support overall when compared to mainland Tanzania (based on the findings from the overall study conducted by the NTT), as all Zanzibari groups have received some form of training, and most have received support acquiring equipment. Access to trainings and

equipment were some of the most common self-reported benefits of being a group member, where additionally the social support and ability to control and govern their own affairs were commonly perceived benefits. Thus, being a member of a group lowers some of the barriers to entry into the fishing economy, giving women access to credit, equipment, and expertise enabling them to enter the sector and also potentially expand to new species, portions of the value chain, and value-added products. Simultaneously as self-governed entities, these benefits are less likely to be dominated or coopted by patriarchal gender dynamics that plagued many mixed-gender groups (a common occurrence often cited as one of the main motivations to form their own groups).

Gender relations shaped fisheries work in different ways depending primarily on the species type. Women seaweed bivalve harvesters saw themselves as more technologically sophisticated, better trained, and more organized than men in the sector. The physical challenges and requirements of their work however made it advantageous to have a few men in their groups to perform specialized tasks. But the specter of climate change threatens their work, as rising temperatures in the shallow waters they rely on have led to new diseases, production losses, and greater uncertainty about the future. This is a serious and unresolved challenge. But women who are part of seaweed groups are experimenting with means to adapt, especially groups that are connected and networked through higher-level platforms, granting them access to capital and technical support to experiment with new technologies and methods to grow seaweed in deeper

water. Thus, being a part of a group may facilitate adaptation to climate change which is poised to have potentially devastating impacts on the seaweed industry on the island, a traditionally female and low-waged occupation.

These results indicate the potential value in strengthening the role of organizations in the sector and their capacities for a more gender equitable future for fisheries governance. Inevitably gender differences will remain but organizations can create opportunities for non-traditional access to capital (e.g., soft loans), equipment, and ways of dividing labor that can adapt to and rework existing power imbalances, enabling access to the sector for some, and spreading the risk of post-harvest losses and the costs of investing in new techniques and technologies for others. Clearly no one strategy to enhance the capacity of women in fisheries will suffice. This assessment demonstrated that first gaining a baseline understanding of the existing relationships between gender, collective action, and value chains can provide critical insights for ways forward, and that organizations are themselves adaptable and evolving modes of collective action amenable to different types of support.

How these results will inform future strategies to transform fisheries governance and perform fisheries differently is uncertain. But one outcome of the negotiations around and results of the mapping strategy so far was the realization that Zanzibar should have its own autonomous policy implementation process, with the goal that the initiatives mutually inform each other but be distinct (where representatives from

Zanzibar would remain on the NTT for the implementation process on mainland Tanzania). The differences between inland and marine fisheries revealed in the policy implementation process—of histories, experiences, and interests—would remain a challenge (see Chapter 4), but recognizing that Zanzibar should embark on its own self-determined process was one result that emerged in part through the work of mapping.

5.6 Conclusions

The women's SSF mapping assessment was not drawn from the many existing forms of calculation practiced in fisheries (Snyder and St Martin 2015): a slight modification or update to an existing fisheries management or evaluation tool in use. Neither was the strategy to map women's SSF organizations dictated by the text of the Guidelines, by the FAO, through 'expert' networks at the science-policy interface, or by the state—actors closer to the locus of existing centers of power and calculation where policy designs are often presumed to flow from (Clarke et al., 2015). State representatives were involved, but the study was not handed down from their desks and the halls of the Ministry. It was determined by the diverse participants engaged in policy implementation who participated in a series of national meetings (described in chapter 4). Unaccustomed to working together to determine fisheries governance priorities, they sought a means to establish a common baseline of knowledge and data they could use to craft empirically calibrated actions to enhance the capacity of women to participate in fisheries governance. The women's SSF mapping assessment was

developed to meet this agreed upon need, a means to make "specific economic entities and practices visible" that were already present (Roelvink et al., 2015) but not typically represneted in fisheries. Mapping was an alternative 'policy technology' (Peck, 2011) that represented fisheries as a social space marked by gender and collective action: a countermapping project to make gender and existing forms and networks of organizing visible, enacted with the goal of further connecting and strengthening them, enabling new modes of working together, information-sharing, and exchange.

While policy technologies can be "initiated and experienced at a distance" through conventional centers of power with authority over the measurement and surveillance of people, they also depend on the intermittent 'co-presence of actors' in specific places such as conferences, meetings, and site visits (McCann, 2011b; Cook and Ward, 2012; McCann and Ward, 2012b). Women fishworkers and CSOs committed to transforming gender relations participated in the initial scoping workshops that led to the development of the mapping assessment (described in Chapter 4), the project was implemented by a diverse group of state and non-state actors, and the study's results were intended to strengthen existing political networks and help build a new national platform for women in fisheries.

Countermapping is one way we can "make other worlds possible" (Roelvink et al., 2015) in fisheries governance, re-presenting and re-producing knowledge we need for the world we want. While in Tanzania this initiative 'mapped in new ways', this

alternative representation is not itself 'complete'. But it does counter the dominant thinking that women merely 'support' men's harvesting labor, serving in a static and siloed role relative to men's work (which is what really counts in terms of fisheries). Women are not invisible, nor are the power dynamics that presently locate them in fish value chains singular or fixed; they are not powerless to resist subordination, seamlessly empowered by joining a group, or liberated by being 'seen' and mapped. Collective action is varied, yielding a diversity of forms, shortcomings, benefits, and possibilities for women in fisheries. Countermapping does not inherently solve or alleviate gender challenges, but it is a technology that can help us see new entry points, lines of difference, and the diversity of women's working conditions in fisheries. Much is left to be explored, but countermapping fisheries through the implementation of the SSF Guidelines is one strategy performing fisheries as a gendered and diverse economic space colored by various modes of collective action. A place to start from.

6. Conclusions

This dissertation examined the politics of global environmental governance in the context of SSF, a sector long depicted as local, static, and traditional fishing practices from the past. The introduction outlined how governing SSF has often been cast as an objective and value-free endeavor about getting the design right; "a method, not a value" (Saul, 1995), to be honed through a rational process of implementation, assessment, updating and learning. In this linear model of governance, science is depicted as separate from politics, supplying objective facts about fisheries, where policymakers act on supplied scientific knowledge as they craft policies that prescribe how fisheries should be governed. Policy designs (ideally based on SMART targets) are then acted on to achieve their pre-determined goals, implemented by bureaucratic managers. And what 'really counts' about policies are their impacts, to be measured after the fact. But the movement to create and implement the SSF Guidelines challenges these ingrained assumptions and creates an opening to perform fisheries governance differently. This is the central tension this dissertation examined: who has wielded the power to define the vocabulary of SSF governance—the terms, definitions, metrics, and values placed on SSF—and the best means for achieving desired goal; a terrain that is increasingly contested and simultaneously framed as global in scope.

The goal of this dissertation was to recenter the politics of environmental governance in fisheries to deconstruct the supposed naturalness of embedded

assumptions about SSF governance by examining the questions "governance of what, by whom, and to what ends?" (Bridge andPerrault, 2009). I empirically demonstrated how SSF have been positioned as marginal in the wider discourse of fisheries governance—as low-tech, static, male-dominated harvest technologies from the past—illustrating some of the effects of these representations and the various exclusions concealed by patterns often taken for granted. At the same time, I highlighted the tensions and contradictions between past patterns and present movements for change, openings where alternative possibilities are being imagined and enacted, transformations which have made SSF a global story. One with potentially different answers to the fundamental questions: governance of what, by whom and to what ends. No longer local practices to be either ignored or observed and ordered at a distance by scientists and state-sanctioned policymakers, SSF are increasingly framed and understood as a global concern, one that implicates international bodies and sites of policymaking for their limitations while also reconfiguring them, demanding room for non-traditional actors in the process (e.g., civil society) and unconventional ideas about governance. These shifts within powerful sites where global priorities for fisheries governance are made (particularly at the UN Committee on Fisheries) do not amount to minor improvements or adjustments to existing fisheries policy landscapes—the very existence of the SSF Guidelines represents realignment of power and priorities, an unfinished transformation that is still in the process of becoming. The meaningful inclusion of SSF in global policymaking was

affected by global civil society networks, who worked to insert unorthodox ideas about global priorities and which principles should guide SSF governance, giving rise to new scales of organizing SSF in the process (e.g., the formation of global CSO platforms, and national and regional networks for women's fishery organizations). The SSF Guidelines are part of an unfinished project of rescaling SSF governance; reconfiguring the roles, capacities, and powers of different actors in setting the agenda around 'the governance issues' in fisheries and the right policy designs to realize them.

Typically, on the global level the 'right designs' are imagined to be target-based policies, made-up of narrowly defined goals attached to universal and measurable benchmarks to track progress and evaluate success (Campbell et al., 2014b; Campbell and Gray, 2019). The SSF Guidelines in contrast are an anti-target global policy, an intentionally open-ended and flexible set of guidelines designed to accommodate difference, with an explicit goal of reconfiguring existing power relations and injustices in fisheries governance. The work of affecting these changes is not a straightforward case of seamless implementation in any instance (whether SMART targets or not), as policy mobility matters to the process. The varied work entailed in 'scaling down' this global policy and translating the unusual principles within in place and at different scales continues. But this transformative project here and now could be missed as existing research on the SSF Guidelines is still often underpinned by vague notions of governance, policy coherence, and abstract scaling down that exhibit a lingering

adherence to a managerial framework. If scales are regarded as fixed, then the question of policy movement is one of whether (will states act?) more than how. But why should policy coherence and smooth implementation be anticipated if the aim is transformation? And given the broader reconfiguration of actors in the era of global environmental governance, and the uncharted collaborations required to move the Guidelines forward through policy implementation, isn't how as important as if?

In pursuit of recentering the politics and meanings at stake in fisheries governance, this dissertation first conceptualized SSF governance within the field of global environmental governance, acknowledging the diverse people working to (re)define the terms of SSF governance and the shifting relationships among them. Each chapter that followed added different, additional theoretical lenses on knowledge production, scale, policy mobility, and countermapping to grasp different elements of the politics, tensions, and transformative potential of the SSF Guidelines. Each empirical chapter engaged with a different site, set(s) of actors, and scales where meanings are at stake to both describe and problematize how SSF are becoming global.

6.1 Key findings

1. How have small-scale fisheries been defined, and how are the SSF guidelines redefining what SSF are?

While the definition of SSF is often assumed to be obvious, this dissertation demonstrated that the definition of SSF is a fraught, malleable, and contested category

that different actors have staked claims to over time. To address the question of "governance of what?" in the context of global environmental governance, this dissertation focused on scientists and policymakers (both traditional and non-traditional) as experts with an outsized influence in setting the terms of environmental governance. Historical analysis of the dominant features that have been elevated in definitions over time were contrasted with the possibilities for alternative definitions to be enacted through the implementation of the SSF Guidelines. As the latter includes the participation of civil society, fishworkers, and their organizations in addition to state and other non-state actors, an opening is created for non-traditional policy actors to determine what SSF are in the terms of reference used to govern their sector.

Chapter 2 focused on the rising global interest in SSF among scientists and policymakers, marked by a proliferation of new peer-reviewed publications on SSF and emergent global policy tools, representing a growing aspiration to count, synthesize, and scale up knowledge on the sector at the global scale. Analysis of peer-reviewed scientific literature in comparison to fisheries policies found a remarkable resonance in recent patterns of defining SSF. Presently, definitions most commonly rely on male-dominated harvest technologies (e.g., fishing gear and boats), using fixed limits on the size and technological specifications of each to characterize SSF. But this has not always been the case, in earlier decades (e.g., 1960s up to the 1990s) sociocultural characteristics were more common, and generally more diverse range of characteristics were used.

Over time, fewer scientific articles have defined SSF at all, and simultaneously, those that do increasing relied on technological dimensions of SSF. The effect of this narrowing definition is that male-dominated harvesting technologies are highlighted at the expense of a more expansive view of the wider social, ecological, and political relations that constitute SSF that occur throughout the value chain, crisscrossing land and water.

While fisheries science and management have been critiqued for being "gender-blind" (Kleiber et al., 2014), I counter that they are androcentric—systematically focusing on and centering men's work in SSF (albeit still in abstract, simplifying, and problematic terms; St. Martin, 2005). While 'gender-blind' implies a managerial oversight or precision error, the rooting of the gender bias in fisheries can be traced to the very definition of what SSF are. A more systematic problem. Further, women's presence, labor, technologies, environmental knowledge, and impacts are presently not counted on aggregate. Thus, the social, technological, ecological, and political dimensions of women's work are not merely left undistinguished, presently captured but not discerned along lines of gender, they are absent. As a result, women's work which often relies on different technologies, employs distinct fishing practices, targets different environments or species, and often occurs on land in pre- and post-harvest processing are still either excluded, or acknowledged but remain locked in a subordinate position relative to the 'real economy' (Cameron and Gibson-Graham, 2003). As such, gender as

an important but variable dimension of power in the sector is largely ignored. Lastly, if at the same time SSF are increasingly not defined at all (another temporal trend identified), it seems likely that the presumption that SSF are equivalent to small boats operates in the absence of a clear definition—an embedded trope too easily conjured.

Chapter 2 also considered how the definition of SSF is being opened to new interpretations and negotiations through the implementation of the SSF Guidelines—which in lieu of the standard technological definitions only offers a broad template as a starting point, stressing that labor on land and water, conducted by both men and women, throughout the value chain counts. In Tanzania, the process of implementing the Guidelines has hinged on the issue of who and what counts and therefore should get counted in the policy implementation process. While struggle and ambiguity around the definition of SSF continues, one outcome has been clear: women's labor and contributions count, and gender relations are important sociocultural and political dimensions to account for. How to account for gender and count women is a subject I explored further in Chapters 4 and 5.

2. How do common assumptions about scale shape SSF governance, and how can these relationships be reimagined through the SSF Guidelines?

Common-pool resource scholars and human geographers generally agree that scale is an important concept. But each have conceptualized scale in the context of resource governance to different ends. Chapter 3 grappled with these two fields

different conceptualizations of scale, thinking them through the case of SSF to illustrate how each enables different insights and leads to different types of empirical and analytic questions about matters of governing common-pool resources (e.g., traditionally fisheries, forests, pastures, and water). Through this comparison I described how different readings of scale lead to different ideas about the problems and solutions at hand in common-pool resource governance. In SSF, scale has often been understood as a relatively stable and settled concept (as commons scholars often use it), an ordered backdrop that configures spatial and conceptual relationships hierarchically, as nested, and discrete levels ordered by their magnitude. In this standard approach, scale is easily equated with size, levels, or hierarchically ordered relationships—qualities used to explain things with, rather than things to be explained (Bridge and Perreault, 2009). These assumptions are readily apparent in common representations of SSF as certain types of governance objects: SSF are small boats, are already contained at the local level, and are naturally located at the bottom of existing hierarchies of fisheries categorization and governance.

But treating scale as given forecloses empirical questions about how particular scales come together, why some scalar configurations come to dominate, and whether and where new alignments are possible. Opening the concept of scale up to new process-based scale questions, inspired by critical human geographer's ongoing conceptualization of scale, creates new opportunities to ask how scale is produced in the

commons. In SSF governance, exploring the dynamics of scalar production points to the ways that the SSF Guidelines might rescale properties of SSF assumed to be fixed, and their location within existing orders of governance and policymaking taken to be natural. Through a close reading of the SSF guidelines, I demonstrated how this global policy upends assumptions about the natural scale of SSF, the right scale to observe and organize them, and how SSF should be translated and represented as a domain of social, ecological, and political concern. Through the lens of new scale questions, a more generative reading of the possibilities and transformative potential of SSF governance becomes possible. Where instead of treating 'policy landscapes' as stable spaces contained within pre-given scalar levels, an orderly backdrop that policies move over as they are 'scaled down'. Both scale and policy landscapes can be understood as a dynamic terrain that policies move through, movement which opens up possibilities for rescaling, as SSF governance is reimagined, interpreted, and performed differently.

3. How are the SSF Guidelines scaled down and implemented in practice?

If scales are not stable and fixed, then policy mobility is a phenomenon that invites scrutiny. In Chapter 4, I outlined why attention to policy mobility from a critical policy studies perspective is useful for understanding the transformative potential of the SSF Guidelines as something happening here and now, a story presently unfolding. In traditional approaches to policy studies, policies are made on the one hand and received on the other. Policy implementation is a bureaucratic and managerial matter. Movement

is not an interesting part of the policy process, as the meaning-making step in the life of a policy is already thought to be complete; policies are akin to finished products that can be sent and received over space, scaled up, down, or across, unaltered by these journeys. This belief (that policy design is the stage where meanings are at stake) is evident in the popularity of target-based global governance agreements, a technique meant to ensure that the process of meaning-making is wrapped up neatly in pre-packaged targets and indicators before policies move onward and outward from the centers of power where they are designed. This is particularly true of targets that are designed to be SMART (specific, measurable, achievable, realistic, and time-bound), characteristics that are intended to eliminate any flexibility or 'wiggle room' to alter, adapt, or determine the meaning of principles and policy goals in place (Maxwell et al., 2015). In contrast, the SSF Guidelines are not SMART in this narrow sense. They were instead intentionally designed to be flexible, with the precise definitions of terms, the meaning of progress towards stated goals, and strategies to achieve them negotiated in place. Flexibility that accommodates bottom-up translation and is characteristic of an alternative, anti-target global policy design that could be adapted for other environmental domains.

Chapter 4 focused on the work entailed in mobilizing the SSF Guidelines as an ongoing process of translation (e.g., making meaning), where movement opens up new possibilities for fisheries governance to be imagined and performed differently as policies are moved around by people for particular purposes (Temenos and McCann,

2013). Policy movement is not a smooth transfer over space or arc of scaling up or down. This very movement is unsettling as the relationships among people, ideas, and things are (re)made as policies travel (Tsing, 1997), opening up the ideas within and the very structure of existing 'policy landscapes' to negotiation (Peck, 2011). By 'following the policy' through multiple sites, forums, scales, and networks, I show how the SSF Guidelines, like any policy on the move (even supposedly SMART ones), are always in the making, as the ideas they contain are continuously (re)imagined and articulated by people doing the organizational work, finding alignment among different actors, and negotiating actionable strategies to realize those goals in place. This chapter focused on the work entailed in mobilizing the Guidelines and the principle of gender equality in particular, which emerged as the focus of policy implementation in Tanzania.

But this story of policy implementation did not begin from any one definitive starting point—the National Implementation Workshop, the signing of a letter of agreement between the government of Tanzania and the FAO, or even the moment when the Guidelines were ratified by Tanzanian state representatives and the other COFI member states. Instead, I traced backwards and forwards to tell this story through multiple, interconnected sites that better capture the iterative work entailed in making policies move, focusing on the policy work of different actors, especially civil society, that spanned multiple decades. This choice reflected my methodological commitment to 'following' and taking the mobility of policy seriously (Peck and Theodore, 2012). The

non-linear telling of this story also resonated with my own observations and data collected, where even FAO described policy implementation as an "iterative and non-linear process". While the project of implementation is not complete, Chapter 4 outlined the three strategies that were articulated as part of the Tanzanian 'roadmap': establishing a Gender Desk at the Ministry of Fisheries, building a national platform for women in fisheries, and conducting a national study to map existing women's fishing organizations. I went on to follow the mapping study in particular, and demonstrated how the purpose, methods, and scope of the study came together through an unlikely collaboration. Also emphasizing that finding alignment around common strategies did not mean the elimination of all differences or inequities.

4. How is the principle of gender equality translated and performed in place through policy implementation?

While gender is a trending topic in fisheries, set amidst wider interest in addressing power imbalances and inequities in environmental governance more generally (Mills, 2018; Cohen et al., 2019), what constitutes progress towards the goal of gender equity and equality in the context of fisheries governance is not obvious. Chapter 5 followed this question in motion through the implementation of the SSF Guidelines in Tanzania, where the goal of gender equality emerged as the focus, but no agreement or common ground existed on the starting point. I put their efforts to overcome this challenge through the strategy of mapping in conversation with existing efforts to

include women's work and 'feminize the economy' in fisheries and beyond (Cameron and Gibson-Graham, 2003). Often, efforts to include women's work have relied on the strategies of 'adding on' or 'counting in' women to existing models of the economy (Cameron and Gibson-Graham, 2003). In doing so, a 'politics of the whole' is maintained where the inclusion of gender is about completing the model and 'getting the data right'.

In fisheries, existing research on gender has largely been descriptive, demonstrating that women do work in fisheries and the existence of gendered divisions of labor (Alonso-Población and Siar, 2018). These efforts have contributed to a growing realization that women are present but have been overlooked. But while no longer invisible, these strategies have not amounted to a meaningful transformation in terms of how we imagine and enact the fishing economy. Where for instance, existing fisheries law in Tanzania dictate that local governance structured (e.g., Beach Management Units) need to have 30% representation by women. But this policy is widely considered a failure, as many Beach Management Units are non-functioning, and the 30% quota unapplied or ineffectual (Luomba et al., 2017). Would enacting gender equality through the Guidelines be imagined similarly, say even upping the quota to 'add on' women to an even 50%?

Chapter 5 illustrated how the implementation of the SSF Guidelines in Tanzania (enacted in part through the strategy of mapping women's fishery organizations) became a project more transformative in its aims, expanding beyond the repertoire of

adding on and counting in women. Instead, implementation called for a more fundamental, ontological reordering of what counts as economic activity and labor worthy of inclusion. I characterize the mapping study actors in Tanzania imagined and enacted as a countermapping project, one that mapped fisheries differently. Not relying on the typical metrics of fisheries scientific management—counting boats, gear types, landings, and state profits generated—the mapping study aimed to make the existing landscape of women's organizations and the networks among them visible.

The results of the mapping study (from a subset of the data I collected in Zanzibar) demonstrated that even while most organizations identified as self-started cooperatives, women worked in different parts of the value chain, with different species, and divided their labor, earnings, and asset ownership differently. Despite these differences, acting collectively to form, maintain, and evolve their organizations has been a common strategy to navigate gendered power imbalances in fisheries. These gender power imbalances are themselves variable, inequities that transpire in terms of access to fish and dealings with fishermen at landing sites, with middlemen, poor access to credit, the uncertainty of climate change, toxic village politics, or price extortion with export companies. Thus, developing a new means of mapping and governance technology sensitive and appropriate to the diversity of women's work and experiences in the sector is an important place to start to imagine gender equity and equality from. Further, the mapping study revealed that organizations already networked with other

groups through higher-level platforms had better access to trainings, capital, technologies, and markets. Indicating that the goal of forming a national network for women in fisheries (one of the other strategies determined in Tanzania to implement the Guidelines) is a viable strategy, one that performs gender as a national scale phenomenon organizing SSF governance.

6.2 Conclusions and directions for future research

This dissertation contributed needed empirical and theoretical insights into the tensions between past patterns and present movements for change in fisheries governance using multiple methods. Adding to existing debates about the SSF Guidelines, which are often instrumentalist in scope, I examined the underlying concepts of the definition of SSF, the meaning of scale, and the principle of gender equality from a critical but intentionally hopeful orientation. Telling this story entailed knitting together seemingly disparate places, forums, and supposedly separate scales of policymaking through the empirical art of 'following', illustrating how the connections among these sites are drawn in and redrawn through the dynamics of global environmental governance surrounding SSF. This is not a story defined by static boundaries, but rather is told through dynamic and shifting socioinstitutional terrains that policies move through, movement which opens both policies and policy landscapes to being (re)made and rescaled. In this pursuit, I highlighted different types of 'policy work' (Clarke et al, 2015) and the labor of different actors animating and reconfiguring

existing networks to transform fisheries governance. People move policies around (Temenos and McCann, 2013); they do not move naturally on their own merits, or through fetishized hypermobile global flows (Tsing, 2000). In this case, 'the people' who were tasked with implementing the policy were unaccustomed to working together, differences which fueled creative, place-based strategies, and were also marked by gaps in common ground and unremedied divisions. 'The people' that constituted this lively group expanded and reoriented as it went, even including me, as following led me into the network of actors assembling policy implementation.

Multi-sited ethnographic studies of policies on the move have largely focused on 'following' urban policy processes (Peck, 2002; 2003; McCann, 2011b; a; McCann and Ward, 2012a; Clarke et al., 2015), often looking at the incomplete projects of disciplining, austerity, and innovation that inevitably veer from their neoliberal origins and designers' intents. I applied this theoretical approach and methodological practice in an understudied context—fisheries governance—within a framework of global environmental governance. This application may further extend insights into policy mobility given the novel context of the Guidelines: a policy based on principles of equity and justice and designed to be flexible to accommodate difference. I blended this theoretical orientation/methodological approach of following with an intentionally hopeful research orientation that takes both policy mobility and performativity of knowledge seriously. As "the task of uncovering alternative realities and of working to

see things differently, is not only relevant to a project of transformation – it is vital" (McKinnon, 2010).

If we agree that the feminist project of transforming how we think of, study, practice, and imagine the future for fisheries governance is incomplete, I argue that the implementation of the Guidelines offers reasons for hope; that in addition to the present strategies commonly employed, an "ethos of hope is needed in order to seek out openings and possibilities" (Cameron and Hicks, 2014). Hope is not certainty—we should not placate ourselves with "naïve optimism" and assume what the Guidelines will do in practice (Cameron and Hicks, 2014)—but neither is it inaction. The transformative potential of the SSF Guidelines can be thought of as something actually here and now, not so far off that we must wait and see what 'actually' happens of this policy. An ethos of hope can intersect with a performative research orientation, trying to detect "those faint signals and distant glimmers of other worlds that are already present and that we are committed to making more real" (Law, 2004). The SSF Guidelines are one avenue to "make other worlds possible" (Roelvink et al., 2015) in fisheries governance, releasing women from a siloed position in fish value chains and inevitable dynamic of subordination by performing fisheries as a gendered and diverse economic space colored by various modes of collective action. This dissertation has told part of the ongoing story of the SSF Guidelines, reading "for glimmers of a deconstructive project that opens 'the economy' to difference" (Cameron and Gibson-Graham, 2003), one that

can alter how we envision fisheries governance—where mobilizing the ethical principles they contain in place is part of the global project of transforming fisheries governance.

Future research will continue to follow the mapping project, including how and whether the information and insights gained through the study are incorporated into the Ministry of Fisheries monitoring or assessment practices, their policies, and interventions to support women in fisheries. I will also follow the other two strategies (the Gender Desk and the national platform for women) to see how they (continue to) materialize and the extent to which CSOs continue to have any role in shaping their activities or ownership over these initiatives. Lastly, I am following how Tanzania's efforts to implement the Guidelines are affecting efforts in other places and scales. I am already following how the mapping study is moving beyond Tanzanian to shape fisheries governance reform in other countries, where the FAO (including myself) are expanding it to four other African countries and counting. The methodology will become part of the FAO's 'global toolkit' made available to other countries implementing the SSF Guidelines, a collaborative assessment forged in Tanzania that is becoming a 'mobile policy technology' (Peck, 2011) on the move. The results of applying the mapping study in other countries will create an unprecedented data set on gender, collective action, and organizations in fisheries to be explored through future research that continues to disentangle the gendered dimensions of collective action and being-in-common.

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