Stockholm University

Reeling in private governance approaches for sustainable fisheries

A study of Fishery Improvement Projects

Sofia Käll

Doctoral Thesis in Sustainability Science at Stockholm University, Sweden 2022

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Abstract

In response to the global fisheries crisis new governance models have been developed. In this thesis, I study one such model, Fishery Improvement Projects (FIPs), that have increased in numbers and importance globally, yet received little scientific attention. Alongside seafood certifications schemes, FIPs have been developed to meet the growing demand for sustainable seafood. By employing a multi-stakeholder approach, these projects aim to use the power of the private sector to improve fishery management and fishing practices. However, processes within these projects, and how they function as an instrument of change to improve fisheries, have been particularly understudied. This thesis explores the potential benefits and challenges of FIPs as a private governance approach for achieving sustainable fisheries. **Paper I** presents the first global systematic description of FIPs governance processes by examining reported actions, the actors involved, and their achievements. It reveals that FIPs have influenced both governmental policy (e.g., through management plans and new governmental management bodies) and industry-led practices (e.g., traceability programs and gear changes). It also demonstrates that FIPs include a diversity of actors, although fishers and retailers are relatively absent in FIP actions. The paper proposes that FIP actions and outputs can be categorized as either complementary or reinforcing of state regulations. **Paper II** contributes with an in-depth case study of the blue swimming crab FIP in Indonesia. By using the lens of institutional entrepreneurship, the study provides a historical analysis of the value chain from village fishers in Indonesia to importers in the US. It describes the entrepreneurship behind the FIP's establishment and its institutional interventions, as well as addresses why these have been unsuccessful in changing behaviours of fishers and traders to increase the ecological sustainability. The paper expands on the theoretical understanding of institutional entrepreneurship. **Paper III** presents an overview of how fishers participate in FIPs based on data from FIP implementers world-wide. Fishers are mostly involved in data collection efforts and less involved in developing FIP workplans and objectives indicating that they are not involved in the early development process of the FIP. The lack of overall benefits for fishers together with limited capacity and skills within projects were identified as the main barriers to have meaningful fishers' participation, flagging some critical challenges for the FIP model. Finally, **Paper IV** uses a literature review of the social embeddedness theory within fisheries literature to explore how social context influences economic actions in fisheries trade. The paper emphasizes the importance of how social identity (e.g., ethnicity) shapes market access and how the level of (dis)trust between actors impacts trade strategies. It discusses the implications of these findings for research and implementation of FIPs and other market-based interventions. Together, these four papers contribute with novel empirically grounded understandings of FIPs, which is relevant for the growing literature around private governance as well as for the global community of practice within the sustainable seafood movement. These papers provide important insights into the ongoing debate about effective governance approaches for improving the sustainability of fisheries for both people and ecosystems.

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SUMMARY

In response to the global fisheries crisis new governance models have been developed. In this thesis, I study one such model, Fishery Improvement Projects (FIPs), that have increased in numbers and importance globally, yet received little scientific attention. Alongside seafood certifications schemes, FIPs have been developed to meet the growing demand for sustainable seafood. By employing a multi-stakeholder approach, these projects aim to use the power of the private sector to improve fishery management and fishing practices. However, processes within these projects, and how they function as an instrument of change to improve fisheries, have been particularly understudied. This thesis explores the potential benefits and challenges of FIPs as a private governance approach for achieving sustainable fisheries. **Paper I** presents the first global systematic description of FIPs governance processes by examining reported actions, the actors involved, and their achievements. It reveals that FIPs have influenced both governmental policy (e.g., through management plans and new governmental management bodies) and industry-led practices (e.g., traceability programs and gear changes). It also demonstrates that FIPs include a diversity of actors, although fishers and retailers are relatively absent in FIP actions. The paper proposes that FIP actions and outputs can be categorized as either complementary or reinforcing of state regulations. **Paper II** contributes with an in-depth case study of the blue swimming crab FIP in Indonesia. By using the lens of institutional entrepreneurship, the study provides a historical analysis of the value chain from village fishers in Indonesia to importers in the US. It describes the entrepreneurship behind the FIP's establishment and its institutional interventions, as well as addresses why these have been unsuccessful in changing behaviours of fishers and traders to increase the ecological sustainability. The paper expands on the theoretical understanding of institutional entrepreneurship. **Paper III** presents an overview of how fishers participate in FIPs based on data from FIP implementers world-wide. Fishers are mostly involved in data collection efforts and less involved in developing FIP workplans and objectives indicating that they are not involved in the early development process of the FIP. The lack of overall benefits for fishers together with limited capacity and skills within projects were identified as the main barriers to have meaningful fishers' participation, flagging some critical challenges for the FIP model. Finally, **Paper IV** uses a literature review of the social embeddedness theory within fisheries literature to explore how social context influences economic actions in fisheries trade. The paper emphasizes the importance of how social identity (e.g., ethnicity) shapes market access and how the level of (dis)trust between actors impacts trade strategies. It discusses the implications of these findings for research and implementation of FIPs and other market-based interventions. Together, these four papers contribute with novel empirically grounded understandings of FIPs, which is relevant for the growing literature around private governance as well as for the global community of practice within the sustainable seafood movement. These papers provide important insights into the ongoing debate about effective governance approaches for improving the sustainability of fisheries for both people and ecosystems.

SAMMANFATTNING

Den globala fiskerikrisen kräver nya styrningsmodeller. I den här avhandlingen studerar jag en sådan modell, Fishery Improvement Projects (FIPs), som har ökat i antal och betydelse globalt, men ändå fått lite vetenskaplig uppmärksamhet. Vid sidan av certifieringar för hållbart fiske har FIPs utvecklats för att möta den växande efterfrågan på hållbarhetsmärkt sjömat. Dessa projekt inkluderar flera olika aktörer och syftar till att använda den privata sektorns inflytande för att förbättra fiskeförvaltning och fiskemetoder. Processerna inom dessa projekt och hur de fungerar som ett instrument för förändring för att förbättra fisket, har inte studerats väl. Denna avhandling syftar till att undersöka potentialen och utmaningarna med FIP som en privat förvaltningsstrategi för hållbart fiske. **Artikel I** presenterar den första globala systematiska beskrivningen av FIP:s styrningsprocesser genom att undersöka rapporterade strategier, de inblandade aktörerna och vilka resultat de lett till. Artikeln visar att FIPs påverkar både statlig politik (t.ex. genom nya förvaltningsplaner och förvaltningsorgan) och industripraxis (t.ex. spårbarhetsprogram och förändring av fiskemetoder). Den visar även att FIPs inkluderar en mångfald av aktörer, men att fiskare och återförsäljare är relativt frånvarande från projektens strategier**. Artikel II** bidrar med en djupgående fallstudie av en FIP för blå simkrabba i Indonesien. Genom att använda begreppet institutionellt entreprenörskap ger studien en historisk analys av värdekedjan från fiskare i Indonesien till importörer i USA. Studien demonstrerar entreprenörskapet bakom projektets etablering och strategier för förändring, men även varför dessa har misslyckats med att ändra fiskares beteende för att öka den ekologiska hållbarheten. Artikeln utökar den teoretiska förståelsen för institutionellt entreprenörskap. **Artikel III** presenterar en översikt över hur fiskare deltar i FIPs baserat på data från de som implementerar projekt över hela världen. Studien konstaterar att fiskare var mest involverade i datainsamlingsaktiviteter och praktiska utbildningar men mindre involverade i att utveckla FIPs arbetsplaner och mål. Bristen på fördelar för fiskarna att vara involverade identifierades som ett av de främsta hindren för att främja fiskarnas deltagande. Slutligen, **Artikel IV** undersöker hur sociala sammanhang påverkar ekonomiskt agerande inom fiskebranschen genom en litteraturöversikt av teorin social inbäddning. Artikeln belyser insikter om vikten av hur sociala identiteter (t.ex. etnicitet) formar relationer och tillgång till marknader samt hur nivån av (miss)förtroende mellan aktörer påverkar handelsstrategier. Den diskuterar sedan konsekvenserna av dessa resultat i relation till framtiden för FIPs och andra marknadsbaserade interventioner. Tillsammans bidrar dessa fyra artiklar med en ny, empiriskt grundad förståelse av FIP, som är relevant för den växande litteraturen kring privata styrningsmetoder såväl som till den globala hållbarhetsrörelsen för fiske i stort. Avhandlingen ger viktiga insikter till den pågående debatten om effektiva förvaltningsmetoder för förbättrad hållbarhet inom fiskeindustrin för både människor och ekosystem.

LIST OF PAPERS

Paper I

Crona. B., **S. Käll**, and T. Van Holt. 2019. Fishery Improvement Projects as a governance tool for fisheries sustainability: a global comparative analysis. PLOS ONE 14(10): e0223054. https://doi.org/10.1371/journal.pone.0223054.

Paper II

Käll. S., B. Crona, T. Van Holt, and T. Daw. 2022. From good intentions to unexpected results — a cross-scale analysis of a fishery improvement project within the Indonesian blue swimming crab. Maritime Studies 1: 1–21. https://doi.org/10.1007/S40152-022-00285-Y.

Paper III

Käll. S. Who has a say in seafood sustainability? A critical analysis of fishers' participation in Fisheries Improvement Projects. Manuscript.

Paper IV

Käll. S., E. Drury O'Neill and B. González-Mon. Social embeddedness of fisheries trade - what can we learn for improved market interventions towards sustainability? Manuscript.

Contributions to papers

Paper I: I contributed to joint research idea and design, did most of the data collection and analysis and wrote parts of the paper. **Paper II**: Joint idea generation. I developed the research design, collected and analysed the data and wrote as lead author. **Paper III**: I developed the idea and research design, collected and analysed the data, and wrote the paper. **Paper IV**: Joint idea generation, research design, and data collection. Led the analysis and writing of the paper.

Additional publications

Van Holt, T., W. Weisman, **S. Käll**, B. Crona and R. Vergara. 2018. What does popular media have to tell us about the future of seafood? Annals of the New York Academy of Sciences, 1421(1), 46–61. https://doi.org/10.1111/NYAS.13613.

Blasiak, R., A. Dauriach, J. Jouffray, C. Folke, H. Österblom, J. Bebbington, F. Bengtsson, A. Causevic, B. Geerts, W. Grønbrek , P.J.G. Henriksson, **S. Käll**, D. Leadbitter, D. McBain, G. Ortuño Crespo, H. Packer, I. Sakaguchi, L. Schultz, E. Selig, M. Troell, J. Villalón, C.C.C. Wabnitz, E. Wassénius R. A. Watson, N. Yagi and B. Crona. 2021. Evolving Perspectives of Stewardship in the Seafood Industry. Frontiers in Marine Science: 671837. https://doi.org/10.3389/fmars.2021.671837.

CONTENTS

INTRODUCTION

1.1 Challenges in global fisheries and approaches to seafood governance

The state of global fisheries has become one of the most pressing and debated sustainability issues. Fisheries around the world are facing challenges with declining catches, overfished populations, habitat destruction, and bycatch (FAO 2020, Costello et al. 2016; Jackson et al. 2001). There are large problems with Illegal Unreported and Unregulated (IUU) fishing (Pauly and Zeller 2017) as well as reported incidents of human rights abuses within the industry (Teh et al. 2019; Duong 2018). In addition, environmental conditions in the ocean are changing. In particular, climate driven changes, such as ocean acidification and increasing temperatures, causing shifts in fish distributions and species extinctions are expected to raise new challenges for fisheries (Pinsky et al. 2013; Seo 2021). Seafood production is at the same time critical for our future. People depend on healthy fish populations and ecosystems for their livelihood, diet, and culture, especially in coastal regions (Short et al. 2021; FAO 2020). With a growing population to feed, and the recognized climate impact of many terrestrial sources of animal protein, seafood demand is only expected to rise (Naylor et al. 2021; Golden et al. 2021). Although, the main increase is predicted to come from aquaculture, these production systems still often depend on wild-caught seafood, making fisheries crucial for future food systems (Naylor et al. 2021).

In short, fisheries provide important benefits for people and societies but are currently faced with multiple challenges. There is an ongoing debate about how to design effective governance approaches to tackle these issues. Current governance approaches within fisheries have been described as a 'complex mosaic' that includes a mix of public and private instruments and arrangements (Bush and Oosterveer 2019:25). It is an innovative space where multiple forms of governance to achieve sustainability are being tried and tested. Bush and Oosterveer (2019) identify four general categories of governance approaches that interact and exist simultaneously: 1) centralized government arrangements – e.g., regulation of territorial waters and the establishment of RFMOS; 2) state control regulations that use the market to allocate the rights to fish – e.g., by setting and trading individual transferable quotas (ITQs), licenses, or assigned shares; 3) privately-led governance in the form of standards, codes, labelling, and certification schemes regulating production and trade, these schemes are often created by NGOs and target industry actors and consumers; and 4) community-based resource management, which aims to counter centralized forms of regulations and is based on self-regulations by resource users. In this thesis, I will focus on the third category (privately-led governance). Specifically, I examine one model for marine-captured seafood, Fishery Improvement Projects (FIPs).

With the rise in privately-led governance, marine governance is following a similar trend as seen in other environmental resource management and food systems at large (e.g., Lemos and Agrawal 2006; Auld 2014). Scholarly discussions around this mode of environmental governance use several concepts that refer to a similar phenomenon – e.g., private authority (Green 2013), multistakeholder incentives (Busch 2014; Fransen 2012), sustainable partnerships (Bitzer and Glasbergen 2015; Glasbergen, Biermann, and Mol 2007), and non-state market governance (Cashore 2002). I follow, for example, Falkner 2003 and Auld (2014) and use the term private governance to examine the mode of

governance where non-state actors – both firms and civic society actors – play an increasingly important role in global environmental governance and have the legitimacy to guide and steer actors' behaviours. As noted by Falkner (2003), the result is a blurring of the roles and responsibilities of state and non-state actors.

Scholarly literature offers multiple reasons behind the increase in private governance mechanisms. Within the sustainability scholarship, the drivers of this trend have partly been described as a response to the perceived failure of states to govern, especially in the marine domain (Roheim et al. 2018). However, it has also been seen as a response to the features of global environmental challenges, as 'no single institution alone is capable of addressing wicked problems effectively and equitably' (Ponte, Noe, and Mwamfupe 2020: 3). Therefore, multiple stakeholders need to be included in governance processes to represent state actors, firms, civil society, and local resource users. Others, have explained the increase in multistakeholder incentives and voluntary private standards as a result of, and response to, neo-liberalization of policies globally (Busch 2014; Konefal 2013) and the promotion of individual responsibility and consumer power (Iles 2004).

1.2 The sustainable seafood movement

Returning to fisheries specifically, the emergent discourse about private governance is often referred to as the 'sustainable seafood movement' (Barclay and Miller 2018; Sutton and Wimpee 2008). This movement has been largely created and promoted by NGOs, US-based family philanthropic foundations, and industry (Bush and Oosterveer 2019). Today, large international NGOs, as well as scholars are urging and recommending end-consumers, food services, retailers, and governments to make use of certifications, industry standards and procurement specifications to address seafood sustainability challenges (e.g., Blue Food Assessment 2021; Jonell et al., 2021; Conservation Alliance 2021a). The outcome of this movement has had a significant impact. Initiatives for sustainability now contain well over 100 standards, certifications, codes, recommendation lists and traceability programs (Jacquet and Pauly 2007; Blasiak et al. 2017). The aim of these incentives is often to change the behaviour of value chain actors through price premiums and/or preferential market access. Currently, around 40% percent by volume of seafood production globally (both farmed and wild-caught) is certified or rated within one of these programs (Certification & Ratings Collaboration 2022).

As seafood is among the most traded commodities world-wide, private governance approaches, targeting trade and production systems, are particularly worth considering. The wide reach of seafood trade means that these approaches have the potential to promote better fisheries management in areas and countries where state capacity is low (Bailey et al. 2016). Certification schemes have demonstrated positive outcomes in terms of changes in stock health, ecosystem impacts and fisheries management changes (Arton et al. 2020). Furthermore, certification implementation methods have been argued to encourage participatory and inclusive practices (Foley and McCay 2014) as well as increase transparency, accountability and traceability of seafood productions (Rudolph et al. 2020).

At the same time, private governance approaches within fisheries have been criticised. Scholars claim that there are both unequal participation and unequal benefits for actors within these sustainable incentives (e.g., certification programs) and that they mostly benefit powerful actors, such as large corporations, while marginalizing small-scale producers (Kalfagianni and Pattberg 2013; Bitzer and

Glasbergen 2015). Moreover, market-based tools have been criticized for not promoting long-lasting environmental and social improvement (Blackman and Rivera 2011; Jacquet et al. 2010). These cited tensions are especially important for the ongoing debate of incorporating social aspects in fisheries management such as fairness, ethics, and justice (Foley et al. 2020).

1.3 Fishery Improvement Projects – an example of a private governance model

Despite this ongoing debate around the pros and cons with private governance approaches in seafood production, it is evident that the sustainable seafood movement has created an increasing demand for sustainably labelled seafood. Yet, many fisheries struggle to reach such standards, for example certification requirements. In an attempt to fill this gap, and to help value chain actors move towards certification, a new private governance model emerged in the early 2000s called Fishery Improvement projects (FIPs). FIPs were designed to serve as a path towards ecological improvement of fisheries that do not currently have the capacity to meet sustainability standards (e.g., Marine Stewardship Council, MSC). The Conservation Alliance defines FIP as follows: '[FIP is] a multi-stakeholder effort to address environmental challenges in a fishery. These projects utilize the power of the private sector to incentivize positive changes toward sustainability in the fishery and seek to make these changes endure through policy change' (2021: 7). I further explain the details of how FIP works in section 2.1.

FIPs provide an innovative way of working towards sustainability that could potentially have large impacts if they live up to their promises. Here, sustainable seafood refers to seafood production that meets the needs of the present without compromising the ability of future generations to meet their own need (WCED 1987; Clark and Harley 2020). They have been portrayed as a solution to some of the identified problems with certification because FIPs can allow small-scale fisheries or fisheries in low-income countries to reach standards, or be acknowledged as sustainable without the need for certificaton (Bailey et al. 2018, Cannon et al. 2018). FIPs have increased in numbers and volume and are promoted by NGOs, donors, industry, and retailers and have become a dominant feature in global value chains as FIPs now influence the sourcing policies of large retailers. For example, Walmart states that by 2025 it will require that all wild-caught fish they sell are sourced from fisheries that are either third-party certified or engaged in a FIP (Walmart 2020). Today, there are 275 FIP projects in over 70 countries (about 9% of the total global wild-caught catch) (FIP-DB v2021; CEA 2020). The demand for sustainably sourced seafood is predicted to continue to increase and with it the numbers and importance of FIPs will raise (Bush and Oosterveer 2019; Borland and Bailey 2019). However, despite the growing role of FIPs in global fisheries governance, there are still many aspects of their functioning and performance we do not fully understand, and there has been limited research on this governance approach.

First, there is an ongoing debate about FIPs' effectiveness, and critiques have been levelled against FIPs for providing market access before they can ensure that the seafood is in fact sustainable (Sampson et al. 2015). Most research and debate on this topic has merely focused on ecological outcomes (Sampson et al. 2015; Cannon et al. 2018; Thomas Travaille, Crowder, et al. 2019), which is logical and important given the aim of FIPs. However, it is hard to measure ecological effects, especially over short periods. Therefore, it is important to also understand intermediate steps and outputs that can help fisheries towards a better trajectory. In this thesis, I aim to improve this knowledge base by

examining the strategies that are deployed and who is included in these projects. By understanding the nature of these strategies, it is possible to unpack how FIPs work as an instrument for change as well as the potential outcomes beyond purely ecological change. Second, little attention has been devoted to barriers and enablers for the establishment and implementation of FIPs. As these projects often are implemented across value chain actors, a better understanding is needed of what incentives and strategies work for different actors in different settings. Third, there is a growing call to recognize the different social-ecological contexts that FIPs are operating in not only to increase their effectiveness but also to limit unintended and undesirable consequences. In addressing the knowledge gaps articulated here, I seek to add insights that can enrich the debate about FIPs as well as the overall debate about future sustainable fisheries governance.

BACKGROUND

The rise of the sustainable seafood movement and Fishery Improvement Projects

To understand the value and contribution of the thesis, it is essential to understand the FIP model, its origins, and theory of change. Therefore, I begin by briefly providing a historical description of some of the key elements of the sustainable seafood movement. I then provide further details of the evolvement of FIPs and some more specifics of the model.

2.1 The emergence of the sustainable seafood movement

The sustainable seafood movement started around the 1990s in North America and Europe (Sutton and Wimpee 2008; Roheim et al. 2018). The movement was initiated by conservation organizations as a response to reported problems with overfishing and degradation of the marine environment. These signs of ecological crises coupled with a perception that state-led management had failed to fix these problems led the way for several NGOs to champion a new way to work (Allison 2001). The new strategy focused on how market forces could incentivize well-managed fisheries by harnessing consumer and industry power. This trend in fisheries was well in line with a general trend in environmental governance (Lemos and Agrawal 2006). Specifically, NGOs within the seafood movement were inspired by similar tactics in the forestry sector. In 2015, Guretiérz and Morgan (2015) stated that key stakeholders such as NGOs, philanthropic foundations, and industry had 'successfully built a network of actors that share a common, overarching, cultural model—a desire to improve the sustainability of capture fisheries via the supply chain, through the establishment of a non-state market driven governance regime' (p. 13). Although this broad uptake, recent reviews of the sustainable seafood movement show some changes in both strategies and theories of change overtime (Roheim et al. 2018; Blasiak et al. 2021). In the next sections, I describe some key developments and provide examples of the multitude of initiatives and tools that exist.

2.1.1 The development of strategies

The first set of strategies within the movement focused on boycotts that targeted end-consumers. Two famous examples are "Give Swordfish a Break" and "Take a Pass on Chilean Sea Bass," both launched in the US by different NGOs in the 1990s. These public media campaigns aimed to draw attention to the decline in fish stocks and need for better management. With the help of known chefs, the campaign encouraged restaurants, cruise ships, and retailers to take swordfish off their menus and shelves, which they successfully succeeded in some cases. There has been limited scientific assessments of these boycotts, but they have been reported to have increased attention by the governments and eventually improved management (Roheim and Sutinen 2006).

The actors within the seafood movement developed their strategies from boycotts to buycotts (Bush and Roheim 2019), complementing consumption guidelines with the active promotion of the "right"

type of (sustainable) seafood. For example, consumer guides not only recommended seafood species to avoid but also encouraged seafood categorized as a "good option" from an environmental perspective. The most prominent ones today are Monterey Bay Aquarium Seafood Watch wallet card and the World Wildlife Fund for Nature (WWF) seafood guides, released in multiple countries, (Jacquet, Hocevar, et al. 2010 WWF 2022). These types of recommendation lists have been met by scholarly criticism. For example, their accuracy of the empirical assessment and transparency have been questioned (Parkes et al. 2010) and they are argued result in consumer confusion as many lists give contradictory messages (Roheim 2009).

Other examples of buycott strategies are eco-labelling and certification schemes. These are used to verify that products meet a certain set of (sustainability) standards. Perhaps the most ground breaking certification scheme is the Marine Stewardship Council (MSC) (Sutton and Wimpee 2008). The MSC, a non-profit organization created in 1997, was one of the first NGO-business partnerships. The MSC includes a collaboration between Unilever, a large multi-national corporation, and the WWF. This new way for NGOs to work received some criticism (Sutton and Wimpee 2008). Although MSC today is the most widely used certification scheme for wild captured fisheries, covering around 14% of all globally traded wild-caught seafood (MSC 2022a), it was embraced slowly. The scheme struggled with acceptance from industry, NGOs, and governments as well as financially (Gulbrandsen 2014; Sutton and Wimpee 2008). After the first seven years, only six fisheries were certified. A turning point for MSC came when Walmart, the world's largest retailer, announced that it would only source MSC products starting in 2006 (Blasiak et al. 2021). Walmart's MSC sourcing policy was followed by a grant to MSC from the Walton Family Foundation (set up by the founders and still owners of Walmart). That grant enabled MSC to speed up its assessment and certification process and the number of MSC-certified fisheries increased. Despite being the most prominent certification scheme, MSC has also received widespread scholarly criticism – e.g., the MSC lacks a broader ecosystem perspective (Jacquet and Pauly 2007), some fisheries allow environmentally destructive gear to be certified (Jacquet, Pauly, et al. 2010), the process of certification is too costly and therefore excludes small-scale fisheries (Ponte 2012), and producers receive no price premiums (Van Putten et al. 2020; Blackman and Rivera 2011).

Walmart and the Walton Family Foundation's support of MSC symbolizes two important developments. First, it shows the large role philanthropic foundations have had and still have on the direction of the movement (Guretiérz and Morgan 2015). Indeed, Konefal (2013) notes that before the David and Lucile Packard Foundation started investing in market-based approaches in the late 1990s very few NGOs had campaigns targeting the consumption and production of seafood. Second, it illustrates the shift in strategies from demand from end consumers to demand from retailers and food services. Targeting large seafood buyers rather than individual consumers was a strategic decision of NGOs and philanthropic foundations (Sutton and Wimpee 2008). Rohiem et al. (2018) called this adaption the 'theory of change v2.0' within the sustainable seafood movement. The change came about because of costly campaigns targeting consumers and weak evidence of how much consumers can and were driving the demands of retailers. Retailers and food services companies, on the other hand, have large market and procurement power and can require compliance with sustainability standards.

The demand for certified seafood increased to meet the pledges from a growing number of retailers and food services (Roheim et al. 2018). However, there was a lack of sustainable certified fisheries. To address this, retailers started to seek partnerships with NGOs to help them with their sourcing

strategies to fulfil their sustainability commitments and to make their policies credible. It is within this context that FIPs were developed. In the next section, I explain in more detail how this came about, but I will first describe the role FIPs have played in the movement at large.

NGOs created FIPs to fill the gap in the demand for sourcing options and to help fisheries improve their status. Roheim et al. (2018) even call the development of FIP and its equivalent in aquaculture (Aquaculture Improvement Projects) a 'theory of change v3.0' of the movement. They state that FIPs try to 'incentivize seafood producers to work towards a goal of certification using a promise of preferential market access' (p. 394). In addition, I argue that this third version of the theory of change also involves an increased focus on trade relationships between value chain actors to leverage change as well as a move from only targeting retailers and food services to also targeting mid-chain companies as well (Packer 2020). For example, processors are often key actors in seafood production chains with a lot of 'chain-shaping power' (Iles 2007). In the last years of the movement, precompetitive collaborations for a more pro-active approach to addressing environmental issues by the seafood industry have emerged (Blasiak et al. 2021). The entrance of these collaborative efforts has shown how FIPs are not only a tool to bridge the gap in demand of sustainable seafood but also an important instrument for businesses that aim to generate positive environmental change. For example, the large player International Seafood Sustainability Foundation (ISSF), a coalition of the tuna industry, scientists, and NGOs, states in their new strategic plan that they will focus on FIPs to help improve tuna fisheries (ISSF 2022).

2.2 How are fishery improvement projects defined?

2.2.1 The forerunner to FIPs

Guidelines and key characteristics that qualify a FIP (Figure 1) have evolved over 15 years and with input from many organizations. However, before examining the technical details, it is worth understanding how it all started. The exact details surrounding the emergence and development of FIPs are not well documented in either the scientific or grey literature, perhaps because the FIP model is not run or owned by one organization. FIP is not, for example, a standard-setting body or its own entity. Rather, FIP is usually described as a model, approach, or tool.

The term fishery improvement project has been around since the 1980s and has historically been broadly used to describe collaborative projects to improve the conditions in a specific fishery (Deighan and Jenkins 2015). In 1987, the first called fishery improvement project (Discovery Bay, Jamaica) was established. This project was a collaboration between the University of the West Indies and Trent University (Canada) with support from the Canadian International Development Agency. It was initiated because of signs of overfishing of the reef fishery and aimed to implement community-based management (Doddema 2012). The project focused on monitoring research, increasing knowledge about the fishers, and ensuring sustainable fishing practices (Van Barneveld et al. 1996). Unlike today, FIPs from the 1980s and 1990 did not have a value chain approach and lacked significant contributions from the private sector (Cannon et al. 2018). These early FIPs were often funded by development aid.

Another seed to what was later to become the FIP model was introduced in 2002 – the fishery improvement partnership. These initial partnership initiatives engaged retailers and restaurants as

well as their suppliers to influence management decisions of fisheries they used (Cannon et al. 2018). Rather than changing sourcing from fisheries that ignored sustainability issues, these partnerships should 'keep buying and fix it' (SFP 2021: 22). Joint multi-stakeholder partnerships were created to solve problems in the fisheries. These initiatives were targeted at and implemented in international supply chains that sourced large amounts of seafood but whose poor resource management risked the future of the fishery.

One of these initial partnerships was with McDonalds and its suppliers of white fish (SFP 2022). These partnerships generated some of what will later be referred to as the first types of FIPs, such as the Eastern Baltic cod FIP. The Eastern Baltic cod project was run by Sustainable Fisheries Partnerships (SFP) with support from European market players and with Espersen, a major seafood supplier/processor. The objectives were to increase stock size, set quotas in line with management plans, and achieve MSC certification (SFP 2011). For example, FIP stakeholders participated in meetings at EU level and the International Council for the Exploration of the Sea (ICES). In 2011, several Eastern Baltic cod fisheries received MSC certification, although some certifications were withdrawn in 2020 (MSC 2022b). Other early examples were the Russian Pollock FIP and the Barents Sea Haddock and Cod FIP, which also eventually received MSC certification. The MSC certification could be a sign of success of these projects as the fisheries went from having large sustainability issues to adhering to the MSC standard (SFP 2021)

2.2.2 The FIP model is born

More organizations started to use similar approaches to what we today refer to as FIPs. The model became adapted and adjusted. A diversity of similar incentives emerged. To coordinate and communicate these better, major conservation organizations founded a coalition called The Conservation Alliance for Sustainable Seafood (here referred to as the Alliance) in 2008. The Alliance created 'a common vision for sustainable seafood ' to provide seafood businesses with a roadmap, including practices and strategies in support of environmentally sustainable fishing and aquaculture production (Conservation Alliance 2021a). The same year the term Fishery Improvement Project was adopted to streamline the language describing these new approaches (Cannon et al. 2018). The Alliance has in general been successful in unifying their messages and collaborating to develop the FIP model (Guretiérz and Morgan 2015).

In 2012, the organizations in the Alliance agreed on the first common definition and guidelines. The guidelines have been updated several times (2015, 2019, and 2021). They include key characteristics necessary for a project to be considered a FIP and how they should demonstrate credible improvements (Figure 1). In summary, a FIP must start with an assessment of the fishery's environmental performance (often a MSC pre-assessment). Based on the assessment, FIP participants develop a workplan that includes FIP objectives, time-bound actions, and a budget. To assess whether projects are making credible improvements, FIPs need to report progress in relation to the workplan and the MSC Fisheries Standard (although certification is not required). All documentations, except budgets, should be publicly available. Since 2016, over 95% of FIPs publicly share their self-reported progress every six months on a web platform (www.fisheryprogress.org), which is run by the US-based NGO FishChoice. The development of this reporting site was a key development for the transparency and accountability of the projects (CEA 2020; **Paper I**).

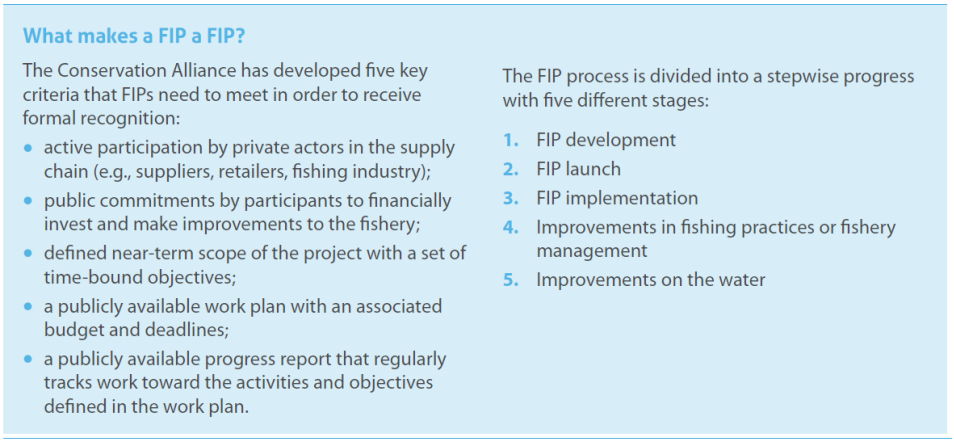

Figure 1. Description of key characters of FIPs based on the guidelines provided by the Conservation Alliance (Adapted from Käll, Sanders, and Levine 2020).

2.2.3 Same same but different – the variations of FIPs

FIPs have been applied in various ways in different fisheries and governance contexts, from large industrial fisheries in Europe to artisanal fisheries in Asia and Latin America. They have been led by either industry, NGOs, consultants, or governments. In the beginning, the implementation landscape was dominated by two NGOs: SFP and WWF. However, partly influenced by a strategic decision by SFP, seafood companies are increasingly leading and implementing FIPs. In fact, more than half of all FIP were implemented by industry in 2020 (CEA 2020). Therefore, the role of NGOs has shifted from being the main implementers to providing more strategic and technical support. The diversity of NGOs and environmental consultancy engaged in FIPs is also increasing – i.e., more organizations are working with the model.

A FIP's scope, objectives, and verification processes can vary as they are contextually adapted. A FIP can be implemented on different scales – multinational, national, or local. For example, a FIP can be run by a few companies and their vessels or cover a whole national fishery engaging all the large producers. In addition, they can address different issues. The Alliance guidelines distinguishes two types of FIPs – Basic and Comprehensive. Basic FIPs focus on a subset of environmental issues that need to be improved, and Comprehensive FIPs address all environmental matters covered under the MSC Fisheries Standard and often have an end goal of certification. Comprehensive FIPs must also have an independent audit of their progress toward MSC standards every three years. However, not all FIPs have MSC certification as a goal. Although some FIPs do not aim for any certification, some FIPs aspire other types of certifications and ratings such as Seafood Watch's 'Best Choice' or Fair Trade (e.g., Borland & Bailey, 2018; Duggan & Kochen, 2016). Finally, the initial status of the fishery can, of course, vary. Projects have been implemented in fisheries with significant environmental problems as well as in fisheries with already relatively advanced status in accordance with MSC certification standards, and

some of the discrepancies observed in terms of FIP achievements can arguably be linked to such divergent starting points (Cannon et al. 2018).

2.2.4 Scholarly examination of FIPs

One strand of scholarly debate focuses on the overall theory of change of FIPs. For example, the formalization of FIP processes was partly a response to criticisms of the model (Bush et al. 2013; Deighan and Jenkins 2015). After some large retailers in North America and EU developed sourcing policies including FIPs, fisheries were allowed the same market access as certified fisheries even when there was no proof that they were improving. This debate is still ongoing, and concern has been raised about the risk of FIPs leading to a 'race to the bottom' when it comes to fisheries and sustainability (Sampson et al. 2015). In addition, some FIPs risk demotivating a full MSC assessment and some retailers risk facing reputational damage if fisheries do not live up to what they claim in their sustainability commitments (Ponte 2012). Another perspective is that FIPs can play an important role in improving the ecological status of fisheries that really need it (Bailey et al. 2016). From this view, FIPs can be especially important for small-scale fisheries and fisheries in low-income countries, which are lagging behind in the number of certifications but represent around half of the seafood entering international trade. Therefore, FIPs can play a crucial role in helping these fisheries. However, few studies on the effectiveness of FIPs have shown contradictory results when it comes to their ability to work in low-income contexts. Whereas some studies have found a clear link between the lack of improvement in developing countries (Sampson et al. 2015, CEA 2020), other studies have not found any differences in effectiveness for developed and developing countries (Cannon et al. 2018; Thomas Travaille, Crowder, et al. 2019). Nonetheless, some studies have questioned whether the FIP model is suitable for small-scale fisheries (Barr, Bruner, and Edwards 2019).

A second strand of research focuses on how effective FIPs are at creating ecological improvements. For example, some studies have shown that FIPs can improve stock status and management of targeted species (e.g., Cannon et al. 2018; Samy-Kamal 2021; **Paper I**) or help fisheries receive MSC certification (Thomas Travaille, Lindley, et al. 2019). On the other hand, other researchers have also pointed out the lack of reported outcomes for the larger ecosystem. For example, in 2019 only around one-third of FIPs stated improvement on 'stage 5 change on the water' (Figure 1) – i.e., changes in the environment (Van Holt et al. forthcoming). In addition, another report demonstrates that many stage 5 results are not linked to improvements, but only to new availability of data (CEA 2020). Some scholars have stressed that internal FIP dynamics are important for understanding the effectiveness of FIPs (Thomas Travaille, Lindley, et al. 2019; Deighan and Jenkins 2015; Packer, Schmidt, and Bailey 2020). Yet, we know little about the process where FIPs work to create improvements, who is included, and why actors engage in FIPs. It is to this stream of research – i.e., a discussion about the inner workings of FIPs – that this thesis primarily aims to contribute.

SCOPE AND RESEARCH QUESTIONS

This thesis explores the challenges and opportunities of FIPs as a private governance approach for improving the sustainability of capture fisheries. Given FIPs' growing influential role and a pronounced goal to leverage the influence of value chain actors for ecological improvements, this thesis aims to understand how FIPs work as an instrument for change and to examine the role that FIPs can play for enhanced fisheries governance.

I specifically focus on what can be described as the governance processes of FIPs. By governance processes, I refer to the process of designing and setting up FIPs, creating incentives, deciding who to involve, deciding what actions to take, and deciding to what institutional outputs (e.g., new public policy or industry practice) FIPs aim to contribute to. As such, this thesis does not evaluate environmental outcomes.

To guide my research further, my papers address the following four research questions.

1) Which strategies are used in FIPs to drive change and what (institutional) outputs do they lead to? (**Papers I** and **II**)
2) Who participates in these strategies and under what conditions? (**Papers I** and **III**)
3) What are the key incentive structures behind FIP establishment? (**Paper II**)
4) What is the potential influence of social relationships and social-ecological interactions on FIP governance processes? (**Papers II** and **IV**)

To answer question 1, I address the strategies that FIPs develop to reach their objectives. Answering question 2 uncovers broad trends and patterns in the type of actors involved in these governance processes and provides insights into what this means for the types of strategies chosen and the types of challenges and opportunities experienced by FIPs. Answering question 3 contributes with an understanding of the motivations behind the formation of FIPs and the factors that enable the development and maintenance of a FIP and its ability to improve fisheries. Finally, answering question 4 helps explore the potential influence of social relationships and social-ecological interactions on FIP governance processes. Social-ecological interaction refers to any form of interaction across the social and ecological domain and can include fishing practices, perceptions of ecological signals, etc. Focusing on relationships and the social-ecological allows me to unpack and illustrate how strategies work in certain contexts and the outputs they give rise to under these conditions.

3.1 Paper focus, connections and contributions

The four papers in this thesis contribute to several dimensions needed to discuss challenges and opportunities of FIPs as a private governance approach. The papers are framed around four bodies of literature, which I flag here and further develop in the theory section (section 4).

Paper I contributes with the first global FIP review of its kind, aiming to set the scene for both academics and practitioners. Earlier reviews have focused entirely on FIPs' environmental impact. Thus no previous research has provided a comprehensive description of FIP governance processes. In addition, **Paper I** provides an overview of several projects and global distribution and describes the

actions implemented to affect change, the types of actors involved in these, as well as the achievements in terms of policy and practice outputs, investigations that contribute to answering questions 1 and 2. Moreover, the paper compares FIPs across geographical regions and fishery types to expand the understanding of if and how types of fisheries/species and types of actors influence the strategies chosen by FIPs and their respective outputs. Finally, **Paper I** uses emerging theory from the field of private governance to discuss the findings. This first comprehensive global analysis also provides some critical reflections on FIPs as a governance model and their potential to contribute to the governance of fisheries.

Paper II complements the global overview from **Paper I** by focusing on one in-depth case study in a small-scale fishery setting – the Indonesian blue swimming crab FIP. Here, we add contextual understanding for how a FIP project can start and play out. By using the notion of institutional entrepreneurship, this paper, like **Paper I,** sheds light on the strategies of the FIPs, which contributes to answering question 1. In addition, it examines the incentive structures behind FIP establishment, showing how and why actors leverage resources to start a FIP (question 3). Moreover**, Paper II** analyses the value chain, from lead firm processors in the US to local fishers in Indonesia and uncovers how incentives and strategies differ across geographic contexts and value chain levels. We combine two analyses to also investigate the potential influence of social relations and social-ecological interactions on FIP governance processes (question 4). First, we use a historical narrative approach to analyse the development of the FIP and the fishery, mainly through the lens of a key individual. Second, we conduct a causal-loop analysis of local social-ecological dynamics that impact fishers' incentives (i.e., compliance to gear and fishing regulations) and affects the performance of the FIP. The paper broadens the theoretical understanding of institutional entrepreneurship, information that is important for understanding how institutional change can be created. It also provides valuable empirical understanding of FIP implementation in increasingly global supply chains characterizes fisheries trade.

Based on findings from **Paper I and II**, **Paper III** investigates fishers' participation across a world-wide sample of FIPs, exploring who participates in FIP strategies and when from the perspective of a particular actor (question 2). A FIP, by definition, is a multi-stakeholder approach to governing fisheries resources as it involves multi-actor participation as a core tenet (Conservation Alliance 2021). Although fishers are argued to be key actors in the governance of fisheries, **Papers I** and **II** suggest that there might be a lack of meaningful participation by fishers in projects. By using a mix-method approach, this paper contributes with both qualitative and quantitative data of how fishers are participating in FIPs. I use literature from the field of stakeholder participation to examine and discuss patterns of fishers' participation as well as key barriers and enablers for participation from the perspective of FIP implementers. The paper points to key challenges for the FIP model and contributes with insights into how to improve FIP participation processes and design.

In my final paper, **Paper IV**, I zoom out from explicitly looking at FIPs to more broadly considering how social context influences economic actions and trade in fisheries. I do so to discuss what that might mean for FIPs and other private governance models, given the noted shortcomings (e.g., **Paper II**) and a call to better understand the social context where these models operate. The paper provides a literature review of how the well-established theory of social embeddedness has been used in fisheries literature. Thus, the paper contributes to answering question 4 about social relationships . By analysing and synthesizing empirical insight from case studies found in the literature, we initiate a discussion on

key themes that might be worth considering by future research on FIP development and implementation.

THEORETICAL BACKGROUND

In this thesis, I build on theories developed by scholars studying private governance, institutional entrepreneurship, stakeholder participation and social embeddedness. Below I elaborate how these bodies of literature help me to understand key dimensions of fisheries governance towards sustainability.

4.1 Private governance in a fisheries context

Fisheries governance is central for sustaining fisheries and the multiple goods and services they provide to society and ecosystems (Grafton 2010). I use governance as a concept to capture the deliberation, design, and implementation of rules, both formal and informal, that govern the behaviour of all the actors whose actions address outcomes of fisheries (Symes 2006; Kooiman 2005). Specifically, to understand FIPs as tools for change and how they relate to other governance approaches, I conceptualize FIPs as a form of private governance. I broadly define private governance as governance driven by various types of non-state actors who interact to produce institutional arrangements that structure and direct actors' behaviours in a particular domain (Falkner 2003). Examples of private governance mechanisms within FIPs are the use of private standards, such as MSC or procurements specifications, and the overall aim to leverage value chain actors' capacities to change practices, market demand, and governing institutions. Although FIPs have characteristics of private governance, it has been less discussed within the private governance literature compared to certification (e.g., Auld 2014; Gulbrandsen 2014).

Building on the conceptualization of FIPs as a private governance model, I want to situate my work within a broader governance theory. In particular, I draw on the insights that business, civil society, and public actors interact at different levels and that these interactions shape policy trajectories and policy outcomes (Grabs, Auld, and Cashore 2020; Ponte, Noe, and Mwamfupe 2020). These processes have been theorized to range from complementarity to mutually reinforcing state regulation. Complementarity refers to private actors filling a gap that states ignore. In such cases, states can then learn or adapt to standards from private actors. Mutually reinforcing state regulation is when private actors reinforce the legitimacy of state regulation, which can lead to better performance of existing regulations (Gulbrandsen, 2014; Groeneveld, Bush, and Bailey 2017). **Paper I** suggests this division of complementing and reinforcing interactions is a way to classify and understand the contribution of FIPs to the governance of fisheries.

4.1.1 A value chain lens as an analytical framing for private governance

Throughout the thesis, I use value chains as a lens to study FIPs and the social-ecological systems where they are situated and to identify actors that are key from the perspective of private governance in each of the fisheries. Throughout the thesis, I refer to these actors as value chain actors, which refers to all the actors involved in the range of activities required to bring a product or service from its origin to end use and beyond (Kaplinsky and Morris 2000; Gereffi and Fernandez-Stark 2011). In fisheries'

systems, these might be fishers, traders, processors, and retailers. Value chain analysis as an analytical approach has gained increased attention as it is a way for research and policy to move beyond the production node and to include multiple actors and their relationships (Ponte and Sturgeon 2014; Bush and Oosterveer 2015; Tezzo et al. 2020). For example, a global value chain perspective can identify how power of production and value adding are distributed through different coordination of lead firms in the chain (Gereffi, Humphery, and Sturgeon 2005). In this thesis, I do not conduct a complete value chain analysis. Instead, I approach the seafood systems through a value chain lens. Categorizing actors in relation to their value chain position, role, and each other allows me to understand actors decisions, choices, and the outcomes of these choices at different value chain levels or segments associated with a FIP.

4.2 Institutional entrepreneurship to understand private governance for sustainability

Since FIPs and other types of private governance schemes are built on voluntary commitments, it is essential to understand the motivations of FIP initiators. In addition, it is important to recognize how various actors involved in the fishery systems (e.g., retailers, NGOs, processors, and fishers) can leverage the resources they need to create new institutions, policies, and practices and how they access resources to sustain energy and momentum over time. Within the growing literature on transformations in social-ecological systems (SES), scholars aim to understand how to deliberately transform SESs towards new, sustainable trajectories (Clark 2000; Westley et al. 2011). Transformations are often defined as the creation of new and different systems with novel configurations between system components, which are deliberately pursued when ecological, political, social, or economic conditions make the existing systems untenable (Walker et al. 2004). Although I am not explicitly arguing that FIPs necessarily lead to such systemic transformation, FIPs embody an articulated vision for change. Therefore, I build on the tradition from SES scholarship to look at and understand the importance of change agents (Westley et al. 2011; Westley et al. 2013). I specifically draw on the notion of institutional entrepreneurship (DiMaggio 1998) as a lens for understanding how system change can and does occur and to study how and why new organizations, practices, or institutions emerge and are maintained (or not) (Bakir and Jarvis 2018; Hardy and Maguire 2008). I use Maguire, Hardy, and Lawrence's definition of institutional entrepreneurs: 'actors who have an interest in particular institutional arrangements and who leverage resources to create new institutions or transform existing ones' (2004:657)

In the field of sustainability science, institutional entrepreneurship has been increasingly used to understand change and transformation. Although private governance, market-based initiatives, and industry leadership have come to play a more dominant role in today's global sustainability movement, institutional entrepreneurship has not been widely employed to understand this development. Therefore, in **Paper II**, I adapt Battilana et al.'s (2009) conceptual framework to understand the process of institutional entrepreneurship towards sustainability in fisheries. Battilana et al.'s framework emerges from an extensive review and accounts for the conditions under which institutional entrepreneurship emerges and the key activities institutional entrepreneurs deploy to create change. In **Paper II**, I extend this to include a focus on social-ecological dynamics, contextual differences affecting actors' ability to realize or resist change at various scales, and analysis of the outcomes of institutional change. Therefore, **Paper II** advances the use of institutional entrepreneurship as a

theoretical framework to understand processes geared towards improvements in sustainability in fisheries and beyond.

4.3 Stakeholder participation in governance structures

To complement and balance the focus on institutional entrepreneurship, which focuses on key individuals initiating and driving change, I address the concept of participation. Participation refers to the involvement of stakeholders in the decision-making and implementation process (Röckmann et al. 2015). This body of scholarship allows me to discuss and explore meanings and practices of how stakeholders, in particular fishers, are involved in the FIPs set in motion by certain institutional entrepreneurs and change agents. I focus specifically on their participation in FIP processes and their outcomes. By definition, a FIP is a multi-stakeholder project and should ideally provide opportunity for participation and collaboration among several actors in the seafood value chain. But who is included in these projects and what do they actually do? Like other types of private governance tools, FIPs are not required to be inclusive or be democratically structured. Some have argued that FIPs can lead to increased stakeholder participation (Thomas Travaille, Lindley, et al. 2019), but others stress lack of participation from certain actors and unequal premises of participation within projects (Zelasney and Ford 2020; Paper I and II).

Many environmental governance scholars and international policy makers (e.g., Sharpe, Harwell, and Jackson 2021; Linke et al. 2020, UN Code of Conduct for Responsible Fisheries 2005) have called for more stakeholders to participate in environmental and fisheries governance. For example, participation is argued to be associated with increased legitimacy for policies and outcomes, improved decisions due to better and more diverse knowledge input, and fewer conflicts and more empowerment of certain groups (Young et al. 2013; Reed 2008; Leitch et al. 2015). From a sustainability lens, a focus on fishers' participation is relevant because fishers interact directly with the ecosystem and exclusion of fishers' perspectives in management increases the risk of non-compliance (Stratoudakis 2021; Pinkerton 2018). In addition, fishers around the globe – particularly small-scale fishers – often receive the least amount of benefit and profit from trade (Purcell et al. 2017). However, participation literature has argued that it is not enough to just acknowledge that different actors are participating as it is important to understand how and when actors are participating. For example, Arnstein (1969) argues that tools are needed that measure the degree of involvement and power-sharing, and Cornwall (2008) argues that analyses are needed that determine who is participating, what they are participating in, and who receives benefit from the participation. In **Paper III**, I use these strands of scholarship to guide the explorations of fishers' participation in FIP. In addition, I use a framework of best practice for stakeholder involvement developed by Reed (2008) to further discuss enablers and challenges for fishers' participation in FIPs.

4.4 Social embeddedness in fisheries trade

I draw on insights and theories from the literature on private governance, institutional entrepreneurship, and stakeholder participation to understand different aspects of the process of FIPs.

The fourth body of theory I employ is the theory of social embeddedness, emerging from the field of economic sociology (Swedberg 2003). Economic theories of rationality have dominated the theories of change of many market interventions of fisheries, including FIPs, although these theories' assumptions often do not hold (Henrich et al. 2001, Jentoft and Eide 2011; Fulton et al. 2011). The theory of embeddedness challenges some of the core assumptions of rational market actors and proposes that these actors are in fact embedded in social relationships, institutions, and culture (Granovetter 1985; Polanyi 1957; Zelizer 2011).

The relevance of the embeddedness perspective has been argued to be especially important for understanding fisheries markets given the influence of social relationships and the cultural context within fishing communities (e.g., Jentoft, McCay, and Wilson 1998; Hamilton-Hart and Stringer 2016; González-Mon et al. 2021). Also, within the literature of FIPs, the relationships of value chain actors have been seen as key to FIP stability and effectiveness (Packer, Schmidt, and Bailey 2020). In this thesis, embeddedness is used to gain further understanding of how trade is mediated in fisheries, adding to the debate on the multidimensional nature of economic activities and what that means for re-tuning, effectiveness, and potential unintended consequences of private governance approaches (Stoll, Bailey, and Jonell 2019; Kittinger et al. 2021; Barr, Bruner, and Edwards 2019; Thomas et al., forthcoming). In **Paper IV**, I show how embeddedness has been used in the literature of fisheries trade overall and explore the main contributions from this literature to identify key areas for future research.

RESEARCH DESIGN AND METHODS

In this thesis, I combine different research designs and multiple methods to achieve my aims of understanding how FIPs work as an instrument for change and the role FIPs play for improved fisheries governance (Table 1). In this section, I describe, discuss, and justify the methodological decisions. I start by explaining the value of using FIPs as cases studies. I then present the main methods used in the order they appear in the papers. This is followed by a short discussion on the limitation of the used methods. Finally, I end with reflections on research ethics and positionality.

Table 1. Methodological approaches across papers

Paper	Research design	Methods	Data analysis
I	Comparative analysis of multiple FIP cases at global level	Document analysis of FIP progress reports, compilation of global database	Structured, qualitative content analysis, descriptive statistics
II	Qualitative single case study; inspired by multi-sited ethnography	Interviews, focus group, participatory observations, review of progress reports	Thematic coding, causal loop diagram analysis
III	Multi-case quantitative comparisons combined with qualitative in-depth case examination	Mixed methods approach combining survey method and interviews	Descriptive statistics, thematic coding
IV	Review of scientific literature relating to a specific theory	Literature review	Qualitative content analysis

5.1 Using FIPs as case studies

In this thesis, I use FIPs as case studies in several ways. The analytical advantage of focusing on FIPs lies in the fact that they share a common overall theory of change and rely on the same guidelines. Therefore, it can be argued that they constitute a coherent sample. Moreover, by comparing cases of that share the same guidelines, I am better placed to glean insights that are generalizable across the population of FIPs. In **Paper I**, I use a global sample of FIPs to compare and contrast their strategies, actions, and actors involved. I extract data from their published and publicly available FIP reports. By comparing FIPs, I identify global patterns as well as similarities and differences across FIPs based on species and geographic regions (Mills, Durepos, and Wiebe 2012). In **Paper II**, I use a single case study design. This approach is suitable for generating in-depth understanding of a particular setting and has commonly been used for theory testing and development (Mills, Durepos, and Wiebe 2013; Yin 2013). The research design in this paper is also inspired by multi-sited ethnography (Marcus 1995; Nielsen, Hauer, and Friis 2019) which is 'a method of data collection that literally follows something through different geographic or social fields in order to grasp a given event, topic, or process' (Nielsen, Hauer,

and Friis 2019:308). Finally, in **Paper III**, I use a mixed-methods approach and use FIP cases in two ways. First, I relied on survey responses from representing 40% of FIPs from the global population, to uncover generalizable knowledge and patterns. Next, I selected cases within the sample based on whether fishers' participation was identified as high or low from the survey to conduct interviews. In **Papers I** and **III**, I used a globally derived sample of FIPs, but they differed in their data collection methods and therefore complement each other well. In **Paper I,** as I analysed FIP reports, I was restricted to the content of these reports. However, in **Paper III**, I used survey methodology and interviews, an approach that allowed me to gather information that does not necessarily make it into public reporting. The survey method allowed me to tailor the questions to elicit more specific information relevant for understanding key aspects of fisher participation in FIP governance.

5.2 Methods

5.2.1 Development of a global database

To systematically compare a global sample of FIPs (**Paper I**), we developed our own global database. Previous global studies on FIPs have used existing datasets (e.g., FishSource in Cannon et al. 2018; Sampson et al. 2015 and Fisheyprogress in Thomas Travaille, Crowder, et al. 2019; CEA 2020). However, these datasets were not sufficient to fully understand how FIPs affect change through their actions, who were involved in those actions, and what outputs these actions led to. First, the above data sources do not include specific actions taken by FIP actors as they only report on progress evidence – i.e., the output. Second, before the data collection, we understood from our discussions with the NGO Sustainable Fisheries Partnership (SFP), who developed the methodology for the reporting, that FIPs could report changes that happen in policies influencing the fishery (e.g., a new regulation) as an output of the FIP even though they were not involved in the process leading to that policy change. To overcome these issues, we developed our own database. That is, we developed a comprehensive codebook and systematically coded FIP progress reports for activities and outputs that were directly related to specific FIP actions (see codebook, S2 Appendix in **Paper I**). Our approach aims to give a more accurate understanding of FIP outputs and allows us to link outputs to specific strategies and actors within FIPs.

5.2.2 Qualitative interviews

Understanding people's experiences, motivations, perceptions and behaviors requires the ability to actively engage in a conversation with the individuals engaged in FIPs. Through interviews people can share their lived experience and provide explanations and justifications for their actions and opinions (Tracy 2013). All the interviews I conducted were in-depth interviews with open-ended questions centered around different topics (Tracy 2013; Shackleton et al. 2021). In these interviews, the conversations moved from me introducing broader questions to the interviewees' accounts of their experiences and views to me probing these to get useful information for the analysis. By using this

technique, I aimed to find a balance between 'rigid structure and complete uncertainty' to provide an 'in-depth information on the topic of interest without predetermining the results' (Given 2012; 2).

In **Paper II**, interviews were the main data collection method. I conducted several follow-up interviews with key actors to gain a deep understanding of the case and individuals' perceptions, strategies, and motivations. In total, 61 interviews were conducted with 45 people. All interviews except three were done in person. One interview was done over the phone and the other two over Skype, these were not done in person because of peoples' location. I interviewed a broad range of actors representing industry leaders, industry associations, NGOs, traders, and fishers. In **Paper III**, the interviews were aimed to follow-up quantitative surveys, understand different observed patterns, and explore the dynamics behind perceived barriers and enablers for fisher participation. In total, I interviewed 11 FIP implementers, drawing on experiences from FIPs across the globe. All interviews were conducted over Zoom.

5.2.3 Participatory observations

To complement interviews in **Paper II**, I used participatory observations during my fieldwork both in Indonesia and the US. Observation is a good method to gain understanding of the social and cultural context of a case study and people's behaviours and interactions (Macqueen, Guest, and Namey 2005). In Indonesia, I did observations at fishing trips, on landing sites, and markets to understand trade and fishing practices beyond how they were spoken about. I also observed fisher group meetings to add perspective on issues that were discussed among fishers in the community. Similarly, in the US, I did observations at a large seafood trade show to get insights into how key actors – e.g., seafood industry actors and NGOs – discussed sustainability issues. During or after all observations, I took detailed notes to capture what I had seen and heard and my reflections as well as noting any new questions that emerged based on the observations (Spradley 1980).

5.2.4 Survey

To get insights into fishers' participation across all global FIPs, I used a survey to collect both quantitative and more qualitative data as part of the mix-method design (**Paper III**). My choice of a survey methodology was based on my desire to identify common patterns and issues across FIPs in different regions. The survey methodology allowed me to generate data that could easily be compared across respondents and therefore provide a higher degree of generalizability than my more qualitative interviews (Shackleton et al. 2021). The survey was designed with both closed questions where respondents selected pre-defined answers and a short section with open-ended answers where respondents were free to elaborate their answers. The online survey was sent to FIP implementers representing all FIPs globally (153); 61 implementers completed the survey, representing 40% of the total FIP case population.

5.2.5 Literature review

For **Paper IV**, I conducted a literature review of scientific peer-reviewed articles as a literature review is a useful method to provide an overview of certain issues and can be used to explore new research agenda (Snyder 2019). The review provided an overview of how the theory of social embeddedness has been used in the literature about fisheries trade. We collected the literature using two databases – Scopus and Web of Science. Articles for our literature review were systematically collected using a specified set of search terms and clear exclusion and inclusion criteria (Gough, Oliver, and Thomas 2017). After the exclusion round a total of 79 articles remained and were included in the review (see Paper IV, Appendix 1). In the next step we selected 15 case studies based on how the articles used the embeddedness theory. The review method allowed us to use insight from previous literature on a specific topic and theory on another ongoing debate within another field of literature. This systematic approach meant that we could capture the spread of articles to date, which provided a comprehensive overview of the literature.

5.2.6 Methodological limitations

All research methods come with their own strengths and limitations. Here I will briefly reflect on the limitations of the main methods and data sources used and how these limitations may have influenced the findings and conclusions. However, I also argue for how I think the methods used complement each other.

One limitation of our global dataset in **Paper I** is the fact that FIP progress reports are self-reported. There is clearly a risk that actions and outputs are overrated. The way the report was written, if it included a lot of details of actions, also impacted the results. Therefore, the FIPs with well written reports could be more easily coded, whereas poorly written reports may have failed to communicate important actions or outputs and the strategic decisions that underpinned these. Actors' involvement in FIP actions was also self-reported, so other actors could have contributed but were not reported. Although we tried to trace the link between FIP actions and documented outputs in the reports, in cases where other organizations or actors were involved, it does not allow us to consistently capture the level of influence that the FIP had over a reported output. In other words, it was not possible to determine whether the FIP was instrumental for the output to materialize or was just one of several factors. To deal with this, **Papers II** and **III** attempt to triangulate and add to the findings from **Paper I** by performing complementary analyses of interviews and surveys to explore these links further.

For example, in **Paper II**, I conducted interviews with multiple actors in the FIP and fisheries systems as the main method. I also triangulated this method with both an analysis of progress reports and participatory observations, since interviews are good to sense underlying reasons that is left out of formal documents, such as the progress reports, or to ask questions about observed behaviours (Tracy 2013). The interview method, of course, has its own limitations. For instance, the data gathered from interviews are based on what people are willing to share. Interviewees might not give the full picture of their views, or how events occurred, therefore trust between the researcher and interviewees is important to create a comfortable space (Morris 2018). Moreover, when analysing interviews, other people might view the same topic in a different way. The use of causal loop diagrams in **Paper II** is an attempt to address this limitation and bring different perspectives of the system dynamics together from the fishers I interviewed. That is, I highlighted the complexity of an issue and people's diverse

views and experiences while capturing the complex causal connections of the social-ecological system. Another limitation is introduced when a study relies on only a limited number of key informants as I do in **Papers II** and **III**. Naturally, this reduces the potential for generalizability with regard to the whole population of FIP cases that I hope to address. In **Paper III**, I deal with this weakness by using a mixed-methods approach. That is, I tried to balance the limitations of the survey method, including the inability to ask clarifying follow-up questions or detect nuances or underlying factors to the answers.

Perhaps one of the most apparent (and ironic) shortcoming in this thesis is the study of fishers' participation without fishers' participation. Although this thesis presents important experiences from people who implement FIPs, there is a risk that these arguments about barriers and opportunities for fishers' participation are not shared by the fishers themselves. Including fishers would have been a desirable option; however, the study was designed and conducted during the Covid pandemic restrictions, so I was therefore forced to use online methods. Of course, I would have been able to use online methods with many fishers as well; however, it would have required much more time to find interviewees for each case. In **Paper III**, I clearly state that the perspectives presented are from FIP implementers and that future studies should follow-up on these findings by including fishers as well as other stakeholders.

Lastly, a limitation with the literature review method in **Paper IV** is that the search term of 'embeddedness' is rather limiting. People might have written about the theory but perhaps used only 'embedded' or 'embedding'. One way to overcome this shortcoming was the snowball sampling of the references in the articles we included in the review (although no additional articles were added using this method). In addition, we only included literature in English which restricts the article sample. Another weakness in **Paper IV** is that it is based on an analysis of case studies that do not specifically look at market-based interventions, however, as we state in the paper our findings can still highlight important common features which can serve as starting points for future research and for the community of practice to acknowledge. Moreover, I recognize that by using a literature review of the theory of embeddedness as an entry point to explore how social context impacts fisheries trade, indeed implies shortcomings for the findings. For example, scholars have written about how social relationships matters for economic actions, without using the embeddedness theory, which we do not capture by the research design in the paper.

5.3 Research ethics and positionality

5.3.1 Research ethics procedures

Reflecting on ethical issues is an important part of a PhD journey. As part of standard procedures, **Papers II** and **III** were reviewed by Stockholm Resilience Centre Research Ethics Sub-Committee, which helped improve the ethical procedures and be transparent about the potential risks that the research could imply. All participants who contributed to this PhD thesis provided informed consent before they were interviewed or completed a survey. They were all sent or verbally disclosed a plain language statement about the study before providing their consent.

However, research ethics are not only about formal procedure as research is 'not a static, one-off exercise' (Iphofen 2013: 3). Rather, research ethics is about how to deal with matters that come up during the course of the entire research process. One of the most sensitive issues that arose for me is

linked to **Paper II**. In this paper, I essentially report on the occurrence of illegal fishing practices, which can put people in a very vulnerable and awkward position as well as potentially incriminate them. I managed this ethical challenge in various ways. First, this topic emerged as a key issue from the interviews themselves. That is, I did not directly ask about illegal fishing practices. If the topic came up, I made sure that I framed any questions related to it in general terms or in third person. I did this to avoid putting people I interviewed in a situation where they had to justify their own behaviour. Although some people did reflect in general terms, others talked more about their own experiences even though the question was not phrased in that way. In the presentation of the **Paper I**, I made sure that peoples' fishing behaviours could not be tracked to any individual. Finally, it is worth noting that problems with non-compliance of fishing and processing practices have been well documented in serval reports and studies within the same village where I did my field work. Thus, it was not a new concern that my study brought to light.

Another ethical challenge I dealt with was anonymity of interviewees. When examining FIPs in the way I have done, it is crucial to be aware that it can be a limitation to the confidentiality of projects, organizations, and individuals. I handled this issue differently in **Papers II** and **III**. In **Paper II**, I recognized that by using the name of the FIP, key people's anonymity could be compromised because of the limited people involved in the project at the start and the fact that in some circles it is a quite well-known case. It is important that the people included in the study are aware of this risk. In the consent form, I specifically stated that although no names would be used in publications or presentations, their identity might be discernible through their connections to others or to activities related to the FIP. In **Paper III**, I used another approach. I changed the research design to make sure that respondents could not be linked to specific FIPs. Initially, I wanted to present the data from the interviews together with the survey as case studies. However, that would have meant stating individual FIP names. I thought that people would not want to be involved in the research or not be honest in their answers if that was the case. Therefore, I chose to present the interview and survey data in a way that ensured the anonymity of the respondents.

Finally, another topic I have reflected on during this PhD journey is linked to the trust I have created with the people I interviewed. When interviewing people, I learned how hard they work and how engaged they are in their jobs. I am aware that most people are doing the best in often difficult circumstances. I was concerned that I unfairly represented people's efforts, breaking the trust that I created by presenting my results, which tend to focus on problems and sometimes shine a critical light on people's work. Although this represents more of an internal conflict than an ethical challenge, I still believe it is relevant to be transparent about these issues, particularly within the field of sustainability science where we often engage with people working to steer improvements and we come in as outsiders to critically assess someone's work.

5.3.2 Positionality

We all have pre-conceived knowledge about the world. I am aware that my worldview impacts how I interpreted data, the decisions I made throughout my research, and what research findings I might have ignored or emphasised . Therefore, I need to be reflexive about my background, my values, and my normative position, an exercise often described as a positionality statement (Darwin Holmes 2020). To start with, I am a Swedish white woman from Stockholm, raised as an atheist and with a middle-

class background. I think it is relevant to consider that I am not from a fisheries or marine science background, but instead have a background in human ecology and sustainability science.

Except for frequent ice-fishing trips when I was young, I have no previous experience with fishing or the seafood industry in general. All the interviews I conducted have been with people from other nationalities and about fisheries in other countries. I clearly have had an outsider's perspective (Darwin Holmes 2020). In interviews, people were sometimes surprised that I was not a marine scientist. I think my outsider perspective has shaped an interesting dynamic in the interviews. My non-fishery background has potentially created a disarming atmosphere in some cases, while my Swedish background has created curiosity. Having an outsider perspective, and limited knowledge can also be a limitation. For example, I could make wrong assumptions or misread a situation. In **Paper II**, I dealt with these issues by triangulating different methods and presenting my findings to people with knowledge of my case study and collaborating with an Indonesian University.

Moreover, being an outsider also risked creating distrust between the interviewees and myself. In **Paper II**, I did fieldwork in two countries, representing two cultures foreign to me. During the data collection, I tried to build trust with the people interviewed and get to know the culture in different ways. For example, in the US, I stayed at a key informant's house, arranged dinners with key people, and tried to understand the seafood business through my visits to the large seafood show in Boston. In Indonesia, I stayed with a family in the village. I attended weddings, visited schools, and got to know the way of life in the village. I also spent time on the water, going back and forth to some fishing grounds, joining a few fishing trips, and interviewing people at landing stations watching many boats come and go. The engagement in these activities was a way for me to both build trust as well as pick up norms or traditions that were interesting for my research topic. I recognize that there is a very limited amount of culture one can get in the restricted amount of time I spent in the countries during my field work. I acknowledge that my fieldwork in Indonesia was made possible because of my collaboration with Diponegoro University, in Semarang, where I was also a guest student. My field supervisor, Sri Redjeki, and colleagues have been working in the fishing community for decades and had built up a trusting environment between researchers, students, fishers, and villagers. Being a guest student at Diponegoro University helped me to get in contact with fishers and traders. People seemed to have a positive relationship with students and appeared to refer to me as a student among others.

Finally, I want to reflect on my training as a PhD student in sustainability science and how this has influenced the way I view science. The discipline is problem-driven, defined by what we as researchers have identified as sustainability challenges. Therefore, research in this domain is often solution-oriented and with an instrumental focus (Kates 2011; Clark and Harley 2020). I think this is reflected in my thesis which is quite user-inspired in its character, meaning that I am trying to reach an audience beyond academia. In line with the solution-oriented approach I take, I position myself with what Creswell and Creswell (2018) describes as a pragmatic worldview. Within this worldview, the research problem is in focus and the researcher is free to choose all the approaches on hand that can help to understand the problem, thus not being committed to one system of philosophy or reality (Creswell and Creswell 2018; Cherryholmes 1992; Morgan 2007). Pragmatists acknowledge that research always occurs in a social and political context, but can move between a more deductive (value-free, generalizable) and inductive (contextually unique) philosophy (Moon and Blackman 2014; Creswell and Creswell 2018). In addition, the external world, the reality, can be captured both independently, as

well as within the mind (Creswell and Creswell 2018). However, within this pragmatic space, my research is leaning more on a constructionist epistemology, assuming that meaning 'comes into existence in and out of our engagement with the world' (Moon et al. 2021:4). Typical of the pragmatic worldview is the use of mixed methods. In my thesis I draw on both qualitative and quantitative methods and data analyses, to combine them and obtain knowledge that is best suited for my research problems. The mixed method approach is clearly shown in **Paper III**, where I first try to find more generalized quantitative data, and then have a qualitative data collection approach as a second step. Similarly, **Paper I** and **II** complement each other, going from identifying general patterns from a global set of cases to then relying on qualitative methods in one case study in **Paper II**, producing more contextual-dependent insights. In **Paper IV**, I also synthesize data from different case studies in the literature, but have a more qualitative approach, compared to **Paper I**. Within **Paper II,** I also mix various analytical methods such as a narrative approach and causal loop diagrams. Being trained in sustainability science has been referred to as an 'undisciplinary journey', and it is therefore important to have a reflexive process to navigate between the pluralistic worldviews, methods and theories that can be used (Haider et al. 2018). I have tried to do so throughout the PhD process and within the different approaches I have taken in the papers.

SUMMARY OF FINDINGS

This section outlines the key findings of each of the four papers included in the thesis.

Paper I – A global comparative analysis of FIPs

This paper contributes with a global analysis of FIPs governance processes to show their reported actions, the actors involved, and the achievements in terms of policy and practice outputs. First, our findings provide a review of the global distribution of FIPs. We show that FIPs have increased globally from four in 2007 to 57 in 2011 to 107 in 2015. Asia and South America had the largest number of FIPs. Although FIPs have increased, our results also show that several FIPs had been discontinued; half of the FIPs in South America and Europe had stopped their projects.

Second, we found two main categories of actions and outputs: ones related to policy and ones related to practice. Most FIPs seem to engage in one of these categories and few engage in both. We found that the most common action types were data collection as well as dialogues about data collection procedures, dialogues with government stakeholders, and educational efforts directed at fishers. The latter was mainly reported in both shrimp and crab/lobster fisheries, whereas deeper and more sustained government dialogues were more common in crab/lobster fisheries. Data collection issues were common among all fishery types. In terms of outputs, the most common policy ones were management plans and/or a new management body. Practice-related outputs were dominated by traceability programs and gear changes. Two findings are particularly interesting when it comes to the actors involved. First, FIPs engage actors from all levels in the supply chain, but retailers or first tier suppliers were the least involved. Second, fishers participate in educational efforts but are not particularly involved in policy dialogues, which suggests they are not directly involved in conversations around new regulations. Furthermore, our findings show that only 7% of the FIPs had fishers in a leading position. Based on our analysis, we discuss the opportunities and challenges FIPs will likely need to engage to contribute to a global transition to more socially and environmentally sustainable fisheries. We argue that by not just reporting tangible outputs but also the strategies that fail, the learning opportunities across FIPs would increase and enhance the potential for cumulative learning and adaptive adjustments of the governance model over time. Finally, we propose a tentative heuristics to categorize FIP actions and outputs as either complementary or mutually reinforcing of state regulations (Gulbrandsen 2014; Groeneveld, Bush, and Bailey 2017). This categorization could begin to classify and understand the contribution of FIPs to fisheries governance.

Paper II – A historical cross-scale analysis the Indonesian blue swimming crab FIP

This paper uses the notion of institutional entrepreneurship to provide a historical analysis across the value chain of the Indonesian blue swimming crab FIP. We found that the establishment of the FIP depended on one key person acting as an institutional entrepreneur. By having a vision for the role and responsibility of industry actors and a key social position, this institutional entrepreneur motivated

others and leveraged resources to start the FIP. In addition, we found that the FIP model was used to deal with a perceived environmental crisis and that ecosystem signals and ecological knowledge and awareness motivated actors. Industry actors could channel their ambitions to work with sustainability issues through the FIP by collaborating with other stakeholders using industry associations as platforms for this.

The FIP accomplished several of its objectives, such as influencing fishery management policies to ban trawls and to have a minimum landing size of crabs and promoting an industry imposed control document to increase compliance to government regulations. However, we found that despite these improvements, strategies did not altered behaviour of the local fishers. In fact, one of our key findings was that many fishers recently went from trap fishing to trawl fishing, undermining FIP measures designed to improve the ecological status of the fishery. Therefore, we explored in-depth why this gear change happened. We uncovered likely reasons for why FIP strategies have not achieved lasting institutional change at a local level by identifying four social-ecological dynamics influencing gear use and plausible reinforcing the use of trawls by fishers. The case illustrates the complex reality of private and public regulations. That is, to produce lasting environmental sustainability, value chain strategies that rely on lead firms governing from a distance will need to find ways to acknowledge, incorporate, and deal with context-specific dynamics that shape compliance within and among local fishing communities as well as all parts of the supply chain.

Paper III – Fishers' participation in FIPs

This paper is one of the first attempts at a systematic examination of stakeholder inclusion processes in FIPs, specifically focusing on fishers' participation. The paper found patterns of how fishers are currently involved in projects and highlighted key barriers and enablers for fisher participation from the perspective of FIP implementers. I found that fishers participate in diverse ways. The majority, 87%, of FIPs answering the survey were engaging with fishers either as formal participants (41%) or non-formal participants (46%). A few cases, 8% (5 FIPs), stated no engagement with fishers at the time. Activities where fishers were most involved were data collection efforts and practical trainings for fishers (e.g., how to use logbooks). The least common form of participation was fund raising. I also found that fishers were relatively rarely involved in developing FIP workplans and objectives. This indicates that they are not involved in the early development process of the FIP. Indeed, fishers' participation ranged from being the key actors in bottom-up design projects to being a stakeholder to only being included in a top-down manner merely for data collection purposes. For FIPs that had a high level of fisher participation, implementers' earlier experiences with fishing communities or related engagement outside of the FIP were key.

The lack of overall incentives and benefits for fishers was identified as one of the main barriers across all FIP implementers. At the same time, FIP implementers stressed the importance of fishers' involvement for the success of FIPs. This stresses a critical challenge for the FIP model. I concluded that FIP implementation processes could benefit from better stakeholder mapping and inclusion of fishers early in the process of the projects and as part of additional activities. The process of designing workplans can be helped by a participatory process to find suitable strategies for each case. Costs for the participation processes could be included in the budget. The structure and design of FIPs for participation could be part of their progress reporting.

Paper IV – Fisheries trade as socially embedded

Given that social context is key for processes and outcomes of FIPs, this paper provides a literature review of how the theory of social embeddedness has been used or invoked in fisheries literature. The aim is to synthesize key empirical insights that seem to be especially important for how fisheries trade is embedded. Based on the analyses, we found three main groups of articles based on the empirical context where the theory is applied. These were deemed relevant for our aim of unpacking empirical insights. The first group of articles, 'embeddedness of trade strategies and participation', largely focuses on trader and fisher relations. The second group, 'embeddedness of trade in dealing with external change', focuses on the effects of changes in the market such as policies or technology. The third group of articles, 're-embedding seafood trade for desirable outcomes', focuses on where trade is re-organized to address the perceived short-comings of some food systems – i.e., industrialized, resource intensive, globalized, and technology driven. Our analysis shows that the relationships and norms that influence seafood trade were not the same globally. Instead, we see a diversity in how economic activity is locally embedded, indicating that how embeddedness plays out in fisheries trade is itself highly context dependent. Despite this diversity, the analysis of the articles revealed key social aspects (cross-cutting themes) that were identified as particularly important in seafood trade settings across the cases. Our review brought out three aspects in particular: 1) social identity and structures (e.g., ethnicity) for trade relationships and market access; 2) different forms of trust and the roles they play in influencing trade strategies; and 3) community as local norm-setting for trade and trade as community builder. In the paper we discuss these three themes as an invitation for closer consideration of these perspectives in future debates around the development of FIP and other market-based interventions for seafood sustainability.

DISCUSSION

In this thesis, I combine the four papers to highlight and discuss the opportunities and barriers of FIPs as a private governance model in fisheries. I start by discussing the contribution of my work in relation to my first aim to better understand how FIPs work as an instrument of change (section 7.1 – 7.3). Next, I more specifically discuss the second aim: to examine the role that FIPs can play for enhanced fisheries governance (section 7. 4). I hope to add to the ongoing academic debate about effective governance approaches as well as deliver insights that practitioners can use with the sustainable seafood community at large.

7.1 Private and public governance interactions

A key insight from this thesis relates to the interaction between FIP strategies and outputs and public regulations. FIP actions, including dialogues with government actors, can lead to new policy outputs such as national fishery management plans, laws, and new management bodies (**Papers I** and **II**). For example, **Paper I** shows that dialogues with policy stakeholders were employed across all FIPs in the study and that 30% of all FIPs demonstrated some type of policy output implemented by the government. In addition, **Paper II** illustrates that in Indonesia the FIP worked to have a national management plan for the blue swimming crab fishery, which the government eventually established. These findings highlight the potentially positive large-scale effect FIPs can have on strengthening public regulations for fisheries management. In their article about the sustainable seafood movement, Sutton and Wimpee (2008) found that a key challenge of market-based approaches is how to influence fisheries management. With the evolution of FIPs and their multi-stakeholders, we now see the opportunity for private mechanisms to now do so. The papers in this thesis also show how FIP strategies often reinforce the public government, for example, by implementing traceability schemes or through control documents (**Papers I** and **II**). These findings speak to the idea that private mechanisms can make governments 'ratchet up' their regulatory performance by following the lead of businesses with higher standards than national regulations (Cashore et al. 2007; Groeneveld et al. 2017). FIPs represent an interesting case where industry actors lobby for strengthening environmental regulations. Industry actors do this, in part, because of the desire to level the playing field for the market, which makes other companies outside of the FIP adhere to the same regulations as their own industry standards and therefore reduce the risks of unfair advantages (**Paper II**). The types of large-scale public policy changes FIPs often aim to influence reveal a gap in our understanding of who and who does not benefit from these policy changes. These benefits, for example, depend on the types of national and local regulations promoted FIPs or how dependent public policy becomes on these private governance mechanisms.

As discussed in **Paper II**, the adopted management rules by the Indonesian government were promoted by the industry led FIP and are in line not only with sustainability interests but also with industry leading the FIP business interests. This win-win approach was perhaps the strength of the

project and one reason the FIP received such wide-spread industry buy-in. However, the analysis also shows that it was difficult for fishers to comply with both new governmental regulations and industry practices. In addition, fishers did not gain much from them and the FIP outputs did not address what fishers themselves expressed as the main challenges – e.g., vessels targeting other species or finding partners to fish with. **Paper II** shows that after all the effort of setting up the FIP and its outputs, such as the control document, the FIPs are being undermined by low compliance partly because the FIPs clash with the social reality of the fishers.

Papers I and **III** both indicate that fishers often have limited influence over decision-making processes within FIPs. Together, these insights raise the issue of who is involved and allowed to be heard when FIP outputs translate into formal regulations. **Paper III** shows that fishers had limited involvement in developing the objectives and workplan of FIPs, steps of a FIP process that are important as they form the project's strategies. On the other hand, new management bodies established as a result of FIPs is evidence of how FIPs can foster greater inclusion and participation of actors in fisheries management, addressing the challenge stated above. These management bodies seemed to have formalized participation and collaboration among different stakeholder groups in decision-making processes even outside of the FIP itself (**Papers I** and **II**).

Another discussion about private and public governance interactions is the debate on how the government and its political and institutional contexts impact the effectiveness of FIP implementations. Recent discussions in the literature compare the effectiveness of FIPs in low- and high-income countries (Sampson et al. 2015; Thomas Travaille et al. 2020; Cannon et al. 2018). However, I argue that these discussions generally ignore if and why national governments would be willing to engage in FIPs and what political strategies underpin how the government chooses to interact. Some scholars argue that the role of states and regulation is not weakening but rather changing to co-exist with private initiatives (Green 2013; Gulbrandsen 2014), whereas others have argued that public management bodies might be losing authority (Foley 2017; Gutierrez and Morgan 2017). However, it seems that private actors are increasingly taking on governing roles and states are facilitating the uptake of private governance approaches (Green 2013; Groeneveld, Bush, and Bailey 2017). For example, studies show that governments have been working toward MSC certifications as part of a broader political strategy (e.g., Nyiawung, Raj, and Foley 2021; Adolf, Bush, and Vellema 2016). Indeed, Marques and Eberlein (2020) stress that national governments may respond in different ways (substitute, adopt, repurpose, replace, or reject) to private governance initiatives and standards depending on their overall political strategies, which impact the outcomes of these private governance incentives. The scope of the thesis does not allow me to explore the full range of opportunities and challenges of public-private governance interactions in a FIP context, but it does provide a first empirical platform where we can begin to ask more pointed questions. My first paper suggests a tentative avenue forward: explicitly testing the notion of FIPs as either complementary or mutually reinforcing of state regulations. However, an analysis of the role of governments in relation to FIPs in general and their impact on improvement outputs specifically deserves much more scholarly attention.

Furthermore, in this thesis, I mainly discuss how state-FIP interactions are important for effective fisheries management, but I believe this topic is also interesting from a wider perspective of how these types of sustainability incentives can work towards strengthening overall governance systems. Although private governance models like FIPs are increasing globally, there is an overall decline of democracy world-wide (Alizada et al. 2022). This raises more general questions, such as those

discussed in **Paper III**: Can tools or mechanisms be developed to make FIPs accountable not only for the improvement of environmental goals but also for how they interact and shape governmental institutions as well as who is involved in these processes? This would also be an interesting area for future research.

7.2 The 'fairness' of FIPs and need for broader actor involvement

Another key contribution of this thesis relates to different actors' participation in FIPs and what role they have in various activities. For example, **Paper I** revealed that retailers and first tier suppliers are relatively absent overall form FIP activities and fishers were most often engaged in practical trainings (e.g., about use of gears or logbooks) as well as data collection efforts. They were less involved in other activities such as dialogues and meetings, particularly with governmental agencies and policy makers. **Paper III** confirms the findings in **Paper I** but adds that that fishers are less engaged in the development of FIP workplans and objectives compared to other activities, indicating that they are unlikely to add issues that matter to them. At the same time, **Paper II** shows that it is crucial to include fishers' perspective for FIP strategies to work.

It is not surprising that fishers are more engaged in data collection and practical educational efforts. In fact, such educational efforts are important and have been highlighted in the literature as a key feature for FIPs to engage with so that fishers can increase their capacity to adhere to new practices (Tolentino-Zondervan, Berentsen, Bush, Digal, et al. 2016). However, **Paper III** demonstrates that FIP implementers expressed that they would like to increase fishers' involvement in projects and in other activities; however, these involvements are hampered by a lack of incentives for fishers to participate and limited capacity within the project (e.g., budget and skills). These challenges demonstrate crucial limitations of the current FIP model not only because of the call to increase participatory and democratic processes to the design of private seafood incentives (Packer 2020) but also because of the constraints this might have on a FIP's ability to create positive ecological improvements (**Papers I** and **III**). Moreover, in a workshop with FIP practitioners from over 25 FIPs and key organizations in the FIP community, the same issue of limited benefits for fishers was discussed as a key problem for the future of FIPs. Representatives even expressed that FIPs must ensure short-term gains for fishers, although this might imply slowing down on environmental improvements; they argued that if fishers perceive FIP involvement as only a burden, ecological progress may be even slower (Van Holt et al. 2022). Similarly, if incentives in projects are matched to the goals of fishers, they are more likely to comply with sustainability practices (Tolentino-Zondervan, Berentsen, Bush, Idemne, et al. 2016; Grafton et al. 2006).

The need for FIPs to create benefits for fishers is linked to the ongoing debate about who is paying the price for the FIP, both economically and in time and effort. Some reports have argued that fishers and value chain actors 'closer to the water' are carrying the brunt of responsibility for the improvements that are needed, but the retailers and processors are benefitting the most (CEA 2020). **Paper I** addresses this debate by indicating that retailers and first tier suppliers were relatively absent. The interviewees in **Paper III** made the same argument. This is noteworthy as the demand from retailers is one of the main drivers of the FIP movement (Bush and Oosterveer 2019). Arguably, they should

contribute and potentially play an important role in projects by providing support and resources (Duggan and Kochen 2016; Thomas Travaille, Lindley, et al. 2019). In the same vein, recent work by Thorlakson, Hainmueller, and Lambin (2018) shows that collaborations and a close relationship between retailers and harvesters helped create compliance with the standards. The FIP model provides a potentially good forum for retailers to be more directly engaged to deliver on their own stated sustainability commitments.

7.3 Local dynamics and relationships

Findings from this thesis also address the scholarly debate around value chain strategies in general. The structure of many global value chains implies strong lead firms with asymmetrical power. That is, they should be able to mandate compliance of their suppliers (Mayer and Gereffi 2010). This idea also underpins the FIP model as a whole and many of the strategies within FIPs such as control documents (**Paper II**). However, as seen in **Paper II** and as argued by others, buyers do not always have full power over their suppliers (Swinnen and Vandeplas 2010). Relationships among actors appear to be more complicated. For example, top-down value chain initiatives need to acknowledge heterogeneity among and within communities rather than viewing them as homogenous (Teh et al. 2019; Zimmerer, Lambin, and Vanek 2018). **Paper 2** shows how initially small changes in individual fishers' behaviors accumulate and interact and eventually spiral into a dynamic that undermines FIP efforts as it led to a unsustainable 'small-crab state'. Moreover, **Paper IV** demonstrates how relationships between value chain actors in fisheries are often strongly influenced by their local context. For example, Turgo (2016) shows that place-based ethos of trust forms the basis of actors' sales and purchases in the Philippines. Similarly, historical gender roles can determine men's and women's economic behaviours in the fishery (Danso-Wiredu 2018). **Paper IV** shows that motivations for different actions might differ and are not always aligned with economic incentives. FIPs and other market-based incentives often do not acknowledge this diversity and misdirected incentives for different actors in the value chain (Kittinger et al. 2021).

Based on these insights, I argue that FIPs would gain by incorporating knowledge about local conditions and relationships within their strategies. In addition, knowing more about the social context is important for limiting unintended consequences of FIPs (Thomas et al. forthcoming). For example, **Paper IV** discuss how social identity and structures impacts market access and deeply influences how changes and interventions in fisheries trade systems affect diverse actor groups. FIP implementers interviewed in **Paper III** noted that although the ecological assessment at the start of the project is helpful, it does not tease out how strategies to drive change can work within the specific FIP. In **Paper I**, we found that no social-economic data were collected, and **Paper III** shows that few FIPs perform a stakeholder analysis at the start of the project even though they are encouraged to. Developing and prioritizing some sort of social assessments and data collection could be helpful for FIP implementation. Other scholars have had similar ideas: drawing on actors' social networks in FIPs and the equivalent Aquaculture Improvement Projects, they could become more effective (Bottema 2019; Packer, Schmidt, and Bailey 2020).

7.4. Continuous improvement: governance for sustainability as a (never-ending) process

As stated in **Paper I** and **IV**, it is important to openly reflect on the inherent strengths as well as weaknesses of the FIP model. Above, I have already discussed and elaborated on several limitations. In addition to these, I believe it is important to again acknowledge that the current form of the FIP model, which heavily relies on value chain strategies, is designed primarily to target seafood that is internationally traded and often consumed in Europe and North America. This focus essentially means that FIPs leave out the majority of global seafood production. As highlighted by other scholars, it is crucial to promote a diverse set of approaches to sustainability and recognize that FIPs and certifications might not be a good fit for every fishery (e.g., Stoll, Bailey, and Jonell 2019; Thomas Travaille, Lindley, et al. 2019). Nonetheless, FIPs are still growing and can represent an important way to drive improvements in fisheries. In addition, more FIPs are targeting domestic consumption in Mexico (CEA 2020).

The potential strength of private governance models is that they are potentially flexible and can quickly adapt and change. However, the fact that there is still a slow uptake of certifications in small-scale fisheries and low-income countries (e.g., Nyiawung, Raj, and Foley 2021) 30 years after the start of the sustainable seafood movement is evidence that certification schemes, at least, have not addressed to the early criticism they received. When it comes specifically to FIPs, the model has already evolved and been developed significantly during the last decade. What sets FIPs apart from, for example, certification is that they are not a standard in themselves. That is, the model can play a different role within the governance sphere. The latest development – the inclusion of social indicators within Conservation Alliance guidelines and fisheryprogress.org – is an interesting example of how the FIP model can keep changing to address new issues. This inclusion of social indicators is welcomed, as fisheries management and certification continue to fall behind other sectors in the consideration of human rights perspectives (Kittinger et al. 2017; Mussells and Stephenson 2020). As discussed in **Paper III** and **IV**, the FIP model could potentially incorporate understanding of social and participatory aspects further.

It will be interesting to see whether the FIP movement continues to serve as a springboard for certifications or whether FIPs will begin to embrace a variety of goals and rely on a broader perspective of sustainability. Tlusty and Thorsen (2016) discuss the danger of labelling something sustainable as they suggest that 'sustainable' seafood should be a moving target. Specifically, they state that 'sustainability indicates a process-driven journey that has no agreed recipe book or a set path – it is instead a type of behavior. It is defined with every step we take and redefined as we learn more' (p. 341). The willingness of the FIP community to develop is promising. However, questions remain regarding whether FIPs will become platforms for learning and innovative governance strategies among all stakeholders or whether they risk being a top-down tool with limited outcomes for the ecosystem and with benefits biased towards already powerful actors.

One concern of FIPs, as mentioned before, has been that they gain the same market access as certified seafood, although they lack demonstrated progress towards sustainability (Sampson et al. 2015; Zelasney and Ford 2020). This has somewhat reduced the legitimacy of the tool. As a result of such critiques, there is increased pressure on FIPs to make more detailed reporting and prove outcomes of projects within set timelines. For example, 'Comprehensive FIPs' are encouraged to do an independent audit of their progress toward fulfilling MSC standards every three years. Although good reporting

practices and auditing are paramount for FIPs to transparently report progress (and failures as argued in **Paper I**) as well as limiting the risk of FIPs succumbing to greenwashing, the current trend might limit the ability of FIPs to be flexible and adaptable for different fisheries. It might increase the administrative cost of projects and act as barriers for FIPs to start in the most challenging fisheries where they perhaps are most needed. However, while engagement with the most challenging fisheries is important, the question remains: how can we make sure they live up to their promises of improvements for the ecosystem? Lowering the bar of sustainability standards for higher inclusion causes problems in terms of stringent environmental standards (Jonell et al. 2019). As this discussion hopes to have shown, uncertainty still remains regarding the risk of FIPs becoming a market-barrier and excluding actors as opposed to a model to incentivize participation and create shared benefits.

7.5 Beyond scientific contributions

In addition to the four papers included in this thesis, I have throughout my PhD engaged in related activities outside of the academic sphere. During the early stages of my thesis work and specifically for the work with **Paper I**, I collaborated with a key NGO for the data collection processes and to get to know the FIP model better. We later shared our data and methodological approach with the NGO, which found it useful and contributed to them conducting their own research. We also shared insights into how we thought the FIP reporting processes could be improved to better carry out evaluations of FIPs. These insights were also shared among other actors in the FIP community through the NGO.

Based on findings from **Papers I** and **II**, I realized that I needed to understand participation of fishers better. Therefore, I started the work with **Paper III** and engaged with many FIP implementers through the survey and interviews. With these contacts in mind, it felt important to be a research organization that communicates findings with stakeholders. It also felt like it would be a good exercise to hear practitioners reflect on our research and to hear if they agreed and what they thought were future research gaps. In addition, this could create a platform for knowledge exchange among actors. Therefore, we held an online workshop to communicate our research on FIPs and to give people time to discuss our findings. The workshop was attended by 59 people from all over the world representing both small organizations and renowned names in the FIP community. Before the workshop participants were given a summary of the research findings. During the workshop, we gave participants time to discuss in groups and later report back their reflections to us and each other. In general, we got positive responses to our findings and the session sparked interesting discussions. After the workshop, we made a report summarizing the debated topics and highlighted some common barriers and lessons learned. The report was distributed among all participants that joined the workshop as well others who did not attend. General feedback from the session was that participants found it useful to have the space to share experiences among themselves, showing a beneficial perspective of communicating research in such a participatory way.

Finally, I have also engaged in research presentations to both seafood companies and to philanthropic foundations, acting as crucial donors for FIPs, and to the seafood movement at large. I produced a scientific brief to summarize knowledge as well as knowledge gaps about FIPs that was used and shared within the large science-business collaboration SeaBOS.

CONCLUSION

The global fisheries crisis demands new governance models. In this thesis, I studied one such model, FIPs, which have increased in numbers and importance globally yet has received little scientific attention. The thesis explored how FIPs work as an instrument of change towards sustainability and what role they can play to improve fisheries governance. I have done so by providing different empirically grounded insights about the inner workings of FIPs – i.e., I have provided the first systematic global overview of FIPs governance processes, demonstrating the strategies and actors involved as well as achievements of FIPs. I found that FIPs can strengthen government policies and that their outputs as industry led practices often work to either reinforce or complement government fisheries policies. These findings add to the debate about how private and public governance systems interact. When it comes to the actors involved in FIPs, I specifically contributed with insights of how fishers are participating. Participation of fishers is believed to be important for FIP success, yet their participation was limited in some activities, for example, at the beginning of projects when key strategies are decided. I conclude that increasing benefits for fishers and FIPs' internal capacity to facilitate meaningful participation are possible areas of improvement. Moreover, through a case study, I contribute with in-depth understanding of the dynamics behind FIP establishment and how industry actors can channel their desire to work towards ecological improvements. The case study also points to the complexity of the task to change fishing and trading practices across the value chain and stress the need to incorporate local social-ecological conditions and fishers' perspectives into strategies. Lastly, in thesis I discuss the underpinning economic theory of FIPs and private governance strategies in light of noted shortcomings. I suggest that economic relations within fisheries trade, where FIPs operate, would benefit from a better understanding of their socially embeddedness. People's motivations and value chain relationships are often locally shaped, a fact that could better be acknowledged within research as well as in FIP design and evaluation. Finally, this thesis has contributed to insights into both barriers and opportunities for FIPs to present a viable governance option in fisheries in a time when urgent measures towards sustainability are needed.

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