



Worker-less social responsibility: How the proliferation of voluntary labour governance tools in seafood marginalise the workers they claim to protect

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ABSTRACT

In response to labour and human rights violations onboard fishing vessels, the private sector is increasingly relying on market-based solutions in the form of voluntary, non-governmental social governance tools to improve working conditions for fishers. While the proliferation of these tools is relatively recent in fishing, there is substantial evidence from other sectors that these voluntary standards fail to transform working conditions. Yet, there remains an insistence on using market-based solutions to mitigate labour abuses in fishing despite the problem being a market failure. Using a human and labour-rights based analytical paradigm that underpins worker-centric processes, we constructed objective criteria to assess several voluntary standards against. Failing to include workers and commit to meaningful remedy, findings from the analysis suggests these voluntary non-governmental social governance tools are not able to ensure that human and labour rights are respected in a way that is consistent with state and international regulation or rigorous human rights due diligence. As a result, there is an urgent need for a transformational shift in the sector away from a worker-less reactive and adaptive corporate social responsibility strategy of doing less harm toward a fundamental commitment to redistributing power through a worker-driven social responsibility paradigm.

1. Introduction

In response to governance gaps and continued reports of pervasive labour abuses on fishing vessels (e.g., [1–5]), there has been a relatively recent proliferation of voluntary, non-governmental social governance tools in the fishing sector, purportedly setting and enforcing norms and standards for working conditions and labour performance. This profusion of tools includes ethical standards, labeling systems, commitments, certification schemes, and codes of conduct, with performance evaluated through a plethora of social auditing strategies running the gamut from self, to private, regulation. While the genesis of these tools varies between private sector actors, NGO coalitions, and multi-stakeholder initiatives (MSIs), they share four key commonalities in that: they are typically transnational, market-based (i.e., they rely on market sanctions driven by private sector actors), voluntary, and independent of government oversight or regulation that should underpin human rights due

diligence (HRDD) [6–13]. We term this proliferation of ‘tools’ a ‘hydra’ as akin to the Lernean Hydra, in Greek legend, which could grow new heads as quickly as Hercules cut them off.

While this cornucopia of non-governmental governance tools may be comparatively new to the fishing sector and global seafood supply chains, such diffuse and voluntary labour compliance schemes have existed in other sectors and supply chains such as garments, manufacturing, chocolate, and palm oil since the 1990s [14,15]. More than 25 years-worth of empirical evidence demonstrates non-governmental social governance tools often have little to no benefit for workers, failing to improve working conditions, labour rights, or human rights [8,9,16–22]. Additionally, they “deflect attention from core business models and uneven value distributions” [8, p.1] entrenching the status quo of power imbalances that suppress worker agency [17,22,23].

Thus, there is no basis for supposing that non-governmental social

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governance tools would transform the fishing sector. Yet, there remains an insistence on using voluntary market-based solutions to mitigate the problem of labour abuses despite the problem being a market failure [24]. Since labour violations are caused by market failures, specifically externalizing labour and information asymmetries, there is an obligation to question how more of the same from the market could shift hidden exploitative and abusive working practices on board fishing vessels toward visible, good practices [25]. Therefore, this research aims to fill a gap in critical examination of the effectiveness or wider impacts of non-governmental social governance tools.

First, we explore the evolution toward top-down, business-centric voluntary approaches (e.g., FISH Standard for Crew and the Global Seafood Assurances' Best Seafood Practices) [26,27]. Using a human and labour-rights based analytical paradigm that underpins worker-centric processes, we then assess eight of the standards according to objective criteria and discuss their ability to deal with the fundamental problems of labour rights violations they purportedly address on board fishing vessels. While more tools were identified in our search, the majority of the analysis focused on these eight standards, since they are being used to assure consumers and retailers of the working conditions in seafood supply chains, many of them being associated with certifications. The fishing sector is seemingly on a pathway towards institutionalizing many of these tools in lieu of binding regulation, thus it is imperative to understand what is being institutionalized [7].

2. The genesis of non-governmental social governance tools

Driven primarily by industry, industry trade associations, and NGOs, non-governmental social governance schemes across all sectors, including fishing, have largely been in response to weakening state regulation and reduction of governmental capacity and reach after the deregulation of labour markets in the 1980 s, following the emergence of neoliberal doctrine and free-market fundamentalism [28]. Specifically, governments lacked the political will to meaningfully enforce labour standards; for example, due to economic liberalization resulting in international trade deals limited their responsibility [15] and/or capacity for regulatory implementation, monitoring, and enforcement to keep pace with globalization [9,11]. As a result, a shift from state regulation focusing on an individual production site within state boundaries, to supply chain regulation transcending state boundaries and thus across multiple regulatory frameworks, has been observed [9].

From the perspective of multinational corporations, these non-governmental social governance schemes were easy to integrate into the existing business models and audit processes that evolved in response to increasing globalization in that they were predicated on the same core characteristics of globalization: outsourcing and continuous improvement [9]. Additionally, since the mid-1990 s there have been demonstrable beneficial impacts to global brands in that adoption alone (e.g., without continued transparent reports of effectiveness or performance) of these voluntary non-governmental social governance schemes is sufficient to mitigate reputational risk following media exposure of abuses, forced labour, and human trafficking [6,8,21].

As fisheries globalized to serve industrial production [29], voluntary market-based tools independent of state regulation were first adopted to address environmental harms several years prior to the emergence of non-governmental social governance tools [30]. This was, in part, per stakeholders, because companies viewed the environment as part of the greater good whereas social measures were viewed as affording competitive advantages. Initially, the transboundary nature of fish appeared to offer more opportunity for coordinated international, binding regulations specific to mitigating environmental harms, despite the outsized influence of a concentrated number of multinational corporations in certain supply chain nodes representing disproportionate market power for a small number of corporations [31]. However, in the 1980 s, the United States' declining influence in international fisheries

polymaking, coupled with the pro-globalization global-first paradigm advanced by the multinational corporations, began weakening state regulation of the environmental dimensions of fisheries in favor of transboundary frameworks. This ultimately began a shift from binding, state-based regulations and sanctions to voluntary, market-based standards and sanctions to mitigate environmental harms [31].

The globalisation of fisheries production also precipitated the commercialization and casualization of fishing work. To minimize the labour costs of production, increasingly industrialised vessels in some fisheries and geographies began relying on foreign fishing crew, many inexperienced and/or untrained, who were provided with a wage rather than remuneration via fishing share [32]. In response to concerns expressed by frontline organizations about the subjection of fishers to labour abuses including forced labour [33,34], the ILO C188 Work in Fishing Convention (2007) was introduced [35]. Its goal was to progress fair competition while ensuring decent working and living conditions for fishers by setting out a basic framework of corresponding obligations for employers and governments to implement minimum working and living standards [35]. Intended to be analogous to the ILO Maritime Labour Convention (2006), ILO C188 has received far less support to date [36], with the Maritime Labour Convention coming into force four years earlier than C188 (despite C188 being introduced only a year later) and having 98 signatories [37] in comparison to C188's 19 signatories [38].

As a result, ILO C188 was not yet in force and there was an existing precedent for non-governmental governance tools to address environmental harms when high-profile and wide-reaching media exposés detailing conditions of modern slavery onboard fishing vessels were released naming specific brands (e.g., Wal-Mart and Chicken of the Sea) for the first time [5,39,40]. Though seafood buyers placed some pressure on governments to respond, particularly Thailand [41], this brand "naming and shaming" likely contributed to the shifting of attention towards market-based tools, an established successful strategy for preserving brand reputation, instead of broader and more sustained pressure on governments. And while some governments have implemented domestic fisheries policies (e.g., New Zealand) [42] or ratified ILO C188 in conjunction with new domestic policies and governance measures (e.g., Thailand) [43,44], there are now numerous non-governmental social governance tools in the fishing sector, akin to the hydra where new tools continuously emerge before others are adequately evaluated in terms of effectiveness or impact on the reality of work in fishing.

Additionally, many of these tools are purportedly tied to ILO standards and UN conventions in that these tools reference or use convention regulations as guidelines (e.g., the FISH Standard for Crew [26] and the Monterey Framework [45]). However, they are not enforceable obligations without being legally bound to the convention. And increasingly, labour and human rights experts have raised concerns that these voluntary tools are seemingly prioritizing high-level reputational management over specific, actionable pathways of change, including recourse and remedy for workers [46]. Thus, there remains a need to interrogate how these new non-governmental social governance tools are creating decent working conditions.

3. Methods

To better understand the coverage of voluntary, non-governmental social governance schemes specific to labour and human rights and their mechanisms for change, insights were gleaned from a desk review analyzing the texts of publicly available documents associated with non-governmental social governance tools in seafood. Tools included in the analysis (see Table 1) were identified through a web search and discussions from recent sector events and were classified according to voluntary commitments (e.g., public commitments to widely accepted principles of social responsibility); procurement guidance (e.g., voluntary procurement actions); codes of conduct; standards and certifications; general data reporting tools (e.g., tools for collecting data and diagnosing or assessing risks that have an end goal of reporting); and

Table 1
Relevant tools for a labor focused human rights strategy for seafood supply chains.

Category of "Tool"	Name of "Tool"	Effective Date
Policies	ILO C188, Work in Fishing Convention (2007) [35]	2007
	UN Guiding Principles on Business and Human Rights [47]	2011
	California Transparency in Supply Chain Act [48]	2012
	UK Modern Slavery Act [49]	2015
	US Trade Facilitation & Trade Enforcement Act of 2015 [50]	2016
	France's Duty of Vigilance Law [51]	2017
	Australian Modern Slavery Act [52]	2018
	Monterey Framework on Social Responsibility [45]	2017
	Tuna 2020 Traceability Declaration [53]	2017
	PAS 1550:2017, Exercising due diligence in establishing the legal origin of seafood produces and marine ingredients [54]	2017
Procurement Guidance	Voluntary procurement actions in support of SeaBOS commitments and goals [55]	2020
	Conservation Alliance for Seafood Solutions, A Common Vision for Sustainable Seafood [56]	2021
	Ethical Trading Initiative Base Code (2016) [57]	2016
Codes of Conduct	Thai Union Fishing Vessel Improvement Program and Vessel Code of Conduct [58]	2017
	Seafood Task Force Vessel Auditable Standards [60]	2018
Standards & Certifications	Fair Trade USA Capture Fisheries Standard [60,61]	V. 1: 2018 V. 2: 2022
	Marine Stewardship Council Chain of Custody Standard [62]	2019
	GSA Responsible Fishing Vessel Standard [63]	2020
	Seafish Responsible Fishing Ports Scheme Standard [64]	2020
	Global Dialogue on Seafood Traceability Standards and Guidelines for Interoperable Seafood Traceability Systems- Core Normative Standards [65]	2020
	AENOR Atun de Pesca responsible (APR) certification [66]	2020
	Fairness, Integrity, Safety, and Health (FISH) Standard for Crew [26]	2021
	Consumer Goods Forum, Sustainable Supply Chain Initiative Social Compliance Benchmark – At sea operations [67]	2021
	Verité Responsible Sourcing Tool [68]	2016
	Monterey Bay Aquarium Seafood Slavery Risk Tool [69]	2018
Data Reporting Tools	Social Responsibility Assessment Tool [70]	2021
	Sustainable Seafood Data Tool [71]	2021
	SEA Alliance Fishing Vessel Labour and Welfare Practices Data Collection Portal [72]	2019
	Seafish Tools for Ethical Seafood Sourcing [73]	2017
	Global Sustainable Seafood Initiative Seafood Map [74]	2020
Resource Repositories	Seafood Alliance for Legality and Traceability (SALT) SEASCAPE [75]	2020
	FishWise Roadmap for Improving Seafood Ethics (RISE) [76]	2021

resource repositories (e.g., attempts at collating relevant extant resources). The historical development of these tools was also plotted against the year it was first introduced or implemented.

An initial analysis of the voluntary commitments, procurement guidance, codes of conduct, standards and certifications, general data reporting tools, and resource repositories determined that these tools were too diffuse in purpose and contribution to be systematically assessed against the same criteria. To overcome this issue, we conducted a more in-depth analysis of the standards and certifications (see Table 2)

since they are intended to establish expectations and assurances around behaviour. At this time, the AENOR Atún de Pesca Responsible chain of custody vessel certification based on the UNE 195006 standard [66] was excluded since documentation of the standard was not publicly available.

To analyze the standards and certifications, we developed a list of principles grounded in a rights-based approach that considers workers' agency in exercising their fundamental human rights and their core labour rights, through withdrawal of labour to take power. We operationalized each principle a priori based on salient features described in the literature (see Table 3) [6,8,10,46,77–80]. Specifically, our selected measures were derived from worker-centric human rights due diligence practices representing the minimum conditions [81] and the core tenets of the worker-driven social responsibility (WSR) paradigm as best practice [22,78,80,82]. Both provide an agreed, repeatable, and documented way of respecting, improving, and exercising human and labour rights.

Increasingly there is momentum to enact human rights due diligence (HRDD) to ensure that businesses respect human rights and afford workers access to remedy, while ensuring that businesses are responsible for their own outcomes. However, HRDD still represents the minimum as it is voluntary, though many states are looking to interpret it into hard-law obligations, and its purposeful adaptability and flexibility presents an opportunity for manipulation towards corporate interests [81]. WSR is widely considered the benchmark for shifting power to workers in supply chains to prevent, mitigate, and cease a range of exploitative labour practices [22]. The mutually reinforcing combination of worker representation from the outset to ensure that issues most salient to workers are detected during monitoring [6,80]; legally binding and enforceable agreements that provide actionable pathways to remedy; a truly independent and responsive third-party monitoring body; and zero tolerance of abuse and retaliation in WSR initiatives has demonstrably changed purchasing practices in agricultural and garment supply chains [22,80]. WSR has also fostered work-place environments wherein workers feel safe from retaliation to report violations rather than solely relying on auditing procedures, a principle known as worker-driven enforcement [80].

Documents and materials that were publicly available were then coded for each tool against the features of each criterion described in Table 3. Specific to the Fair Trade USA Capture Fisheries Standard (CFS), we plotted the original implementation date as 2018 in Fig. 1, which was the effective data for version 1.1.0, but then coded version 2.0.0 since the standard underwent significant revisions, effective January 1st, 2022. The Fair Trade USA CFS also aims to cover a wide breadth of fishing, ranging from small-scale and artisanal to industrial. Under the CFS, fishers who do not have a formal employer must be affiliated with a Fishing Association (typically community-based) and are classified as registered fishers. These are likely to be smaller-scale operations. "Crew" work on vessels operated by a registered fisher while "hired-labor fishers" work on vessels operated by non-registered fishers [60,61]. For the purpose of the analysis we focused on standards specific to hired-labor fishers since migrant fishers on industrial vessels are purportedly those at highest risk for poor working conditions, and are most likely to meet the defined criteria for hired-labor fisher.

4. Results

Since the adoption of ILO Convention C188 in the 96th International Labour Conference in 2007 [35], there have been other significant trade and supply chain regulations that have had some influence on global fisheries supply chains ranging in purpose from increasing supply chain transparency to placing due diligence responsibilities on companies. For example, the California Transparency in Supply Chain Act (2012) [48]; the UK Modern Slavery Act (2015) [49]; the United States' Trade Facilitation and Trade Enforcement Act of 2015 (2016) that repealed the 'consumptive demand' exception of The Tariff Act of 1930 and

Table 2
Assessed standards, their scope and description.

Standard	Scope of standard	Description of standard
Seafood Task Force (STF) Auditable Vessel Standards	Vessel	Vessel Auditable Standards covering the use of child and forced labour, employment contracts, freedom of movement and personal freedom, retention of personal documents, recruitment fees, humane treatment, workplace equality, freedom of association, grievance procedures, wages and benefits, working hours, worker awareness and training, private employment agencies and recruiters, and health and safety. The Vessel Auditable Standards are intended to guide the implementation of the STF Code of Conduct. The STF's current focus is on shrimp and tuna with a geographic focus on Thailand [59].
Fair Trade USA Capture Fisheries Standard	Supply Chain	Developed to provide the opportunity for fishers to demonstrate the core elements of fair trade in their practices. The CFS is organized around the core Fair Trade USA principles representing the main organisational objectives of: empowerment, economic development, social responsibility, and environmental stewardship. The CFS Certificate is held by a Certificate Holder, on behalf of one or more entities in the supply chain. The certificate's scope can cover a group of vessels/fishers, multiple groups, and/or a processing facility buying from one or more groups of vessels. The Certificate Holder is ultimately responsible for compliance with the CFS [60].
Marine Stewardship Council (MSC) Chain of Custody (CoC) Standard	Fishery (supply chain)	The blue MSC label requires that every company in the supply chain must have a valid Chain of Custody certificate. To be certified, businesses are audited by independent certification bodies. Five key principles must be met to achieve certification: satisfy demand, enhance trust, strengthen loyalty, show you're well-managed, and plenty of choice. The Chain of Custody Standard was updated in 2015 and is reviewed every three years [62].
Responsible Fishing Vessel Standard (RFVS)	Vessel	The RFVS is a fishing vessel-based program certifying high standards of vessels management and safety systems including crew rights, safety, and well-being. The Standard is comprised of two core principles – vessel management and safety systems; and crew rights, safety and wellbeing underpinned by ILOc188 and other global conventions. The key objective of the RFVS is to enable fishing vessel operations to provide third party assurance of decent working conditions by demonstrating operational best practice from the catch to the quay, in line with internationally agreed protocols and guidelines [63].
Responsible Fishing Ports Scheme Standard (RFPS)	Port	The RFPS is a voluntary and independently audited certification scheme. It helps to promote and encourage responsible operating practices within UK fishing ports and harbours of all sizes. Fishing ports are assessed and must show compliance against the following core principles in the standard: food safety and structural integrity, port and the working environment, care for the environment, care of the catch and traceability [64].
Global Dialogue on Seafood Traceability Standards (GDST) and Guidelines for Interoperable Seafood Traceability Systems- Core Normative Standards	Supply chain	The GDST is an international, business-to-business platform established in 2017 to create the first-ever global industry standards for seafood traceability. The GDST standards are global, voluntary, industry-led standards for seafood traceability that are designed to support three main goals: To enable interoperability among all seafood traceability systems, To communicate harmonized expectations about the basic information that should accompany all seafood products, including to ensure seafood is produced legally and to support sustainability claims, and to improve the verifiability of information in traceability systems by establishing agreed authoritative data sources. The standard covers vessel, catch, transshipment, landing, processing, certifications and licenses and traceability as well as technical data [65].
Fairness, Integrity, Safety, and Health (FISH) Standard for Crew	Vessel	The FISH Standard provides a global, voluntary, independent and accredited third-party certification program for labour practices on vessels in wild-capture fisheries. The FISH Standard for Crew is adapted from ILO C188 and related ILO Guidance Number 199 (R199). In addition, the Standard reflects the intent of the International Maritime Organisation Torremolinos International Convention for the Safety of Fishing Vessels, 1977 (as amended). It also incorporates elements from the IMO International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (STCW-F) and the United Nations Universal Declaration of Human Rights (UDHR) as well as addressing some of the more general concerns that have been voiced in recent years by industry, researchers, and non-governmental groups. It is aligned with the developing work of the Sustainable Supply Chain Initiative - the Consumer Goods Forum-initiated work to benchmark third party certification systems for labour conditions [26].
The Consumer Goods Forum (CGF) Sustainable Supply Chain Initiative (SSCI) Social Compliance Benchmark – at Sea Operations	Supply Chain	The Sustainable Supply Chain Initiative (SSCI) benchmarks third-party social compliance auditing, monitoring and certification schemes. The criteria for the At-Sea Operations scope were developed through an ongoing collaboration with the Global Sustainable Seafood Initiative (GSSI) with support from IDH, the Sustainable Trade Initiative. The SSCI's Social Criteria identify the key foundational elements of any effective and responsible social sustainability standard. These criteria ensure that all relevant social sustainability topics are being covered by an auditing scheme. The SSCI Social Criteria are informed by international reference frameworks such as principles from relevant ILO Conventions, the 1998 Declaration on Fundamental Principles and Rights at Work, the UN Guiding Principles on Business and Human Rights, and the CGF Priority Industry Principles on Forced Labour [67]

Table 3
Seven central rights-based principles and their salient features.

Principle	Salient Features	
1. Worker Representation	Workers or their representatives included in development of the tool or standards, during certification, etc. Provisions for workers' organizing efforts and collective bargaining. Collective agreements accepted.	
2. Compliance and Enforcement	Anchored by a binding policy, a binding market commitment, or an immutable agreement. Responsive complaint/grievance mechanism operated by trusted and independent third party free of conflicts of interest	
3. Auditing Mechanisms	Actionable pathways to remedy and recourse for workers Truly independent third party-monitoring free of conflicts of interest, communicated to workers Root cause analyses	
4. Zero Tolerance	Zero tolerance of child and forced labour, human trafficking, and modern slavery Zero tolerance of abuse Zero tolerance of retaliation Inclusion of root cause analysis	
5. Full Application of ILO C188 Minimum Standards	Minimum requirements for work on board fishing vessels Conditions of service Accommodation and food Medical care, health protection, and social security Compliance and enforcement	Minimum age Medical examination Manning and hours of rest Crew list Fisher's work agreement Repatriation Recruitment and placement of fishers Private employment agencies Payment of fishers Medical care Occupational safety and health and accident prevention Social security Protection in the case of work-related sickness, injury, or death
6. Full Application of UNGPs	Support for human rights policy Human rights due diligence Access to remedy	
7. Chain of Custody Mechanism	Immutable processes for tracing fish and the working conditions associated with its capture and processing throughout the supply chain.	

re-energized use of withhold and release orders including six seafood import bans [50]; France's Duty of Vigilance Law (2017) [51]; and the Australian Modern Slavery Act (2018) [52]. Additionally, there were the non-binding United Nations Guiding Principles on Business and Human Rights (2011), normative, principle-based standards for states and businesses to conduct human rights due diligence focusing on prevention, mitigation, cessation, and remedy [47].

In the absence of wider ratification of ILO C188, there has been a proliferation of voluntary tools beginning around 2016, a time of growing media coverage of adverse impacts on human and labour rights within seafood supply chains (see Fig. 1) [5,39,40]. Many of these tools share similar foci: timebound voluntary commitments (though time frames could presumably be altered since they are voluntary); data collection and transparency (e.g., the Social Responsibility Assessment Tool [70] is intended to operationalize the Monterey Framework's voluntary commitments [45]); responsible decision making; and suggested actions/tools. Another interesting development is the recent emergence of multiple resource repositories (see Table 1) that aim to collate the relevant resources in a single site – ironic given the aim of these initiatives and likely a symptom of the problem of proliferating voluntary initiatives.

Specific to the standards and certifications, none of the standards are operationalisable at the level of the individual fisher but at the level of the vessel, port, or fishery (see Table 3). This may be related to a central issue we identified in the analysis, which is that there was a dearth of worker, worker representative, or trade union involvement in the development of the standards and their governance (see Table 4). It is also likely related to the lack of effective auditing mechanisms and processes (see Table 4), which would be unthinkable if the standards were developed and implemented in collaboration with workers and their representatives.

While the standards aim to align the operations of vessels, ports, and fisheries with international conventions, they invoke these indicators in a non-binding manner resulting in a lack of accountability (see Table 5). For example, the FISH standard, the most comprehensive attempt to date to operationalise C188 in voluntary standards, appears to have the potential to drive vessels above national frameworks and minimum standards in many areas. Though the FISH standard appears to mimic the requirements of ILO C188, in C188, the purpose of inspections is to ensure the enforcement and compliance of the law [35], but for the FISH standard, inspections are concerned with the enforcement of 'applicable laws and regulations', which in vessels flagged to states that have not ratified C188 will be of a lower standard [26]. This is especially problematic if it is the captain (or agent of the captain) doing the inspections,



Fig. 1. A graphical representation of the number of initiatives, by type, from 2005 to 2021.

which is permissible in the standard guidelines. There is also some nebulosity here as ‘frequent’ is not defined [26].

Many of these standards also selectively choose which components of international conventions to include and exclude. Several of these exclusions are related to costs that should not be incurred by fishers. For example, the CGF SSCI at Sea Operations Standard [67] allows fishers to incur placement fees; the Fair Trade USA’s CFS [61] does not specify that vessel owners should pay for repatriation and specifies that fishers can be charged for onboard food and water; and the STF Vessel Auditable Standard [59] permits repatriation costs for fishers in some circumstances – all in contravention of ILO C188 [35] and relevant considering migrant fishers’ vulnerabilities to debt bondage [1]. In other cases, the standards provide exception clauses (e.g., Fair Trade CFS [61] and the working/rest hours exceptions) or they default to state/national legislation (e.g., CGF SSCI at Sea Operations [67] and the FISH standard [26]), which is problematic since fishers may be classified as self-employed and excluded from national labour legislation in many jurisdictions.

Not a single standard met all three fundamental principles of the UNGPs: support for human rights policy, human rights due diligence, and access to remedy (see Table 6). Only the FISH standard [26] and the STF Vessel Auditable Standards [59] include remedy, but remedy is limited to child labour and illegal recruitment fees respectively. As a result, these standards are not able to ensure that human and labour rights are respected in a manner that is consistent with the UNGPs, which should be the minimum benchmark.

Finally, most of the standards also did not require a chain of custody (CoC) mechanism to be established, instead relying on insufficiently defined processes and records to advance traceability, including self-reporting which likely cannot occur in real-time due to connectivity challenges (see Table 6). Without the CoC, standards are not able to provide an assurance to organisational buyers and consumers that the fish they are buying was caught in the socially responsible way they are purporting. Of the eight, only the MSC CoC Standard [62] has a full chain of custody mechanism in place but as noted in Tables 4–6, the human and labour rights covered by the standard are insufficient to provide the assurance needed. Both the GDST Core Normative Standards [65] and the Fair Trade USA CFS [61] have some mechanism in place, but there are exceptions for not tracing back to vessels that are likely to nullify assurances.

5. Discussion

Across sectors, worker-driven labour and human rights initiatives have led to the following outcomes for industries: 1) increased effectiveness of human rights governance of supply chains; 2) development of more effective monitoring mechanisms within supply chains; 3) greater ability to identify and remedy human and labour rights issues relevant to workers within the supply chains; and 4) incentives for businesses to respect and improve human rights. The lack of a fixed place of work in fishing, that at times may not be wholly within one state’s jurisdiction, presents a need for processes and opportunities for workers to drive adaptation of these strategies, instead of relying on arguments about fishing’s exceptional circumstances. Due to the relatively recent implementation of many of these standards, it is difficult to assess their effectiveness in improving working conditions. Nonetheless, our analysis suggests that these voluntary tools are structured in a manner that makes them likely to fail to deliver positive outcomes for workers.

5.1. Effectiveness of human rights governance

Worker-driven monitoring increase the effectiveness of human rights governance in supply chains by ensuring accountability, enforcement, and consequences for violations [83]. Building accountability in supply chains requires “objectively measurable gains for workers.” By responding to media exposés [5,39,40] and the pressure generated by

them from external international audiences, the seafood sector’s focus to date appears to have been on more abstract universal standards to protect those perceived as the most vulnerable workers to having their human rights violated. This has been at the expense of responding to fishers’ specific demands including greater voice, agency, and bargaining power and for governments to better protect their citizens’ rights to migrate for work (i.e., their labour rights) [91]. For example, most of the standards assessed explicitly prohibited the use or tolerance of forced labour (see Table 4), but none fully implemented all provision of ILO C188 (see Table 5), which was negotiated in part by workers’ representatives. Furthermore, none of the standards described worker grievance processes that would engender trusts through responsive and trustworthiness (see Table 4), making it difficult for workers to exercise their rights. This pattern of conflating human rights for labour rights and hyper-focusing on illegality has already occurred in other sectors and has failed to: 1) disrupt power imbalances, 2) challenge business practices that perpetuate exploitation, and 3) effect real change for workers in protecting their human and labour rights [8,11,15,21,22].

Additionally, we found no confirmatory evidence that workers or their representatives were included in any of the standard setting processes. Instead, many of the schemes involved multi-stakeholder initiatives led by more environmentally oriented entities (e.g., the Monterey Framework [45] and its related Social Responsibility Assessment Tool led by Conservation International [70]), sometimes in consultation with experts and stakeholders (e.g., Fair Trade USA CFS [61] or the RFPS [64]) or public consultations (e.g., the FISH standard [26] or the RFVS [63]). This suggests a replication of the NGO-corporate partnership risk reduction model used in responding to environmental harms, wherein companies externalize the risks and solutions, perpetuating market failures [84]. While these approaches may build transparency, consensus, and action when setting environmental standards, they disempower workers by allowing outside actors to overshadow worker perspectives or by the outright exclusion of workers from determining what issues need to be addressed and the processes and responsibilities for addressing them. Attempts to be inclusive rather than focusing on fishers, may also yield the lowest common denominator, consolidating minimum standards as the norm. Rather than improving standards, these can underpin widespread abuse of fishers [46].

This lack of operationalizable gains for workers’ rights may also suggest that these standard setting processes are attempting to adapt environmental standards for labour and human rights or are starting with environmental standards and “adding-on” labour standards such as the case with the addition of a “Human Rights and Social Responsibility” policy into FisheryProgress’ fishery improvement projects (FIPs) in 2021 [85]. In the absence of workers or tripartite processes, which include worker representatives, the dimensions of these mechanisms may be based on the principles environmental NGOs use in product (i.e., seafood) supply chains. That is, they start with ecological boundaries and criteria, which are not relational or considerate of power structures. Thus, subsequent linking of human and labour rights standards to environmental standards (e.g., tying them to FIPs) may further obfuscate the worker perspective and seek to draw equivalence between these pillars of sustainability.

The social and ecological aspects of fishing activity are not inter-changeable fungible, although they may be mutually reinforcing (e.g., the established link between illegal, unregulated, and unreported [IUU] fishing and labour rights violations) [86]. There is a clear divergence between social and ecological standards when it comes to voluntary standards, as ecosystem health is more visible to external watchdogs [30] and more objective, in that it is not underpinned by human interpretation that is imbued by unconscious biases influenced by racism, xenophobia, and other forms of systemic and intersectional discrimination or power relations. Additionally, evidence suggests the integration of social and ecological standards can provide a guise for removing labour rights [87] and deflect scrutiny about working conditions [88, 89].

Table 4
Analysis of worker-driven principles.

	Worker representation	Compliance & enforcement	Auditing mechanisms	Zero tolerance
STF Vessel Auditible Standards	Unclear how developed. The STF is an industry led multi-stakeholder initiative. There are business and NGO members currently, but no worker representatives appear to be members. Employers are required to comply with “all applicable laws that pertain to freedom of association and collective bargaining.”	There does not appear to be a binding market commitment at this time. Employer required to have a grievance procedure for workers to report to someone other than their direct supervisor. Effective measures are in place to ensure workers “feel safe and free from potential retaliation.” Time boundaries not specified beyond “swift.” Remediation policies are specified for child labour and for the reimbursement of illegal recruitment fees. No other remedy or recourse pathways are explicated.	Audits conducted by STF members’ auditors. No stated processes for ensuring procedures are free from conflicts of interests. No root cause analyses.	Forced labour, human trafficking, and modern slavery prohibited. Abuse and harassment prohibited. “Workers can submit a grievance without suffering prejudice or retaliation.”
Fair Trade USA	Fair Trade USA worked closely with a team of stakeholders that included Certificate Holders, traders, NGOs, and academics. Workers not explicitly mentioned. Workers may be interviewed during audits for the certification. Provisions for workers organizing and collective bargaining. “Fishers who do not have a formal employer must be organized into Fishing Associations, fishers who do have an employer may choose to organize into a Fishing Association, but it is not required.” Collective agreements accepted.	Uses a binding market agreement incentivized through a participant premium. Currently, some elements are binding, some are recommendations, and some will become binding over time. For hired-labor fishers, the employer must establish a grievance policy and procedures that allows for “anonymous complaints, resolutions in a timely manner (specific timeframe not detailed), and an appeals procedure.” It is recommended that a third-party ombudsman or government department mediates disputes. Standard requires more than one method for submitting grievances and complaints. Requires “actions taken to address each grievance,” but specific remedy and/or recourse pathways not explicated.	Certificate Holders are subjected to “auditing and reporting as managed by Fair Trade USA.” Certification is verified by an independent third-party. Fair Trade USA partners with Conformity Assessment Bodies. The manner in which the standard criteria will be “audited will vary based on the fishing operation.” No stated processes for ensuring procedures are free from conflicts of interests. Root cause analyses not included.	Zero tolerance of child and forced labor, human trafficking, and modern slavery. Zero tolerance of abuses. While the standard includes no retaliation for grievances language, it also permits disciplinary action against hired-labor fishers for making a grievance complaint as long as the employer can prove it was not retaliatory.
MSC CoC	Development process for standard not presented. The document is more focused in the treatment of the catch rather than workers so organising, collective bargaining, and collective agreements not discussed.	Absence of binding agreement. Grievance procedures not included. Measures for remedy and recourse not included.	The only requirements are a) The signing of the “COC Certificate Holder Statement of Understanding of Labour Requirements,” that only demands a third-party labour audit ¹ , b) Provide evidence that the audit was done, and c) Inform within 2 days if they fail to comply with the audit requirements. Organisations that are “Lower Risk for forced and child labour violations according to the Country Labour Risk Scoring Tool” are not required to comply with the former. Requirements aligned with ISO-17065. Relies on third-party certification; no processes for ensuring procedures are free from conflicts of interests. No root cause analyses specific to labour and working conditions (just vessel accidents and incidents).	Only point 7 of Principle 5 rules on workers wellbeing (“Specific Requirements on forced and child labour”.
RFVS	Built after incorporating inputs “from all sectors of the global seafood industry: “catching, processing, retail, standard holders and NGO’s.” Workers not mentioned. Two consultation phases: a) Initial consultation phase (no information on who was involved), and b) 60 days public consultation phase, “to allow feedback.” There is no information regarding how these feedbacks were considered, or how the RFVS was distributed to be discussed. Collective agreements accepted.	Recognises rights under international agreements but does not provide a trustful way to make sure that the certified units are complying. Puts the responsibility on the vessels to have “policies or procedures,” but does not provide alternatives. This happens with grievance and possible reprisals, discrimination before, during or after employment.	Requirements aligned with ISO-17065. Relies on third-party certification; no processes for ensuring procedures are free from conflicts of interests. No root cause analyses specific to labour and working conditions (just vessel accidents and incidents).	No child or forced labour. Requires a policy to be adopted by the skipper and/or owner to prohibit abuse and harassment. A policy shall be adopted to prevent retaliation.
RFPS	Developed by “representatives from each key supply chain sector within the seafood industry.” No information regarding the role of workers. The document is more focused in the treatment of the catch rather than workers so organising, collective bargaining, and collective agreements not discussed. Industry led standards drafted by companies through three years of	RFPS focuses in making ports agree to comply with United Kingdom legislation, which does have domestic legislation for its ratification of ILO C188. Port is required to have a documented grievance process and to specify time frame for resolving grievances. Remedy and recourse not included. Requires “name of internationally recognized [human welfare] standards	Relies on third-party certification; no processes for ensuring procedures are free from conflicts of interests. No root cause analysis.	Prohibits forced, bonded, or involuntary labour for port employees; vessels not specified. No policies on abuse and harassment specified. No policies to prevent retaliation specified. No discussion of zero tolerance policies since standards allow

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Table 4 (continued)

	Worker representation	Compliance & enforcement	Auditing mechanisms	Zero tolerance
GDST- Core Normative Standards	“consensus-based dialogue;” initially there were two dozen companies now there are five dozen companies	to which policy on a vessel/trip claims conformity; may be an internal policy. Does not provide a trustful, binding mechanism to make sure that the certified units are complying. No discussion of grievance mechanisms or remedy since standards allow vessels to select their own human welfare standards they will adhere to.	If vessel using an internal policy, subjected to third party audit. Root cause analyses not included.	vessels to select their own human welfare standards policy they will adhere to.
FISH Standard for Crew	Accepts fishers’ organising & collective bargaining. No role for workers during certification. Collective agreements accepted.	Recognises rights under international agreements but does not provide a trustful, binding mechanism to make sure that the certified units are complying. Grievance processes in place, though there are more requirements for large vessels. Time boundaries not specified. Procedures for engendering trust amongst workers not specified. Remedy and recourse not discussed.	No clear measures to eliminate conflicts of interest in audits. No root cause analyses specified.	No child or forced labour. Prohibits harassment and abuse. “The grievance process shall ensure that a fisher who lodges a grievance is not retaliated against for doing so.”
CGF SSCI – at sea operations	Framework developed by Technical Working Group comprised of 8 corporations, 1 statutory corporation, and 2 NGOs (both environmentally oriented), followed by a 60-day public consultation period. No reference to workers in development process. It says there is a “focus on worker knowledge” but unclear how that is operationalized in the standard. Provisions for workers organising and collective bargaining. Collective agreements accepted.	“Informed by international reference frameworks such as principles from relevant ILO Conventions, the 1998 Declaration on Fundamental Principles and Rights at Work, the UN Guiding Principles on Business and Human Rights and the CGF Priority Industry Principles on Forced Labour.” It also says it “incorporates technical elements of ILO C188.” Does not provide a trustful, binding mechanism to make sure that the certified units are complying. Frequently defaults to state legislation. Grievance mechanism required but not specified to be operated by truly independent third party with no conflicts of interest; no specified timeline for response. Remedy and recourse not covered.	“Robust auditing” not further specified; frequency not specified; will include interviews, but measures for trust and safety not specified. Root cause analysis is a term “not applicable under scope.”	Does not explicitly prohibit forced labour, instead situations involving fees and costs cannot lead to forced or compulsory labour or debt bondage. Child labour is a term “not applicable under scope.” Measures must be in place to prevent abuse but no zero tolerance policy articulated. No retaliation if complaint lodged in good faith.

Fishers have the most invested interest in their working conditions and thus are their own best representatives in developing responses to these issues. Continued failure to include workers will likely fail to disrupt the status quo business models underpinned by underpayment, overwork, and exploitation of predominantly migrant workers in the interest of increasing profits for owners without driving up production costs up so retailers can provide cheap seafood [90]. This model thrives off power imbalances that give corporations most of the power [6]. Indeed, Table 4 suggests that business, and to some extent environmentally oriented NGO, interests are overly represented in these non-governmental social governance tools, compared to the needs of workers. As a result, intended outcomes of these tools may emphasize risk mitigation and brand protection at the cost of transformative change in terms of working conditions [12].

Referencing rights guaranteed in ILO C188 and other conventions in voluntary standards can be a first step in mainstreaming new norms in the sector around working conditions. However, voluntary standards are not enforceable as is the case with binding instruments, policy or market-based, and therefore should not be considered a substitute. While there is some evidence in other sectors that the duplication of standards in voluntary measures and state regulation leads to improved compliance, this is only when the state regulation precedes the voluntary measure. Thus, the non-governmental mechanism reinforces the governmental tools [10,92] and there is existing public and state-led enforcement [93]. As such, there should be concern that an absence of tools anchored by binding commitments could exacerbate an already extant diffusion of responsibility for the improvement of working conditions in international seafood supply chains.

5.2. Effective monitoring mechanisms

Worker-driven initiatives in other sectors have been successful, in first eliminating and then ultimately preventing labour abuses because workers trust the processes and systems. Specifically, data suggests a worker accessible grievance mechanism with guaranteed timely responses; truly independent third-party monitoring; zero tolerance for retaliation policies; and concrete consequences for violations that validate workers’ experiences engender the trust necessary amongst workers to overcome the risks associated with reporting complaints [22, 78–80,94,95].

Additionally, though non-governmental social governance tools are predicated on compliance [8], all of the standards appear to rely on social auditing processes to assure legitimacy. And while most report they will use third-party monitoring, they do not describe how these processes will be truly independent. Demonstrable evidence across sectors and time has shown that social audits fail to effectively monitor working conditions and are plagued with problems such as the training, independence, and capacity of auditors and monitors [79]. Auditors are typically reliant on the companies that hired them for access to production sites, workers, internally collected data, and financing [21]. Thus, there may be a financial and business (e.g., repeat contracts) incentive to not report violations in-depth.

Many auditors also lack the training, expertise, and experience of workplace labour monitoring which has led to cases of non-compliance despite corporations having satisfied internal or third-party audits [15]. For example, a recent investigation into social audits at a Malaysian glove factory discovered auditors reported 61 violations of voluntary

Table 5
Full Implementation of ILO C188 standards and requirements.

	Minimum requirements for work onboard	Conditions of service	Accommodation & food	Medical care, health protection and social security	Compliance and enforcement
STF Vessel Standards	Has no prohibitions of work at night for under 18-year-old workers as in C188. Only requires medical certificate for fisher on boats at sea for more than 3 days. No information regarding validity period, or information included in the medical certificate.	No crew list requirement. No reference to the crew size. No requirement to keep a copy of the contract on board. Few details on repatriation policy. The only reference states that a fee may be charged on a pro-rata scale for the expenses of repatriation if the employee terminates employment prior to the end of the contract. Focus on employment agencies and recruiters' behaviour. No mention of the right nor the mechanisms to transmit all or part of their payments received by the workers to their families	Broadly mentioned in the STF Code of Conduct, but not specific enough in the Vessel Auditable Standards. Water and food quality requirements are not included.	Claims that workplaces should be "as safe as possible". Not specific enough. Includes the basic requirement of first aid supplies and personnel, safety policies and personnel protective equipment. Social security is mentioned as a point in equal treatment for migrant workers, but it is not mentioned as a requirement.	No adequate tools in place to ensure compliance. C188 is not mentioned in the document. There is no procedure to show the vessel's compliance with the Convention.
Fair Trade USA	Complies with minimum age requirements. Requires medical certificate for vessels > 24 m.	Minimum hours of rest are consistent with ILO C188, but there are "exceptional circumstances" clauses that can be negotiated prior to the trip. Non-compliant with crew list requirements. Full application of work agreement requirements. Partial application of repatriation measures. Does not specify that vessel owner should incur cost of repatriation. Full application of recruitment and placement measures. Full application of private employment agencies measures. Full application of payment measures.	Partial application of accommodation and food requirements. Has excluded requirements around noise and vibration. Does not require that food and water is provided at no cost to the fisher.	Full application of medical care requirements. Accident prevention measures are more focused on registered fishers than hired-labor fishers; some accident prevention measures are recommended or best practices – not required. Social security protections such as health insurance and a retirement pension are only compulsory on large operations (more than 25 fishers). They are recommended for other operations. Workers compensation is only compulsory on large operations.	There are procedures for demonstrating compliance with the measures from C188 that the standard invokes. Issues with inspection: inspections are to be conducted in 'accordance with applicable laws and regulations. The requirement of C188 would only apply if the vessel was bound by this convention, which will not always be the case.
MSC CoC	Only point 7 of Principle 5 rules on workers wellbeing ("Specific Requirements on forced and child labour". The only requirements are a) The signing of the "COC Certificate Holder Statement of Understanding of Labour Requirements," that only demands a third-party labour audit, b) Provide evidence that the audit was done, and c) Inform within 2 days if they fail to comply with the audit requirements. Organisations that are "Lower Risk for forced and child labour violations according to the Country Labour Risk Scoring Tool" are not required to comply with the former.				
RFVS	Does not accept 15- year-old workers (with laws authorization). RFVS is not specific enough on the characteristics of medical certifications required for the crew.	Repatriation granted. Ensures opportunity to review contracts or work agreements. Does not specify working hours or length of rest periods.	Does not mention food quality, quantity, or nutritional values. Does not include specific conditions about the accommodation.	Less specific about medical examinations (Period validity, minimum requirements of the medical certificate, for example).	Recognises rights under international agreements but does not provide a trustful way to make sure that the certified units are complying. Puts the responsibility on the vessels to have "policies or procedures," but does not provide alternatives. This happens with grievance and possible reprisals, discrimination before, during or after employment.
RFPS	Ports are not in the scope of C188. C188 is not mentioned in the document, even in the guidelines of the "Port and Working Environment"	RFPS does not include procedures for port workers' recruitment processes.	RFPS does not mention accommodation or food provision.	RFPS does not require "full health and safety strategy and policy in place." It does not include compulsory insurance or compensations	RFPS focuses in making ports agree to comply with United Kingdom legislation, which does have domestic legislation

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Table 5 (continued)

	Minimum requirements for work onboard	Conditions of service	Accommodation & food	Medical care, health protection and social security	Compliance and enforcement
GDST- Core Normative Standards	principle, that discusses the working environment and welfare practices and provisions. Standards allow vessels to select their own human welfare standards policy they will adhere to, thus specific elements are not discussed. Standards do discuss the use of a internationally recognized standards, so presumably this could include ILO C188's standards.			for sickness, injuries or death.	for its ratification of ILO C188.
FISH Standard for Crew	Full compliance	Partial compliance Does not include alternatives for when fishing vessel owners fail to provide repatriation. FISH does not request recruitment agents to be coordinated with the public employment system, nor that they act "in conformity with a standardised system of licensing or certification," as C188 regulations request.	Full application.	Partial application. Less specific with medical examinations (Period validity, minimum requirements of the medical certificate, for example).	Partial compliance Issues with inspection: inspections are to be conducted in 'accordance with applicable laws and regulations. The requirement of C188 would only apply if the vessel was bound by this convention, which will not always be the case. Recognises rights under international agreements but does not provide a trustful way to make sure that the certified units are complying.
CGF SSCI – at sea operations	Compliant with minimum age. Not compliant with medical examination certificate requirement.	Not compliant with work and rest hours – defaults to national legislation. Requires a "mechanism" for identifying workers on board. Abstractly discusses "terms and conditions of work" but does not require a written work agreement. Repatriation not included in standard. Not compliant with recruitment and placement measures as it allows fishers to incur fees and costs. Compliant with private employment agencies. Does not require monthly payments as a minimum.	Partial application for accommodation. "Sufficient size and quality" and appropriately equipped for length of fishing trips required. Lack of specifics about hot/cold water and provisions for sleeping accommodations. Partial application for food and water. Does not specify that fishers should not incur the cost of food and water while fishing.	Partial application. Specifies that protections should be in accordance with the national legal requirements and when protections are not legislated, the standard requires the provision of protections for "work-related sickness, injury or death appropriate to the size and type of vessel." Does not explicitly require workers' compensation, compulsory insurance, or vessel owner liability.	Reliance on audits and the maintenance of evidence to demonstrate compliance. "The audit shall take place during a period when on-site observation can take place, evidence can be collected, and interviews can occur."

standards and over 50 regulatory violations; yet the auditors concluded there was no evidence of forced labour or debt bondage in the facility which was later contradicted by state labour inspectors [96]. Though some of the standards have provisions for interviewing workers, basic safety measures such as interviewing workers away from supervisors or captains are not detailed.

Social auditing programs also lack transparent information sharing channels. Specific to seafood, Packer et al. [97] found that both internal and external monitoring for non-governmental governance tools (both environmental and social) were often not followed by structured and transparent monitoring. Even worker grievance mechanisms tied to social audits do not improve data verifiability or assurances of working conditions [79]. This is because the voluntary, non-governmental social governance tools are not associated with meaningful company engagement of workers. The voluntary measures also do not foster improved and safer communication channels between workers and their employers, government actors, or supply chain operators [79]. Beyond the STF Vessel Auditable Standards [60] explicitly stating there should be a grievance procedure for reporting to someone other than a supervisor and Fair Trade USA's Fisheries Associations [61] (though unclear if migrant hired-labour fishers would trust associations comprised of captains and vessel owners), none of the measures appear to contribute

any new channels of communication between workplaces, inspectors, or supply chains. And few had provisions in the tools for worker training and education around their rights (notably, Fair Trade USA CFS has a strong worker education component [61]). These noted failures of social audits are further compounded by long supply chains with several nodes and spatial heterogeneity wherein workers may have difficulty identifying their employer (i.e, supply chain characteristics frequently found in fishing) [9,21,98].

5.3. Greater ability to identify and remedy abuses

Worker-driven initiatives have repeatedly demonstrated that actionable remedy must be the end goal for any response to labour abuses to achieve justice for, and empower workers [8,24]. Instead, the current hydra of seafood standards seems to conceptualize transparency and accountability through reporting as the end goal. Of the eight standards analyzed, only the Seafood Task Force's Vessel Auditable Standards [60] mentioned remedy and recourse, and it was limited to child and forced labour and the reimbursement of illegal recruitment fees (see Table 4). In particular, the analysis suggests there are unfounded benchmarks predicated on improvement of performance versus prevention or mitigation of the problem (e.g., ensuring 75% of global

Table 6
Full application of UN Guiding Principles on Business and Human Rights.

	Support for human rights policy	Human rights due diligence	Access to remedy	Chain of custody mechanism
STF Vessel Standards	Using standards would only provide limited support for human rights policy.	Due diligence measures only in reference to private employment agencies and recruiters.	Remediation policies are specified for child labour and for the reimbursement of illegal recruitment fees. No other remedy or recourse pathways are explained.	No chain of custody mechanism detailed.
Fair Trade USA	Requires suppliers to be certified using the standard. Requires a human rights policy to be in place and to be communicated to workers.	Does not explicitly mention human rights due diligence.	No remediation policies specified. Only abstract reference to resolution processes for grievances and complaints and option for engaging third-party ombudsman, government representative, or Fair Trade USA’s Social Engagement Team for disputes that cannot be resolved at site-level.	Requires a physical traceability system. Paper tracking systems may be used. Traceability starts at the Fishing Association. “Ideally, the system can trace back a particular final product all the way to the specific vessel from which it came, but at the very least, the expectation is that a batch can be clearly linked with Fishing Association members. Unclear what happens if vessel is not operated by a registered fisher and hired-labor fishers onboard are not part of the Fishing Association.
MSC CoC	Certification would only provide limited support for human rights policy	Does not explicitly mention human rights due diligence.	Does not explicitly mention access to remedy.	For a limited number of labour rights issues included, standards do provide a chain of custody mechanism.
RFVS	Certification using standards would only provide limited support for human rights policy.	Due diligence is mentioned in relation to labor recruiters only,	Does not explicitly mention access to remedies concerning adverse impacts on human rights.	Section 3 discusses “Catch Traceability Management”. The section (of two points only) lists the traceability information required to receive the certification and asks the vessels to have a system to identify and segregate the catch. There is no way to assure sufficient and satisfactory due diligence.
RFPS	Certification would only provide limited support for human rights policy.	Does not explicitly mention human rights due diligence.	Does not explicitly mention access to remedies concerning adverse impacts on human rights.	Traceability is included as one of the five principles. However, it states that “There shall be processes in place that enable the traceability of a catch to its originating vessels, including a record of any other fishing ports that the catch has passed through.” Does not provide good guidance on what to do to keep traceability.
GDST- Core Normative Standards	Use standards and guidelines to increase transparency/traceability and reduce adverse human rights impacts. For example, transshipment is a driver of adverse human rights impacts and standards, and guidelines will increase transparency in relation to this issue.	Does not explicitly mention human rights due diligence.	Does not explicitly mention access to remedies concerning adverse impacts on human rights.	Chain of custody mechanism specified, including harvest chain of custody certification, but appears to allow the processor to be the first supply chain actor to collect and share traceability events in some circumstances.
FISH Standard for Crew	Requires suppliers to be certified using the standard.	The assessment tool does not explicitly mention human rights due diligence.	Remedy only considered in relation to child labour	Does not address chain of custody.
CGF SSCI – at sea operations	Requires suppliers to be certified using the standard. Requires a human rights policy to be in place and to be communicated to workers.	Does not explicitly mention human rights due diligence. Entities are required to conduct “due diligence to ensure workers are safe and well for working at sea” under occupational health and safety measures.	Access to remedy not included.	No chain of custody mechanism mentioned.

production has “adequate safeguards in place to ensure social responsibility” as proposed by The Conservation Alliance for Seafood Solutions, [56]). Similarly, is an abundance of non-specific targets that lack formalized action plans. For example, the RFVS [63] and the RFPS [64] both defer the development of grievance processes to vessels and ports respectively, while the GDST Core Normative Standards [65] defer the selection of an internationally recognized human welfare standard for benchmarking.

Reporting is a fundamental component of almost all non-governmental social governance tools across sectors. Despite this, voluntary tools have a history of conflating reporting with improving labour rights and working conditions [8,24]. Data collection and transparency are essential to any initiative. However, some of the standards’ (e.g., the FISH standard [26] and the RFPS [64] reputedly

improved data transparency relies on, in part, reporting from the use of self-assessments.

This mistaking of transparency as the end goal is also reinforced by the recent proliferation of data reporting tools which supposedly aim to provide assurances to buyers, retailers, and at times, even consumers (see Fig. 1 and Table 1). Instead, these tools will likely continue to support the diversified sourcing model, which means sourcing decisions can change with price and availability, creating a coverage fallacy.

While the aforementioned limitations associated with social audits create liabilities for certification schemes, in general, certification MSIs risk misleading the public as the labels and certification logos on products are simple, with broad language that fails to specify the scope of the MSI and lacking detailed information about limitations. Furthermore, some MSIs may use identical terms with different

meanings, which can be compounded with coupled social-ecological challenges and related certifications [21]. For example, the term 'sustainable' may refer to a living wage standard in some instances and not in others. The Marine Stewardship Council (MSC) certified fish as 'sustainable' for more than 15 years without addressing labour issues [62], despite sustainability allegedly suggesting environmental, social, and economic sustainability.

These non-governmental social governance mechanisms will likely fail to improve conditions for fishers, due to their voluntary nature, broad scope, ineffective/non-existent monitoring, exclusion of workers as well as the absence of commitments or enforcement mechanisms. They are not effective tools for holding corporations accountable for abuses, protecting human rights, or providing workers, survivors, and victims with access to remedy. While they may support learning, dialogue, and trust-building between corporations and other stakeholders, they cannot be relied upon for the protection of human and labour rights and are not a substitute for public regulation [22]. Their increasing proliferation may also contribute to a hydra of standards that creates confusion, barriers, and unnecessary opportunity costs in the form of time (e.g., time wasted navigating the multitude of standards) and resources (e.g., financial resources that could be diverted to workers [88] or used as financial inducements to suppliers to offset the costs associated with a fair business model [82]).

ILO C188 has given trade unions and affiliates that declare fishers a minimum set of principles to fight for in protecting their members and fishers employed on their flagged vessels and in their waters [77,91]. Through a tripartite process, it has established concrete standards as a starting point to regulate the sector, but these are minimum standards, and much work remains to ensure decent work in fishing. Workers and their representatives should continue to drive further sectoral regulation and responses. The ratification of relevant international and domestic instruments; proper consultation with workers and worker's representatives; development of contractual pathways to remedy that can be leveraged by workers; formal social dialogue and implementation of collective bargaining agreements (CBAs), either at national, sectoral, port, fleet, vessel or company level are all essential components of worker-driven initiatives that cannot be sidestepped through voluntary standards. "Respect for human right [and labour rights] cannot be optional or voluntary," and neither can the consequences [82].

6. Conclusion

The hydra of non-governmental social governance tools being produced will be an ineffective means for increasing respect for and improving human and labour rights within seafood supply chains in the absence of transformations in the following areas: 1) the business models of seafood businesses; 2) the long supply chains within the seafood industry; 3) worker participation in the governance of seafood supply chains; and 4) the widespread adoption of ILO C188 and similar laws and conventions by fishing nations. The tools assessed in this research have been developed by bodies that have vested interests in the continuation of a social responsibility culture that does not ensure accountability, nor create real liability for those exploiting fishers. These bodies avoid measures that would make seafood supply chains transparent and traceable and keep failing to give workers or their representatives a seat at the decision-making table or in the verification processes. While for those operators who already respect their workers, these tools can provide a benchmark to maintain good practice, unfortunately, for those who do not, these tools are a minor and easily circumvented (and voluntary) inconvenience, which can provide public relations and financial benefits to the companies, with no benefits 'trickling down' to workers. For criminal operations, these tools pose no significant threat at all.

The working conditions of fishers should be regulated along the same general principles as other shore-based industries as well as being comparable to working conditions in the merchant marine [99], with

adequate consideration being given to addressing the special conditions which apply to fisheries. The conditions of work for fishers should, as a general rule, be the result of collective agreements and negotiations between vessel owners and trade unions or fishers' organisations that fulfill similar functions, and be fully in accordance with the Universal Declaration of Human Rights and the core labour standards adopted by the ILO and reflect the principles set out in the ILO's Decent Work Programme. National law should, depending on national labour market traditions and customs, supplement the conditions set out in such agreements.

Even in the ideal circumstances, voluntary non-governmental social governance tools are an adaptive strategy to do less harm. Instead of increased investment in these voluntary tools, seafood brands and retailers need to encourage the sector's movement toward a more transformational, transparent, and worker-centric approach, such as worker-driven models of labour participation, monitoring, and remediation [46,100].

CRedit authorship contribution statement

Jessica L. Decker Sparks: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **Lee Matthews:** Methodology, Writing – review & editing. **Daniel Cárdenas:** Methodology. **Chris Williams:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing.

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Declaration of Competing Interest

All authors declare no competing interests.

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