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# Collateral damage? Small-scale fisheries in the global fight against IUU fishing

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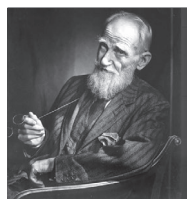
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## Abstract

Concern over illegal, unreported and unregulated (IUU) fishing has led to a number of policy, trade and surveillance measures. While much attention has been given to the impact of IUU regulation on industrial fleets, recognition of the distinct impacts on small-scale fisheries is conspicuously lacking from the policy and research debate. In this paper, we outline three ways in which the application of IUU discourse and regulation undermines small-scale fisheries. First, the mainstream construction of “illegal,” “unreported” and “unregulated” fishing, and also the categorical use of “IUU” in an all-inclusive sense, disregards the diversity, legitimacy and sustainability of small-scale fisheries practices and their governing systems. Second, we explore how the recent trade-related measures to counter IUU fishing mask and reinforce existing inequalities between different sectors and countries, creating an unfair burden on small-scale fisheries and countries who depend on them. Third, as IUU fishing is increasingly approached as “organized crime,” there is a risk of inappropriately targeting small-scale fisheries, at times violently. Reflecting on these three trends, we propose three strategies by which a more sensitive and ultimately more equitable incorporation of small-scale fisheries can be supported in the global fight against IUU fishing.

## KEYWORDS

catch certification, developing countries, fisheries governance, maritime security, organized crime, seafood trade



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**Etymology of Ghoti** George Bernard Shaw (1856–1950), polymath, playwright, Nobel prize winner, and the most prolific letter writer in history, was an advocate of English spelling reform. He was reportedly fond of pointing out its absurdities by proving that ‘fish’ could be spelt ‘ghoti’. That is: ‘gh’ as in ‘rough’, ‘o’ as in ‘women’ and ‘ti’ as in palatal.

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## 1 | INTRODUCTION

Illegal, unreported and unregulated (IUU) fishing is attributed as a major cause of overfishing around the world. Annual IUU landings are estimated at 26 million tons globally, equivalent to one-in-five wild-caught fish, with a net annual cost of between \$10 and \$23 billion (Agnew et al., 2009; Pew Trusts, 2018; Sumaila, Alder, & Keith, 2006). Faced with the scale of these figures, regional fisheries management organizations (RFMOs) and intergovernmental organizations—now increasingly joined by a broad range of NGOs and individual states—see the elimination of IUU fishing as essential to securing sustainable fishery resources into the future (e.g. Cabral et al., 2018; Erceg, 2006; FAO, 2001a, 2001b; Flothmann et al., 2010; Pitcher, Watson, Forrest, Valtýsson, & Guénette, 2002).

Early impetus for addressing IUU fishing came from the United Nations (UN), which at the turn of the century (from 1999 to 2000) declared it as “one of the most severe problems affecting world fisheries” (UNGA, 1999). This led to the Food and Agriculture Organization's (FAO) International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) in 2001 (FAO, 2001a). Over time, the UN has expanded its IUU framework through the 2009 Port State Measures Agreement (entered into force in 2016) aimed at regulating landings and transshipment of fish from foreign-flagged vessels (Pew Trusts, 2018). RFMOs, most of which fall under the remit of the UN's Law of the Sea, have also gradually addressed IUU fishing in transboundary waters through a range of monitoring, control and surveillance (MCS) measures, albeit with varying effectiveness (e.g. Cullis-Suzuki & Pauly, 2010; Haas, Haward, McGee, & Fleming, 2019). IUU fishing is also taken up under the UN Sustainable Development Goal (SDG) 14, which further exhorts countries to improve coastal state controls, and national legal frameworks (see Haas, Fleming, Haward, & McGee, 2019).

Meanwhile, international trade-based measures have evolved over time to augment traditional MCS approaches to IUU (He, 2017; Stokke, 2009). Both unilateral and multilateral trade-based measures have been put in place, including cargo documentation, voluntary vessel registries, country report cards and private consumer-directed product labelling schemes (see Helyar et al., 2014; Le Gallic & Cox, 2006; Stokke, 2009). Most notably, overt trade-restrictive measures have been implemented by major seafood markets such as the European Union (EU) and United States (US). The EU-IUU regulation restricts or blocks imports if exporting countries do not show significant efforts to address IUU activity in their waters or by vessels under their control (see Miller, Bush, & Mol, 2014; Miller & Sumaila, 2016; Soyer, Leloudas, & Miller, 2018). The US Seafood Import Monitoring Program (SIMP) in contrast relies on an import permit system, whereby catch data and documentation are requested from US-based seafood importers, instead of government-to-government certification (He, 2018).<sup>1</sup>The United States (US) has implemented a similar IUU-related measure. In 2014, the US government established a

“Comprehensive Framework to Combat Illegal, Unreported, and Unregulated Fishing and Seafood Fraud” (dated 17 June 2014) with the aim of establishing reporting procedures for importation of “at-risk” fish (NOAA, 2019). In 2018, this framework transformed into the mandatory Seafood Import Monitoring Program (SIMP), implemented under the Magnuson-Stevens Fishery Conservation and Management Act, with the aim of ensuring transparency for 13 seafood species vulnerable to IUU and/or mislabelling seafood (see NOAA, 2019). Under SIMP, there are provisions for individual exporting firms to gain “trusted trader” status, if they can establish and verify their supply chain is free of IUU fish or fish product and falsely labelled seafood product (NOAA, 2018). Those with this status can benefit from reduced reporting and recordkeeping requirements. Unlike the EU-IUU regulation, the US-SIMP does not implement country-level exclusion from the US market as a result of non-compliance. But small-scale fisheries remain vulnerable to the increased information requirements demanded under US-SIMP—which increases their dependency on their buyers or “third parties” to support documentation and traceability (see Djelantik, 2016; He, 2018). Amid recent calls to expand these forceful trade measures to other major importing countries, such as Japan and China (Sumaila, 2019), this article uses the longer-running and more widely discussed EU policy as an illustration of the wider shift to trade-restrictive IUU regulation.

While the breadth of IUU fishing countermeasures is impressive, we argue that they have a strong tendency to homogenize fishing activity either by the country in which they operate, by the export species they target or by the sector they encapsulate. Categorical assumptions of what IUU is and how it should be “fought” hold significant consequences for small-scale fisheries (SSF), a sector that includes 86 per cent of motorized fishing vessels (corresponding to 12 m in length or less), 90 per cent of the fisheries workforce and two-thirds of catches destined for direct human consumption globally (FAO, 2018). By their very nature, small-scale fisheries do not commonly fall under reporting regimes or government regulatory frameworks aimed at industrial and other large-scale fisheries. Yet, because IUU fishing is frequently interpreted and applied without distinguishing the particularities of small-scale fisheries (see Drammeh, 2001; Isaacs & Witbooi, 2019; Luomba, Chuenpagdee, & Song, 2016 for exceptions), the wide range of countermeasures outlined above risk undermining not only the well-being of small-scale fishers (including achievement of SDGs 1 and 2 aimed at poverty elimination and food security) but also the ability of the measures to be legitimate and effective in the long run (Berkes & Nayak, 2018; Coulthard, Johnson, & McGregor, 2011).

In this paper, we reflect on how the assumptions, terminology and regulations associated with IUU fishing have the potential to negatively impact small-scale fisheries. Our analysis is divided into four parts. First, we argue that the conflation of “illegal,” “unreported” and “unregulated” into “IUU” erases the distinction between small-scale and industrial fleets, and also inadequately discriminates between the distinct illegal, unregulated and/or unreported activities. Second, we review the various ways in which counter-IUU

measures, seen through the EU's trade policy example, lead to unfair assumptions of the role and function of small-scale fisheries and small-scale fisheries-dependent countries. Third, we reflect on the growing tendency to frame IUU fishing as "crime" and the effect this has on the growing criminalization of small-scale fishers. Finally, we discuss how a more small-scale fisheries-sensitive approach can be attained in the global fight against IUU fishing by outlining three broad strategies.

## 2 | THE "LARGE-SCALE" CONCEPT OF IUU

The concept of "IUU fishing" emerged out of concerns related to industrial fishing fleets operating in the high seas—in particular the longline toothfish fishery in the Antarctic Ocean within the CCAMLR framework (the Commission for the Conservation of Antarctic Marine Living Resources).<sup>2</sup> From this specific context of the high seas, "illegal," "unreported" and "unregulated" fishing is now commonly used to explain the main drivers of global fisheries decline regardless of the social or ecological context in which these fisheries are practiced (Palma, Tsamenyi, & Edeson, 2010). In the process, the non-differentiation of illegal, unreported and unregulated under the banner of "IUU" "obscures the policy responses required by treating as one what are really several distinct problems calling for as many distinct solutions" (Serdy, 2011, p. 272). Following this observation, we argue there are at least three ways in which the non-differentiated use of "IUU" fishing has negatively affected, and even delegitimized, small-scale fisheries.

First, the categorization of *illegal* fishing as a concern of the state has tended to ignore the existence of plural rule systems governing small-scale fisheries activity (i.e. legal pluralism, Bavinck, 2005; see also Adhuri, 2013; Foale, Cohen, Januchowski-Hartely, Wenger, & Macintyre, 2011; Rahman et al., 2017). It is widely documented that many small-scale fisheries are self-governed through a range of customary rules, most of which were

developed in the absence of the state (see Ruddle & Satria, 2010). But as the inland and coastal waters and the fisheries resources within them have been gradually enclosed within (sub)national state regulation, small-scale fisheries practices have also been subsumed under state managerial control (*sensu* Scott, 1998; see also Bavington, 2010; Butcher, 2004; Campling & Havice, 2014). In the process, fishing activity and tenure arrangements that fall outside state control have been made "illegal"—even when there may be existing rules controlling fishing effort or allocation. For example, traditional tenure systems governing coastal fisheries resources in the Pacific were in some cases weakened and eliminated by the imposition of formal laws by colonial governments (Johannes, 1978; see also Chirwa, 1996; Gustave & Borchers, 2008). Such formal proclamations of "illegality" have serious implications for local cultures, livelihoods and economies. If enforced, fishing activity can be shut down, informal trade significantly curtailed and socio-cultural linkages between coastal communities eroded (Fabinyi et al., 2014; Ross, Adhuri, Abdurrahim, & Phelan, 2019). The aim here is not to imply that self-governance rules in small-scale fisheries are necessarily more effective in controlling stock status than government control. Instead, it highlights the need to recognize the empirical reality that diverse forms of management, including self-governance, exist and even prevail in small-scale fisheries (e.g. see Foale et al., 2011; Zeller & Pauly, 2019).

Moreover, the sharp binary of what is "legal" makes everything else illegal by definition, undermining more nuanced understandings of legality/illegality as a spectrum of beliefs, values and practices (Benda-Beckmann, 2002; Nahuelhual, Saavedra, Mellado, Vergara, & Vallejos, 2020). As illustrated in the Philippines, the use of beach seining, while illegal in the eyes of the law, is often tolerated by fishers, community members and local-level government officials as compared to more destructive fishing methods such as cyanide or blast fishing (Eder, 2009; see also Bell, Hampshire, & Topalidou, 2007). It thus appears prudent to understand the severity, frequency, magnitude and acceptance of "illegal" activity in determining the applicability of IUU-related measures.

Second, *unreported* fishing refers to the misreporting or non-reporting of relevant information, including the volume and composition of catch and landings, vessel movement and catch location and vessel registration (Palma et al., 2010; Serdy, 2011; Theilen, 2013). The failure to collect such information is deemed to undermine efforts to assess stocks; create and implement harvest strategies; and eliminate fraudulent practices at sea and the market through traceability and transparency (Bailey, Bush, Miller, & Kochen, 2016; Duggan & Kochen, 2016).

Small-scale fisheries are, however, chronically unreported because, unlike industrial fisheries, landing sites are widely distributed, vessels are small and numerous, and their catches have generally not been included into national stock assessment and management methodologies (Duggan & Kochen, 2016; Quetglas et al., 2016). In addition, the small-scale sector across a number of countries has historically been excluded from reporting requirements either because of weak state capacity to enumerate these fisheries (Govan, 2014)

<sup>2</sup>The origin of the "IUU fishing" concept can be traced to the concerns discussed within the CCAMLR (the Commission for the Conservation of Antarctic Marine Living Resources). During the 15th Session in 1996, specific concerns about illegal and unreported fishing were first raised. Illegal fishing, particularly in the longline fishery for toothfish in the Antarctic Ocean, was identified as a particular challenge. Likewise, fishing activities of vessels flying the flags of non-CCAMLR members were described as unregulated fishing, who also provided no reports of their catches from the Convention area. Since the first formal mention of IUU fishing during the 16th Session of the CCAMLR in 1997, the concept began to appear regularly at CCAMLR meetings. In 1999, the term also found its way into meeting reports of the FAO, the International Maritime Organization, the UN General Assembly and other regional fisheries management organizations (RFMOs) to refer broadly to a combination of unsustainable fishing activities by both members and non-members. In FAO, the term IUU fishing was formally adopted and became a central part of its international fisheries policy at the 23rd Session of the Committee on Fisheries (COFI) in 1999. A series of rapid developments concretized the IUU fishing notion, including the Rome Declaration on Responsible Fisheries in 1999 to develop an international plan of action to address IUU fishing as well as a global review of IUU fishing by FAO (see Bray, 2001). A draft text of "International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing" by the FAO Expert Consultation on IUU Fishing was tabled in May 2000, followed by FAO Technical Consultations on IUU fishing. Finally, the COFI in March 2001 adopted the text of the IPOA-IUU, which was subsequently endorsed by the FAO Council at its 120th Session in June 2001 (see FAO, 2015; Palma et al., 2010 for more details).

and/or because assumptions made in stock assessments are already deemed robust enough for the small-scale sector (Mahon, 1997). Though unreported, these fisheries are not necessarily illegal, and any distinction of this kind is again lost in the blanket use of "IUU" (see Shajahan, 2012). This conflation of unreported fishing as IUU fishing, regardless of context or conditions, has led to perverse assumptions around the status of small-scale fisheries. For example, Watson and Tidd (2018) classify 80% of all non-industrial fisheries globally from 1950 to 2015 as "IUU" because there was no recoverable record of landing. While correct in the sense that this fishing is not reported, this non-differentiated use of "IUU" delegitimizes these fisheries with little consideration of their regulatory status, local economic importance or contribution to overall fish stock or habitat status.

Finally, *unregulated* fishing is perhaps the most ambiguous category of "IUU" (Rosello, 2017; Theilen, 2013). Much of this ambiguity extends from the IPOA-IUU, which permits certain unregulated fishing if it "take[s] place in a manner that is not in violation of applicable international law and may not require the application of measures" (FAO, 2001a, p. 3). In other words, a fishery is considered unregulated based on the *status* of the prevailing national or sub-national regulatory system, rather than that fishery's *compliance* with the regulatory system in place (FAO, 2015). This becomes all the more problematic when coastal and inland small-scale fisheries are largely unregulated by the state, with *de jure* open access, in order for small-scale fisheries to meet wider societal goals, such as livelihood and food security in remote and often poor communities (e.g. India, Sri Lanka, Indonesia and Kiribati; also recreational fisheries in countries like South Korea).

The lack of explicit government regulation does not necessarily mean there are no well-functioning rules or systems in place. As Arthur (2020, p. 1) notes, "not restricting who can fish may represent a viable management option for some small-scale fisheries, particularly where there are migratory fishers, seasonal waterbodies or fluctuating resources." For example, customary rules regulating local access to stocks and habitat, often even adapting to changing climatic conditions, have been widely shown to function effectively in small-scale fisheries (e.g. Jul-Larsen, Kolding, Overå, Nielsen, & Zwieten, 2003; Kolding & van Zwieten, 2011; Ruddle & Satria, 2010; Tezzo, Kura, Baran, & Wah, 2017). In such cases, "unregulated" appears to be more a matter of weak government recognition of such customary rules which develop, for example, through social ties or co-management (e.g. Alexander, Staniczenko, & Bodin, 2020; D'Armengol, Castillo, Ruiz-Mallén, & Corbera, 2018). The policy attention on unregulated fishing may stem from an acknowledgement that, despite the presence of official rules, enforcement of small-scale fisheries is made difficult by either the inadequate functioning of the state or the inability of the state to cope with distant and/or largely illegible fishing, trade and processing practices (Doddema, Spaargaren, Wiryawan, & Bush, 2018; Serdy, 2011; Song, Johnsen, & Morrison, 2018).

In summary, the non-differentiation of "illegal," "unreported" and "unregulated" has the potential to undermine the viability and

legitimacy of small-scale fisheries. The consequences for small-scale fisheries, though some more than others depending on individual contexts, are that they are not differentiated from industrial fisheries despite making a distinctly different contribution to both coastal economies and overfishing.

### 3 | TRADE RESTRICTIONS TO FIGHT IUU FISHING

The blanket uptake of "IUU fishing" in international trade regulation by major importing markets such as the EU and the US<sup>1</sup> holds significant risks for small-scale fisheries. Notably, the EU-IUU regulation (EC Reg. No. 1005/2008) is an explicit attempt to incentivize the governments of fish exporting countries to take action to prevent and eliminate IUU fishing conducted in their waters or by their fleets (for more details, see He, 2017; Leroy, Galletti, & Chaboud, 2016; van der Marel, 2017; Miller et al., 2014; Rosello, 2017; Sumaila, 2019). The EU-IUU regulation does not target specific sectors in isolation—whether small-scale or industrial sectors. Having a broad mandate, it requires states to implement a catch certification scheme that ensures that catches are traceable from vessels through the markets, and compliant to conservation and management measures agreed upon for coastal and high seas waters.

Countries not cooperating with the IUU regulation are prohibited from trading fish landed from their waters to the EU or the fish caught by vessels flying their flag. Exporting countries must demonstrate continued compliance with the requirements of the IUU regulation or bear the opportunity costs of being excluded from the European Common Market. Non-compliance is initially sanctioned with a "yellow card" warning, followed by a "red card" if they are found to be in repeated contravention of the regulation's requirements (EU-IUU Reg. Article 31[3]). A yellow card requires improvements to be addressed according to an agreed timeline. If these requirements are not met, a red card is issued, at which time all fisheries in that country, irrespective of species and sectors, will be banned from exporting fish products to the European common market. Since its inception in 2010 until July 2019, the EU issued 25 yellow cards. Of these, 15 were resolved without further sanctions at time of writing, while six led to a red card being issued (see Figure 1).

The EU's trade-based control of IUU fishing has had a demonstrable impact on both national fisheries management systems and the conduct of fishers. For example, after receiving a yellow card in 2014 the Philippine government amended the national Fisheries Code, leading to stronger penalties for legal violations and a greater emphasis on data collection and monitoring (Republic Act 10654) (Espinilla, 2019; Oceana, 2017). Similarly, Thailand revised their fisheries legislation and implemented a series of reforms in the monitoring and surveillance of fishing vessels in reaction to concerns over "slave" labour in Thai fishing fleets (Marschke & Vandergeest, 2016), and Sri Lanka and Belize both made reforms to the enforcement of catch documentation (Government of Belize, 2013; Leroy et al., 2016).

Despite its apparent success and a call to extend such measures to other major import markets (e.g. Sumaila, 2019), we argue that the issuance of yellow and red cards (inadvertently) has had a disproportionate impact on small-scale fisheries in at least three ways.

First, as outlined above, the categorical use of “IUU” overlooks important differences between small-scale fisheries and industrial fishing operations. Ignoring these differences can mean that the small-scale sector is seen as an easier target for reform than the industrial sector. Such a scenario has been observed in the case of Ghana, which received a yellow card from the EU in November 2013 for, among others, inadequate reliability of MCS systems and catch certification schemes, and poor compliance with RFMO regulations (European Commission, 2015). While various legislative reforms were introduced to manage the industrial fleet, in practice, the illegal use of lights and chemicals by small-scale fishers became a conspicuous object of scrutiny in the name of curbing IUU fishing (Afoakwa, Osei, & Effah, 2018). Artisanal fishing nets were seized, and special courts set up in collaboration with Chief Justice and Attorney General's offices to prosecute fishers engaging in IUU fishing, including small-scale operators (Gyesi, 2019). By treating reforms in the small-scale sector as a means of addressing a yellow card aimed at the industrial sector, the Ghanaian authorities have also avoided addressing the illegal transshipment behaviour of domestically registered but largely Chinese-owned and operated industrial fleet (EJF & Hen Mpoano, 2019)—China being an important trade partner and source of aid. This case shows how the politics of illegal fishing can create pressure for action that does not address the causes of the most problematic forms of fishing while tending to opt for a more convenient target.

Second, the EU-IUU regulation stipulates data collection and reporting requirements that in turn lead to the “procedural exclusion” of small-scale fisheries from markets (Bondaroff, Teale, Reitano, & Werf, 2015; Houssa & Verpoorten, 2015). The wider trend towards information systems encourages fisher enrolment to the EU-IUU regulation, but also enables fishers to comply with private initiatives such as the “IUU Fishing Index” (Macfadyen, Hosch, Kaysser, & Tagziria, 2019) and/or Global Fishing Watch (Kroodsmas et al., 2018). Although small-scale fisheries have been given some concession in the design of the EU regulation, resulting in simplified catch certificates for instance,<sup>3</sup> small-scale fisheries are nevertheless being facilitated to verify their catch and provide landing documentation for individual vessels, and in doing so gaining or maintaining access to export markets (see Doddema et al., 2018; Duggan & Kochen, 2016). Difficulties with compliance have been noted, such as how to effectively validate the data entered by the captains of fishing vessels given insufficient logistics and infrastructure available at provincial landing sites as well as the absence of government rules to oblige

small-scale vessels to produce catch documentation (Doddema, Spaargaren, Wiryawan, & Bush, 2020; Siriraksophon, Kawamura, & Imsamrarn, 2016). Perhaps more importantly, these informational demands incur negative material consequences for small-scale fisheries. Greater transparency can engender greater regulatory oversight that might constrain their ability to maintain their already often marginal mode of production. Reporting procedures can also be particularly onerous for small-scale fishers for which relatively little data are available, especially where management and trading relations continue to rely on informal and customary arrangements (Steenbergen et al., 2019). In addition, there can be real costs to increase information provision. As observed in the Philippines after the EU issued a yellow card (see Fabinyi, Dressler, & Pido, 2019; Sari, 2015), the registration of boats, gears and fishers themselves, as well as upgrading landing sites and training fishers and fishery experts, imposes significant extra costs that are not easily recuperated.

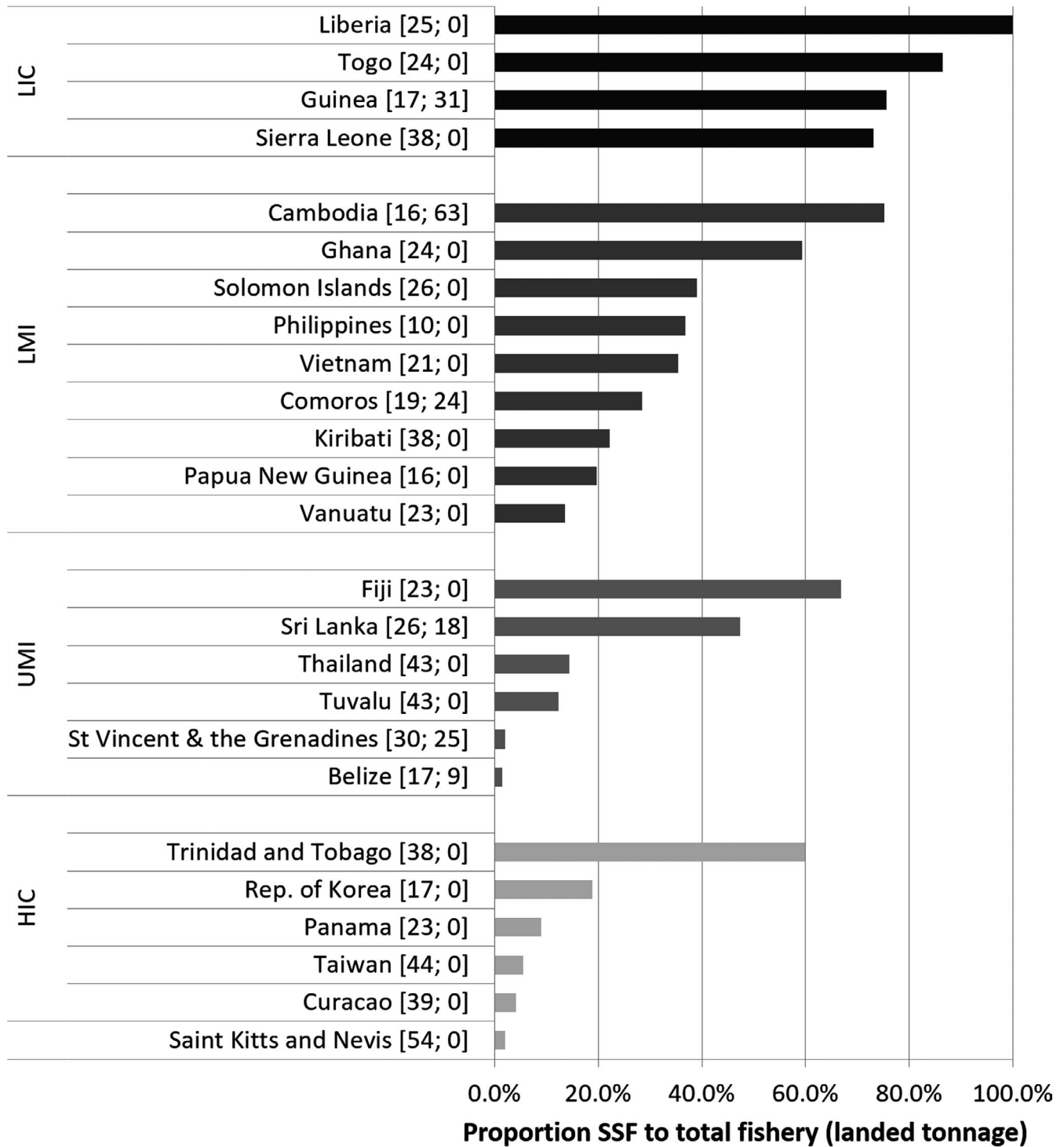
Third, the EU-IUU regulation does not discriminate in terms of the relative importance that the small-scale sector plays in domestic markets. Analysing multi-country fish trade data, Sumaila (2019) concludes that small developing countries, such as Cote d'Ivoire, Seychelles and Maldives, would face the highest economic risk of being red carded given their high dependence on the EU market, with between 70% and 90% of their catch being sent to the EU. In fact, the “poorest” countries classified as “low-income countries” (e.g. Liberia, Togo) tend to show the largest share of small-scale fisheries within the 25 carded countries (Figure 1).<sup>4</sup> These are countries with arguably the least financial and administrative capacity to make the required changes to fishing and processing activities, including access to information and tracking technologies and infrastructure (e.g. use of Automatic Identification System [AIS] data is biased towards larger vessels in upper-middle-income and high-income countries, Taconet, Kroodsmas, & Fernandes, 2019).

The EU has provided assistance to developing countries to help them address deficiencies in MCS and legal systems and comply with the requirements of the IUU regulation. However, by neither accounting for the systematic challenges of implementing IUU-related regulation in return for market access, nor considering the relative overall contribution of those countries to I, U or U fishing, the EU runs the risk of placing a disproportionate burden on small-scale fishery-dependent countries.<sup>5</sup>

<sup>3</sup>The simplified catch certificate is laid down in Article 6 of Commission Regulation 1010/2010, where it stipulates the criteria of a small vessel as follows: (a) with an overall length of less than 12 m without towed gear; or (b) with an overall length of less than 8 meters with towed gear; or (c) without a superstructure; or (d) of less than measured 20 GT.

<sup>4</sup>Proportion of SSF to total fisheries was constructed through: [marine SSF landings + inland fisheries landings]/[total marine landings + inland fisheries landings], by using sector disaggregated data of marine landings of the Sea Around Us project (Pauly & Zeller, 2015) and integrated inland fisheries landing estimates from Funge-Smith (2018). Number of months subjected to EU carding was derived from the dates that the EU issued yellow, red or green card (available at IUU Watch, 2019), as at July 2019.

<sup>5</sup>For instance, Tsamenyi et al. (2009, p. xv) state that the EU “must acknowledge the vulnerability of developing countries and the difficulties that they will face in implementing the [EU trade] regulation. It is essential that developing countries do not, directly or indirectly, bear a disproportionate burden of global efforts to combat IUU fishing.”



**FIGURE 1** Proportion of small-scale fisheries to total fisheries of countries carded by the EU, listed by country income groups. The two numbers in square bracket denote the number of months a yellow card and red card were issued for, respectively, between 2010 and July 2019. (LIC: low-income countries; LMI: lower-middle-income countries; UMI: upper-middle-income countries; HIC: high-income countries)

#### 4 | IUU FISHING AS ORGANIZED CRIME

The non-differentiation of IUU fishing also means that all fisheries, including small-scale fisheries, are potentially being reframed as subject to criminalization. This reframing corresponds with a shift from fishing activity being dealt with through administrative-law, focused

on strengthening management rules and stepping up compliance levels, to IUU fishing dealt with through criminal-law, facilitated through intelligence-led policing with a view to prosecution and imprisonment (Chapsos & Hamilton, 2019; de Coning & Witbooi, 2015; Liddick, 2014; Page & Ortiz, 2020; Stølsvik, 2019; UNODC, 2011; Vrancken, Witbooi, & Glazewski, 2019). It expands the scope of IUU

activity to a far broader set of activities including money laundering, corruption, human trafficking, slavery and document and customs fraud that in turn expands the potential scope for criminal policing and surveillance of fishers in general (Vrancken et al., 2019).

There is growing evidence of this shift to associate IUU fishing with criminal activity in various international fora. IUU fishing now makes up one of five broad areas of environmental crime by the EU, the Group of Eight (G8) and the United Nations Environment Programme (UNEP) (de Coning, 2016). It was also identified as a new trend in crime during the Twelfth United Nations Congress on Crime Prevention and Criminal Justice in 2010. Aside from INTERPOL, which is directly involved in cross-border investigations of IUU fishing through joint information-gathering and multilateral operations among member countries, other major international organizations have also taken steps to combat IUU-cum-criminal activities in the fisheries sector (e.g. The Organisation for Economic Cooperation and Development [OECD], the African Union and the International Labour Organisation) (de Coning, 2016; Stølsvik, 2019).

While the criminalization of IUU has focused mainly on inter-jurisdictional fisheries, several countries have also taken action at the national level. For example, Vietnam revised its national fisheries law in 2017 (Law No. 18/2017/QH14) making an extensive range of illegal commercial fishing (including failures to keep logbooks and non-adherence to RFMO rules) open to criminal prosecution. In South Africa, Isaacs and Witbooi (2019) report that the Marine Living Resources Act, the primary legislation addressing the country's marine fisheries, now criminalizes almost all transgressions of its provisions and regulations. This has resulted in direct steps being taken by the government to investigate and prosecute those suspected of illegal fishing activities. In other countries, such as Indonesia and Tanzania, there is also anecdotal evidence that confirms the formal criminalization of illegal fishing, including the use of mobile courts where fishers who violated licensing or gear requirements can be charged and sentenced instantly (see "Mobile courts can curb illegal fishing", 2019).

The all-encompassing criminalization of fisheries becomes highly problematic, however, when extended to small-scale fisheries, where the categories of legality/illegality are more blurred. Such categories become doubtful when the activity of small-scale fishers "doing what they have always done" (Bell et al., 2007, p. 413) come to be seen as engaging in new forms of criminally organized illegal fishing operations. As illustrated in the case of West Coast rock lobster in South Africa, organized criminal groups may be entrenched within coastal communities who enrol local fishers with few alternative livelihood opportunities to participate in illegal harvesting (Isaacs & Witbooi, 2019). The criminalization of small-scale fisheries in such contexts is made further opaque by the patronage these gangs exercise over fishing communities by, for example, supporting school fees and cash advances for food in return for exercising illegal fishing activities (Isaacs, 2011, 2013; Isaacs & Witbooi, 2019; McMullan & Perrier, 2009). In such a setting, a clear demarcation of who is part of an organized syndicate and who is not becomes ambiguous (see also Chapsos, Koning, & Noortmann, 2019). Subsequently, it requires a careful judgement as

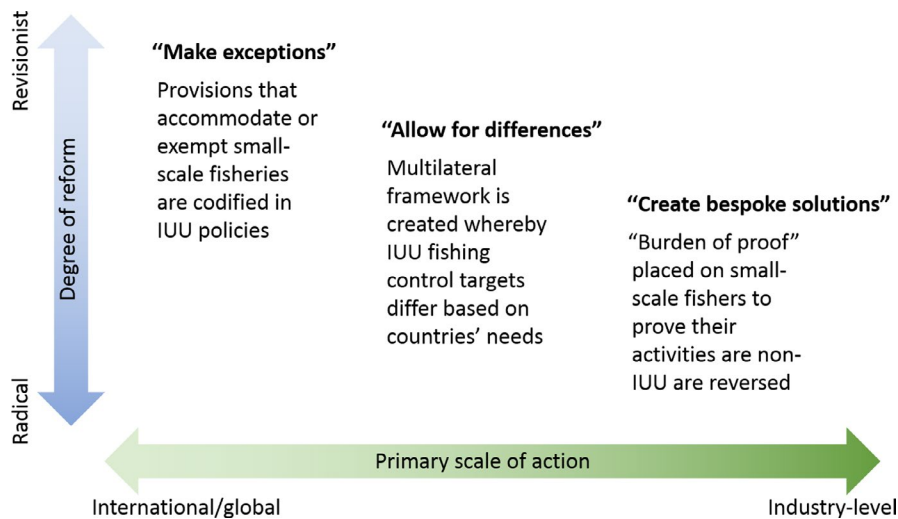
to whether small-scale fishers engaging in "IUU" activity are in fact in control of the criminal organization of that activity; that is, controlling the means by which the IUU fishing is perpetuated.

As argued by Global Initiative Against Transnational Organized Crime (The Global Initiative, 2014), the failure to distinguish between those organizing and those exercising illegal behaviour has serious consequences for small-scale fishers. First, there is weak evidence that the criminalization of IUU fishing has led to the conviction of controlling or organizing illegal behaviour. Instead, it is small-scale fishers already exploited in low-income, labour-intensive fishing activity who have been the focus of policing and legal persecution (Isaacs & Witbooi, 2019; The Global Initiative, 2014). Second, by not focusing on those organizing illegal fishing, there is heightened risk of state-sponsored violence against fishing communities. For example, criminalizing fishers as "poachers" directly impacts livelihoods and the resilience of communities as well as "exacerbates rifts between citizens and the state" (The Global Initiative, 2014, p. 3). It may even bring lethal outcomes as observed from the case of fishermen being shot dead for "intruding" on newly imposed marine reserves (e.g. Gustave & Borchers, 2008). The consequence is that those who depend on small-scale fisheries bear the burden of stigmatization, sanctions and even bodily harm, as the international discourse pushes for the criminalization of IUU fishing.

## 5 | MAKING IUU REGULATION WORK FOR SMALL-SCALE FISHERIES

As laws and regulations to combat IUU fishing continue to be rolled out, the risk to small-scale fisheries will continue to grow. Very real consequences of surveillance and criminalization as well as exclusion from export trade regardless of their IUU status are already being observed. At worst, IUU regulation of all kinds will contribute to the de-legitimization of small-scale fisheries, by framing them as inherently ungovernable (i.e. inherently illegal, unregulated and unreported) rather than as a major contributor to coastal food security, economies and cultures (Béné, Hersoug, & Allison, 2010; Mills et al., 2011; Teh & Pauly, 2018). Yet despite the consequences of the IUU discourse for small-scale fisheries, we remain optimistic that this oversight can be rectified. The challenge, we argue, is to rethink how IUU fishing policy and regulation can support a more constructive and ultimately more equitable incorporation of small-scale fisheries in the global fight against IUU fishing. Rethinking how IUU fishing can work in the interest of small-scale fisheries could start with any combination of the following three strategies (see Figure 2).

First, dedicated provisions could be made in international, regional and national IUU-related policy and regulation that acknowledge the role and importance of small-scale fisheries to food security and local economies. Making such provisions would constitute an important step in providing an adequate and fair representation of the activities of small-scale fishers. It will also directly help to move beyond the categorical use of IUU outlined above and instead force policymakers to be more precise in their use and allocation of illegal, unregulated and



**FIGURE 2** Three possible strategies for responsibly incorporating small-scale fisheries into IUU fishing regulation, and how they are characterized according to the degree of reform and the scale of action [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

unreported when distinguishing between industrial and small-scale fisheries. More precise language will increase the likelihood of more contextualized measures and regulation that distinguish the kinds of small-scale fishery activity that does contribute to stock decline or habitat degradation and those activities that do not.

Some international measures are already making such provisions that are instructive. For instance, the Port State Measures Agreement makes an exception for small-scale fisheries (e.g. “vessels engaged in artisanal fishing for subsistence,” see Article 3.1a), and the US Seafood Import Monitoring Program (SIMP),<sup>1</sup> exempts importers from providing vessel-specific information if the catches are from small-scale vessels (up to 12 m in length or 20 gross tons). Further, the SIMP allows reporting to be aggregated for single-collection-point, single-calendar-day catches by multiple small-scale fishing vessels, substantially reducing the amount of export documents required. Small-scale fisheries would benefit if such exceptions were extended to the EU-IUU regulation, as well as private initiatives such as the IUU Fishing Index and Global Fishing Watch—all of which risk making generalized assumptions of national-level performance that target national governments rather than allow space for differentiation between fleets or sectors (see Taconet et al., 2019). Better representation in such fora by small-scale fisheries organizations would also better ensure they receive due recognition of how international IUU policies affect their conduct and performance.

Second, the global community may consider utilizing a multilateral framework whereby IUU fishing control targets take into account differences in the countries’ economic status, administrative and technical capacity and also in the composition and nature of their fishing industries. While the idea of non-uniform targets is antithetical to the current EU- and US-IUU regulations by which all countries are to be placed on a “level playing field,” the practice of common but differentiated responsibilities is in fact well established in related international fora, particularly in the domain of climate change mitigation via the “Nationally Determined Contributions” scheme under the UN Framework Convention on Climate Change (Mbeva & Pauw, 2016). One potential pathway, for instance, could

be to enhance ongoing debates on harmful subsidies at the World Trade Organization, where subsidies may be allowed in support of “non-IUU”-related small-scale fisheries. Such a flexible and more equitable strategy would allow each country to determine ambitions and strategies that meet IUU challenges while considering their own political, social and economic contexts. But it would also require international guidance by the overall framework of the convention. The result would be that rather than all countries being forced to comply with regulations set by a few importing market jurisdictions, the global fight against IUU fishing would be made more sensitive to the diverse circumstances faced by countries still largely dependent on the small-scale sector.

Finally, in a more radical move, bespoke mechanisms could be established to counter IUU fishing to deal with the most destructive small-scale fishery practices. Despite the high complexity and diversity of small-scale fisheries, attempts that rely on greater self-reporting and control over IUU activity in and by small-scale fisheries seem plausible. For instance, using an increasing range of relatively inexpensive digital sensing technologies on vessels and landing sites, small-scale fishers are already demonstrating their legal, reported and even regulated conduct (Bush et al., 2017; Starr, 2016). Key to such a system is not only the incorporation of these technologies into the practices of fishers (Doddema et al., 2018), but also control over the data and information collected (Bush et al., 2017; Duggan & Kochen, 2016). Fishers, governments and buyers will need to view the collection and presentation of this information as both a credible and legitimate representation of small-scale fisheries behaviour. The merit of such a system is that it would reverse the “burden of proof” placed on small-scale fishers to prove their activities are non-IUU. Necessary conditions for such a shift to be a realistic option for small-scale fishers include advances in sensing technology that are sensitive to the activities of fishers (Toonen & Bush, 2020) in combination with NGOs or the private sector fulfilling the role of data collectors and technology service providers (Bush et al., 2017). Recognition and support by national governments is also needed to secure small-scale fisher rights over the data and resources on which they report, and importing states to recognize the

credibility of market claims made by these fishing communities—much as they do the information coming from organizations like Global Fishing Watch. While currently only at the ideational stage, there are precedents from which we can learn. For example, participatory guarantee systems in organic agriculture work on the basis of social control generated through local ownership of the terms of surveillance. This has facilitated localized system of assurance and verification, helping to recognize context-specific systems as credible and legitimate (see Loconto & Hatanaka, 2018). Hence, this innovative model could offer more sensitive and effective means of deterring unauthorized and ecologically harmful small-scale fishing practices.

These three strategies provide a starting point for further debate over the current role of and the potential alternatives to global IUU regulations. All three strategies recognize the need to move beyond homogenizing narratives, policies and regulation that treat illegal, unreported and unregulated as the same thing. They also help to think more carefully about the consequences “IUU” holds for small-scale fisheries compared with industrial fisheries. Making exceptions, allowing for differences or creating bespoke solutions can offer three alternative strategies for small-scale fishers in any given context. It is, however, more likely that a combination of these strategies will be needed to overcome the underlying assumptions that both implicitly and explicitly corral small-scale fisheries into an undifferentiated bundle of “IUU” fishers and fishing practices.

Determining which of these or other strategies are most effective will depend in large part on first recognizing the important contributions small-scale fisheries make to national and local economies. Such recognition is in fact well underway through, for example, the FAO-led Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (see Jentoft, Chuenpagdee, Barragán-Paladines, & Franz, 2017). Linking small-scale IUU strategies to the Guidelines would at the very least acknowledge that small-scale fisheries are to be approached differently than large-scale operations. But it can also be a first step in gaining the political recognition necessary for thinking differently about the relationship that states have with small-scale fishers. By reimagining the relationship between small-scale fisheries and IUU fishing, more effective, legitimate and morally justifiable approaches can be put in place that in the long run may also enable small-scale fishers to become part of the solution rather than (intentionally or not) marginalizing them in the global fight against IUU fishing.

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## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in Sea Around Us at [www.seaaroundus.org](http://www.seaaroundus.org) (Pauly & Zeller, 2015) and in FAO at [www.fao.org/3/ca0388en/CA0388EN.pdf](http://www.fao.org/3/ca0388en/CA0388EN.pdf) (Funge-Smith, 2018).

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