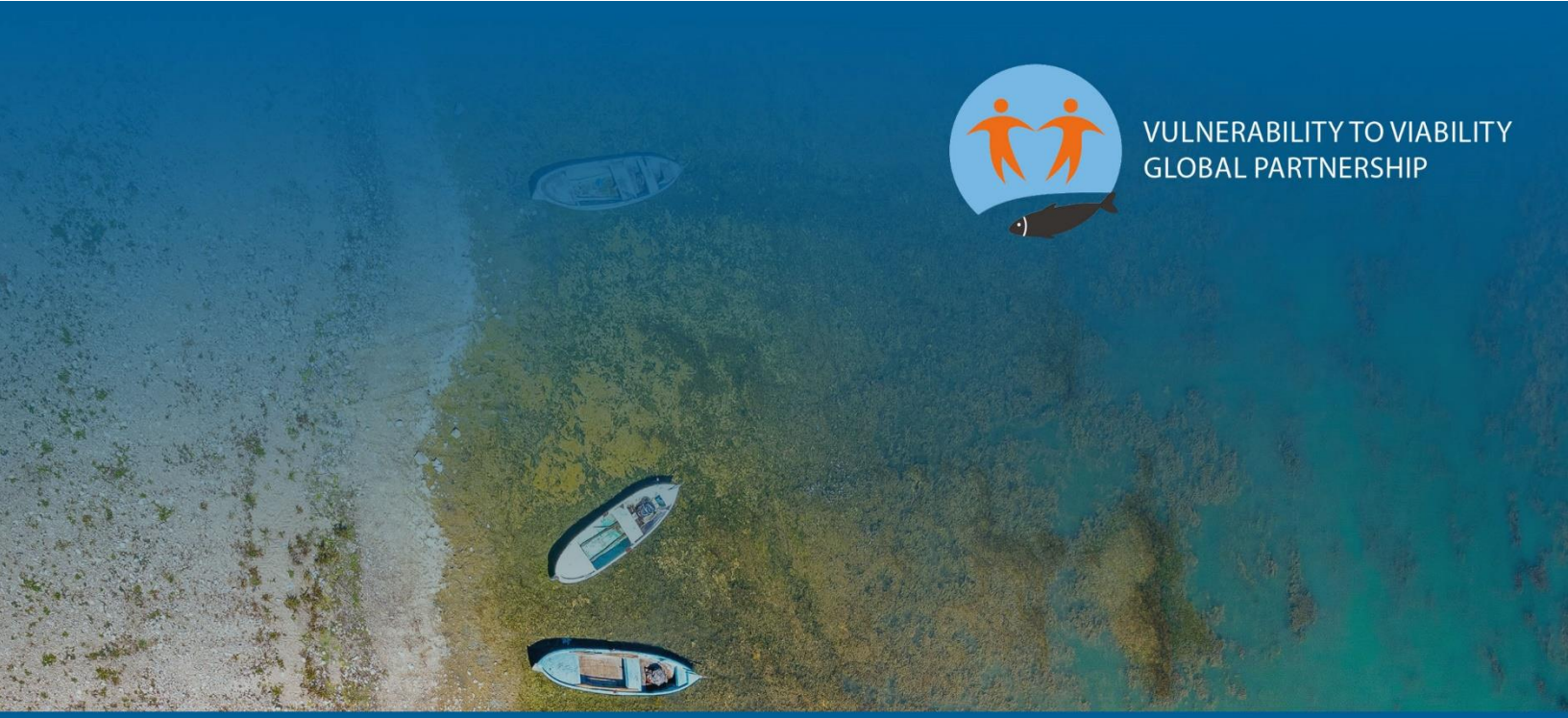


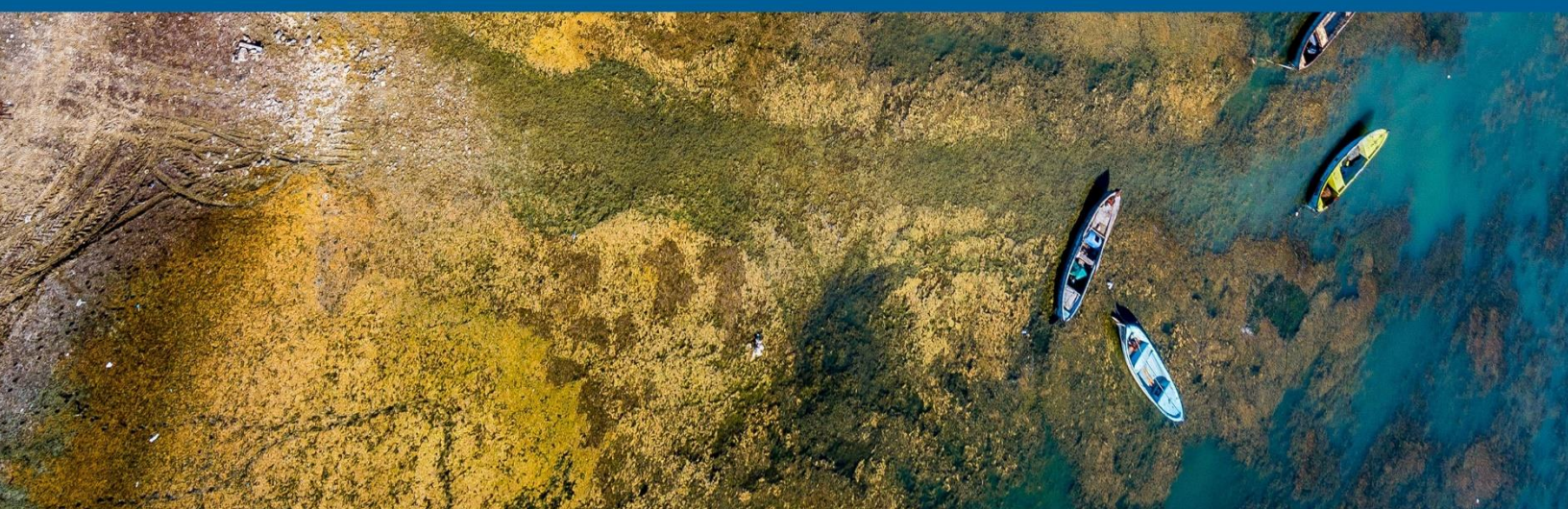
VULNERABILITY TO VIABILITY
GLOBAL PARTNERSHIP

A Situational Analysis of Small-Scale Fisheries in Thailand: From Vulnerability to Viability

V2V Working Paper No. 2021-6

Ratana Chuenpagdee, Suvaluck Satumanatpan, Suphakarn Traesupap, Thamasak Yeemin, Kungwan Juntarashote

December 2021



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How to cite:
Chuenpagdee, R., Satumanatpan, S., Traesupap, S., Yeemin, T., and Juntarashote, K. (2021). *A Situational Analysis of Small-Scale Fisheries in Thailand: From Vulnerability to Viability*. V2V Working Paper 2021-6. V2V Global Partnership, University of Waterloo, Canada.

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V2V Global Partnership is supported by the Social Sciences and Humanities Research Council of Canada under its Partnership Grant Program.

Social Sciences and Humanities Research Council of Canada
Conseil de recherches en sciences humaines du Canada
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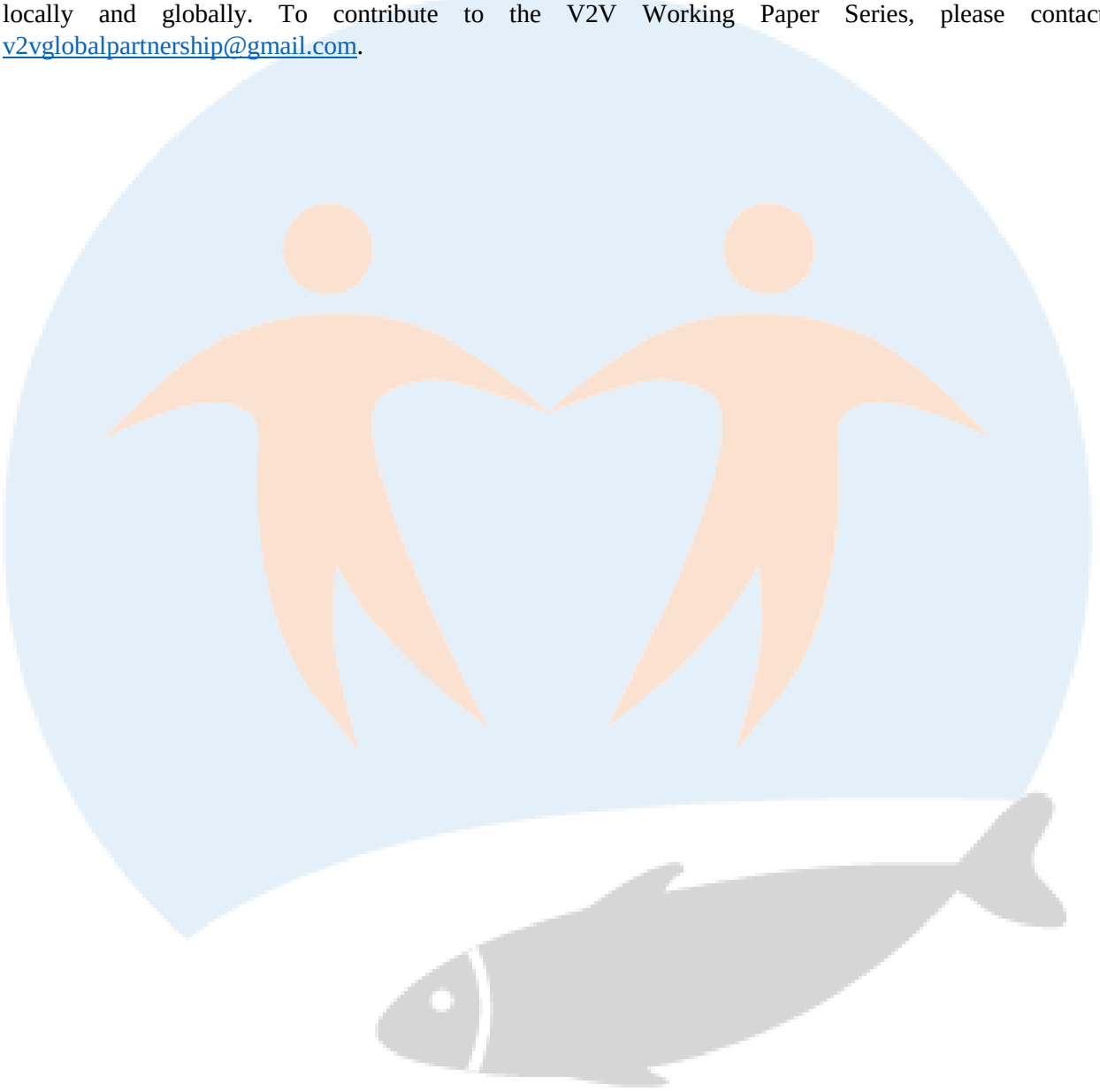

A V2V Situational Analysis of Small-Scale Fisheries

Small-scale fisheries (SSF) are an important economic resource, both at the local and global level; their depletion has ramifications on fundamental aspects of life, spanning from food security to society's wellbeing and culture. On the global scale, SSF provide food security and a source of livelihoods and income for more than 100 million people. The objective of the V2V Situational Analysis is to build a global perspective on key vulnerabilities and opportunities associated with SSF viability across six countries in Asia (Bangladesh, India, Indonesia, Japan, Malaysia, Thailand) and in six countries in Africa (Ghana, Malawi, Nigeria, Senegal, South Africa, Tanzania). Each country-level situational analysis identifies the key social-ecological drivers of change, emerging issues and challenges confronting SSF, and important policy and governance concerns.

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A Situational Analysis of Small-Scale Fisheries in Thailand: From Vulnerability to Viability

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1. Introduction

Small-scale fisheries (SSF) in Thailand are well established and have long co-existed with large-scale, industrialized fisheries. Marine SSF take place in all of Thailand's 22 coastal provinces. These provinces are divided into five main zones: the east coast, the Upper Gulf, the Gulf, and Lower Gulf of Thailand, and Andaman Sea. SSF are defined using vessel size, as vessels that are less than 10 GRT. According to the latest SSF catch survey statistics (2019) from the Department of Fisheries (DoF), the sector was estimated to produce 161,463 ton of marine fishery catch, which is only about 11% of the country's total production (DoF, 2020). This proportion is lower than the global estimates of about 25%. This difference may be due to the recently introduced definition of SSF in Thailand and to possible survey data collection inaccuracy. Still, the survey is the only available comprehensive report at the moment and will thus be considered as the most reliable source of information for this study. Note that while inland SSF are also important in Thailand, they are not included in this analysis.

The majority of the SSF marine catch (about 33%) is composed of various fish species. Crab contributes to another 11%, shrimp and squid represent about 4% each, and bivalves about 1%. The remaining 46% of the catch is composed of jellyfish caught by dip nets. Gill net is the most common gear, used to target fish, crab and shrimp. Data regarding the number of SSF households and the number of fishing boats is derived from the 2014 national statistics, published by DoF in 2016. Based on that report, there were a total of 168,140 fishers (during peak season) and 57,800 fishing households in Thailand (DoF, 2016). About half of the people employed in the sector are household members, which we assume to all be involved in SSF. Of the 58,119 fishing boats, 2,639 (about 5%) are non-powered, while the majority, 73%, are outboard-motor boats. These figures suggest that SSF are prominent in Thailand, which corresponds with their long-established and well-recognized cultural and traditional importance.

As a tropical country, Thailand is rich in productive ecosystems such as mangroves, coral reefs and seagrass. Small-scale fishers generally recognize the importance of these habitats for their fishing livelihoods and employ conservation strategies in their fishing practices (Thiammueang et al., 2012; Chuenpagdee et al., 2001). Generally speaking, some fishing gear can be harmful to the environment, even though there is a large knowledge gap and a lack of scientific consensus concerning their specific environmental impact (Suebpala et al., 2017). Despite small-scale fishers' attempts to preserve ecosystems, some gear that they traditionally use is now considered illegal. Like other countries around the world, Thailand had gone through the development phase of the fisheries in the early 1970s, with the introduction of modern, more efficient fishing gear, which caused numerous negative effects on the environment. Gear modification, enhanced engine power, and expansion of fleet are expected when fisheries are undergoing

development, often argued from economic efficiency but sometimes for safety reasons. Fishing comes at a cost, however, and serious consideration is necessary in terms of hard choices and trade-offs between economic growth, wellbeing and livelihoods, and conservation, among other things.

Generally speaking, Thai fisheries are well managed. As the main governing body responsible for fisheries management, the DoF has been actively implementing fishing regulations to ensure efficiency while pursuing sustainability. The DoF also has a strong statistics division, responsible for data collection about various aspects of fisheries, including SSF, and reporting to the FAO on a regular basis.

Having the information is a key condition for viability, but how the data is used in the management needs to be factored in as well. For decades, Thai fisheries were regulated under the Fisheries Act (1947). In 2005, urged by the FAO, the Thai government embarked on a process to revise the dated law. After 10 years of consultations with fisheries experts and stakeholders, the new law was enacted in 2015. Unfortunately, it was short-lived. The political turmoil that led to a military coup in 2014 brought many changes to the fisheries governance system in Thailand. As a result, some SSF took a hard hit and became even more vulnerable. Specifically, to sanction the new government, the European Union (EU) barred Thailand from exporting fish and seafood to EU countries (Kadfak & Linke, 2021). Furthermore, Thailand was pressured to direct more efforts towards eliminating illegal, unreported and unregulated (IUU) fishing. In order to show the EU that the country was taking this issue seriously, a new fisheries law was drafted and released in six months as the new Royal Ordinance for Fisheries (2015) through an emergency decree. As this study will elaborate, many serious consequences followed.

2. Meaning and status of small-scale fisheries

2.1 Small-scale fisheries contribution to Thailand

While specific value and contribution of SSF to Thailand is not known, the importance of fish for Thai people is well acknowledged (Juntarashote & Chuenpagdee, 2011). Fish is a staple food for Thai people, along with rice. In fact, Thai people have an old saying, "*Nai Nam Mee Pla, Nai Na Mee Khao*", which depicts this relationship, portraying how fish can be found in any water, just like rice can be found in all fields. The connection of Thai people to freshwater fish has a deep-rooted history, with family fishing taking place in creeks and riverine across the country. A similar relationship to marine fish existed in coastal provinces on a small-scale, household level, where fish was caught for day-to-day subsistence (Chuenpagdee & Juntarashote, 2011). The popularization and nation-wide fish consumption came later with the development of coastal fisheries and the introduction of modern fishing techniques and gear. This resulted in the domestic and foreign commercialization of fish and other marine products.

Currently, fish and seafood are a key part of people's diet, with about 29 kg/year of fish being consumed per capita, which is above the world average of about 21 kg/capita/year (FAO, 2020). Although data on fish consumption is not disaggregated for SSF vs. large-scale fisheries, that fact that SSF families normally keep a small portion of fish for household consumption speaks to their imminent role in local food security.

Women are recognized as a pivotal role in Thai society. Many have an education and contribute to the household economy. Thus, it is not surprising that women play important roles in Thai fisheries throughout the value chain (Sornkliang et al., 2018). In a typical SSF household, husband and wife work together to mend the fishing net and prepare for the daily fishing trip. For families owning small fishing boats, women usually join a male relative on their daily fishing expeditions while young children are cared for at home by the extended family members. At times, older children join the adults when they are not busy with school. At the end of the fishing trip, the groups return ashore to sort and process the daily catch for sale.

Men and women work together to remove the fish from the net and to sell them in the markets, or do the preliminary processing before selling. For bigger boats requiring 3-4 crew members, women are usually not part of the fishing. Instead, they help with the postharvest process, during fish sorting and processing for sale. Many women are involved in the rudimentary processing of fish. Many of them are also in charge of the marketing and the trading of the catch (Sornkliang et al., 2018), as well as work in bookkeeping and administration of the enterprises.

Based on the study about poverty in fisheries conducted by Chuenpagdee and Juntarashote (2011), SSF in Thailand are modernized and are relatively viable. There is some tension with large-scale fisheries, especially those using destructive gears. But, generally speaking, they do live in harmony and the majority of SSF families are able to provide basic needs for the members of their family including education for their children.

2.2 Small-scale fisheries profile in Thailand

In Thailand, SSF are officially defined in the 2015 Royal Ordinance on Fisheries (Royal Gazette, 2015a) under two main categories:

1) "Artisanal fishing" means fishing operations in "coastal seas" in which a fishing vessel is used or in which a fishing gear is used without a fishing vessel, but in any case, does not include commercial fishing; and

2) "Coastal seas" means areas within 3 nautical miles from the baselines.

SSF in Thailand use a range of gear types and the majority of the small-scale fishing boats are wooden boats, with or without engine (outboard motor), for daily fishing trips. Vessels that are less than 10 GRT are considered small-scale. Table 1 summarizes the features of SSF in Thailand.

2.3 The relevant linkages between ecosystems and small-scale fisheries

As in a typical tropical ecosystem, small-scale fisheries are highly dependent on the health of coastal habitats such as seagrass, mangroves and coral reefs. Fishing communities are mostly situated along the river, in the riverine and estuaries, sheltered behind vegetation to protect themselves from storms. One of the main lessons from the tsunami is that villages behind mangrove forests were safe, while those without the protected were destroyed (Chang et al., 2006). The role of mangrove and coastal vegetation in providing protection and buffer against storm (contributing thus to strengthening community resilience) is well recognized. Thus, habitat protection and mangrove rehabilitation and reforestation have since become part of the country-wide conservation effort, with a strong mandate from the government (Royal Gazette, 2015b), and supported also by private companies.

Similarly, coral reefs are known to be highly related to SSF productivity. Unfortunately, they are being depleted by unsustainable tourism and aggressive fishing, including the use of destructive fishing practices. Government has been promoting artificial reef programs to help restore coral reefs, but the efforts are expensive, and there is no clear evidence that the programs are successful (Yeemin et al., 2006).

One of the community-based conservation efforts that has gained popularity and is widely implemented in several fishing villages is the crab bank project. When fishers catch egg-bearing crab females, they would bring them to the crab bank center. Once the eggs are hatched in the facility, the female crabs and the larvae

are released back in to the sea. The project has been successful in both enhancing the productivity of the crab fisheries and in raising public awareness about marine conservation (Thiammueang et al., 2012).

Table 1

Summary of small-scale fisheries profile in Thailand

Terms used in SSF	Gear types	Vessel types	Ecosystem types	Ecosystem detailed types
• Artisanal (official) • Coastal (official) • Small scale • Subsistence • Traditional	• Dredges: short-necked clam • Gillnets: shrimp, crab, fish (mackerel, sardines) • Hooks and lines: pelagic fish • Lift nets: mixed species • Surrounding nets: anchovies, small pelagics • Traps: squid, crab, fish • Trawls (otter board): shrimp, demersal fish • Squid falling net: squid • Dip net: jellyfish	• Wooden	• Marine • Freshwater • Brackish	• Intertidal • Beach • Lagoon • Coastal • Lake • Coral reef • Mangrove • Open ocean • Estuary • River • Salt marsh

3. Social-ecological changes and key drivers

Collectively, our research team has extensively conducted research about SSF in Thailand since the 1980s. We published the first comprehensive report for the international symposium devoted to research of SSF, held in Montpellier, France, in 1989 (Juntarashote & Chuenpagdee, 1991). In that report, we highlighted how SSF were lacking government support and attention, thereby becoming a highly unproductive and marginalized sector. Thus, the lack of proper infrastructure such as landing sites and transportation networks, created unstable conditions to ensure their viability.

Many improvements have been made since then, especially with the introduction of the National Social and Development plans (NESDB). Under these plans, the Thai government has made several commitments to invest in SSF, providing infrastructure and other benefits to promote their viability. Following this, SSF communities have experienced considerable improvements in their wellbeing and livelihoods. In a more recent study conducted as part of the Poverty in SSF project (2007-2011), the improved wellbeing of SSF was documented as an outcome of the 'sufficiency principle' (Chuenpagdee & Juntarashote, 2011). The principle speaks to the modest nature and the intrinsic values of SSF in Thailand.

Compared to many countries in the Global South, Thai SSF are thriving and SSF communities have better livelihoods than those depending on other rural occupations, including agriculture and rice farming. While all rural communities benefit from the development of improved infrastructure and good health care and education under the NESDB, SSF communities have an advantage with coastal tourism development, which

brings additional income to the local economy. As a result, SSF communities have been able to expand on their harvest and post-harvest activities. Rather than being considered poor, many SSF are the well-to-do members of the local communities, and often play key a role in supporting other members, providing food and jobs to local people, and serving as leaders and organizers of local activities (Chuenpagdee & Juntarashote, 2011).

The economic transition achieved since the NESDB Sixth Plan (1987-1991) is accompanied by the decentralization of power and authorities to Local Administrative Organization in 1999, which allows local governments to manage natural resources as deemed appropriate (Royal Gazette, 1999). It is for this reason that we consider Thai SSF a 'moderate case' on the vulnerability to viability pathway, meaning that they fall in the middle area, not as vulnerable but are able to pursue decent and viable livelihoods. It also means, however, that prospects for improvement are small and incremental, and might not be easily observable. We believe that as a 'moderate' case, opportunities for Thai small-scale fisheries to become more viable rest mostly on innovation. Such innovation must be introduced in harvest and post-harvest technologies as well as in government policies throughout the value chain. This topic will be further elaborated as we conduct the field research.

4. Emerging issues and challenges

Based on our current knowledge and the recent field observations (2019-2021), challenges that drive SSF vulnerabilities are likely related to five topics.

First, fishery resources decline, and stakeholders' conflicts are key sources of vulnerabilities. Fishery and other marine resources are degrading due to factors such as overfishing, destructive fishing practices, degraded coastal ecosystems, coastal development, pollution, and climate change. The decline in fisheries creates a ground for resource competition. As a result, large-scale fishers, small-scale fishers, fishers in aquacultures and fisheries using different gears are all competing over the same scarce resource, and also for space.

Second, legislative change causes vulnerabilities in SSF. The major legislative revision that recently took place with the enactment of the Royal Ordinance for Fisheries (2015) has brought a lot of uncertainties to the future of fisheries. SSF has been negatively affected by some of the new rules and regulations, but also have benefited from some. More research is required to understand the impact of this legislative change on SSF.

Third, political dynamics are another source of SSF vulnerability. Thailand is going through a very unstable political time, with people feeling increasingly discontent with the current government, which does not have the full legitimacy due to the mechanisms it has taken to gain, and remain in, power. The situation has been made worse by the COVID-19 pandemic. This topic might be difficult to examine because it has polarized the country and people are likely to avoid discussing it.

Forth, blue economy reveals vulnerabilities in transparency and development strategies. Thailand is embracing the Blue Economy initiative and is working to develop strategies to integrating it in its planning. There is no clear direction yet about its focus and priorities. Given how things are today, with the lack of transparency in the governance system, there are many justice concerns, and we will try to understand this from the 'Blue Justice' perspective, following the framework suggested by TBTI (Kerezi et al. 2020).

Finally, climate change is a major driver of SSF vulnerability. Sea level rises, ocean acidification and rising sea surface temperature have been observed in the coastal seas of Thailand, and linked to human activities. We will further explore the extent to which it affects SSF viability.

5. Policy and governance

As previously mentioned, the decentralization that took place in 1999 has led to empowerment of local governments, which are responsible for the daily management and local decision-making processes. While the structure of the governing system is well defined, there are many governing actors across all levels, with many types of organizations involved in varying degrees of governance, including communities, non-governmental organizations and environmental groups. Although beneficial to hear local stakeholders' voices, this level of decentralization can be challenging to coordinate (Satumanatpan & Chuenpagdee, 2015).

There have certainly been several changes in the laws and policies in Thailand that warrant careful consideration for their considerable impact on key divers of vulnerabilities in SSF. The most relevant change is related to the new Royal Ordinance on Fisheries issued in 2015, issued by an emergency decree. While the new decree was legitimate under the new Constitution, the rapid drafting process (less than six months) resulted in administrative complications for the DoF in its implementation. Confusion also arises among fisheries stakeholders, especially SSF given how their operation is defined. The definitions mentioned above are according to the law, but they do not reflect the reality on the ground, as explained below.

By law, SSF or artisanal fishing means fishing operations (with or without boat) in coastal seas or 3 NM from the shore- line. If fishing using a boat, its engine must be less than 10 GRT and lower than 280 Horsepower. This legal definition of SSF assumes that SSF operations are homogenous and can be treated as one group, while in reality, SSF are diverse and can be categorized into three main groups: (1) SSF for family consumption (or subsistence) or distribution to the local community; (2) SSF using outboard fishing vessel, employing non-mechanized/simple gear; thus a larger volume of catch compared to the first category, and a broader market distribution; and (3) semi-commercial SSF using boats smaller than 10 tons; these have strong horse-power engines, high-technology gears and large storage capacity; thus they can fish farther from shore and have high catch volume. The need for refinement of the SSF definition has been acknowledged, and it seems that the revision of the decree is being proposed at the parliamentary level. At a minimum, this will help increase the consistency across laws. Ideally though, agreements on SSF definition will help design regulations that better tackle SSF vulnerabilities to ensure pathways for viability.

The strong emphasis in the new Fisheries Ordinance on preventing IUU, after the EU yellow card, adds another layer of complexity (see Kadfak & Linke, 2021). SSF are now subjected to new regulations that do not work according to the traditional fishing practices. For instance, gears like push nets are now considered illegal because of the belief that they are bottom-tending gears, when in practice, the gear is highly selective and does not cause damage to habitat (Suebpala et al., 2017). While this is partly the case, the abolishment of push nets has paved the way to another trawl gear, a gear with powerful steel blades that seem to cause more damage to habitat compared to push nets. This finding is largely based on the observations made by small-scale fishers, which we noted during the preliminary visit. They expressed deep concerns about ecosystem health and how the new gear may have direct consequence on their catch and thus their fishing livelihood. More research is required to examine the consequences of the Royal Ordinance on Fisheries on SSF, especially on justice issues and concerns associated with the new legislation.

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Vulnerability to Viability (V2V) Global Partnership

The Vulnerability to Viability (V2V) project is a transdisciplinary global partnership and knowledge network. Our aim is to support the transition of small-scale fisheries (SSF) from vulnerability to viability in Africa and Asia. Vulnerability is understood as a function of exposure, sensitivity and the capacity to respond to diverse drivers of change. We use the term viability not just in an its economic sense but also to include its social, political, and ecological dimensions.

The V2V partnership brings together approximately 150 people and 70 organizations across six countries in Asia (Bangladesh, India, Indonesia, Japan, Malaysia, Thailand), six countries in Africa (Ghana, Malawi, Nigeria, Senegal, South Africa, Tanzania), Canada and globally. This unique initiative is characterized by diverse cultural and disciplinary perspectives, extensive capacity building and graduate student training activities, and grounded case studies from two regions of the world to show how and when SSF communities can proactively respond to challenges and creatively engage in solutions that build their viability. Further information on the V2V Partnership is available here: www.v2vglobalpartnership.org.

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