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RESEARCH

Understanding group capabilities for small-scale tuna fishery certification in Indonesia

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Abstract
Fair Trade USA Capture Fisheries Standard (CFS) requires small-scale fishers to be organized in groups before getting certified against its voluntary sustainability standard. This raises questions about what groups (can) do to enable individual fishers to participate in and benefit from certification. This study uses a capabilities framework to understand this dynamic. We use a case study of handline tuna fishery in Maluku, Indonesia. Three clusters of groups are included: the groups in Buru Island that have been certified by Fair Trade USA Capture Fisheries Standard and Marine Stewardship Council, the groups in Seram Island that have been certified by Fair Trade USA, and the groups in Buru and Seram Islands that have been excluded from Fair Trade USA certification. The results show how group capabilities play an essential role in group and individual fisher certification. We conclude that there is a need to support group certification as a mechanism to govern sustainability in small-scale fisheries. To achieve group certification policy interventions beyond the certification stakeholders are needed to provide conditions supportive for group capabilities.

Keywords Small-scale fisheries · Voluntary sustainability certifications · FT USA CFS · Groups · Capabilities

Introduction

Small-scale fisheries (SSF) account for a large proportion of the global catch and are vital in securing nutritious food and livelihood incomes for many people, especially in developing countries (Béné and Friend 2011; FAO 2015). SSF activities are often promoted as sustainable fishery practices, as their environmental footprint is considered relatively small due to low fuel consumption and their use of (passive) gears that have a lower impact on marine habitat and ecosystem (Jacquet and Pauly 2008; Le Manach et al. 2020). Over the years, some SSF, particularly in tuna fisheries, have gained entry to global value chains, mostly dependent on private initiatives and market-based approaches, for instance through the voluntary certification schemes of Fair Trade USA (FT USA) and the Marine Stewardship Council (MSC) (Vandergeest et al. 2015; Borland and Bailey 2019).

The certification schemes emerged in response to growing demand for sustainable seafood, regulatory gaps and lack of state control, and the need to improve the transparency of the product information to the consumers (Jenny Sun et al. 2017). Currently these schemes are well-established in the global seafood governance landscape (Bush and Oosterveer 2019). The scheme is based on a market-based approach that uses a set of sustainability criteria that producers (and other value chain actors) must follow (Cashore 2002). In return, the scheme provides incentives through market access or premium prices to compensate the actors for their efforts (Thrane et al. 2009; Blomquist et al. 2015; Swartz et al. 2017). However, despite the potential of such schemes, they are criticized for not being (easily) accessible for small-scale fishers (Kaiser and Edwards-Jones 2006; Bush et al. 2013; Wakamatsu and Wakamatsu 2017). The high cost of certification, low financial capital to pay for the cost and other costs associated with the preparation and any improvement that has to be made to be able to be certified, low production because often fishers catch multiple fish species, and lack of access to information about certification and market incentives are among the factors that hinder their participation (Jacquet and Pauly 2008; Bellchambers et al. 2014; Wakamatsu and Wakamatsu 2017). Moreover, certification

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schemes are perceived as targeting mainly developed countries with well-managed stocks and strong government authorities, favouring retailers and consumers, and being less impactful for improving the livelihood of small-scale fishers (Jacquet and Pauly 2007; Gutiérrez et al. 2012). As a response, efforts to include small-scale fisheries in certification have been increasing.

To certify small-scale fishers, collective action via group formation is considered a solution as it reduces transaction costs (Stratoudakis et al. 2016; Velázquez Durán and Ortega 2022). Group certification usually certifies producers who collectively organizing the group management and marketing system. Through this way, the certification bodies place an internal system control at the group level, besides the control by the certification (Steidle and Herrmann 2019). Various voluntary certification schemes have already marked significant efforts by certifying smallholders through group certification (Markelova et al. 2009; Steidle and Herrmann 2019). Studies indeed show that group certification has allowed effective implementation of voluntary certification schemes by providing support and assistance to smallholders. It significantly reduces high transaction costs, increases access of their members to resources, improves production, higher prices, better access to markets, and higher productivity (Becchetti and Costantino 2006; Fischer and Qaim 2012; Ruben and Fort 2012; Dragusanu et al. 2014; Chiputwa and Qaim 2016; Ibnu et al. 2018; Meemken 2020). However, other studies showed that not all groups successfully gain positive impacts (Loconto et al. 2014; Brandi et al. 2015). These mixed findings show that the evidence about the impacts of group certification for small-scale fishers is inconclusive, which we argue is due to a knowledge gap on the interplay between groups and certification, that is, what groups (can) do to enable individual fishers to participate in, and benefit from, certification. In this study, we do not examine the positive and negative effects of certification. Instead, we focus on understanding how groups with valuable capabilities can operate under the certification scheme, which may lead to positive impacts for group members.

In this study, we investigate the role of groups in SSF certification, building on the capability approach (Sen 1999; Robeyns 2017). Drawing on collective action as a means for social and environmental improvement implies dependence on the abilities of both individuals and groups to organize joint activities and to balance individual needs and preferences with group goals. We use 'group capabilities'(inspired by Stewart 2005) as a conceptual lens to specify both collective ownership and management of resources, and abilities that fishers have and use as a group. Like individuals and their personal capabilities, as emphasized by Sen (1999), we argue that groups also have freedom and choice to convert resources into 'group functioning', so the group can achieve what it has reason to value. Group functioning here means compliance to a standard which can only be achieved through group certification. A key idea to understand group capabilities is that capabilities emphasize the way groups operate, including the processes, mechanisms, and dynamics that occur within groups. In short, these encompass various opportunities available to groups, which are essential for both the groups and their members to function effectively. To examine the process that groups go through, we took Stewart (2005) as a starting point that is by operationalizing group capabilities as the beings and doings of a group in relation to its members in three ways: the group contributes to the well-being of its members, the group provides a mechanism to enlarge individual capabilities, and the group influences over its members' preferences and values.

We draw on a case study of small-scale tuna fishers in Maluku province (Indonesia). Our focus is on fourteen groups which, since 2014, gained access to the FT USA's capture fishery certification program. Currently nine groups are certified, while five groups lost their certification. Also, in 2020, four out of the nine groups received certification from the MSC as well. Because the fourteen groups engage differently with different certification schemes, this study allows us to unpack how group capabilities affect standard compliance (group functioning), contributing to an increased understanding about access and credibility of sustainable certification in global value chains.

The outline of this article is as follows: after explaining our conceptual framework in the next section, we introduce the case study and describe our methods. Then, we present our results and analysis of the group capabilities of the groups of small-scale tuna fishers in Maluku, followed by a discussion and conclusions.

Theoretical framework

Group capabilities are what a collective is and can do and what the collective has reason to value (Stewart 2005, 2013). This definition follows directly from the central notion of the capabilities approach (Sen 1999; Robeyns 2017), that is, group capabilities (like personal capabilities) are based on two major concepts: capability and functioning. Capability refers to the freedom and choice to be and to do, and functioning is the actual achievement, so what is valued as the desired outcome of being and doing. While groups consist of individuals, group capabilities go beyond the sum of individual capabilities (Evans 2002a, b). Group capabilities involve collective action and interactions between the group members and affect what they cannot achieve individually. Group capabilities are also different from socially dependent individual capabilities, which refer to a group's contribution to an individual's ability to achieve his/her functioning, as judged and evaluated by the individual. The underlying

assumption is that an individual knows best what he/she wants and is fully autonomous (Sen 1999). Most scholars drawing on the capabilities approach, emphasize personal (including socially dependent individual) capabilities (Rauschmayer et al. 2018). However, in line with (Stewart 2005), we argue that if a group is the entity to achieve the functioning, because it is impossible to achieve this individually, the group has to be considered the level for judging what is best and evaluating whether the desired functioning is met.

This means the analysis should focus on the relationship between individual and group capabilities, which can be analyzed in two ways. First, in a group where individuals interact with each other, a person's ability to choose what he/she has reason to value will depend not only on him/herself but also on the possibility of acting together in a group with other people who value similar things. In this sense, individual capabilities will depend on group capabilities (Davis 2015; Evans 2002a, b; Stewart 2005). Groups that do not function well influence individual capabilities and their functionings. Second, group capabilities are only present through a bundle of individual capabilities who value similar things. In this sense, group capabilities depend on individual capabilities (Ibrahim 2006; Stewart 2005). This includes the ability to influence the group, since group members who cannot choose what they value, will probably leave the group and without members the group dissolves.

Inspired by Stewart (2005), we distinguish group capabilities based on three forms of interplay between individuals and the group of which they are member. The first form is that being a group member contributes directly to the member's well-being. This means that groups can deliver direct benefits that cannot be accessed individually. An example by Stewart (2005) is that one can feel acknowledged in his/her identity by affiliate with a particular group. Also, well-being benefits individuals can access through membership are enhanced self-esteem or sense of pride, depending on how well the group performs and achieves its goals, referred to as the group functioning. The second form is that being a group member is a mechanism to enlarge individual capabilities, in other words, being in a group is instrumental for the members (Stewart 2005). A group has the ability to establish group mechanisms through which members can choose what they can be or do, for example lobby groups, trade unions or women movements. The third form is that group membership influences the members' preferences and values. This accounts for the influence that for example family, friends, school or media have on what an individual deems to be valuable to pursue (Stewart 2005).

For our study, we developed the conceptual framework as presented in Fig. 1 (Evans 2002a, b; Ibrahim 2006; Sen 1993; Stewart 2005). The figure shows, on its right end, the group functioning, in our case group certification by FT USA CFS. To achieve group functioning, groups require capitals and assets, on the left end of the figure. Capitals and assets necessary for complying with the standard are to be converted into group capabilities. By joining a group, individual fishers can access the capitals and assets through these group capabilities, and achieve group functioning, but only by drawing on their own capability set, and selecting their individual strategies to achieve what they value. Finally, the achieved functionings (individual and group) affect fishers' commitment to be part of the group, thereby determining whether there is group compliance with the FT USA CFS certification standard.

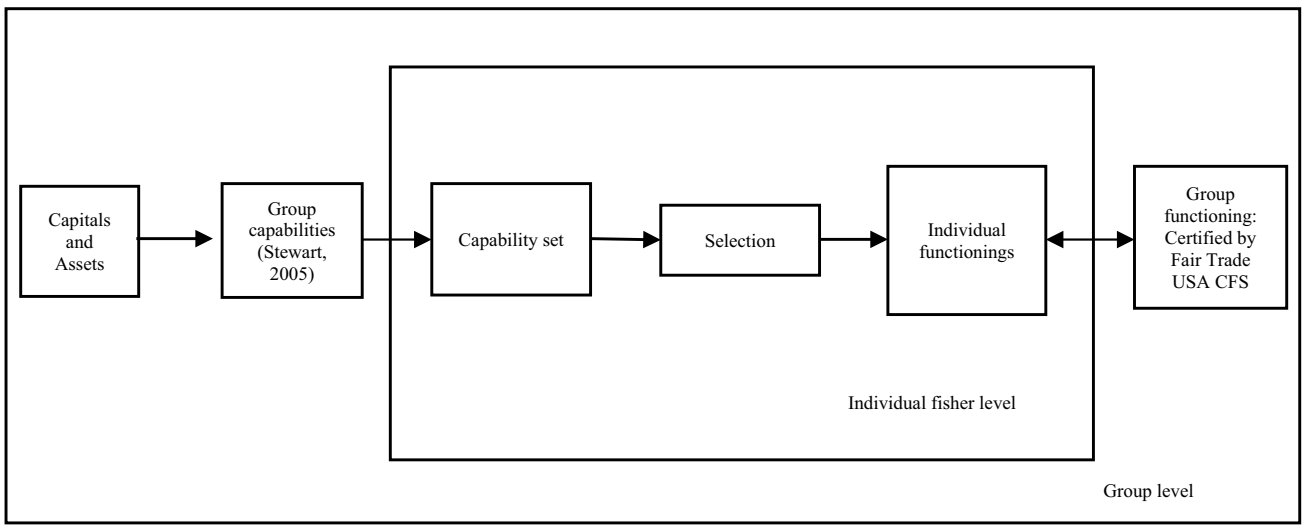

Fig. 1 Conceptual framework

Methods

Case study area

Our research follows a case study research design, focusing on small-scale tuna fishers in Maluku province (Indonesia) who (have) obtained FT USA CFS certification, and some also MSC certification. Indonesia is a major producer of tuna, contributing approximately 15% to the global production (SeafoodSource 2022). The Maluku province is rich in tuna resources, and small-scale fishers in many of its areas have used traditional handline fishing techniques over the years (Tomasila et al. 2020). Fishing is the primary source of employment for fishers, and their main catch is yellowfin tuna. They also catch skipjack, bigeye, and small-pelagic fish to meet their daily needs. Their fishing technique is very traditional yet considered very environmentally friendly: they apply handline techniques to free tuna schools or utilize Anchored Fish Aggregating Devices (AFADs) fishing methods. FT USA CFS has certified fisher groups in Buru and Seram Island since 2014. The certification scheme is the first voluntary seafood certification for small-scale tuna fishers in Indonesia and the first pilot project of FT USA fishery certification. The FT USA CFS is different from the MSC standard in that it is not an environmental-based standard but includes aspects in its criteria to promote both social and environmental goals (Borland and Bailey 2019).

According to the FT USA CFS, fishers have to join fisher groups to access the certification. The scope of the certification can only cover a group of vessels or fishers in the form of a cooperative or fisher groups, and/or a processor buying from one or more groups (Fair Trade USA 2020). In our case study, groups were established by the fishers along with their middlemen and an Indonesian NGO, Yayasan Masyarakat dan Perikanan Indonesia (MDPI), as the implementing partner of the certification scheme. Each group's structure includes a leader, a secretary, and a treasurer. The fisher groups usually consist of fishers living in the same village, but it does not limit the possibility of fishers from other villages joining the group. Also, each group has registered middlemen to whom the groups supply the tunas. MDPI also has field staff who are usually placed in the same village as the fisher groups. In addition to the fishers being organized and assisted in groups, their compliance with the certification standard is also audited collectively. To compensate for the fishers' compliance, the groups are granted incentives through premium funds calculated from the quantity of fish they supply to the middlemen. These funds can only be used for community programs, and according to the FT USA standard, 30% of the funds must be allocated for environmental projects.

Five fisher groups on Buru Island have been certified by FT USA CFS and also received MSC certification since 2020. Two groups were excluded from the FT USA certification scheme in 2017 and 2020. The groups in Buru are located in five coastal villages: Waepure, Wamlana, Waprea, Waelihang, and Namsina. Four groups on Seram Island have been certified by FT USA since 2014. Three groups were excluded from the scheme in 2019. The groups in Seram are located in seven coastal villages: Tehoru, Yeholu, Ampera, Haruo, Sakanusa, Supulessy, and Yainuelo. Based on the certification status, we grouped the fisher groups into three clusters: the first cluster includes the groups that are certified by both FT USA CFS and MSC, the second cluster consists of the groups that are certified by FT USA CFS only, and the third cluster includes the groups that were formerly certified by FT USA CFS but have been excluded since (Table 1).

The buyer, Anova Food, is the certificate holder for both FT USA CFS and MSC. Anova Food appointed MDPI to accompany the fisher groups in implementing the certification scheme. The fisher groups usually sell their catch to a FT USA registered middleman in the form of dirty loins. The loins are cleaned, weighed, packed, and coded in the middleman's mini plant. Afterwards, the clean loins are supplied to the processing company, PT. Harta Samudra. The processing company further processes the loins and supplies them to the exporter, Coral Triangle Processor. The products are then exported to Vietnam and from Vietnam to the buyer, Anova Food, for

Table 1 Fisher group clusters

Fair Trade USA CFS and MSC certified groups (double certification)	Fair Trade USA CFS certified groups (single certification)	Former Fair Trade USA CFS certified groups (no certification)
Wamrunggut Teguh Bersatu	Tuna Yapana	Bayelen
Leisela	Tunas Beringin	Sinan Bersatu
Setia Selalu	Teluk Ampera	Tuna Abadi
Waeplabung	Darah Tuna Haruo	Usaha Lulu Hata
Latamiha		Tanjung Kelapa

sale in the United States. The excluded groups applied similar practices before they were dismissed from the certification scheme.

Data collection

In this study, we use interviews, a survey and documents as data sources (Table 2). We purposively selected groups certified by FT USA CFS, by FT USA CFS and MSC, and groups previously certified by the FT USA CFS but later excluded. We conducted open-ended interviews with the leaders of certified and formerly certified groups. The interviews focused on the practices carried out by the groups in supporting individual fishers and group capabilities. The leaders of Leisela group in Buru and Teluk Ampera group in Seram were unavailable. Interviews were also conducted with FT USA committee administrators and MDPI field staff to further clarify the group practices. A survey of 127 certified fishers was also used to support our understanding of the group practices and to compare what personal capabilities group members use to comply with FT USA CFS. We were unable to attain individual data for fishers from formerly certified groups, so we only compare the active groups. Finally, the FT USA CFS standard version 1.1.0 was used to determine indicators corresponding to the personal capabilities of the fishers (see below). The guideline for the fisheries management action plan in the implementation area in the Province of Maluku was the main document used to complete our information on group certification.

Data analysis

In this study, we combine qualitative and quantitative data analyses. Qualitative data derived from interviews was analyzed using thematic analysis (Braun & Clarke (2006). The themes were initially based on the three forms of group capabilities (Stewart 2005) as explained above. The steps included in the elaboration are transcribing of recordings and importing in Atlas. Ti 8.1, where codes were created based on the respondents' responses. Then, various codes were grouped into themes, followed by interpretation of the themes according to the three forms of group capabilities. In addition, data from FT USA committees, MDPI field staff, and surveys was used to support the analysis. Guidelines from the fisheries management action plan were used to determine the extent to which the groups were involved in tuna fishery management in the Province of Maluku.

The individual survey data allowed for a quantitative data analysis. We operationalized personal capabilities through the capitals that fishers can use to fulfil requirements set by the certification standard. The capitals are grouped into five categories: Human capital (H) facilitates knowledge transfer and training; Financial capital (F) involves cash, credit, savings, and debt; Social capital (S) refers to social relations, trust, and social support; Physical capital (P) includes supplies, infrastructure, equipment, tools, and technologies; and Natural capital (N) that covers all-natural resource stocks (Scoones 1998; Morse and McNamara 2013). Fishers were asked to score their access to these capitals. For example, to comply with the criterion that the fishers have to know the scheme, the fishers need human capital, operationalized by their access to knowledge through training. However, fishers can also use their social capital by sharing information with each other. Another example is the criterion that requires fishers to do data documentation, which implies that fishers must be trained in fishery documentation, representing a human capital requirement. However, fishers can also use other capitals to handle documentation for the group members, like hiring an assistant, which necessitates financial capital to cover the assistant's fee. Therefore, prior to designing the survey, we compiled a list of potential capitals and assets that fishers might use across all the criteria of the standard. In the survey, we inquired whether fishers had access to the capitals and utilized them, along with asking them about any alternative or additional capitals they employed to fulfill each criterion.

Table 2 Data collection methods

Data collection method	Number	Location	Period
Group leader interviews	7 interviews	6 villages	March–April 2022
Ex-group leader interviews	5 interviews	5 villages	March–April 2022
FT USA committee interviews	3 interviews	2 committees	March–April 2022
MDPI field staff	4 interviews	Buru, Seram	March–April 2022
Survey	127 fishers	9 villages	February-April 2022
Documents	FT USA CFS 1.1.0, the guideline for fisheries management action plan following Fair Trade capture fisheries standards, with implementation area in the Province of Maluku	MDPI, The Marine Affairs and Fisheries Department of the Province of Maluku	2020–2022

Following Samerwong et al. (2020), we calculated the proportional distribution values of the capitals used by fishers across all FT USA CFS standard version 1.1.0 criteria. The proportional distribution values show the relative importance of the capitals for fishers' ability to meet the requirements of the standard, ranging from 0.00 to 1.00. The closer the value to 1.00, the more important the capital is for fishers compared with the other capitals. Finally, the proportional distribution values for each individual capital were used for nonparametric Mann–Whitney U and Kruskal–Wallis H tests. Data analyses were performed using SPSS statistics version 28.0.

Group capabilities of small-scale tuna fisheries certification

Direct sources of the well-being of individual members

Small-scale tuna fishers in Buru and Seram can only benefit from FT USA CFS if they participate in a group. The group capabilities are therefore a direct source of well-being for the individual members. The group leaders agree that fishers benefit directly from joining the groups in five ways: 1. access to the certified market; 2. access to premium funds and certification programs; 3. access to additional income from the processing company, PT. Harta Samudra; 4. access to MDPI's assistance; and 5. access to other capitals (Table 3).

Whether single- or double-certified, or no longer certified, access to the FT USA market is considered a benefit only possible for fishers through participating in the FT USA CFS. Before certification, fishers sold their catch to the middlemen. By joining the FT USA groups, fishers still sell their loins to middlemen, often the same middlemen prior to certification, but they are now part of the certification scheme, so the fishers' loins are tagged with the FT USA code. Although fishers have individual access to the middlemen, the possibility to access the certified market is at the group level. Only when a group is certified by FT USA CFS, individual fishers' loins can be tagged with FT USA label. Although the fishers from single and double-certified have shown progress by slowly reducing fuel dependency on the middlemen, as long as the groups need the middlemen to access the certified market, it will always be their group capabilities.

Tagged loins are associated with premium funds, the second benefit only accessible through group membership. The premium fund is calculated as a percentage of the ex-vessel price multiplied by the weight of the coded groups' tuna loins. The total premium fund depends on the total catch from the group members. When a fisher does not fish, the group still receives the premium fund when other members' supplies are sufficient. The fund is not paid directly to the individual fishers, no matter how many kilograms they sell through the FT USA chain. Instead, groups propose how they intend to spend the money for their members, their families and community needs. The groups follow the FT USA rule that 30% of the premium fund is used for environmental programs. The rest of the funds are used for activities that benefit all members of the group. Groups have used premium funds for 1) childcare and education, such as providing education savings and school uniforms for fishers' children, 2) for fishers' safety supplies such as life jackets, first aid kits, GPS, compasses, 3) for welfare, community, and religious activities, such as building public toilets, donations for building mosques, donations for orphans, 4) for fishing activities, such as providing fishing equipment, fish boxes, and 5) for the environment, such as providing lights for fishing landing areas, and trash cans. The groups also used the premium fund as a source of communal financial assets. One of the leaders mentioned, "*For example, when a fisher's relatives died, or he was sick, we gave him an impromptu fund. The cash was used to face the possibility that someone in this group would get sick so we could donate it to him.*" All groups agreed that their activities depend on the premium funds, which they expected to increase in the future. In addition, the groups certified by both FT USA CFS and MSC expect increased demand for certified tuna.

Another financial benefit that fishers gained is additional income from the processing company. The leaders from Seram mentioned that fishers receive additional funds from the company as compensation for filling out the logbooks to document fishery data as required by FT USA CFS. There are two kinds of logbooks: first the fisher logbook, which records information about catches, and second the endangered, threatened and protected (ETP) species logbook, which records information about ETP species during fishers' fishing activities. According to the leaders, the fishers received 2,000 Rupiahs ($ 0.14)[1] daily for filling out the ETP and fisher logbooks. An additional fund of 500 Rupiahs was also given for each kilogram of loins supplied to the processing company. One of the leaders said, "*Fishers got 500 Rupiahs/kilogram ($ 0.03/kilogram) from the company besides the premium fund. The premium fund was from Fair Trade, but 500 Rupiahs/kilogram was paid by PT. Harta Samudra. For example, if I supplied two tons of loins, I got a million Rupiahs. This was why we were motivated to supply as many as we could. We could get the money every year. However, we did not get it last year because there was still a small amount of money, so we saved it and would take it this year.*" The survey confirmed that in Seram all fishers

[1] USD 1 ≈ IDR14,000 at the time of fieldwork in 2022.

Table 3 Comparative analysis of group capabilities in the three clusters of fisher groups

Forms	Description	Clusters		
		FT USA and MSC groups	**FT USA CFS groups**	**Formerly FT USA CFS groups**
Groups as a direct source of well-being of an individual	Fishers gain market access by being members of certified groups	Fishers have FT USA registered middlemen	Fishers have FT USA registered middlemen	Fishers had FT USA registered middlemen
	Fishers receive premium funds and have access to the certification program	The fund is used as a source for communal financial assets, community and environment programs, supplies for fishers and their families, religious purposes, and as compensation for lower prices. Double certification does not affect the premium fund received	The fund is used for community and environment programs, supplies for fishers and their families, and as compensation for lower prices	The premium fund was used for community and environment programs, supplies for fishers and their families, and as compensation for lower prices. Before the groups were excluded from the certification scheme, the catches declined, and the premium fund decreased
	Fishers gain additional income from the processing company	Fishers receive additional funds from the processing company	Fishers receive additional funds from the processing company	The category does not apply
	Fishers have access to MDPI's assistance by being members of certified groups	MDPI assists the fishers in implementing the certification programs	MDPI assists the fishers in implementing the certification programs	MDPI assisted the fishers in implementing the certification programs
	Fishers have access to diverse capitals	Fishers have access to fish aggregating devices, improvements in fishers' knowledge, fishers' ability to speak in public, family food intake, and physical assets	Fishers have access to fish aggregating devices, improvements in fishers' family food intake and knowledge about financial management	Fishers felt proud as a part of the certification scheme. There were improvements in fishers' knowledge about financial management, and the fishers gained new experiences. The groups also facilitated fishers to connect with other fishers to access fishing information

Table 3 (continued)

Forms	Description	Clusters		
		FT USA and MSC groups	**FT USA CFS groups**	**Formerly FT USA CFS groups**
Groups as a mechanism to enlarge individual capabilities	Groups decide on the requirements for fishers to join the group	Fishers have to fulfill administrative requirements and regularly attend group meetings	Fishers have to fulfill administrative requirements, regularly attend group meetings and have vessels	Fishers had to fulfill administrative requirements, attend the group meetings regularly, had vessels, and caught big tunas regularly
	Groups create a decision-making process	Group discussion is preferable for decision-making. Groups ask MDPI to mediate when group discussions do not work	Group discussion is preferable for decision-making. Groups ask MDPI to mediate when group discussions do not work	Group discussion is preferable for decision-making. Groups asked MDPI to mediate when group discussions did not work
	Groups create and implement fishery management plans	MDPI gives guidance about fishery management plans and strategies but in the end, the groups decide whether to accept the suggestions or not	MDPI gives guidance about fishery management plans and strategies but in the end, the groups decide whether to accept the suggestions or not	Fishers used to ask the middleman to tell their suggestions to MDPI
	Groups determine how flexible the group rules are	Fishers cannot compromise and have to follow the group rules. The fishers are only allowed to sell to other middlemen if they are FT USA registered middlemen. Groups also give sanctions related to the premium funds	Fishers cannot compromise and have to follow the group rules. In practice, groups allow their members to sell to non-FT USA registered middlemen	Fishers could not compromise and had to follow the group rules. The group imposed absence fines for members who did not attend regular meetings

Table 3 (continued)

Forms	Description	Clusters		
		FT USA and MSC groups	**FT USA CFS groups**	**Formerly FT USA CFS groups**
Groups as an influence over preferences and values of individual	Groups have roles in the changes in fishers' level of compliance	Groups assist the members either at the regular meetings or through daily interactions	Groups assist the members either at the regular meetings or through daily interactions	Groups assist the members either at the regular meetings or through daily interactions Before the groups were dismissed, the fishers' compliances decreased due to the problem of loan repayment failure
	Groups have roles in managing the conflicts within groups	Deciding the allocation of premium funds has been challenging, but the groups can manage it The groups cannot handle fishers' dissatisfaction with price differences between FT USA and non-FT USA prices but still require fishers to sell to the FT USA registered middlemen	Deciding the allocation of premium funds has been challenging, but the groups can manage it The groups cannot handle fishers' dissatisfaction with price differences between FT USA and non-FT USA prices but still require fishers to sell to the FT USA registered middlemen	The equal distribution of premium funds has created dissatisfaction among members Two groups in Buru were excluded from the certification scheme because they could not handle internal conflicts with Fair Trade USA suppliers, which were mainly caused by debts The groups in Seram could not handle fishers' dissatisfaction with price differences between FT USA and non-FT USA prices and could not prevent their members from selling to other middlemen with better prices
	Groups' ability to influence the preferences and values of other non-FT USA fishers	There is no conflict between certified groups and non-certified fishers	There is no conflict between certified groups and non-FT USA fishers	There has been no conflict with non-FT USA fishers

received money when they filled in the logbooks. Most (63.9%) of the fishers did the documentation themselves, while 29.2% asked their relatives for help and the remaining 6.9% did not fill in the logbooks because there was no help available. However, in Buru the practice was different because, according to an MDPI field staff, two groups had employed enumerators to do the documentation. The other three groups used to employ enumerators as well but recently asked fishers to do it themselves. The groups that employed enumerators increased the groups' and individual fishers' compliance with documentation requirements, but the individual fishers could not access the additional funds from the company. The survey showed that all fishers from the groups in Buru filled out the logbooks and 50.9% of them were assisted by enumerators, their wives or their children.

A fourth benefit, experienced by all groups, is access to MDPI's assistance. The MDPI field staff usually live in or near the fishers' villages. The fishers got assistance in registering themselves to get legalized fisheries documents such as fisher ID cards (in Indonesia called Kusuka cards) and fishing vessel registration certificates (in Indonesia called TDKP). Fulfilling legal requirements is quite challenging for fishers because they live far from government offices and because the government bureaucracy is complex. The field staff attend group meetings and help resolve problems that the groups cannot resolve. The field staff also assist the groups in making proposals and allocating the premium funds. Before the premium funds disbursement, usually in December each year, the groups conduct premium meetings. According to a leader from a Seram group, they usually already have a rough prediction of how much they will get. The groups write proposals on how they intend to allocate the funds. According to an MDPI field staff, groups' abilities differ in how they write the proposal, "*For a new group, we sat together to decide what they wanted, but for the groups that already understood, they wrote their proposal on what they wanted. For a new group, we had to explain and give directions about using the premium fund, which also sometimes created a problem. For example, 30% of the fund was mandatory for the environmental program, right? Sometimes fishers did not want to do it*." Some groups determine their needs and write proposals themselves, but others need MDPI's guidance. The proposals are sent to the committees and MDPI and when the premium funds are available, the committee administrators and field staff deliver the funds to the groups.

Finally, being part of a group grants fishers access to other capitals, including fish aggregating devices (FADs). These devices are placed on the sea to attract tuna and smaller fish. The device can increase fishing efficiency because fishers do not need to go around the open sea and need less fuel for searching for fish. In addition, the catch rates around FADs are usually better. Fishers often target small fish, such as momar fish (*Decapterus sp*). However, tunas eat smaller fish, including momar fish, so low availability of momar fish also influences tuna availability. According to the fishers, fishing around FADs only costs fishers about 20 to 30 L of fuel instead of 40 to 50 L when doing otherwise. Not all groups had FADs: two groups in Buru (Wamrunggut Teguh Bersatu and Leisela Indah) had FADs, while only one group in Seram (Teluk Ampera) owned a FAD given to them by the processing company. Another group (Tunas Beringin) used to have an FAD, but it has drifted away. Access to group FADs benefits the members since it is very difficult for individual fishers to arrange a FAD themselves because of the price. When a FAD belongs to the group, the members do not need to pay anything. When a FAD belongs to other owners, fishers could go fishing but may have to pay a fee. Some owners do not require any contribution, but others require money or payment in the form of loins. The FADs' owners can also require fishers to sell their catch to them. Groups owning FADs can ban purse seine fishing activities around their devices, but when the FADs belong to others, fishers have no control over other fishing activities around the FADs. The group leaders also mentioned that fishers gained new knowledge, experiences, and access to physical capital since joining groups. The survey showed that 98.4% of the fishers experienced benefits, and 94.5% claimed that their well-being increased since joining the group.

Mechanisms for the enlargement of individual capabilities

The second way group capabilities affect group members is by enlarging individual capabilities. The mechanism relating to the possibilities for fishers to participate in decision-making can be broken down into four. As group member fishers 1) co-decide on the requirements for (other) fishers to join the group, 2) co-create decision-making processes; 3) co-create fishery management plans; and 4) co-determine the flexibility of the group rules (Table 3).

The first mechanism is that groups decide the conditions for fishers to join the group. All groups have similar administrative requirements but they are subject to the FT USA determined quota for adding new members. FT USA sets an annual maximum of 10% of the total number of certified fishers in a committee for new members. This means that a group's opportunity to accept new members also depends on the number of potential new members in other groups. One of the leaders said, "*When there are not many potential new members from other groups, many new members can join our group. Coincidentally, last year, this happened. Other groups recruited less, so our group took the opportunity, and many new members entered.*" Groups have their internal mechanism for accepting new members. Fishers in the groups can recommend other fishers to join the groups,

but the groups decide on accepting new members. A group leader in Buru stated, "*When a new member wants to register as a member, we conduct a meeting first. I, as the leader, cannot take steps alone, so I ask other members when somebody wants to join us in the group and what they think about it.*" There is a group in Seram that applies the requirement that fishers have to own a vessel. The survey confirmed that 97.2% of the Seram groups' members have vessels, while the rest use middlemen or other people's vessel. In contrast, the groups in Buru do not require vessel ownership. There is, for instance, a fisher in one of the groups who does not own a vessel and works as a helper for other members or other fishers.

The second mechanism is that groups arrange their decision-making process. All groups use group discussions to take a decision, including on the allocation of premium funds. The leaders argue that discussions are preferable to votes. The FT USA committee administrators told that there is a group quorum of at least 50% of the group members attending the meeting and that 50% plus one vote is required for valid decisions. MDPI usually comes to the meetings and may be asked to mediate when the group mechanism does not work. Fishers can always nominate themselves as leaders, but the group decides. However, only few group members are willing to nominate themselves or be appointed as group leaders, so many groups have the same leader for over two leadership periods (of two years).

The third mechanism is that the groups develop a fishery management plan. This is an action plan that fisher groups create together with the FT committee, MDPI, and the provincial government to support the implementation of the FT USA CFS. All group leaders state that MDPI provides the guidance but that the groups decide whether or not to accept the suggestion. One of the popular elements in the action plans is that fishers should not go fishing on Friday. According to the guideline of the fisheries management action plan, it is a part of the strategy to control fish mortality and status rate. The leader from the Seram group mentioned that the suggestion first came from MDPI, but that, even before the action plan was developed, most fishers did not fish on Fridays because the social norm was that Friday is a day of rest because Muslims have to perform Friday prayers. An MDPI field staff confirmed that before making suggestions to fishers, they observed fishers' habits and traditions to suggest an action plan that would be suitable for fishers' situations.

The fourth mechanism is that the groups determine the flexibility of the group rules. The group informs the fishers about the rules to follow when joining the groups. According to the leaders, an essential rule is that fishers have to attend the regular meetings□. One of the leaders said, "*They have to come when there is a meeting because that is the rule. For example, group rules mention that someone may not be absent for three consecutive meetings. It cannot be violated. When someone does not come once, we give him a warning, twice he has to clarify the reason, because of sickness or what. When there is no acceptable reason, we will not share the premium fund with him. Members cannot have their own strategies but have to follow the group rules*." All groups' leaders argue that when a member is absent three times from regular meetings without acceptable reasons, he will be dismissed. There are differences between Buru and Seram regarding the maximum period a fisher does not go fishing. According to the Buru FT USA committee administrator, fishers who do not fish for more than three months are considered non-compliant. A leader from the Buru group also said that the group gives only one-third of the premium fund to fishers who do not fish for three or six months. According to the Seram FT USA committee administrators, however, the fishing frequency cannot be regulated because it depends on the weather and uncertain conditions at sea. Moreover, it also depends on personal factors, for instance, fishers might face problems with vessel engines, preventing them from going to sea.

There are also differences in groups regarding fishers' flexibility to sell their catch to non-FT USA middlemen. The leaders from groups in Seram mention that many of their members sell to non-FT USA middlemen. According to a leader, fishers choose other middlemen because of the price differences. He said, "*The truth is that fishers need the premium fund, but fishers also need money for living when the prices at the FT USA middleman are below other middlemen.*" In addition to uncompetitive prices, more competitive middlemen are also available, allowing fishers sell their catch to another middleman where the price is favorable. A field staff said that the loins entering the processing company from Seram have decreased since the end of 2019. The first reason is seasonal change. Second, on average, fishers from groups in Seram can provide themselves with ice, plastic bags, and fuel. So, when the FT USA middlemen's performance does not fulfill the fishers' expectations, they sell to other middlemen. However, that is not the case with the Buru groups. All leaders said that fishers can only sell to FT USA middlemen although this restricts fishers' ability to get a higher price. On the other hand, it supports the groups to continuously supply the processing company and maintains the groups' certification.

Influence over preferences, values, and behavior of individuals

The third role of group capabilities is in influencing the preferences and values of individual fishers. This role is implemented in two ways: the groups have a role in changing the fishers' level of compliance, and the groups have a role in managing internal conflicts (Table 3).

The first role groups play is influencing the fishers' level of compliance with the groups' rules and the FT USA CFS. All leaders in Buru and Seram assured that the fishers' compliance with the certification standard has increased over the years. Groups play a role in assisting the members to maintain and improve their compliance. Group administrators usually remind the members about the rules during the meetings and through their daily interactions. Two leaders in Buru mentioned that the fishers' understanding has improved and that more members come to the regular meetings. Two leaders in Seram mentioned that the groups are easier to manage nowadays. A leader in Seram stated that fishers' compliances can be changed depending on whether the group rules support their interests, especially in terms of loin prices. In reverse, leaders from Buru said that members' compliance in supplying their loins to the company has been reduced due to declining stocks, and because middlemen no longer pay in advance for fuel costs.

The second role of the groups is to manage conflicts within the groups. This is needed because otherwise, the groups do not keep their cohesion, which may affect their compliance. The leaders of the Buru groups mentioned that they face the challenge of different opinions among the members during meetings, primarily related to the allocation of premium funds. There has been suspicion between members and the group administrators about premium fund distribution, but the groups can handle the problem. An issue is that groups cannot handle is fishers' dissatisfaction with the differences between the FT USA and non-FT USA prices. A group leader in Buru mentioned that they understand that there is a difference in bargaining power between the processing company and the fishers and that fulfilling fishers' appreciation regarding higher prices is difficult. Fishers from the groups in Seram have more freedom to sell to other middlemen, but this is one of the reasons why their supply to the processing company has decreased. However, there has been a problem with loan transparency in a group, in which the borrowers failed to repay the loan to the group, but the group could handle the problem. Another group had a problem with the group's administrators' incompetence, which made the group inactive in the past. Like Buru, the groups also cannot handle fishers' dissatisfaction with price differences between FT USA and non-FT USA prices.

Inability of groups to manage internal conflicts is shown in the inactive groups. Two leaders from inactive groups in Buru said that compliance by fishers decreased after the group had debt problems with their middlemen. The members were very dependent on FT USA middlemen to provide in advance fuel, plastic bags for loin packaging, and other inputs for going fishing. Likewise, the middlemen also depended on the processing company to provide fuel and ice to be delivered to fishers. Payments from fishers to the middlemen did not go smoothly, as well as from the middlemen to the company. Another group gave money to a middleman, and unfortunately, he failed to repay the money, which affected the group's cohesiveness. The inactive groups in Seram mentioned that they could not control their members' dissatisfaction with the price differences between FT USA and non-Fair Trade USA middlemen. There were new non-FT USA middlemen who offered better prices, so many members sold to them. Ultimately, the groups closed because their supplies to the processing company did not compensate for the costs paid by the certificate holder. The certificate holder therefore made the decision to exclude the groups from the certification scheme. Another issue is the distribution of the premium fund, which is distributed through community and environmental programs. Usually, these programs are accessed by all members. One of the leaders mentioned, "*At that time, only a small number of fishers supplied their fish to the FT middleman, while most of them supplied to other middlemen. However, when the premium fund was distributed, it was divided equally. This was a problem in the group; whether fishers contributed or not, a little or a lot, the premium funds were divided equally*."

Overall, there was no conflict between the group and non-FT USA fishers. Only at the beginning did non-certified fishers spread unfavourable information about the groups' programs. Groups always send invitations to the village authorities when there are group activities.

Individual fisher capabilities in single and double certified groups

The way group functioning affects fishers' engagement in certification depends on the three forms of interplay between the individuals and group explained above. The comparison between single and double-certified groups shows that groups have similarities and differences in capabilities to comply with the certification standard. The specific abilities of individual fishers are affecting individual functioning and, as individuals make up a group, also group functioning. Based on the survey, we carried out a comparative analysis to identify the human, social, financial, physical and natural capitals that fishers use to comply with the certification standard (group functioning).

Table 4 presents the results of the Mann–Whitney U and the Kruskal–Wallis H tests. The first shows significant differences in the proportional distribution values of each capital between groups, which indicates differences in the relative importance of the capitals for group members to comply with the certification standard. This means that fishers employ different individual strategies in using and combining capitals, especially regarding human, physical and natural capitals (represented by high Mann–Whitney U-value). The Kruskal–Wallis H test results show that there are also differences in the proportional distribution values

Table 4 Mann–Whitney U and Kruskal–Wallis H results of differences in each capital

Capitals	Mann–Whitney U	Asymp. Sig (2-tailed) values	Kruskal–Wallis H	Sig. values
H	1473.50	0.01**	69.82	0.00***
S	408.50	0.00***	85.65	0.00***
F	185.50	0.00***	114.43	0.00***
P	1606.00	0.07*	106.95	0.00***
N	1603.50	0.06*	105.56	0.00***

*, **.***Significant at the 0.10, 0.05, 0,01 levels

for each capital between the single and double certified groups. Fishers who are member of single certified groups have a different use of capitals compared with those part of double-certified groups, as the former rely more on financial capital than the latter.

Despite these differences, the box plot presented in Fig. 2 suggests that the double certified groups (group 1–5) and single certified groups (group 6–9) have a similar pattern in the sequence of the capitals applied to comply with the certification standard. While the double certified groups show overall higher values on the use of social capital, this is also the most important capital used by fishers in the single certified groups. For both groups, human capital is the second most important capital, followed by financial, physical, and natural capitals.

Discussion

Group capabilities bring nuance to the general emphasis on the importance of group certification for small-scale producers with a lack of capital and capacity to access high-value markets while promoting sustainable production practices and improved livelihoods (Giovannucci and Ponte 2005; Wollni and Zeller 2007; Auer 2012; Bitzer et al. 2013; Pinto et al. 2014; Snider et al. 2017; Sellare et al. 2020). Our analysis shows that although organizing sustainable certification in groups brings advantages for small-scale fishers and the certification, the capability of small-scale fishers to comply with its standard is not fully recognized if the group's capabilities are not accounted for.

Being a member of a certified group does not allow fishers to influence the price of their loins, which means that fishers remain price takers. Fishers sell to middlemen and may individually ask for help when they need immediate cash, payment in advance for fuel, ice, etc. However, our study showed that the three clusters of groups directly contribute to the opportunity for small-scale fishers to access certified markets (Steidle and Herrmann 2019). The comparative analysis shows that clusters of groups have similarities and differences in their capabilities to participate in a certification scheme. While previous studies may refer to this finding as a result of group effects (Sellare et al. 2020), we argue with Evans (2002a, b), Ibrahim (2006), Robeyns (2003; 2017), and Stewart (2005) that groups' similarities and differences can be explained by the group capabilities.

The study confirms that group certification contributes directly to the well-being of their members, supporting previous studies on the benefits of smallholder group certification (Becchetti and Costantino 2006; Fischer and Qaim 2012; Ruben and Fort 2012; Dragusanu et al. 2014; Chiputwa et al. 2015; Ibnu et al. 2018; Meemken 2020). The

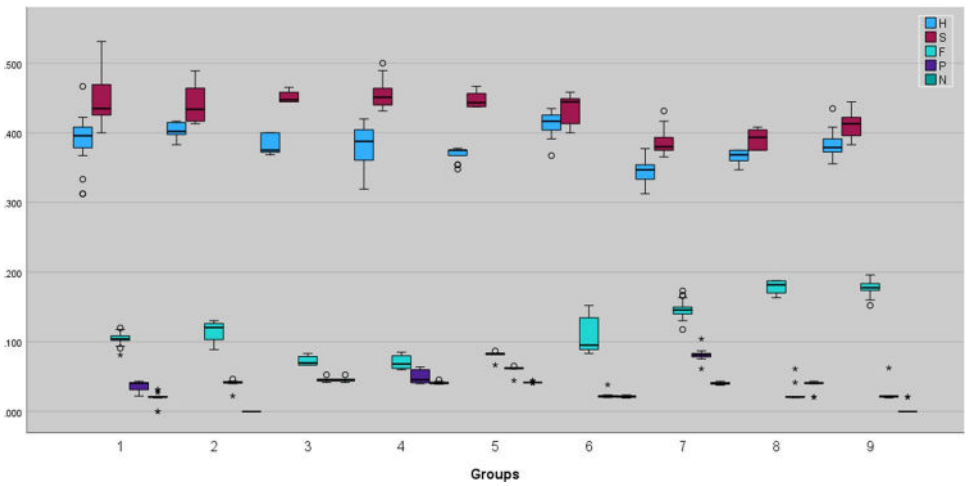

Fig. 2 Distribution of capitals across groups in Buru and Seram. *Note*. The double certified groups: 1= Wamrunggut Teguh Bersatu, 2= Leisela Indah, 3= Setia Selalu, 4= Waeplabung and 5= Latamiha. The single certified groups: 6= Tuna Yapana, 7= Tunas Beringin, 8= Teluk Ampera and 9= Darah Tuna Haruo. Each box indicates the first quartile (the lower frame), the median (the horizontal line in the box), and the third (the upper frame) quartile

comparative analysis shows that apart from getting direct benefits from the group, fishers in all clusters have the capability to perform sustainable fishing practices by participating as group members and exercising their social capital (Allison and Horemans 2006; Gutiérrez et al. 2011; Chuenpagdee and Jentoft 2018; Stoll et al. 2020). This supports Stewart (2005), who states that being a group member influences group members' well-being. Through participation in groups, fishers not only get the opportunity to enlarge their capabilities through certification but also to participate in sustainable fishery management through a fishery management plan that is consistent with the Voluntary Guidelines on Securing Responsible Small-Scale Fisheries (FAO 2015).

There is sometimes missing information on how individual fishers comply with the sustainability standard through their interaction and dynamics within the groups (Bush and Oosterveer 2007). This study shows that group certification creates a combination of internal control through groups and an external control system through the certificate holder and the implementing partner, which effectively supports small-scale fishers in certification (Steidle and Herrmann 2019). However, the internal control system also leads to concerns about the diversity of approaches within the three clusters on how to define compliance (Meinshausen et al. 2014). Each group can have additional requirements for a fisher to join the FT USA group, and the certification standard does not explicitly regulate these requirements. For instance, the single- and double-certified groups have different rules on the maximum period fishers are allowed not to go fishing. Both clusters are also different in allowing selling to non-FT USA middlemen.

Groups also have different approaches on enlarging individual capabilities, as single certified groups allow their members to sell their loins to non-FT USA middlemen. On the one hand, this enlarges the members' capabilities by giving them an opportunity to get a higher price when the price from the FT USA middlemen is unfavourable. On the other hand, such a mechanism can endanger the functioning of the group because the supply to the company may not be comparable with the assistance costs incurred by the certificate holder. In contrast, the double-certified groups do not allow group members to sell to other than FT USA middlemen. Fishers who do not comply are considered disobedient and may reduce their opportunities to enhance their well-being (Gustavsson et al. 2017).

Our study's focus on group capabilities shows the degree of freedom groups have in implementing sustainability standards at the local level, although groups can be excluded from the certification scheme. In this study, the internal problems resulting in the group losing their certification were not directly related to the certification standard. This supports Sutton and Rudd (2016), who state that social conditions are important in governing small-scale fisheries.

In this study, we found no evidence of major differences in group practices between the groups certified by both FT USA CFS and MSC and those only certified by FT USA CFS. The overview of the individual capabilities also suggests that even though there were differences between groups, the distribution and importance of capitals between both clusters is similar. Interestingly, the groups in North Buru have been certified by MSC certification after 2020, being the first MSC-certified small-scale handline yellowfin tuna fishery in the world. This marks a significant improvement in the certification of small-scale fisheries, given the critique on the lack of access to MSC certification for small-scale fisheries (Wakamatsu & Wakamatsu 2017; Bush et al 2013). In our study, we found that even with MSC certification, fishers still supply their loins to the same FT USA middlemen, while there is no guarantee of getting a better price than from other middlemen. The middlemen perform the same activity at their mini plants but write the MSC code to the fishers' loin plastic bags and supply the clean loins to the same processing company. This suggests that the opportunity for a group to be certified by MSC is influenced by institutions that are beyond the group and individuals' control. However, FT USA CFS seems to be essential in gaining MSC certification as groups that have MSC certification are double-certified. Since MSC certification took place six years after the groups were certified by FT USA CFS, it is likely that the groups' capabilities to sustain their participation in FT USA CFS have allowed them to get certified by MSC. Also, based on the MSC theory of change, MSC certification is expected to provide a market-based incentive in terms of higher prices for fishers as compensation for fisheries improvement (Roheim et al. 2018). However, this is not the case for the groups in our study, which raises a question about the MSC's direct impact on small-scale fishers, that is, to what extent the incentive can be enjoyed by small-scale fishers. However, the premium fund delivered from Fair Trade USA CFS has, to some extent, served as a saviour of the credibility of MSC certification.

Our findings highlight that group capabilities offer an opportunity for certified groups to provide access, manage, and control fishers' participation in the certification scheme without relying entirely on interventions from the certificate holder. Differences in group capabilities can explain why some groups are not certified, irrespective of the certification standard. Since there is no other way for the individual fisher to access and gain benefits from certification than by joining a group, this can incorrectly be considered as small-scale fishers' inability to comply with the sustainability standard.

Reducing transaction costs and efficient resource sharing and management are crucial reasons for using group certifications as the prerequisite for small-scale producers' certification (Becchetti and Costantino 2006; Fischer and Qaim 2012; Ruben and Fort 2012; Dragusanu et al. 2014; Chiputwa and Qaim 2016; Ibnu et al. 2018; Meemken 2020;

Wakamatsu & Wakamatsu 2017). However, the analysis of group capabilities in this study shows that instead of only being influenced by the economic aspects of group certification, groups also make use of social and human capitals to access and reap the benefits through the internal groups' mechanism and influences on the fishers' preferences and values toward certification as discussed by Snider et al. (2017). The diversity of capitals used by the groups further supports the need for a capabilities approach in assessing the actual implementation of sustainable certifications.

Many studies emphasize using groups to improve access of small-scale fishers to sustainable voluntary standards, particularly in developing countries (Stratoudakis et al. 2016). Our study highlights that by using group certifications, the certification standards place capabilities in the groups on how they internally manage their compliance with the standard (Steidle and Herrmann 2019). Group capabilities influence individual fishers' capabilities to be certified and practice sustainable fishing practices according to the standard. Therefore, not considering the group capabilities may lead to bias in analyzing access and compliance of small-scale fishers to a voluntary certification standard, either for the certification or policymakers.

The comparative analysis of group capabilities between groups that have been certified by MSC and those that have only been certified by Fair Trade USA CFS illustrates that the difference between two sustainability standards in their implementation on the fisher and their group levels is unclear. Fair Trade USA CFS seems to be used as a way towards fishery improvement thereby overcoming the accessibility challenge for MSC certification through functional upgrading of small-scale fishers, as mentioned by Borland & Bailey (2019).

Conclusion

This paper argues that a group is potentially an effective mechanism for promoting sustainable fisheries for small-scale fishers, especially in developing countries, provided these groups have the necessary capabilities. Groups have capabilities that cannot be placed at the individual level. In the context of voluntary sustainability certifications, we conclude that it is crucial to look beyond the individual capabilities to identify the actual circumstances that facilitate the effective implementation of the sustainability standard. It is unwise to assume that compliance with the sustainability standards is solely attributed to individual capabilities.

We thus concur with studies that highlight using groups to enhance the access of small-scale fishers to sustainability certifications in developing countries. However, our study emphasizes that by using group certifications, the scheme depends on group capabilities to internally manage compliance with the certification standard. Our study shows that group capabilities needed for certification pre-exist, become evident in the certification process, and thereby affect the positive or negative impacts of certification on groups and individual fishers. Hence, it is important to take into account group capabilities when analyzing how small-scale fishers access and operate within a voluntary sustainability certification.

Group capabilities are relevant not only for FT USA-certified groups but for all groups requiring group certification. Even when group certification is not required, we would argue that group capabilities still exist, but to what extent needs further research. Also, groups are embedded in larger entities, which makes the ability of groups to be certified not only on the groups but also on the social system of which groups are part, whether on the local level, within the value chain, or the wider governance context. Differences in the social and environmental system have implications for groups with different capabilities to comply with the certification standard, which will bring implications for individual capabilities. Addressing the social system and what groups and individuals need to gain access, maintain participation, receive better incentives, and the role of the ecological context is a point of interest for further research.

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Declarations

Research ethics We confirm that any aspect of the work covered in this manuscript has been conducted with the ethical approval of the Social Sciences Ethics Committee (SEC), Wageningen University and Research.

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