Supply Chain Study on Forced Labor in the Fishing Industry in Thailand

Report

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Abbreviations

CPF	Charoen Pokphand Foods
CSO	civil society organization
EU	European Union
FMO	Fish Marketing Organization
ICLS	International Conference of Labour Statisticians
IDI	in-depth interview
ILO	International Labour Organization
IUU	illegal, unreported, and unregulated fishing
KII	key informant interview
NGO	non-governmental organization
PIPO	port-in port-out
TIP	trafficking in persons
VTS	Vessel Tracking System

Executive Summary

Introduction and Methodology

This study used a mixed-methods approach to explore the existence of forced labor and the supply chain of fish obtained through forced labor within the Thai fishing industry. Data collection focused on the supply chain stemming from three key ports: Samut Sakhon, Songkhla, and Ranong. In total, 400 workers were interviewed including 180 (45%) fishers, 35 (9%) dock workers, who mostly sort fish once a boat docks, and 185 (45%) factory workers, using a non-probability quantitative survey. Because a non-probability survey was used, the results cannot be extrapolated to the full population of those involved in the fishing industry. Of those 400 workers surveyed, 21 participated in follow-up in-depth qualitative interviews. In addition, 31 experts on the supply chain and labor conditions of the Thai fishing industry were interviewed.

Of the 400 interviewed workers, 258 were male, 140 were female, 1 respondent indicated "other," and 1 respondent preferred not to indicate their sex. Of the 258 male workers, 180 were fishers (all fishers in the sample), 9 were dock workers, and 69 were factory workers. Of the 140 female workers, 26 were dock workers and 114 were factory workers. The two individuals who did not identify as either male or female were factory workers. Nine female workers and 12 male workers participated in the follow-up qualitative interviews. The worker sample was almost entirely made up of workers who did not identify as Thai (97%). Burmese workers were present at all three ports and represented 80% of the study sample, and Cambodian workers, representing 17% of the study sample, were found only in Songkhla.

Main Findings

In total, 47 respondents (12% of the sample) met the definition of forced labor used by this study. These 47 respondents consisted of fishers (n=23), dock workers (n=6), and factory workers (n=18). Although a respondent had to indicate experiencing both involuntariness and coercion for an individual case to meet the threshold for forced labor, this study found higher rates of coercion (18%) and involuntariness (34%) reported by the sample than forced labor (12%). In total, 24% of fishers, 17% of dock workers, and 11% of factory workers experienced coercion. Of the indicators of coercion explored by the study, debt bondage/debt manipulation was the most commonly reported (9% of sample). Although involuntariness did not always occur with coercion, 25% of fishers, 71% of dock workers, and 36% of factory workers experienced at least one indicator of involuntariness. The most commonly reported indicator of involuntariness reported by the sample was that of "very low or no wages" (19% of sample). These findings are important in fully understanding exploitative labor conditions within the fishing industry.

Demographic and descriptive factors of the survey sample, such as sex, age, country of origin, educational level, years spent in Thailand, migration status, type of work performed, and work location, were not different in a meaningful way when comparing those in the sample who met the definition of forced labor and those who did not. However, according to the study's qualitative data, the small processing facilities in the informal market system have higher risks of using forced labor.

> *"… in the lower tiers of the supply chain, such as small companies, this is where the highest risk [of forced labor] lies. For instance, those involved in basic food processing."*
>
> *—Civil society organization lead (KII 15)*

Working Conditions

Only 42% of respondents had written contracts for their employment. Those on fishing boats were most likely to have contracts (53%); none of the dock workers had contracts. Respondents had spent a mean of 5.7 years in the fishing and seafood industry. Those on fishing boats had been working on average for 7.2 years, compared to 6.4 years for those on the docks and 4.2 years for those in factories.

Among the types of workers in the sample, fishers received the highest wages. On average, they received 428 baht ($12.26 USD) per day, compared to 346 baht ($9.91 USD) for factory workers and 304 baht ($8.71 USD) for dock workers. Of the total sample of dock workers, 66% reported receiving less than the minimum daily wage, and 23% of factory workers and 6% of fishers reported the same. The minimum daily wage varies between Thai provinces; at the time of the interviews, the rate was 353 baht in Samut Sakhon, 340 baht in Songkhla, and 332 baht in Ranong.

Although on average fishers were paid the best, they were more likely than other workers to be in debt to their employer or recruiter. This was the case for 37% of fishers; 20% of the dock workers and 8% of the factory workers had such a debt. Of the 32 workers who indicated that they could not have refused their latest employment, 56% indicated that this was because of a lack of alternative work.

More than 40% of all respondents indicated that they had been exposed to at least one workplace hazard. More than half (52%) of fishers reported exposure to hazards, compared to 40% of dock workers and 35% of factory workers. The most common hazard was carrying unreasonably heavy loads (18% of total sample). Dock workers were the most likely to report this hazard (37%), followed by 22% of fishers and 11% of factory workers. Of the 173 respondents who had experienced hazardous work, 24% indicated that they could not refuse to do these activities. The main reason given was that they needed the work for money (38%), and the second most common reason was fearing dismissal or threats of dismissal (21%).

Child Labor

Researchers' observations and survey responses suggest the presence of children working in the fishing industry. The study findings, however, cannot confirm the presence of child labor. Qualitative data suggest that working children were present on the docks and in the factories, but they were probably not working as fishers.

Addressing Forced Labor

> *"In the past, the government didn't oversee it [forced labor], they didn't pay much attention to it. Once they received the yellow card, they started to dance." (KII 17)*

The Thai response to the European Union "yellow card"[1] has been extensive. Thailand became the first country in Asia to ratify the International Labour Organization (ILO) Forced Labor Protocol (P29). The government amended the 2008 Anti-Trafficking in Persons Act three times (2015, 2017, and 2019), with

[1] In 2015, the European Union issued a formal warning to Thailand about its fishing industry—colloquially referred to as a "yellow card"—threatening to restrict Thai fish and seafood exports to the European Union if Thailand did not take greater action against illegal, unreported, and unregulated fishing (Human Rights Watch, 2018a, 2018b; IUUWatch.eu, 2023). The focus of the yellow card was on illegal, unreported, and unregulated fishing and not on labor conditions; nevertheless, discussions and reforms included broad actions that also improved the working conditions of fishers.

the aim of improving labor protection, promoting the rights of migrant workers, and, ultimately, reducing human trafficking and forced labor. Thailand also became the first country in the region to ratify the ILO Convention on Work in Fishing (C188), which is essential to protecting the working conditions of fishers on Thai vessels and reducing labor abuses in the supply chains of international brands sourcing from Thailand. The introduction of the 2015 Fisheries Act has changed the Thai fishing industry. Port-in port-out (PIPO) was introduced as part of this Act and can be seen as a catalyst for important structural changes to the industry. PIPO has substantially influenced the fishing and seafood industry. This study shows that although there is room for further improvements to protect the rights of workers, both workers and stakeholders indicated that PIPO had influenced labor and fishing practices.

Private Enterprise

Following accusations in 2014 of widespread slavery, trafficking, and violence on Thai fishing boats and in processing factories (see Hodal et al., 2014), large Thai private enterprises in the fishing industry have taken proactive measures to address forced labor and child labor within their industry. This study found that since 2016, Thai private enterprises have implemented codes of conduct, undertaken regular audits (with a focus on internal and third-party audits) and monitoring of their suppliers to ensure compliance with labor standards and detect signs of forced labor, invested in technologies such as blockchain traceability systems to improve transparency and traceability, and collaborated with government agencies, industry associations, and non-governmental organizations (NGOs) to address forced labor collectively.

Trade Unions

In Thailand, migrant workers are barred from establishing their own unions or holding leadership positions, restricting their ability to formally lead advocacy efforts for better wages and working conditions. Given this void, NGOs and civil society organizations (CSOs) have taken on roles traditionally undertaken by trade unions. For example, in the three ports included in the study sample, these organizations provided learning opportunities and information on workers' rights, intervened with boat and factory owners when disputes developed, hired lawyers if needed, and ran campaigns ensuring that workers gained compensation when unjustly treated.

Supply Chain

Based on labor findings in this study, it can reasonably be assumed that seafood caught from marine shipping vessels in Thailand is at risk of being captured, sold, and processed with the use of forced labor. This seafood makes its way through the domestic and international supply chain to additional downstream goods. Most notably, "trash fish" and waste byproducts of seafood processors are pulverized and dried to produce fishmeal. Fishmeal is the main protein ingredient in animal feed used in Thai aquafarms, poultry and swine farms, and even pet food. The pet food industry not only incorporates fishmeal directly into dog and cat food but also sources domestically raised seafood and poultry that have been fed with fishmeal.

Shrimp aquafarms and pet food manufacturers are important downstream consumers of fishmeal and export-oriented industries. Although the aquafarm shrimp industry has declined in the last decade, the pet food industry is witnessing significant export growth. As of 2022, Thailand became the largest exporter of dog and cat pet food globally, with exports amounting to $2.6 billion USD. The importance of

the export markets to Thai industries creates an incentive for private sector actors to meet standards set by destination markets, including that ensuring forced labor is not used in the production of goods.

Although there have been governmental and industry efforts to address the issue of forced labor in the seafood supply chain on boats, at port, and in processing facilities, the complexity of trading relationships and multiple input products into downstream goods makes traceability difficult. There is an opportunity for greater public-private and inter-governmental cooperation to increase transparency in the supply chain and eliminate the role of forced labor. In particular, transparency in recruitment processes could help ensure that workers are not subjected to forced labor or human trafficking. By implementing transparent recruitment practices, such as verifying the legality of employment agencies and ensuring that workers fully understand their terms of employment, companies could mitigate the risk of forced labor in their supply chains.

A fishing vessel at a pier in Samut Sakhon, 2023
Source: ICF

Recommendations

Recommendations for the Government of Thailand to enhance labor conditions in the fishing industry include the following:

- Enable migrant workers to form unions to advocate for their rights effectively.
- Unlink immigration status of migrant workers from their employer. If a migrant worker leaves an abusive employer, their immigration status should not be in jeopardy.
- Continue the structural reforms that were introduced after the yellow card to ensure that the Thai fishing industry is free from illegal, unreported, and unregulated fishing while also improving labor practices.
- Undertake further buybacks of boats from those who wish to leave the industry.
- Fully implement ILO Convention C188 by establishing regulations, providing capacity-building initiatives, conducting awareness campaigns, fostering collaboration, and establishing partnerships.
- Increase PIPO inspections to address issues such as undocumented workers and forced labor.
- Assess and improve the present electronic payment system that boat owners should be using to pay their fishers to determine why not all fishers are receiving their payment this way and why some workers are not being paid fairly.
- Investigate why wage violations by boat owners, including paying below minimum wage and irregular payments, are taking place and determine strategies to overcome these issues.
- Ensure that all workers across the various sectors of the fishing industry have contracts. PIPO should be checking that fishers have contracts. Factories, particularly small and medium-sized

ones, need to be inspected to determine whether they are providing their workers with contracts.
- Address debt bondage through regulating recruitment agencies, eliminating recruitment fees paid by workers, promoting direct hiring, providing financial literacy training, and offering legal assistance to affected workers.
- Assist small and medium-sized companies in complying with the Fisheries Act to prevent forced labor.
- Improve migrant access to health services and develop programs to address work and safety issues, such as injuries and preventable diseases such as beriberi, in collaboration with relevant health authorities, NGOs, and CSOs targeting fishers' health.
- Promote Wi-Fi onboard vessels so workers can communicate with their land-based support networks.

All large Thai companies involved in the fishing and seafood industry have a blueprint to address forced labor and child labor in their supply chains, namely to work toward what Thai Union has undertaken to date. Further, they should:

- Promote the adoption of mechanisms for identification and remediation of forced labor risks by developing a zero-tolerance policy toward labor abuses, ensuring clear communication of the policy to all stakeholders and implementing consequences for violations.
- Enhance supply chain transparency by investing in traceability systems to track products and prevent forced labor.
- Collaborate with suppliers to enforce worker rights standards, including strict prohibitions on forced and child labor, with termination clauses for non-compliance.
- Implement rigorous labor standards across the supply chain, ensuring fair wages, reasonable working hours, the elimination of recruitment fees paid by workers, and safe conditions for workers.
- Develop worker empowerment programs to educate workers on their rights, facilitate reporting of abuses, and provide access to grievance mechanisms without fear of retaliation, ideally with support from NGOs and CSOs.
- Strengthen collaboration with relevant stakeholders concerned about workers' rights.
- Conduct regular independent audits of working conditions on fishing vessels, docks, and processing factories by third-party organizations with expertise in identifying forced labor.
- Commit to continuous improvement by regularly reviewing and updating policies and practices based on lessons learned and evolving best practices in addressing forced labor and child labor.
- Ensure that boats within their supply chain add or upgrade Wi-Fi systems onboard vessels so workers can communicate with their land-based support networks.

Medium and small-sized Thai companies involved in the fishing and seafood industry need to be targeted by the Thai government, large Thai companies, NGOs, and CSOs if forced labor and child labor are to be fully removed from this industry. Unlike large companies, they have limited resources and capacity. Nevertheless, these stakeholders should:

- Engage with industry associations focused on ethical sourcing and collaborate with larger companies actively addressing forced labor and child labor for guidance and resources.
- Partner with government agencies, NGOs, and CSOs specializing in labor rights to provide training sessions for employers in Thai and for workers in Burmese and Khmer languages.

- Implement fair labor practices, including fair wages, reasonable working hours, and safe working conditions.
- Refrain from charging fees to workers at the start of employment or when changing employers.
- Ensure transparency regarding any charges, such as for food and housing, and prevent debts from being incurred due to excessive interest rates.

NGOs and CSOs with expanded resources could:

- Increase collaboration with the private sector to engage with medium and small enterprises, offering training sessions for both employers and migrant workers on worker rights, ideally conducted in Thai, Burmese, and Khmer languages.
- Improve migrant access to medical services and enhance healthcare programs to address work and safety issues, such as work injuries and preventable diseases such as beriberi affecting fishers, dock workers, and factory workers.

Countries that are actively involved in assisting Thailand to counter labor abuse within the fishing and seafood industry, along with other sectors of Thailand's economy, need to provide further support, and need to undertake monitoring and research with the Thai government, Thai business community, and NGO and CSO partners to ensure that Thailand can successfully address labor forced labor and child labor. In particular, these governments could:

- Investigate the prevalence of forced and child labor in the fishing industry across Southeast Asia, considering the complexity of vessels flagging in one country but operating across international ports.
- Advocate the Thai government to ratify and implement ILO Convention 87 and 98, while also supporting local organizations championing labor rights.
- Aid the Thai government in aligning its legal system with the regulations outlined in C188.
- Provide ongoing training for law enforcement officials to effectively enforce labor rights legislation.

1. Purpose and Context

Thailand is one of the world's major exporters of fish and seafood products (Shahbandeh, 2023). Despite this global standing, the country's fish and seafood industry has been the subject of persistent reports of concerning labor practices, including child labor, forced labor, human trafficking, and exploitation of migrant workers, both at sea and in onshore processing sites (Chantavanich et al., 2016; Human Rights Watch, 2018a; PLAN International, 2018; Stoakes et al., 2015). Spurred by these reports, as well as diplomatic and economic pressure to overhaul its fishing sector, Thai authorities have made numerous regulatory and legislative changes starting in 2015 aimed at addressing labor exploitation in their country's fish and seafood sector. According to the Thai Department of Fisheries, new legislation ensures that fisheries and seafood products from Thailand meet higher standards, including being environmentally and socially responsible, and free from human trafficking and illegal, unreported, and unregulated (IUU) practices (Department of Fisheries, Thailand Ministry of Agriculture and Cooperatives, 2020, 2021).

This study aims to explore whether forced labor exists within the Thai fishing industry, which encompasses fishing boats, docks, and processing plants. To do so, the study focused on three key Thai ports: Samut Sakhon, Songkhla, and Ranong. Using a mixed-methods approach, the study investigates the supply chain of fish and fish products obtained through forced labor. The research scrutinizes the processing of fish into downstream goods such as fishmeal and its end use in aquafarm shrimp farms and pet food, which are distributed both domestically and internationally. Specifically, this report:

- Maps the supply chain of marine catch in Thailand, tracing its journey from ports and traders to fishmeal processing facilities into shrimp aquafarms and pet food.
- Identifies workers experiencing forced labor in the supply chain and details the types of exploitation they experienced based on the International Labour Organization's (ILO) definition of forced labor (as detailed in Appendix 2). The study also examines sociodemographic characteristics associated with these workers.
- Addresses any evidence of child labor in the fishing and seafood processing industry found during the course of this study.

2. Literature Review

2.1 Economic Overview of the Country

Over the past five decades, Thailand has undergone a remarkable period of economic development. Thailand was counted as among the world's poorest countries as recently as the 1960s, and after decades of industrialization and economic growth, the country is now a modern industrialized state, transitioning from a low-income economy to an upper-middle-income country in just two generations (Kelly et al., 2012; OECD, 2019; Warr, 1994). This period of rapid development has also seen similarly remarkable improvements in economic and social indicators in the country, as new economic opportunities have lifted millions of residents out of poverty, and the country's development and social policies have greatly expanded access to education and healthcare (World Bank, 2023).

This sustained economic growth has long made Thailand a magnet for economic migration from other Southeast Asian countries, and—particularly in the years after an uptick in economic migration in the 1990s—migrant workers have in turn played a significant role in Thailand's economic productivity (Martin, 2007; Richardson, 1996). As of 2010, migrant workers generated between 4% and 6% of

Thailand's gross domestic product, and as of 2019, Thailand's 2.9 million registered migrant workers constituted 7.6% of the Thai workforce (International Labour Organization & United Nations Entity for Gender Equality and the Empowerment of Women [UN WOMEN], 2021). Further, irregular migrants, namely those who enter the country without the proper documentation, are also adding to the country's gross domestic product. The International Organization for Migration estimates that there are more than a million such workers in Thailand (IOM Thailand, n.d.). Current projections suggest that migrant workers are likely to continue to play a significant role in Thailand's economic prosperity, as the country's aging population and ongoing industrialization efforts continue to foster demand for migrant labor (OECD & International Labour Organization, 2017; Towie et al., 2019).

In both its growth and its reliance on migrant labor, the Thai fishing and seafood industry has followed the same pattern as the country's economy overall. Thailand is among the top fish and seafood exporters in the world. In 2022, the industry generated an estimated $7.95 billion USD, with projections anticipated to rise to $9.82 billion USD by 2028 (Statista Research Department, 2023). Key exports include canned tuna, processed shrimp, and squid (International Labour Organization, 2020b; Ngamprasertkit, 2018; U.S. Department of Labor, 2022a).

Migrant workers (both legally registered and irregular), primarily from Burma, Cambodia, and Laos, have become concentrated in labor-intensive sectors like the fishing and seafood industry. Estimates of the total size of the industry workforce and the proportion comprising migrants vary. In 2017, of the approximately 600,000 people employed in the industry, more than half were registered migrant workers (PLAN International, 2018). As of 2020, an estimated 300,000 workers were employed in the industry, with migrants constituting two-thirds of this figure. The reduced workforce reflects the decrease in the number of fishing boats and workers involved (International Labour Organization, 2020a).

Decades of IUU, overfishing by commercial boats, and environmentally devastating fishing practices such as bottom trawling have led to environmental destabilization, a decline in fishing stocks, and international concern over industry standards (Clark & Longo, 2022; Wilhelm et al., 2020). Excess fishing has meant that catch per unit effort[2] has been declining continuously since 1961 (Achavanuntakul et al., 2014; Environmental Justice Foundation, 2023), and research suggests a correlation between declining fishing industry revenues caused by environmental depletion and the use of migrant workers in exploitative labor schemes to cut costs (Clark & Longo, 2022; Moreto et al., 2020).

2.2 Evidence of Forced Labor

Extant literature suggests that forced labor in the Thai seafood industry occurs at various stages of the fish and seafood supply chain, including both commercial fishing and fish processing (Chantavanich et al., 2016; International Labour Organization, 2020b; U.S. Department of State, 2023). Commercial fishing takes place within the Thai Exclusive Economic Zone, within the Gulf of Thailand and in the Indian Ocean, but also beyond, with reports indicating illegal fishing by Thai boats in other country waters (Teh et al., 2015).

[2] Catch per unit effort is a measure of the amount of a given target species that can be captured with one standard unit of fishing effort (often measured in kilograms per hour). Sustained reductions in "catch per unit effort" generally indicate a decrease in the overall population of a given stock, often due to overexploitation (Panayotou, 1982).

The U.S. Department of Labor's List of Goods Produced by Child Labor or Forced Labor has listed fish produced in Thailand as at risk of being produced with forced labor since 2012 (U.S. Department of Labor, 2022b).

Labor exploitation on Thai fishing boats gained wider international attention in 2014 following a report in *The Guardian* highlighting human trafficking and the use of forced labor on Thai fishing boats involved in catching fish and seafood destined for export to major U.S., British, and European retailers (Hodal et al., 2014; Human Rights Watch, 2018a). Partly in response to this and other reporting on the issue, the U.S. State Department downgraded Thailand to Tier 3, the lowest possible rating, in its 2014 Trafficking in Persons (TIP) Report. Then, in 2015, the European Union (EU) issued a formal warning to Thailand—colloquially referred to as a "yellow card"—threatening to restrict Thai fish and seafood exports to the EU if Thailand did not take greater action against IUU fishing (Human Rights Watch, 2018a, 2018b; IUUWatch.eu, 2023). The focus of the yellow card was on IUU and not on labor conditions; nevertheless, discussions and reforms included broad actions that also improved the working conditions of fishers.

Extant sources suggest that workers in the Thai fishing and seafood industry are subjected to a number of exploitative practices, many of which are commonly associated with forced labor as defined in ILO Convention No. 29, including excessive work hours, forced overtime, unsafe working conditions, noncompliance with contract terms, identity and migration document confiscation, restrictions on movement, irregular payment, wage theft, degrading living conditions, and threats of physical and legal harm (Human Rights Watch, 2018a, 2018b; International Labour Organization, 2020b; Urbina, 2022; U.S. Department of Labor, 2022a; U.S. Department of State, 2023). Research undertaken in 2019 and 2020 indicated that roughly 14% to 18% of workers on Thai fishing boats experienced forced labor (U.S. Department of State, 2023).

Existing research also suggests that the risk of being subjected to forced labor or human trafficking is especially high among migrant workers in this industry (International Labour Organization, 2020a; U.S. Department of Labor, 2022a, 2022b). Migrant workers reportedly feel less able to object to unsafe or hazardous working conditions (Human Rights Watch, 2018a), and they are often recruited by third-party labor brokers who charge recruitment, documentation, and travel fees, a practice that is illegal in Thailand. Due to an inability to pay these recruitment fees up front, many agree to pay them out of wages earned (Environmental Justice Foundation, 2023; International Labour Organization, 2020b; Marschke & Vandergeest, 2016; U.S. Department of State, 2023). Debts owed are exploited by brokers and employers through a form of forced labor known as bonded labor, in which release from employment is contingent on repayment of these debts. In these situations, workers may be unable to leave their employment due to large debts owed to brokers and employers (Human Rights Watch, 2018a; International Labour Organization, 2020b; U.S. Department of State, 2023).

Research suggests that the economic and political effects of the COVID-19 pandemic led to further deterioration in the working conditions in the Thai fishing and seafood sector (USAID, 2022). During the pandemic, piece workers in the fishing industry were unable to earn the minimum wage, pushing them into debt or other precarious situations (Stride, 2021). With numerous countries in lockdown, consumer demand for canned and frozen fish products increased. This led to a boom in the Thai fish and seafood industries. Sales of Thai frozen fish and other fish meat increased by 15% in 2020 compared to 2019, and in 2021, Thailand's largest fish company's profits hit a record high (Dao, 2021; TrendEconomy, 2022).

The Thai government has sought to address the widespread labor issues in its seafood industry, both independently and in collaboration with international partners. The steps it has taken include the 2014 revisions to the Labour Protection Act of 1998, aimed at enhancing labor rights and improving working

conditions for all workers, including migrant workers. One of the key objectives of this revision was to better regulate recruitment agencies to address issues such as exploitation, excessive fees, and unethical practices in the recruitment process. The revision sought to streamline and simplify the recruitment process, thereby reducing the complexity and cost associated with hiring migrant workers. By doing so, the government aimed to promote fair and transparent recruitment practices while also protecting the rights of workers, particularly those in vulnerable situations, such as migrant workers in the seafood industry. Although the 2014 revision of the Labour Protection Act represented a significant step toward supporting migrant workers and improving labor conditions, challenges remained in its effective implementation and enforcement, with issues of labor exploitation, debt bondage, and unfair treatment persisting, including in the seafood industry.

In 2017, the Thai Royal Ordinance Concerning Management of Employment of Migrant Workers came into force. At first this triggered confusion and panic among employers and workers alike. Nevertheless, after changes were made in 2018, the ordinance has led to international standard provisions, namely the following:

- Zero recruitment fees charged to migrant workers (Note that the definition of "recruitment fees" still needs to be defined in secondary legislation.)
- No prison sentences imposed on irregular migrant workers
- Written contracts provided in the language of migrant workers (a provision that goes beyond protections offered in the Labour Protection Act)
- Increased flexibility for migrant workers to change employers
- Prohibition on the confiscation of migrants' identification documents
- Removal of housing zones that restrict migrants' freedom of movement
- Appointment of a tripartite committee to oversee migration policy (ILO, 2022)

In 2018, Thailand became the first country in Asia to ratify the ILO's Forced Labor Protocol (P29), along with the Work in Fishing Convention (C188) in 2019 (USAID, 2022). Although C188 became legally binding in 2020, the actual implementation and enforcement of its provisions will take time. Implementation will involve enacting new laws or amending existing ones, establishing regulatory frameworks, training enforcement officials, and raising awareness among stakeholders. Therefore, even though the convention is in force, Thailand is still in a phase in which efforts are underway to implement the convention's provisions and ensure compliance across the seafood industry.

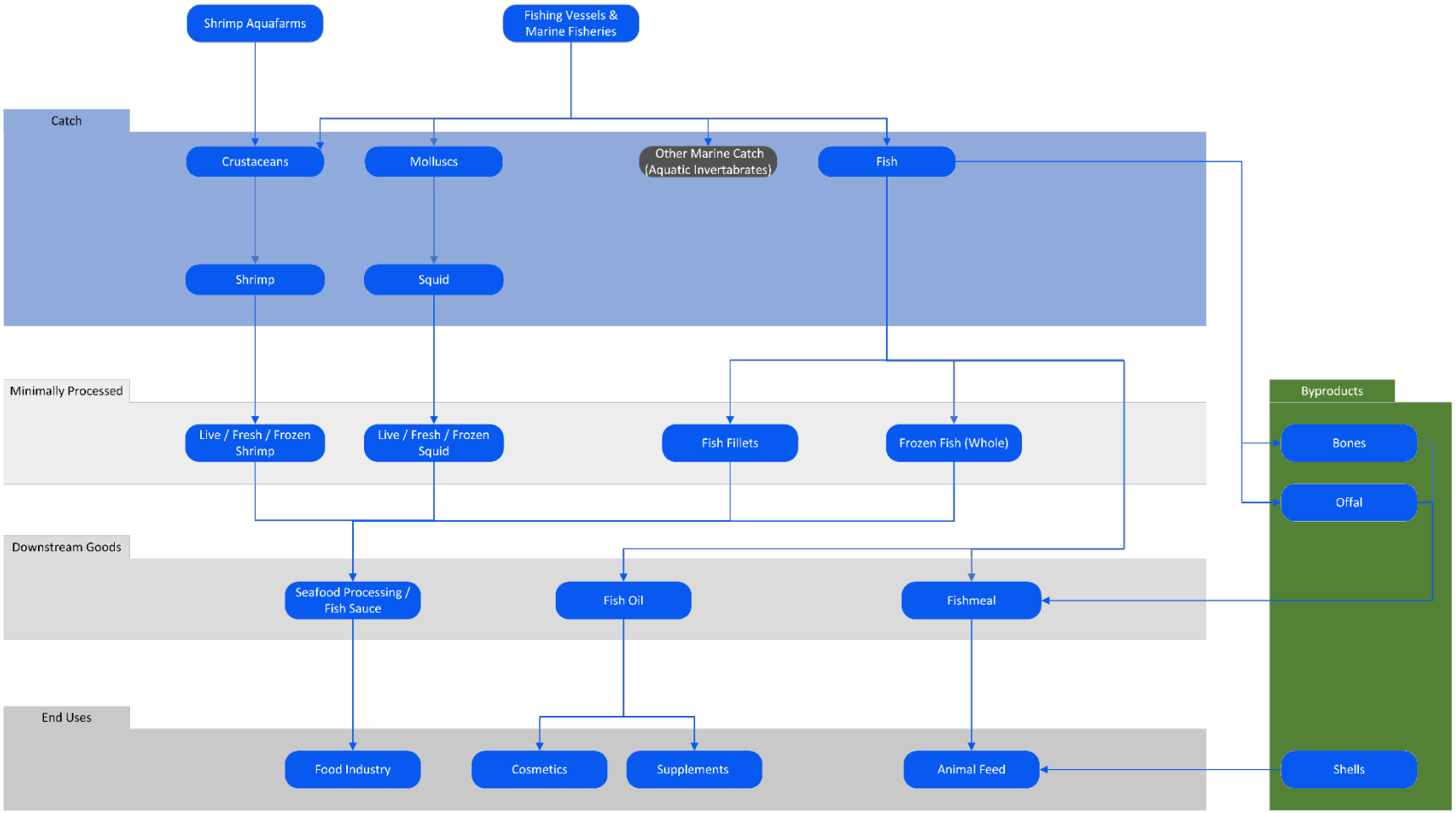
Further, the Thai government has created the Seafood Good Labor Practices program, establishing a port-in port-out (PIPO) inspection procedure for largescale commercial fishing vessels, and establishing standard operating procedures for identifying victims of labor trafficking (International Labour Organization, 2022; Kadfak & Linke, 2021; U.S. Department of Labor, 2022a; U.S. Department of State, 2023). However, the implementation of some of these programs has been challenging and, at times, ineffective. For example, although the Thai government conducted a significant number of inspections though PIPO Centers and Forward Inspection Points, these inspections are reported to be inadequate and ineffective in identifying victims of forced labor (U.S. Department of Labor, 2022a). There are also indications that corrupt officials protect fishing vessel owners from inspection and enforcement (U.S. Department of State, 2023). Further, the fishing industry is shrouded in opacity, with powerful individuals and corporations leveraging complex ownership structures that obscure accountability. This lack of transparency facilitates corruption, as boat owners exploit their political connections to evade regulations and perpetuate labor abuses (Human Rights Watch, 2018a).

Despite advances, forced labor and labor exploitation continue to be pervasive issues in the Thai seafood industry (Human Rights Watch, 2018a, 2018b; International Labour Organization, 2020b; U.S. Department of Labor, 2022a; U.S. Department of State, 2023). In a 2022 report on risks of human trafficking in Thailand, 100 experts in the field ranked the Thai fishing industry (defined as the catching of fish, distinct from fish processing) and the seafood industry more generally as the first and fourth highest priority targets, respectively, for anti-trafficking efforts (USAID, 2022). In addition, the most recent U.S. Department of State's TIP report indicates that Thailand is not fully compliant with the minimum standards for elimination of severe forms of trafficking in persons and highlights malpractices in the Thai fishing and seafood industry (U.S. Department of State, 2023).

2.3 Product Description

This study examined marine catch processed in Thailand and their associated downstream uses, focusing on the processing of fishmeal for domestic industrial consumption in animal feed. Figure 1 outlines processing, byproducts, downstream products, and end uses for seafood in Thailand, followed by a more detailed definition of each product.

Figure 1. Product flowchart



Source: ICF

2.4 Minimally Processed Seafood, Byproducts, Downstream Products, and End Uses

2.4.1 Catch

Fish: Fish in Thailand can be marine or inland caught or raised in aquaculture farms. The most commonly procured species in Thailand are anchovies (154,400 tons), sardines (78,200 tons), and sea bass (78,200 tons). According to government statistics, the largest single percentage of procured fish is trash fish (321,300 tons) (Department of Fisheries, Thailand Ministry of Agriculture and Cooperatives, 2023).

Trash fish: Trash fish is a controversial term used to describe undesirable, damaged, low-value fish or bycatch to be used in the production of fishmeal and fish oil. In Thailand, a significant portion trash fish is obtained through bottom trawling, which, in addition to damaging the marine environment, also results in the capture of healthy juvenile fish and crustaceans before they have time to grow to a size suitable for human consumption. Moreover, prolonged trawling and inadequate preservation methods on ships can spoil fish and crustaceans otherwise fit for human consumption. Consequently, the demand for trash fish in fishmeal production creates a financial incentive for fishers to engage in unsustainable fishing and preservation practices, which overvalues short-term gains of low-value fishing over longer-term gains for high-value marine catch.

Squid: Squid is a mollusk that is marine caught in Thailand and is a leading seafood export. In 2022, 95,600 tons of squid were caught in Thailand (Department of Fisheries, Thailand Ministry of Agriculture and Cooperatives, 2023).

Shrimp: Shrimp are crustaceans that can be either marine caught or raised in aquafarms. Marine caught shrimp has declined due to overfishing, and Thailand supports a large, albeit declining, shrimp aquafarm industry (Department of Fisheries, Thailand Ministry of Agriculture and Cooperatives, 2023).

2.4.2 Minimally Processed Good

Frozen Fish (Whole): Frozen fish refers to fish that are caught, processed, and frozen to preserve them for storage, transportation, and sale, with all parts of the fish, including the head, body, and fins, intact; as well as fish that have been partially processed, or gutted to remove offal. The freezing of fish is crucial to preservation, allowing for long-term storage and transportation across large distances (FAO, n.d. b). Main freezing methods include blast freezing, plate freezing, immersion, and spray freezing (FAO, n.d.) Across the three fishing regions in this study (Samut Sakhon, Ranong, and Songkhla), the choice of freezing and processing methods is influenced by the scale of the fishing operation, the intended market, and the available infrastructure. Traditional ice-based preservation remains prevalent among smaller fleets, but these traditional freezing techniques co-exist with large-scale operations use of advanced freezing technologies, including blast freezing and plate freezing (Department of Fisheries, 2017; Food Intelligence Center, 2016; PSU, 2010).

Fish Fillets: Freshly caught fish are generally sorted by size and species prior to processing. Once sorted, fish are cleaned and processed to remove the head, tail, fins, and internal organs and deboned. To produce fish fillets, or fish meat, the flesh of the fish is cut away from the backbone, generally with the skin present on one side, which can also be removed prior to sale. This process can either be performed by hand or automatically by machines. Once processed, fish fillets can be stored, sold, and consumed fresh, chilled, or frozen (York Saw & Knife, n.d.).

2.4.3 Byproducts

Offal: Offal refers to the rejected or waste parts of fish, squid, and other aquatic catches, including the internal organs and entrails that are typically removed during the cleaning and initial minimal processing of whole fish or squid (Vinton, 2019). Offal is often discarded, but some specific pieces, such as eyeballs, fish heads, livers, and tongues, are used as edible seafood products in various parts of the global market (Vinton, 2019).

Bones: During the processing of boney fish species, inedible bones are often removed in the production of end products such as fish fillets for human consumption. Although these bones are not edible, they can be used in the production of fishmeal (The Fish Site Limited, 2023, Vinton, 2019). In addition, bones can used in the manufacture of calcium supplements, in industrial products (biochar) used in the process of removing heavy metals and organic pollutants from industrial wastewater and oil spill sites, and in manufacturing biofilms and bioplastics (Sarkar et al., 2023; Wang et al., 2019).

2.4.4 Downstream Goods

Fishmeal: Fishmeal is a brown powder or cake produced for animal feed. The global norm for fishmeal production is that at least 75% of the input is from the whole fish. However, Thailand produces a relatively lower quality, higher fat fishmeal that uses approximately 35% of the whole fish (whether or not designated for human consumption) of various species, 25% from tuna byproducts (bones, head, eyes), 20% from supermarket seafood processing waste (bones, heads, eyes), and 15% from aquaculture waste (shrimp heads and shells) (Achavanuntakul, 2014; Oerareemitr, 2022).

Fish Oil: Fish oil is extracted by cooking, press drying, and squeezing oily fish. Fish oil production is closely tied to the production of fishmeal, as fish oil is derived from the squeezing of cooked fish in the fishmeal production process (The Fish Site, 2012). The fish oil extracted through this process is known as "crude" fish oil, as it must undergo further processing before sale. Once collected, crude fish oil is put through a multistep distillation and filtration process during which the crude oil is refined by exposure to low heat into an omega-3 concentrate that is free of heavy metals and contaminants (Gardner, 2023). The resulting fish oil is then packaged, often either as a liquid or in dissolvable pill capsules, in preparation for sale.

Fish Sauce: Fish sauce is an edible, dark amber liquid condiment and seasoning for human consumption that is used in a variety of cuisines, particularly in Southeast Asia. Fish sauce is produced from salted fish, most often anchovies, or krill that is fermented in large vats for anywhere between six months to two years (Ngo, 2020). Following prolonged fermentation, the mixture is pressed, and the extracted liquid is further concentrated through evaporation. The resulting fish sauce is bottled and sold for individual human consumption (Ngo, 2020).

Canned Fish: Fish, commonly tuna or salmon, are processed and sealed into an airtight container or tin in water, oil, or sauce for human consumption.

2.4.5 End Uses

Animal feed: Fishmeal is often used as a feedstock in shrimp aquaculture, and for livestock such as poultry, swine, and fish due to its high protein content (The Fish Site, 2012) (The Fish Site Limited, 2012).

Pet Food: Fishmeal is used in the production of pet food, especially dog and cat food, due it its availability, low cost, and nutritional benefits (Future Market Insights, 2022).

Cosmetics: Fish oil is widely used as a component in the production of various cosmetic products, such as lotions, moisturizing oils, and topical creams, due to the moisturizing, antioxidant, and therapeutic properties of fatty acids present in fish oil on human skin (Huang et al., 2018). The fatty acids present in fish oil, notably omega-3 polyunsaturated fatty acids, docosahexaenoic acid, and eicosatetraenoic acid, have been found to promote and protect healthy skin and alleviate the severity of skin disorders, such as photoaging and allergic reactions (Huang et al., 2018).

Supplements: Fish oil is used as a nutritional supplement and is sold in both liquid and capsule form. Fish oil is sought after due to its high concentration of fatty acids, particularly omega-3 fatty acids (Groth, 2023).

Food Industry: Live, fresh, and chilled seafood can be used in various forms and applications in the preparation of food for human consumption. Seafood can be consumed raw, dried, salted, smoked, semi-cooked, fully cooked, or processed. Edible seafood meat is consumed by individuals, restaurants, retailers, and industrial food manufacturers and includes a vast array of products, including fish, shrimp, mollusks, offal, canned seafood, fish balls, fish sauce, fishpaste, dried shrimp, surimi, and fish tofu.

3. Methodology and Study Implementation

3.1 Study Objective and Research Questions

The study's objective was to explore the supply chain of fish procured through forced labor on fishing vessels and the subsequent processing of this fish into fishmeal and other potential downstream products (such as shrimp feed and aquaculture shrimp, and, if possible, into pet food) in Thailand, which are then sold both domestically and internationally. The study traces, to the extent possible, the supply chain of fish as it moves from ports, traders, and through domestic processing facilities to subsequent purchasers. The study identifies workers who experienced forced labor, the types of exploitation they experienced, and their sociodemographic characteristics. The study also comments on evidence of child labor in the fishing and seafood processing industry.

The key research questions are as follows:

- Are there indicators of forced labor reported by workers on fishing vessels and workers in the domestic seafood processing of fishmeal and shrimp?
- In what phase of Thai fishing and downstream processing and production of fishmeal and shrimp aquafarms are reports of child labor?
- What domestic manufacturing processes occur within Thailand to produce downstream goods, such as fishmeal, shrimp, and pet food, from fish procured using forced labor?
- Who are the main stakeholders in Thailand who use forced labor or exploited labor to catch, sell, and process fish for use in fishmeal?

3.2 Research Methodology

This study, undertaken by ICF and SUPA71, a Thai-based research consulting group, applied a mixed-methods approach to understand the problem of forced labor in the fishing and seafood industry and its supply chain in Thailand.

3.2.1 Collection of Background Research and Materials

Secondary data collection for this study started with reviews of reports about the Thai fishing and seafood industry. Then the research team made initial contact with stakeholders and sought additional reports. Researchers conducted interviews with stakeholders as part of a scoping exercise and visited Samut Sakhon to gain an updated understanding of developments in that province. The researchers used their contacts, such as private sector officials, government officials, local researchers, and workers at civil society organizations (CSOs), non-governmental organizations (NGOs), international agencies, cooperatives, and other relevant organizations to bolster existing information. This included the Labour Protection Network in Samut Sakhon, Stella Maris in Songkhla, and SAWFA in Ranong, all of which assisted in the data collection process.

3.2.2 Research Instrument Development

The tools were designed in English and translated into Thai and Burmese. The tools were pretested in Samut Sakhon and refined after obtaining pretest results. SurveyCTO, a secure mobile data collection platform, was used for the quantitative worker survey for both the pretest and data collection.

3.2.3 Worker Survey

The research team conducted a non-probability quantitative survey of 400 workers to collect data about the demographics of the workers, characteristics of forced labor, the recruitment process, and living and working conditions of those involved in the industry. Administering the survey took between 30 and 40 minutes. The interviews were in Burmese, Khmer, and Thai, and on occasion in Mon, a minority language in Burma.[3]

3.2.4 Workers' In-depth Interview and Key Informant Interview Guides

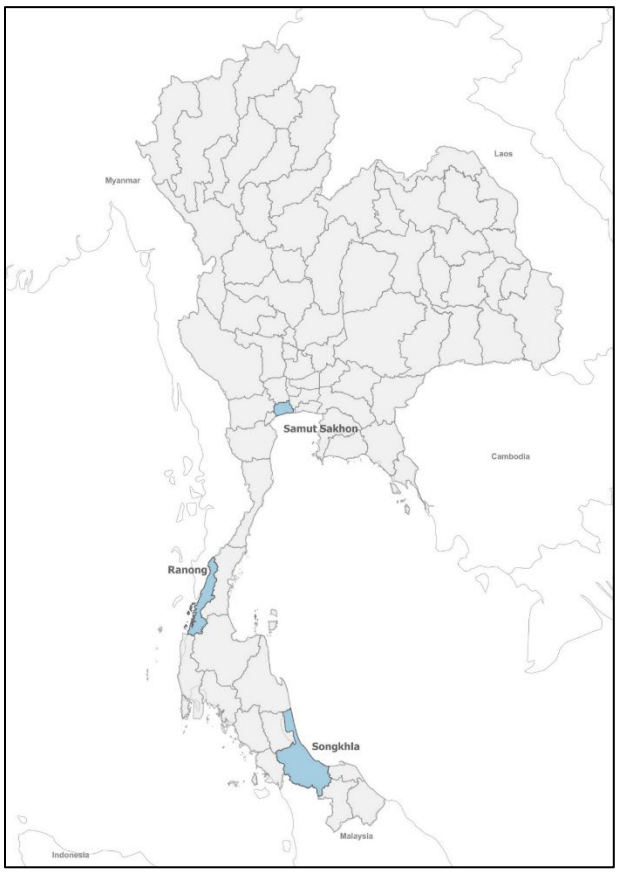
ICF developed two qualitative tools: an in-depth interview (IDI) guide for worker interviews and a key informant interview (KII) guide for stakeholder interviews (see Appendix 1 for the English version of these tools), and SUPA71 provided suggestions of the tools per the local Thai contexts. The IDI guide prompted respondents to detail their working experiences and in particular any malpractices that they had experienced. The KII guide prompted information about supply chain issues and labor conditions.

3.2.5 Site Selection, Sampling and Recruitment, and Final Sample

This study focused on three Thai provinces—Samut Sakhon, Songkhla, and Ranong (Figure 2). Samut Sakhon was chosen because it has the highest concentration of fish processing plants of any province in Thailand and the country's largest wholesale market of fishery products (National News Bureau of Thailand, 2019). Songkhla was chosen for its large fishing fleet and the large number of migrants living in the province, many of whom are Cambodians working in the industry. Ranong was selected because it is one of Thailand's main fishing ports on the Andaman Sea. An additional benefit to conducting research in these three provinces was the presence in each of an NGO willing to help with recruitment of study participants.

[3] Interviews in Khmer and Mon were conducted by multilingual interviewers who verbally translated the Thai instrument on the spot. Khmer and Mon translations of key terms were discussed during training.

Figure 2. Location of Samut Sakhon, Songkhla, and Ranong



Within each province, the research team explored the locations to determine where migrant workers could be found, and discussions were held with NGOs and CSOs to determine the best locations to reach fishers, dock workers, and factory workers. Based on this preliminary research, data collectors recruited workers at NGO centers, at piers, and in migrant communities. In addition to these channels, data collectors relied on personal contacts and local organizations to contact respondents. To facilitate the KIIs, the research team sent introductory letters to potential participants.

Using these different strategies, 400 workers were interviewed, as shown in Table 1. Of these 400, 258 were male, 140 were female, 1 respondent indicated that they were "other," and 1 respondent preferred not to indicate their sex. All 180 of the fishers were male; 9 of the dock workers were male and 26 were female; and of the 185 factory workers, 69 were male and 114 were female. The two respondents who did not indicate that they were male or female worked in the factories. In addition, 21 IDIs, with 12 men and 9 women, and 26 KIIs were administered. Some of the KIIs involved more than one person. In total, 26 men and 5 women participated in these interviews.

Table 1. Final sample

Data collection type	Total respondents	Fishers	Dock workers	Factory workers
Workers' surveys	400	180	35	185
In-depth interviews	21	9	2	10

Key informant interviews	26

3.2.6 Supply Chain Tracing

KIIs were conducted with formal and informal experts, including 10 Thai government officials, 6 NGO/CSO workers, and 10 members of the private sector, to gain a better understanding of the fishing and seafood supply chain and points within the supply chain that involve forced labor. To better understand the supply chain, secondary literature, international trade statistics, and shipping data were analyzed. Further, observations were made at ports during PIPO inspections; as fish was sorted and transferred to cold storage, markets, and processing factories; and as the seafood was sold at auctions at the ports. Observations were also made at markets and in small processing sites outside large factories. Vehicle license plates, which indicate the province in which these vehicles are registered, along with signage and company names printed on these vehicles, were recorded at different points of the supply chain.

Example of fish sorted at a pier in Samut Sakhon, 2023
Source: ICF

3.3 Training and Preparation

Initial research team training and the study pilot took place on June 14–18, 2023. It was then determined that additional in-country approvals were needed, and this process took two months. A refresher training took place on September 28–29, 2023. The training sessions covered a variety of topics, including the study design, definitions of forced labor, child labor, supply chain tracing, data collection roles and ethics, and a full review of the qualitative and quantitative research instruments.

3.3.1 Ethical Considerations

The research protocol and instruments underwent a review by both ICF and Mae Fah Luang University's Institutional Review Boards. They were revised based on these reviews and feedback from the pilot. The Mae Fah Luang University Institutional Review Board indicated that no one under age 20 should be interviewed without approval from their guardians in accordance with Thai law. For this reason, only those age 20 and above participated in this study.

3.4 Data Collection and Analysis

The 400 worker surveys were conducted in October 2023, with data collection initiated in Samut Sakhon, followed by Ranong, and then Songkhla. Simultaneously, qualitative data collection began in October and extended through November 2023. To delineate the supply chain of fish and seafood, a review of trade databases and supplementary information was initiated in early 2023. This investigation continued until early December 2023, with valuable insights obtained from local contacts aiding in the understanding of supply chain dynamics.

Data quality checks were systematically conducted for both quantitative and qualitative data gathered during the research. The quantitative data, collected through SurveyCTO, underwent daily reviews to

identify and rectify any discrepancies and to resolve any challenges encountered throughout the day. The research team recorded and transcribed qualitative interviews. To ensure accuracy, the transcriptions were cross-verified with the original recordings, contributing to the overall reliability of the qualitative data.

Following the completion of data-quality checks, the data underwent analysis. Quantitative data were analyzed using the statistical software packages SPSS and Stata, enabling an examination of numerical patterns and trends. Qualitative data were subjected to analysis using Dedoose. This dual approach ensured a thorough examination of both quantitative and qualitative aspects, enhancing the overall robustness of the research findings.

3.5 Limitations and Lessons Learned

3.5.1 Sampling Method

The study did not use probability sampling to select survey respondents. Instead, efforts were made to select a diverse range of respondents, working at various types of worksites, using purposeful and convenience sampling methods. As such, the results from this study are not representative of the Thai fishing industry as a whole or of the industry in the three ports where data were collected.

3.5.2 Respondent Hesitancy

The Thai fishing and seafood industry has garnered international attention, notably with interventions such as the EU yellow card and criticisms in U.S. TIP reports. This international investigation and attention have made industry stakeholders apprehensive about engagement in the sector. Trade sanctions over labor practices in the fishing industry have dramatically impacted the livelihoods and profits of private sector players, from small artisanal fishers to large multinational corporations. Therefore, many members of the private sector are reluctant to engage with researchers on details of the supply chain.

The research team found that some business owners and government officials hesitated or refused to participate in interviews, citing past negative outcomes from similar research endeavors that affected the industry. Among potential KII respondents approached for the study, about 20% declined to participate. Approximately 30% of those approached for the worker survey declined to participate, and 10% of those approached for the worker qualitative interview declined. Some key informants and worker respondents, while agreeing to interviews, appeared reluctant to divulge potentially negative information.

This hesitancy was particularly evident in Ranong, where a disagreement arose during a roundtable meeting between the ILO and the Ranong Fishery Association in early 2023. Consequently, the data collectors faced challenges securing cooperation. The team had to add an additional round of data collection in Ranong to ensure an adequate number of fishers and workers for the study.

3.5.3 Difficulty in Collecting Survey Data about Working Hours

Interviewers found it difficult to collect survey data on working hours. When asked how many hours they work per week on average, more than a quarter of respondents responded that they did not know. As one fisher stated:

> *“There are no working hours at sea. We don’t have working hours.” (IDI 5)*

The fluctuating nature of fishing schedules, influenced by seasons, weather conditions, the waxing and waning of the moon, and fish availability, contributed to the difficulty in estimating weekly work hours among fishers. The question was also difficult for dock workers due to the variability of boat arrivals. Workers who are paid piecemeal had difficulty in estimating their working hours because they are paid based on output rather than hours. It is possible that the substantial number of respondents who did not report weekly work hours in fact work excessive hours, and the findings of this study may, therefore, underreport the proportion of respondents who work excessive work hours.

4. Findings

The following sections present findings related to characteristics of workers, forced labor, child labor, and the supply chain. Tables show both the number of respondents in each category (i.e., the numerator, denoted by "n") and the number of respondents included in the estimate calculation (i.e., the denominator, denoted by "N"). Missing responses ("don't know" and "refused") are excluded from the denominator for all estimates, and, thus, in some cases the total number indicated in tables is less than 400. Most estimates are presented for all respondents and by province or by worksite. Tables presenting estimates by province or worksite use column percentages, meaning that they show the percentage of workers in each row among those in the province or worksite indicated in that column.

4.1 Demographic Characteristics of the Interviewed Workers

Of the 400 respondents who completed the questionnaire, 46% were working in factories, 45% were working on fishing boats, and 9% were working on the docks, mostly sorting fish once a boat docked (see Table 2). All respondents were working for an employer; none were self-employed.

There were notable differences between the type of work undertaken and the province in which the workers were located. This difference is most likely due to a combination of the non-representative sampling method that was used for the study, along with real differences between the provinces; for example, reflecting the large fish and seafood processing industry in Samut Sakhon, more than 70% of those interviewed in this province were working in a factory, a far greater proportion than in the other two provinces.

The sample included more men (65%) than women (35%). All respondents on the fishing boats were men; this work in Thailand is undertaken by men, with traditional beliefs and hiring practices restricting women from boarding the fishing boats.

> *"The boat's head is considered sacred. If, for instance, a woman was to get on board, bad things might happen, like the boat sinking or not catching any fish." (IDI 11)*

Three-fourths (74%) of dock workers were women.[4] More women than men in the sample were working in processing facilities (62% were women; 38% were men), particularly in Samut Sakhon, where nearly twice the number of women compared to men were working in the factories.

Respondents in Samut Sakhon were younger than those in Songkhla and Ranong, with more than half (53%) of respondents in Samut Sakhon in the youngest age group (aged 20–29). In Songkhla, more than

[4] The study's terms of reference requested the data collectors to survey 25 women on the docks who were sorting fish, and this influenced the gender makeup of those interviewed.

a quarter (27%) of respondents were in this age group, and in Ranong, more than a third (34%) were in this age group. The younger the respondents, the more likely they were to work in factories; 62% of those aged 20–29 did this work. For those on the boats, the trend was the opposite—the older they were, the more likely that they were doing this work; only 31% of those aged 20–29 were fishing, and 67% of those over age 50 did this work.

Of all respondents, 80% were from Burma. Burmese workers were found in all three provinces. Cambodians, the second largest group, accounting for 17% of all respondents, were found only in Songkhla. Thais accounted for less than 4% of the sample. This small proportion of Thais reflects that the organizations assisting the data collectors in gaining access to workers predominately work with migrants, as well as the assumption by the research team that migrant workers are more likely to be victims of forced labor than Thai workers, and because so few Thais undertake difficult and dangerous work within the fishing industry.

Respondents in Samut Sakhon tended to be the best educated, with a quarter completing secondary or higher education. This compared to 7% of respondents in Songkhla and 17% of respondents in Ranong. Overall, Burmese respondents were the best educated, with 55% having some secondary schooling or more. Of Thai respondents, a third had such education levels, and only 15% of Cambodian respondents reached this level of schooling. This could indicate that there are fewer opportunities in Burma for those with secondary and higher education, compared to Thailand and Cambodia.

Overall, close to 95% of respondents indicated that they had the necessary documents to work legally in Thailand, but 13% of respondents in Ranong indicated that they did not have the necessary documents. All but one of the migrants who lacked the necessary documents were from Burma. Workers on the docks were the most likely not to have the legal documents needed to work in the country—14% were irregular migrants. In factories, 7% were irregular migrants, and on boats, 2% were irregular migrants. Among workers who did not have contracts, 5% were men, and 7% were women.

Table 2. Respondent background characteristics by location

	Samut Sakhon		Songkhla		Ranong		Total		
	%	n	%	n	%	n	%	n	N
Type of work									**400**
Fishers	25.7	47	76.2	96	40.7	37	45.0	180	
Dock-workers	3.8	7	6.3	8	22.0	20	8.8	35	
Factory-workers	70.5	129	17.5	22	37.4	34	46.3	185	
Sex									**398**
Men	53.0	96	82.5	104	63.7	58	64.8	258	
Women	47.0	85	17.5	22	36.3	33	35.2	140	
Age (years)									
20–29	52.5	96	27.0	34	34.1	31	40.3	161	**400**
30–39	27.3	50	37.3	47	33.0	30	31.8	127	
40–49	16.4	30	26.2	33	24.2	22	21.3	85	
50+	3.8	7	9.5	12	8.8	8	6.8	27	
Nationality									**400**
Burmese	97.8	179	42.9	54	94.5	86	79.8	319	
Cambodian	0.0	0	52.4	66	0.0	0	16.5	66	
Thai	2.2	4	4.8	6	5.5	5	3.8	15	
Education									**399**

	Samut Sakhon		Songkhla		Ranong		Total		
	%	n	%	n	%	n	%	n	N
No formal schooling	7.1	13	7.9	10	4.4	4	6.8	27	
Preschool	1.1	2	1.6	2	1.1	1	1.3	5	
Some primary	18.0	33	50.0	63	30.0	27	30.8	123	
Completed primary	15.3	28	13.5	17	11.1	10	13.8	55	
Some secondary	33.3	61	19.8	25	36.7	33	29.8	119	
Completed second or higher	25.1	46	7.1	9	16.7	15	17.5	70	
Legal status									**399**
Have legal status to work	96.2	175	98.4	123	86.8	79	94.5	378	
Are irregular migrants	3.8	7	1.6	2	13.2	12	5.5	21	
Total (N)		**183**		**126**		**91**		**400**	

4.2 Living and Working Conditions of Respondents

4.2.1 Housing

The majority of respondents lived in rented accommodations, independent from their employers. Among workers on the docks and in the factories, one-third had their housing provided by their employer or recruiter, but nearly all could have lived elsewhere if they had wanted to; only five of the respondents were required by their employer to stay in the housing provided. All five respondents indicated that the quality of housing was good, that there were not too many people staying with them, that the housing had no major damage, and that they felt safe within their accommodation. One said that they did not have a safe place to store their belongings.

For fishers, 90% had a safe space to store their belongings, and 94% said that they had access to sleeping quarters on the boats. A small minority (3%) indicated that, while at sea, they never had access to communication with family and others. Reflecting the difficulties in contacting family members while at sea, one fisher stated:

> *"I just left a message to call the relatives. I called, but the rule of the contract is that I can't call back. I can make outgoing calls, but they said they couldn't call me back. It was difficult to access them in the middle of the sea." (IDI 11)*

4.2.2 Recruitment

Respondents were asked specific questions about the methods they used to secure their employment, including any involvement of recruitment agencies or other intermediaries. There was a diversity of recruitment channels, including both formal recruitment agencies based in Thailand and informal networks such as referrals from family or friends. Their recruitment methods included the following:

Working on Boats:

- **Formal Recruitment Agencies:** Some workers secured employment through formal recruitment agencies based in Thailand. These agencies facilitate the hiring process by connecting workers with fishing boat owners or captains who need crew members.
- **Informal Networks:** Many workers relied on informal networks, such as referrals from family members or friends who are already working in the fishing industry. These connections may help

prospective workers learn about job opportunities and make initial contacts with boat owners or crew managers.

- **Limited Formal Recruitment**: Unlike factory workers, those on boats were less likely to use formal recruitment agencies. Only two of the surveyed respondents used Thai-based recruitment agents, indicating a preference for informal recruitment channels in the fishing industry.

Working on the Docks:

- **Recruitment through Family Networks**: The research findings indicate that more than half of workers employed on docks (54%) were assisted by family members in gaining employment. This suggests that familial connections play a significant role in securing jobs in this sector. Family members who are already employed on docks may recommend or facilitate opportunities for their relatives. A greater proportion of women (63%) working on the docks used family connections to gain their employment than men (38%).
- **Limited Use of Recruitment Agencies**: Unlike factory workers, dock workers were less likely to use formal recruitment agencies. Only one of the surveyed respondents used a recruitment agent from their own country, indicating a reliance on personal networks rather than formalized recruitment processes.

Working in Factories:

- **Recruitment through Agencies**: The study highlights that factory workers were more likely to have gained employment with the assistance of recruitment agencies in Thailand. Approximately one in five respondents working in factories used the services of Thai-based recruitment agents. This suggests that formal recruitment channels play a significant role in placing workers in factory jobs. There was no difference between men and women using these agencies.
- **Use of Foreign Recruitment Agents**: Factory workers were more inclined to use recruitment agents from their own countries. About 23% of factory workers engaged foreign-based agents to secure employment in Thailand. This indicates a transnational aspect to the recruitment process, in which workers seek opportunities abroad through agencies operating in their home countries. Female factory workers were more likely to use this service (29%), compared to 14% of male factory workers.

Overall, the methods of securing employment varied across industries. Although formal recruitment agencies play a significant role in placing workers in factories, informal and personal connections are more prevalent for fishers and dock workers.

There were also differences between Burmese and Cambodian respondents in how they gained their employment. In Songkhla, the only province where Cambodian respondents were interviewed, 40% of respondents were helped by family members, compared to 32% of Burmese respondents. Burmese respondents were more likely to use friends to gain their employment (59%), compared to 49% of Cambodian respondents. A small and a similar proportion of Burmese and Cambodian respondents used recruitment agencies to gain their employment. Understanding these differences across industries and between ethnic groups can inform policies and interventions aimed at improving labor market access and opportunities for workers in various sectors.

4.2.3 Contracts

As shown in Table 3, fewer than half of respondents (42%) had written contracts for their employment. Those on fishing boats were most likely to have contracts, although only 53% had a contract. (See Appendix 6 for an example of a fisher's contract in Thai and Burmese.) None of the respondents on the docks had a contract:

> *"We have none. In fish sorting jobs, there are no contracts. We just go when they call and inform us." (IDI 9)*

Although 38% of those in factories had a contract, all but one of the factory workers who had a contract were working in a large factory. Of the 165 respondents in all work locations who had a contract, only 78% could understand their contract. This difficulty related to the language of the contract. For example, when asked if she had read her contact, one respondent stated:

> *"I didn't read it. Mostly, Thai language is used." (IDI 3)*

However, for other workers, their contracts were written in multiple languages, allowing them to understand the terms.

> *"I understand. The contract is written in Burmese for one line and then written in Thai for the next line, so I understand. I can understand it because it is also written in Burmese." (IDI 5)*

Among the 235 workers who did not have a contract, 36% had a verbal agreement with their employer, leaving just under 40% of all respondents with no written or verbal agreement.

The contracts that were shown to the researchers were a standard contract translated into different languages and produced by the Thai government. For those on the boats, the main sections of the contract included the following:

- That the payment would not be less than the minimum wage at the time of the contract signing
- That the employee had to have minimum hours of rest, not less than 10 hours per day and not less than 77 hours per week
- That the employer had to provide adequate hygienic food and drinks, toilets, medical supplies, and medications for first aid appropriate for working and living on fishing boats
- That the employer would provide tools or equipment to ensure working safely on fishing boats under the standards required by the laws and provide knowledge about working conditions and instructions on using the tools or equipment to employee prior to work

Table 3. Employment contracts

	Fishers		Dock workers		Factory workers		Total		
	%	n	%	n	%	n	%	n	N
Written contract	53.4	95	0.0	0	38.0	70	41.6	165	**397**
Could understand the contract[1]	76.8	73	0.0	0	80.0	56	78.2	129	**156**
Verbal contract[2]	42.4	36	22.9	8	34.8	40	35.7	84	**235**
No contract	27.2	49	77.1	27	40.5	75	37.8	151	**400**
Total (N)		**180**		**35**		**185**		**400**	

[1] Among those with a written contract
[2] Among those without a written contract

4.2.4 Time in the Thai Fishing and Seafood Industry and Hours of Work

The mean number of years that study respondents had spent in the fishing and seafood industry was 5.7 years (see Table 4). Fishers had been working on average for 7.2 years, compared to 6.4 years for dock workers and 4.2 years for factory workers. For this sample, fishers—the sector of the fishing industry that has received the greatest attention by researchers for forced labor—on average had stayed longest in the industry. One explanation may be the higher pay for fishers.

According to the 292 respondents who answered the question[5] regarding how many hours they were working in a typical week, excluding overtime, workers in factories worked the longest; on average, they worked 44 hours per week. This compares to 40 hours for those on fishing boats and 36 hours for those on the docks. As discussed previously, those who were unable to provide interviewers with an estimate of their working hours may work excessive hours, and, therefore, these averages may be an underestimate.

Thailand's regulations on overtime, including those specific to the fishery and seafood sector, are governed by a combination of the Labor Protection Act and specific regulations that address the unique conditions of the fishing industry. The Act outlines general rules applicable to all sectors, including maximum working hours, overtime compensation, and rest periods, and specific regulations for the fishing industry address the unique challenges and conditions of work in this sector. The document titled "Labour Protection in Fishing Work Act B.E. 2562 (2019)" outlines specific regulations for labor protection in the fishing industry in Thailand. It includes provisions for the rights and duties of vessel owners and fishers, emphasizing the need for compliance with international labor standards to prevent forced labor and ensure the safety and welfare of fishers. This legislation addresses various aspects of fishing work, including employment contracts, health and repatriation rights, accommodation standards, and the provision of welfare benefits. It aims to align the sector's practices with international standards, specifically referencing the ILO Convention No. 188 on Work in Fishing (2007), to enhance the protection of fishers and improve the fishing industry's sustainability and ethical standards (Labour Protection in Fishing Work Act B.E. 2562 (Unofficial Translation), 2019).

Table 4. Time in the Thai fishing and seafood industry and weekly hours spent working

	Fishers		Dock workers		Factory workers		Total		
	Est.	n	Est.	n	Est.	n	Est.	n	N
Number of years (mean)	7.2	179	6.4	35	4.2	185	5.7	399	**399**
Hours per week (mean)	40.4	109	35.7	19	47.8	164	44.3	292	**292**
Total (N)		**180**		**35**		**185**		**400**	

4.2.5 Payments

As a group, fishers were the best paid workers in this study. On average, they received 428 baht ($12.26 USD) per day, compared to 346 baht ($9.91 USD) for factory workers and 304 baht ($8.71 USD) for dock workers (see Table 5).

[5] As noted in Section 3.5, Limitations and Lessons Learned, this question had a high rate of nonresponse because many respondents did not know how many hours they work in a typical week.

Table 5. Mean daily wage and proportion of workers earning less than the minimum daily wage

	Fishers		Dock workers		Factory workers		Total		
	Est.	n	Est.	n	Est.	n	Est.	n	N
Baht per day (mean)	428	180	304	35	346	185	380	400	**391**
Earns less than the minimum daily wage (%)	6.1	11	65.7	23	22.7	42	19.0	76	**391**
Total (N)		**180**		**35**		**185**		**400**	

The Thai minimum wage differs by province (see Table 6). At the time of the interviews, the minimum daily wage was 353 baht in Samut Sakhon, 340 baht in Songkhla, and 332 baht in Ranong (Deloitte Legal, 2022; Reuters, 2023). Two-thirds (66%) of dock workers received less than the minimum daily wage, compared to 23% of factory workers and 6% of fishers.

Table 6. Minimum wage by province

No.	Minimum wage (baht per day)	Number of provinces	Provinces
1	330	3	Narathiwat, Pattani, Yala
2	338	4	Trang, Nan, Phayao, Phrae
3	340	16	**Ranong**, Satun, Loei, Nong Bua Lamphu, Udon Thani, Maha Sarakham, Sisaket, Amnat Charoen, Mae Hong Son, Lampang, Sukhothai, Uttaradit, Kamphaeng Phet, Phichit, Uthai Thani, Ratchaburi
4	341	5	Chainat, Sing Buri, Phatthalung, Chaiyaphum, Ang Thong
5	342	5	Nakhon Si Thammarat, Bueng Kan, Kalasin, Roi Et, Phetchabun
6	343	3	Yasothon, Lamphun, Nakhon Sawan
7	344	3	Phetchaburi, Chumphon, Surin
8	345	15	Kanchanaburi, Prachuap Khiri Khan, Surat Thani, **Songkhla**, Phang Nga, Chanthaburi, Sa Kaeo, Nakhon Phanom, Mukdahan, Sakon Nakhon, Buriram, Ubon Ratchathani, Chiang Rai, Tak, Phitsanulok
9	347	2	Krabi, Trat
10	348	3	Suphanburi, Nakhon Nayok, Nong Khai
11	349	1	Lop Buri
12	350	6	Phra Nakhon Si Ayutthaya, Saraburi, Chachoengsao, Prachinburi, Khon Kaen, Chiang Mai
13	351	1	Samut Songkhram
14	352	1	Nakhon Ratchasima
15	361	2	Chonburi, Rayong
16	363	6	Bangkok, Nakhon Pathom, Nonthaburi, Pathum Thani, Samut Prakan, **Samut Sakhon**
17	370	1	Phuket

Source: Mazars, 2024

When asked whether he received at least minimum wage, a fisher explained:

> *"Yes, I get even more than that. I got 20,000 baht per month. In a day it is almost 700 baht. … Yes. Only those who work on the boat can get that kind of salary. Even on the boat, the salary is different among workers. The salary for the supervisor, for the workers on the boat, those who handle the head of the fish nets, and those who throw and tie the fish net are different based on the types of work. But all workers get more than 10,000 baht." (IDI 5)*

Not all workers on boats were as successful as this fisher. Another reported that he was receiving 11,000 baht per month, but the payment was made only once every 5 months. The worker indicated that every time they return to shore, single men receive 1,000–2,000 baht and those with families receive up to 5,000 baht for expenses and food to get them through the 5-month period (IDI 19).

Although payments to fishers are legally required to be electronic, with payments going directly to the workers' bank accounts, some respondents indicated that wage theft still occurs. One fisher, when asked how he is paid through his bank account, stated:

> *"Should I tell you the truth? … I will tell you the truth. They have kept my passport and work permit including bank account. The supervisor paid our salary. What they try to do is that they first transfer the salary to our bank accounts and then they just withdraw again by themselves. They are abusing the law." (IDI 14)*

A greater proportion of fishers (82%) stated that their salary was meeting their basic needs, compared to 51% of dock workers and 68% of factory workers, reflecting the higher salaries that fishers were earning. Reflecting the difference in salaries between fishers and dock workers, salaries of male respondents were significantly more likely to be meeting their basic needs (80%), compared to 60% of female respondents.

For all workers, particularly in smaller processing facilities, wage theft and exploitative piece-rate systems existed. Wage theft took various forms, such as not paying for all hours worked, violating minimum wage laws, or misclassifying employees as independent contractors to avoid paying benefits. Smaller processing facilities may sometimes engage in wage theft due to fewer resources for oversight or regulatory enforcement. Although piece-rate pay can be legal, it can also be exploitative if the rates are set unfairly low, making it difficult for workers to earn a living wage. In some cases, employers may manipulate piece-rate systems to exploit workers, especially in smaller facilities in which oversight may be lacking.

4.2.6 Debt

Although fishers were on average being paid the best, they were more likely than the other workers to have had, or, at the time of the interview, to have a debt to their employer or recruiter. This was the case for 37% of fishers, compared to one in five (20%) of dock workers and 8% of factory workers (see Table 7).

Nine out of 10 (90%) of those who have had a debt felt that the terms of their debt were reasonable, and a third (34%) had already paid off their debt. Close to half of the 89 respondents who have had a debt said that nothing would happen to them if they left their employer before paying off their debt. However, 19% said that their valuable documents would be withheld from them—all but two of these were fishers.

"They keep our passport and work permit because we have debts to him. But within Thai law and international law, they cannot keep our passport. It should be with workers. Regarding this, we can sue them." (IDI 14)

An additional 17% said that they would be fined or have deductions taken from their wages if they left without paying their debt.

The interest rates on workers' debts can vary widely, depending on several factors, including the type of debt, the region or country where the workers are located, and the specific terms of the loans or credit agreements. If workers are subjected to exploitative labor practices, such as wage theft or low wages, they may turn to borrowing to make ends meet. This could include payday loans, high-interest credit cards, or loans from predatory lenders. Interest rates on such loans can often be exorbitantly high. In addition, where informal lending practices prevail, interest rates could be determined more by the bargaining power of the lender and borrower rather than through formalized rates.

Table 7. Debt

	Fishers		Dock workers		Factory workers		Total		
	%	n	%	n	%	n	%	n	N
In debt to employer or recruiter	37.2	67	20.0	7	8.1	15	22.3	89	**400**
Felt that the terms of the debt were reasonable[1]	88.1	59	100.0	7	93.3	14	89.9	80	**88**
Have paid off the debt[1]	61.2	21	42.9	3	40.0	6	33.7	30	**86**
Consequence of leaving before paying off debt[1,2]									**89**
Nothing would happen	43.3	29	71.4	5	46.7	7	46.1	41	
Documents would be withheld	22.4	15	14.3	1	6.7	1	19.1	17	
Would be fined	22.4	15	0.0	0	0.0	0	16.9	15	
Total (N)		**180**		**35**		**185**		**400**	

[1] Among those in debt to the employer
[2] Multiple responses allowed

4.2.7 Restrictions at Work

As shown in Table 8, more than 90% of respondents indicated that they could have refused their latest employment. However, around 10% of workers were unable to do so. The main reason given by these 32 cases was economic factors, with 56% indicating that work opportunities are scarce.

A small percentage (4%) stated that they were required to work for another employer by their current employer. More than half of these said that they could refuse this work if they wanted.

More than 95% of respondents indicated that they could leave their employment without negative consequences, with no important differences between fishers, dock workers, and factory workers. When asked if she could quit her job, one dock worker indicated:

"Yes, we can. We don't even have to inform them. We can just decide not to go if we don't want to. Even if they call, we can just refuse to go to work." (IDI 9)

When asked how their employer prevented them from leaving, most of the 13 respondents who believed that they could not leave responded that they did not know.

Table 8. Thai fishing industry worker treatment and inability to leave

	Fishers		Dock workers		Factory workers		Total		
	%	n	%	n	%	n	%	n	N
Free to refuse their work	93.2	165	91.4	32	91.7	165	92.3	362	**392**
Required to work for another employer	3.9	7	3.1	1	4.9	9	4.3	17	**395**
Were unable to refuse to work for another employer[1]	14.3	1	100.0	1	66.7	6	47.1	8	**17**
Could leave employment without negative consequences	94.4	168	90.6	29	96.8	179	95.2	376	**389**
Total (N)		**180**		**35**		**185**		**400**	

[1] Among those required to work for another employer

4.2.8 Hazardous Work

Respondents to the workers' survey were asked if they had been exposed to the following:

- Excessive noise without appropriate protective equipment
- Extreme heat without sufficient breaks or without access to clean water
- Dangerous chemicals without appropriate protective equipment
- Dangerous or sharp tools or heavy machinery without appropriate protective equipment
- Carrying unreasonably heavy loads
- Dust or strong fumes without appropriate protective equipment
- Being offered drugs or forced to take drugs on the boats
- Water-related hazards or boats lacking adequate safety measures that could cause risks associated with drowning, hypothermia, and injuries from handling fishing gear
- Anything else considered dangerous

More than 40% of all respondents indicated that they had been exposed to at least one of these hazards (see Table 9). More than half (52%) of fishers reported exposure to hazards, compared to 40% of dock workers and 35% of factory workers. One fisher interviewed offered a remarkable account of the dangers of working on fishing boats:

> *"For those who step onto the boat, they must be cautious in everything, whether in actions, words, or thoughts. They need to be careful in everything, whether they are sleeping or doing nothing, as anything can happen. For those who fish, the risk is constant when moving along the boat. When the boat is running, it can't be stopped, and it runs continuously. While searching for fish, the boat keeps moving. When crossing the boat or going to do personal tasks like urinating or having a meal or smoking, you have to hold onto the railing tightly because of the waves or wind. The boat tilts continuously, and the deck is slippery because it's wooden. The waves can wash over, and the deck may become wavy. Every second, you must be alert; otherwise, you could die. Don't miss a single second. No one sees you, and you don't know where your friends have gone. Going to the restroom, and no one cares because each person is doing their own*

work. Only to realize later, sitting down to eat, not finding a friend, and then discovering they've died, fallen into the water." (IDI 11)

Among survey respondents, the most common hazard was carrying unreasonably heavy loads, with 18% experiencing this hazard. A greater proportion of men than women reported carrying heavy loads. Dock workers were the most likely to report this hazard (37%), followed by 22% of fishers and 11% of factory workers.

The second most common hazard was working with dangerous or sharp tools or heavy equipment without appropriate protective equipment, reported by 15% of respondents. None of the dock workers reported this hazard, although it was reported by 23% of fishers and 11% of factory workers. The danger of machines is detailed by a fisher:

"If we compare it with other jobs, this job is dangerous. … Every job regarding fishing boats is dangerous. Because we need to work with engines and machines. However, when we are used to and have enough experiences already, it becomes less dangerous for us. We still have to work with caution about the dangers. … some people got their hands stuck inside the machines. There was a worker from Kaw-Thaung who lost three fingers." (IDI 8)

IDIs with fishers highlighted other dangers, such as getting hit by ropes:

"The dangerous part is especially the time when deploying the fish net and the time pulling it back up. Sometimes, the rope can snap while being pulled, especially when the rope can't stand the weight. The snapped rope often hits people." (IDI 5)

Workers on fishing boats typically undergo safety training and are provided with safety equipment to mitigate risks, including those associated with handling ropes. Safety training often covers various aspects such as proper use of equipment, emergency procedures, first aid, and awareness of potential hazards onboard. Life jackets are provided, but typically they are not worn. Specifically, regarding ropes, crew members may be trained on how to handle them safely to prevent injuries such as getting hit by moving ropes or getting entangled in them. This training may include techniques for securing and coiling ropes, as well as precautions to take when working with them in different weather conditions or during various fishing operations.

It is unclear how good the training is, and it is more likely to be on-the-job training, particularly for new crew members. Despite safety training and equipment provisions, accidents still occur for various reasons:

- **High-risk environment:** Working on fishing boats is inherently risky due to the dynamic and unpredictable nature of the marine environment. Rough seas, inclement weather, and the fast-paced nature of fishing operations can increase the likelihood of accidents.
- **Human error:** Even with training, crew members may make mistakes or overlook safety protocols, leading to accidents. Distractions, fatigue, drug use, or complacency can all contribute to human error.
- **Equipment failure:** Safety equipment such as ropes can fail due to wear and tear, inadequate maintenance, or unexpected stresses. Even the best-maintained equipment can fail under extreme conditions.
- **Lack of experience:** Inexperienced crew members may not fully grasp the risks associated with working on a fishing boat or may not have developed the skills necessary to anticipate and avoid accidents.

- **Communication breakdown:** Ineffective communication among crew members or between crew members and the captain can lead to misunderstandings or missed warnings about potential hazards. Often more than one language is spoken on the boats, enhancing the risk of miscommunication.
- **Unforeseen circumstances:** Despite thorough training and preparation, accidents can still occur due to unforeseen circumstances or events beyond anyone's control, such as sudden changes in weather or the actions of other vessels in the vicinity.

Another hazard for fishers is going into the water, as part of the fishing process or by accident. One fisher detailed his dangerous working conditions by saying:

> *"Whenever the propeller fan gets meshed with nets that are dropped accidentally while freezing or deploying, the supervisor told me to fix it as I have enough skills to do that kind of work. So, I took a knife and went down into the water to cut and loosen the meshed nets. This kind of work is very dangerous because I could be trapped in the nets which would cost my life." (IDI 1)*

Another fisher described suffering a mental health crisis and jumping overboard twice. His employer did not immediately return to shore so that the fisher could be treated; instead, his employer locked him up at sea until the previously scheduled return. By this time, the fisher's hand was badly infected and had to be amputated:

> *"While working at sea, I lost my mind and jumped into the water. People around me tried to restrain me. They detained me and as a result, I got injured which resulted in the amputation of my left hand. They didn't bring me back to the shore. They locked me up at sea. They only allowed me to come back to the shore when it was time to come back. As soon as we reached the shore, my hand was already smelly, and fluid was already coming out. When we reached the hospital, the doctor said my arm must be amputated so the hand was amputated." (IDI 10)*

Of the 173 respondents who had experienced hazardous work, just under a quarter (24%) said that they could not refuse to do these activities. The main reason given was that they needed the work for money (38%); 21% feared dismissal or threats of dismissal.

Table 9. Exposures to hazards

	Fishers		Dock workers		Factory workers		Total		
	%	n	%	n	%	n	%	n	N
Carrying unreasonably heavy loads	21.7	39	37.1	13	10.8	20	18.0	72	**400**
Dangerous or sharp tools or heavy machinery without appropriate protective equipment	22.8	41	0.0	0	10.8	20	15.3	61	**400**
Extreme heat without sufficient breaks or without access to clean water	13.3	24	8.6	3	11.4	21	12.0	48	**400**
Excessive noise without appropriate protective equipment	12.8	23	0.0	0	12.4	23	11.5	46	**400**

	Fishers		Dock workers		Factory workers		Total		
	%	n	%	n	%	n	%	n	N
Exposed to at least one hazard	**52.2**	**94**	**40.0**	**14**	**35.1**	**65**	**43.3**	**173**	**400**
Could not refuse to do these hazardous activities[1]	**26.6**	**25**	**14.3**	**2**	**23.4**	**15**	**24.4**	**42**	**172**
Total (N)		**180**		**35**		**185**		**400**	

[1] Among those exposed to at least one hazard

4.2.9 Work Injuries and Illnesses

Fishers had the highest proportion of workers reporting injuries or sickness as a result of their work (44%), compared to 20% of dock workers and more than a quarter (26%) of factory workers (see Table 10). The types of injury or sickness tended to be similar for each of the different work types. The one exception was injury to feet, with 14% of fishers suffering this; none of the workers on the docks or in the factories suffered this injury. The most common injuries were injuries to the back, reported by 28% of the 135 workers who had received an injury. This was followed by injuries to hands (25%), cuts or wounds (17%), and heat stroke (14%). The most common causes of injuries were tool-related injuries (23%), beriberi or Thiamine deficiency, a disease caused by a lack of vitamin B1 (10%), and machinery accidents (9%).

Table 10. Main injuries and illnesses suffered by workers

	Fishers		Dock workers		Factory workers		Total		
	%	n	%	n	%	n	%	n	N
Ever hurt or sick because of work	44.4	80	20.0	7	25.9	48	33.8	135	**400**
Type of injury/sickness[1,2]									**135**
Injury to back	32.5	26	28.6	2	20.8	10	28.1	38	
Injury to hands	25.0	20	28.6	2	25.0	12	25.2	34	
Cuts or wounds	16.3	13	0.0	0	20.8	10	17.0	23	
Heat stroke	20.0	16	0.0	0	6.3	3	14.1	19	
Injury to feet	13.8	11	0.0	0	0.0	0	8.1	11	
How was injured/sickened[1,2]									**135**
Tool related accidents	26.3	21	0.0	0	20.8	10	23.0	31	
Beri beri	15.0	12	14.3	1	2.1	1	10.4	14	
Machinery accidents	7.5	6	0.0	0	12.5	6	8.9	12	
Total (N)		**180**		**35**		**185**		**400**	

[1] Among those ever hurt or sick because of work
[2] Multiple responses allowed

4.3 Child Labor

4.3.1 Child Labor in the Thai Fishing Industry

Although this study did not focus on child labor, respondents were asked whether any children were working at their worksites. Of the 400 adults interviewed, 15 (4%) indicated that children were working at their worksites. At Samut Sakhon, 5.5% of respondents claimed that children were working at their

worksites, compared to 3% of respondents at Ranong and 2% of respondents at Songkhla. Further, as indicated in Table 11, the percentage of adults who reported children working at the worksite varied by type of worksite. A total of 7% of factory workers reported that they were working with children, but only 3% of dock workers and 1% of fishers reported working with children.[6] According to respondents, all but one child was non-Thai, with a mix of boys and girls working.

Table 11. Child work present at workplace according to adult respondents

	Fishers		Dock workers		Factory workers		Total		
	%	n	%	n	%	n	%	n	N
Children working at the worksite	1.1	2	2.9	1	6.8	12	3.9	15	**388**
Total (N)		**178**		**34**		**176**		**388**	

Data collectors observed children cutting dried fish to be presentable, sorting different types of fish based on size and quality, cleaning fish by removing scales, guts, or other unwanted parts, wrapping fish in plastic, and preparing fish for transportation. Although children were observed working in the fishing industry for drying fish, and survey respondents mentioned that there were children working with them, it was impossible to determine the exact age of the children or their work tasks. Under Thai law, children between ages 15 and 17 are permitted to work as long as it is not hazardous work (The Labour Protection Act B.E. 2541, 1998). Therefore, the researchers' observations and the survey responses suggest the presence of child labor in the industry but cannot confirm it. The only data from the study that indicate that children were under age 15 or that they were undertaking hazardous work are qualitative, and these references indicated that these children were accompanied by adults and referred to years before this study was undertaken.

> *"In the past, before PIPO cracked down, there were children. For example, if the father worked on the boat, his son did the sorting of the fish. Later, PIPO started checking, so there were no more child laborers. They check the registers carefully. If they are under 18, they are not allowed to go to sea. There was child labor a long time ago, before PIPO, they did not check often. I saw children like that." (IDI 5)*

Two of the three CSOs/NGOs who assisted in the data collection process indicated that child labor was previously of concern, but that this had changed after the yellow card had been issued and the creation of PIPO.

> *"… then it's [the existence of child labor in shrimp peeling sheds] from 2006 to 2016. It's clear that there was child labor but after 2017, during the time of Prime Minister Prayuth, who took measures to address these issues, it made the issue of shrimp aquatic animal processing facility disappear." (KII 7)*

In Ranong, it was claimed that in the past, boys would go out to sea:

[6] Although respondents were asked whether there were children working in their workplaces, it is possible that respondents interpreted "workplace" liberally. For example, it is possible that workers in one type of workplace, such as on the boats, may have included children seen in another area that they associate with their work, such as at the docks.

> *"Children aged 14–15. They used to go out to sea. Boys would go out when they were 14. This was in the past. … Nowadays, it's rare. … Because they [PIPO] check now, right? If you're not 18, you can't go out to sea. In the past, even at 14, they could go out to sea." (KII 12)*

Nevertheless, children were mentioned as still being involved in the industry. A factory worker indicated that there were children working at factory where she worked. She claimed that they were doing this work outside of school hours and that they were all girls from Burma.

> *"We do see children aged 16, 17 working at our workplace. Girls. Like when the schools close. They can only work when the schools close. The supervisor will not allow them to work during school days. They are only allowed to work during holidays." (IDI 9)*

In Ranong, one interviewee indicated:

> *"There are still cases in the fishing sector. Girls who sort fish, there are still cases." (KII 12)*

4.4 Coercion, Involuntariness, and Forced Labor

This study uses the definition of forced labor contained in ILO Convention 29: "The term forced or compulsory labour shall mean all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily." More information on the ILO definition of forced labor can be found in Appendix 2. The study operationalizes this definition of forced labor according to the guidelines provided in the 20th International Conference of Labour Statisticians (ICLS) *Guidelines Concerning the Measurement of Forced Labour* (2018).[7] According to the ICLS guidelines, "a person is classified as being in forced labour if engaged during a specified reference period in any work that is both under the threat of menace of a penalty and involuntary" (p. 2). In alignment with the ICLS guidelines, for the purposes of this study, a person is classified as being in forced labor if he or she engaged in any work that is both under the threat of menace of a penalty and involuntary.

The sections that follow describe the indicators of coercion and involuntariness experienced by respondents and provide the percentage of sampled workers who have experienced forced labor according to the definition used in this study.

4.4.1 Coercion

Of the 400 respondents, 18% experienced coercion. A total of 24% of fishers had experienced coercion, compared to 17% of dock workers and 11% of factory workers. The most common indicator of coercion for was "debt bondage or the manipulation of debt," with 9% of those surveyed reporting this indicator (see Table 12). A fisher explained that his low pay leaves him without enough money to cover all his expenses. He described having to borrow money from his employer:

> *"For me, I borrowed 1,000 baht [$28 USD] from him [my supervisor] when my wife gave birth to my son. In three years, the debt became 70,000 baht [$1,964 USD] with interest." (IDI 14)*

[7] In 2024, ILO released the third edition of *Hard to see, harder to count: Handbook on forced labour surveys*. This document provides "an updated measurement framework" that is based on the ICLS guidelines (p. ix). The document was not yet available during the planning or analysis phases of this study, and therefore the forced labor framework for this study is drawn exclusively from the 2018 ICLS indicators.

Respondents in Songkhla experienced this form of coercion the most (21%), compared to 10% in Ranong and only one individual in Samut Sakhon. Cambodian respondents predominately faced this problem, with 20% indicating having experienced debt bondage, compared to 7% of Burmese respondents and none of the Thai respondents. In addition, debt bondage was more common among fishers (17%), compared to 6% of dock workers and 2% of factory workers.

The second most common indicator of coercion was abuse of workers' vulnerability through threats of dismissal or deportation, with 8% of respondents being victims of this. An example of this is a fisher who had a significant workplace injury and who was threatened with dismissal when he requested leave to heal.

> *"At the beginning, I talked to the employer when the boat entered the port the first time regarding my hand injury. I requested 10 days of leave. They didn't allow me that time. … This time, I told them again that my hand is painful. I need a rest because I couldn't even bend it anymore. … I went to tell the employer that I couldn't do it anymore. The employer said that if you want to rest then you can rest permanently [be dismissed]." (IDI 19)*

Being threatened with dismissal (4.5%) or threatened with exclusion from future work (3%) were the most frequent forms of abuse of vulnerability. There was no real difference between those who experienced abuse of vulnerability and those who did not, regardless of their location, their sex, their age, which country they were from, how long they had been in the country, their level of education, the type of work they were doing, or whether they were legal or irregular migrants.

The third most common form of coercion was the withholding of respondents' valuable documents, with 6% of respondents reporting this indicator. This was most common in Songkhla (14%), compared to 4% of respondents in Ranong and 1% of respondents in Samut Sakhon. This issue mostly affected fishers (12%), compared to one dock worker and one factory worker. A fisher commented:

> *"They keep our passports and work permits because we have debts to him [our employer]. But within Thai law and international law, they cannot keep our passports. They should be with us workers." (IDI 14)*

Withholding of wages or other promised benefits was the fourth most common form of coercion, with 6% of respondents indicating that this had happened to them. A processing factory worker explained:

> *"The supervisor in the HR room said I will get paid 35 baht/hour for this job. Our boss doesn't contact us directly, but the HR manager does contact us in person saying we get paid for once a week or once every 10 days. But they didn't give me any money even though we already worked for 10 days. Even till now, they didn't give it to me." (IDI 7)*

This issue was again more common among those in Songkhla, among fishers, and among men. A total of 18% of Cambodian respondents had experienced this, compared to 3% of Burmese respondents and none of the Thai respondents. Further, respondents who had received no education were more likely to have had their wages or other promised benefits withheld, compared with those with some level of education.

Among all workers, 18% experienced at least one form of coercion. This was the case for a greater proportion of those in Songkhla (28%), compared to 10% of those in Samut Sakhon and 18% of those in Ranong. Just under a quarter (24%) of fishers experienced at least one form of coercion, compared to

17% of dock workers and 11% of factory workers. Most likely reflective of the coercion experienced by fishers, a greater proportion of men (22%) than women (9%) experienced at least one form of coercion.

Table 12. Indicators of coercion among all workers

	Fishers		Dock workers		Factory workers		Total	
	%	n	%	n	%	n	%	n
Debt bondage or manipulation of debt	16.7	30	5.7	2	2.2	4	9.0	36
Abuse of workers' vulnerability[1]	5.6	10	17.1	6	9.2	17	8.3	33
Dismissal or threats of dismissal	2.2	4	11.4	4	5.4	10	4.5	18
Exclusion from future employment	2.2	4	5.7	2	3.2	6	3.0	12
Would be arrested or prosecuted	0.6	1	0.0	0	0.0	0	0.3	1
Denial of rights or privileges	0.6	1	0.0	0	1.1	2	0.8	3
Withholding of valuable documents	12.2	22	2.9	1	0.5	1	6.0	24
Withholding of wages or other promised benefits	10.0	18	0.0	0	2.2	4	5.5	22
Threats or violence against workers or workers' families	0.6	1	0.0	0	1.1	2	0.8	3
Restrictions on workers' movement	1.1	2	0.0	0	0.0	0	0.5	2
Experienced at least one indicator of coercion	**23.9**	**43**	**17.1**	**6**	**11.4**	**21**	**17.5**	**70**
Total (N)		**180**		**35**		**185**		**400**

[1] Some workers experienced multiple types of abuse of vulnerability through denial of rights or privileges, threats of dismissal or deportation (includes exclusion from future employment, financial penalties).

4.4.2 Involuntariness

Among all workers, more than a third (34%) experienced at least one form of involuntariness. This was the case for more than half (51%) of respondents in Ranong, compared to just more than a quarter (26%) of respondents in Samut Sakhon and a third (34%) of respondents in Songkhla. Notably, 71% of dock workers had suffered at least one form of involuntariness, compared to a quarter (25%) of fishers and 36% of factory workers.

The most common form of involuntariness was "very low or no wages," defined for this study as below minimum wage, with 19% of respondents experiencing this indicator (see Table 13). When asked about her wages, a factory worker said:

> *"The salary is not sufficient for us to eat. They don't even pay for the social security fee. We have to pay 500 baht monthly for that." (IDI 16)*

Low earnings were most common among workers in Ranong, accounting for 44% of all respondents in this province. This compares to 12% of respondents in both Samut Sakhon and Songkhla. Of note, Thai respondents experienced this most often, with 27% receiving less than the minimum daily wage, compared to 21% of Burmese respondents and 7% of Cambodian respondents. Two-thirds (66%) of dock workers received less than the minimum daily wage, compared to 23% of factory workers and 6% of fishers. A third of all interviewed women (32%) received a low wage, compared to 13% of men interviewed. Further, close to half of irregular migrant workers (48%) received less than the minimum daily wage, compared to 18% of migrant workers who had permission to work in Thailand.

The second most common form of involuntariness was working in hazardous conditions for which workers had not consented, with 11% of respondents reporting this indicator. Cambodian respondents

were more likely to have experienced this indicator, with more than one in five experiencing involuntary hazardous work, compared to 9% of Burmese respondents and 7% of Thai respondents. When asked whether he could refuse to do hazardous work, a fisher replied that he could not refuse due to potentially fatal consequences.

"I witnessed someone refusing directly, but they got thrown into the sea and died." (IDI 11)

Table 13. Indicators of involuntariness among all workers

	Fishers		Dock workers		Factory workers		Total	
	%	n	%	n	%	n	%	n
Work for very low or no wages	6.1	11	65.7	23	22.7	42	19.0	76
Work in hazardous conditions to which the worker has not consented	13.9	25	5.7	2	8.1	15	10.5	42
Work with no or limited freedom to terminate work contract	3.9	7	5.7	2	2.2	4	3.3	13
Work of different nature without consent	1.7	3	5.7	2	2.7	5	2.5	10
Work for other employers without agreement	0.6	1	2.9	1	3.2	6	2.0	8
Living in degrading conditions imposed by the employer, recruiter	2.8	5	0.0	0	0.0	0	1.3	5
Work for a longer period of time than agreed	1.1	2	0.0	0	0.5	1	0.8	3
Experienced at least one indicator of involuntariness	**25.0**	**45**	**71.4**	**25**	**35.7**	**66**	**34.0**	**136**
Total (N)		**180**		**35**		**185**		**400**

4.4.3 Forced Labor

As noted previously, 18% of those interviewed experienced at least one indicator of coercion, and 34% experienced at least one indicator of involuntariness. To be considered as a victim of forced labor, under the guidelines used for this study, a worker had to have experienced both elements. In this study, 47 respondents, 12% of the sample, met the criteria for forced labor (Table 14). The rate of forced labor was higher among sampled men than women; 14% of men experienced forced labor, compared to 8% of women. The rate of forced labor was similar by age groups. Twelve percent of both Burmese and Cambodian respondents experienced forced labor, and none of the small sample of Thai respondents (n=15) experienced forced labor. The rate of forced labor was highest among dock workers (17%), followed by fishers (13%) and factory workers (10%). This comparison must be interpreted with caution, however, due to the small number of dock workers (n=35).

Table 14. Characteristics of respondents experiencing forced labor

	%	n
Sex		
Men	14.0	36
Women	7.9	11
Age (years)		
20–29	12.4	20
30–39	11.0	14
40–49	11.8	10
50+	11.1	3
Nationality		

	%	n
Burmese	12.2	39
Cambodian	12.1	8
Thai	0.0	0
Type of work		
Fishers	12.8	23
Dock workers	17.1	6
Factory workers	9.7	18
Total experiencing forced labor	**11.8**	**47**
Total (N)		**400**

Figure 3 presents the most common combinations of coercion and involuntariness indicators reported by workers who experienced forced labor. Nearly one-third (30%) of workers experiencing forced labor reported both an inability to refuse hazardous work and some type of abuse of vulnerability. Nearly one-fourth (23%) reported very low wages and some type of abuse of vulnerability. The other most common combinations of coercion and involuntariness are as follows:

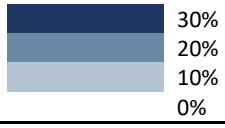
- Inability to refuse hazardous work accompanied by debt bondage or manipulation of debt (17% of those experiencing forced labor)
- Inability to refuse hazardous work accompanied by withholding of wages or other benefits (15% of those experiencing forced labor)
- Inability to refuse hazardous work accompanied by withholding of valuable documents (13% of those experiencing forced labor)
- Very low wages accompanied by debt bondage or manipulation of debt (11% of those experiencing forced labor)
- Limited freedom to terminate work contract accompanied by some type of abuse of vulnerability (11% of those experiencing forced labor)
- Being required to work for another employer without agreement accompanied by some type of abuse of vulnerability (11% of those experiencing forced labor)

All other combinations occurred among fewer than 1 in 10 workers experiencing forced labor.

Figure 3. Heatmap of coercion and involuntariness indicators among respondents who experienced forced labor

		Indicators of Coercion					
		Abuse of workers' vulnerability	Debt bondage or manipulation of debt	With-holding of valuable documents	With-holding of wages/ benefits	Threats or violence	Restrictions on workers' movement
Indicators of involuntariness	Could not refuse to do hazardous work	29.8%	17.0%	12.8%	14.9%	2.1%	2.1%
	Very low or no wages	23.4%	10.6%	8.5%	2.1%	0.0%	2.1%
	Limited freedom to terminate work contract	10.6%	2.1%	8.5%	6.4%	0.0%	0.0%
	Required to work for other employer without agreement	10.6%	2.1%	2.1%	6.4%	2.1%	0.0%

Work of different nature without consent	2.1%	4.3%	4.3%	2.1%	0.0%	0.0%
Work for a longer period of time than agreed	2.1%	2.1%	0.0%	2.1%	0.0%	0.0%
Abusive overtime requirements not previously agreed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



4.5 Policy Change

"In the past, the government didn't oversee it [forced labor], they didn't pay much attention to it. Once they received the yellow card, they started to dance." (KII 17)

The Thai response to the EU yellow card has been extensive. As noted in Section 2.2, Evidence of Forced Labor, the Thai government undertook a range of changes, the most important of which were the ratification of the ILO Forced Labor Protocol (P29), the amendment of the 2008 Anti-Trafficking in Persons Act three times (2015, 2017, and 2019); and the ratification of the ILO Convention on Work in Fishing (C188).

In addition, the introduction of the 2015 Fisheries Act has changed the Thai fishing industry.[8] PIPO was introduced as part of this Act, resulting in important structural changes to the fishing and seafood industry. Although there is room for further improvements, both workers and stakeholders indicated that PIPO has positively influenced labor and fishing practices.

Under the PIPO system, fishing vessels are now tracked using the Vessel Tracking System (VTS). The VTS monitors vessels' movements to determine, among other aims, whether they enter restricted fishing areas, how long they are at sea, how long they have their nets out, and when they are about to return to port. Built into the VTS is an algorithmic risk assessment system, called the Common Risk Assessment, under which each vessel is assessed according to a number of metrics—such as past violations of reporting requirements, degree of recent turnover in the vessel's crew, and past violations of protected area regulations—believed to predict the likelihood that the vessel will be involved in illegal acts. The VTS risk assessment has three levels: normal, under surveillance, and risky. This information, along with data about when the vessel was last checked by PIPO staff, helps determine which vessels will be checked.

"The system will automatically analyze the incoming vessel and then automatically give an order for inspection to us. After that, we will go check it per instruction."

—Government official (KII 2)

[8] Recent reports suggest that the Thai government may relax its efforts to tackle forced labor in the fishing industry, as NGO representatives claim that draft legislation being developed would drop the necessity of a crew list when boats leave the docks and enable the transfer of workers and products from one boat to another at sea (Newey, 2024).

The check is undertaken by a team, with each member having distinct duties. The extensiveness of the inspection done during the check is reportedly tied to the risk classification assigned to the vessel by the VTS.

> *"The first responsible organization is the department of fisheries—they take photos of the vessel, its ID, its signals, its title, and ID registration plate for verification."*
>
> *—Industry representative (KII 26)*

In addition to tracking ships, as part of PIPO, government officials conduct random checks of fishing boats as they enter and leave the ports. These checks were observed during data collection for this report in Samut Sakhon, Songkhla, and Ranong. According to one of the government officials interviewed, PIPO's goal at Samut Sakhon was to check seven boats each day (KII 26). This would have been around 75% of all boats, as based on PIPO estimates of boat arrivals and departures. However, research observations would indicate that this is an overestimation.

Those on the vessel are checked using what one of the government officials interviewed called, "the face-scan method," namely an iris scan. Fishers are lined up on the dock with their work documents, such as their seamen or seabooks or passports, to determine whether they are allowed to work on the boats. The fishers' faces are scanned to ensure that they match the database of those who are meant to be on the boat (KII 1). Contracts are also checked, along with payment slips. Two to three fishers are interviewed, particularly if there is an important concern. For example, PIPO would determine whether there were any missing workers who set sail but did not return. During the check, each worker wears a lifejacket from the boat to prove that there is one for each worker.

However, when asked if they had lifejackets on his boat, one fisher stated:

> *"We had them, but we couldn't wear them while working. It was more like we just had them. It was similar to when the naval forces came to inspect the boat, checking if there were safety measures, gas cylinders, oxygen cylinders, life jackets, rubber rings, and such. They had them for a long time. When their boats encountered naval forces, they showed them for safety inspections. But while working, we wore long pants and long-sleeved shirts, that's it." (IDI 11)*

While the workers are being checked, a PIPO staff member boards the boat and checks the condition of the boat and that it meets standards to be at sea. If anything substandard is found, this increases the risk level of the boat for the next random check.

> *"[They check for…] safety measures, fire extinguishers, SOS kits, and so on. The inspector from the Department of Fisheries will check all the fishing gear."*
>
> *—Government official (KII 2)*

The boat's logbook is also checked during this process. The logbook is filled out by one of the crew while at sea, indicating where they fished and for how long. This information is cross-checked with the VTS, allowing PIPO staff to determine whether there are any discrepancies.

> *"Yes, they will write the coordinates here in the logbook. This step is an official's work. Officers can check whether the coordinates are logged or not, given that the VTS will also show that information. The officers will key in the two coordinates into the system to find out discrepancies. Right, if they match, it means that the logged coordinates keyed in the system is correct after verification by VTS. See, we have an approach for verification."*
>
> *—Government official (KII 2)*

Further, the actual catch is checked to determine if the boat had been overfishing, as well as the types of fish caught. If the catch is more than 20% of what is indicated by the logbook, it is confiscated, and the boat is impounded. As one government official, referring to the boat owners, stated:

> *"They hate us. But as legal officers, we have to explain the law. They complain to me about the rules, and I wish to say that I am not the person who launched this, but they keep on blaming me as they don't know who to complain to. They complain about how these rules were launched saying it's not reasonable."*
>
> *—Government official (KII 6).*

PIPO staff and the boat owners who were interviewed for this study indicated that PIPO has transformed practices on the boats. An official who inspected boats before the creation of PIPO claimed that previously he was unable to get any cooperation from the boat owners. His requests for information about numbers of workers and their names or wages were unanswered. Until PIPO, even getting the name of the boat and learning who the owner was, was problematic.

> *"But when the PIPO center was set up, those boats are ducks on a pond. Therefore, we can get in for inspection. We know everything from the start of an inspection, all of their information. I have the PIPO application which collects data on all of the boats and no boat can sneak through the system."*
>
> *—Government official (KII 6)*

As indicated by interviews with workers, some were using PIPO to make complaints about the working conditions on the boats. One fisher (IDI 8) described how he and three other coworkers made a complaint to PIPO. Asked if PIPO intervened after this complaint, he said:

> *"Yes, they did. He [the employer] was really afraid of PIPO. Now, they are always checking. I think our employer is paying those police. He is really afraid of them. If they don't allow him to go out [to leave the port], he can't go out. There is also a Burmese translator in PIPO. If the police ask him [the employer] to come, he has to come. If the employer is summoned to the office, his mad face becomes a scary white face. PIPO warned him not to even shout or swear at the workers. The police asked 'Do you shout to the workers? Is there a toilet for the workers?' If there is not, the employer has to build a toilet immediately. It cost around 30,000 baht for the toilet. Do they provide life jackets? They checked and inspected everything and took photos for records." (IDI 8)*

Despite evidence that PIPO has had positive impacts, many workers reported that they were unwilling or unable to report employers to PIPO, despite working under conditions that violate the law. Some workers, such as one fisher interviewed, were reluctant to make a complaint to PIPO because of beliefs that PIPO is corrupt or ineffective:

> *"PIPO is corrupted. Because they are corrupt, they don't really do anything officially. If we report to them, they act as if it is nothing to do with them." (IDI 14)*

Another interviewed fisher indicated that he was unwilling to report his employer because he felt that it would lead to his own death.

> *"We don't dare to report them. They have money [whispering]. […] If we go to report, it is like we are digging our own grave. This is usual. They can hire someone and even kill you [whispering]." (IDI 19)*

A number of the key informants for this study were critical of aspects of the PIPO system. They felt that the system had become a show:

> *"Random inspections mean they randomly inspect sometimes, but when they create an image, there will be arrangements. Today, there will be a procession to conduct inspections, and they will just make a phone call to inform the known ships to come for inspection. They create an image to show their strength."*
>
> *—CSO lead (KII 7)*

Many also felt that the inspections were becoming less frequent:

> *"However, when it comes to labor violations, I think it still exists because PIPO's inspections have become less frequent. They don't inspect every day; it's merely a nominal presence. So, there is speculation that the EU might issue a yellow card again, maybe for another round, as the intensity of inspections has decreased."*
>
> *—CSO lead (KII 7)*

A report by the Fisher Rights Network (undated) indicates that vessel inspections fell from 44,322 in 2019 to 12,810 in 2022. The EU yellow card was lifted in 2019; however, this coincided with the onset of the COVID-19 pandemic. Therefore, research is unable to draw definitive conclusions about the cause of a drop in inspections. Future trends of inspections rates will allow for more definitive conclusions.

As mentioned previously, research did uncover allegations that fishers were not being paid electronically, despite PIPO inspections. As per CSO representatives interviewed, some boat owners would pay fishers' wages into their bank accounts but would then withdraw the money with the workers' ATM cards, provide the withdrawal slips to the workers, and then pay the workers as they have in the past. PIPO inspectors would see the withdrawal slips and believe that the system was working (KIIs 7 and 12).

4.6 Private Enterprise and Efforts to Address Labor Abuse

Large Thai private enterprises in the fishing industry have taken proactive measures to address forced labor and child labor within their industry. Following 2014 accusations of widespread slavery, trafficking, and violence on fishing boats and in processing factories, the industry needed reform. Thai Union was one of the first to adopt an ethical recruitment policy in 2016 by working with a migrant workers network. This initiative spawned a host of similar programs to prevent human rights abuses (Wongsamuth, 2019).

Since 2016, many Thai enterprises have implemented codes of conduct; undertaken regular audits and monitoring of their suppliers to ensure compliance with labor standards and detect signs of forced labor; invested in technologies such as blockchain traceability systems to improve transparency and traceability; and collaborated with government agencies, industry associations, and NGOs to address forced labor collectively.

According to Thai Union, it has taken a zero-tolerance approach for human rights violations by stipulating protocols on employee welfare, benefits, wages, age, the right to freedom of association, the right to collective bargaining, and non-negotiable frameworks for health and safety (Thai Union, 2021).

However, the efforts of Thai Union and other large enterprises to counter forced labor are not without their critics. For example, one NGO worker interviewed for this study saw these efforts as being good business practices that smaller companies are unable to reproduce.

> *"Moreover, the trend in Human Rights Due Diligence is shifting towards being mandatory; it was voluntary before. If you don't start adapting today, you will lose opportunities to compete in the market. For instance, Thai Union has already adjusted rapidly. They now have a Testability system in place, complying with the new legal requirements. However, smaller companies are still far from catching up."*
>
> *—NGO worker (KII 15)*

A small business representative argued that large companies like Thai Union had too much influence in the Thai government, at a cost to smaller enterprises.

> *"However, the government blames us because it's a trade game, right? They blame us so that big capital groups like Thai Union and Ocean Foods or CP can export. I even say that the government is controlled by these big capital groups. No matter how much we speak, the government doesn't listen, right?"*
>
> *—Small business representative (KII 13)*

It should also be noted that efforts to address forced labor and ensure compliance with labor standards have not been universally applied across all enterprises. Not all Thai enterprises have implemented robust measures to combat forced labor, despite undertaking codes of conducts, audits, and claims of monitoring their supply chains. For these companies, their efforts have often prioritized form over results (Human Rights Watch, 2018a).

4.7 Trade Unions

A possible policy change that could improve the working conditions within the fishing and seafood industry would be to empower migrant workers to take an active role in unions. In Thailand, migrant workers are barred from establishing their own unions or holding leadership positions in unions established by Thais. The country has not ratified either ILO Convention 87 or 98—the two core labor conventions governing workers' fundamental rights to association, organizing, and collective bargaining—despite national and international labor movement's demands over more than four decades (Rogovin, 2020).

It is estimated that approximately only 25% of Thailand's workers are guaranteed full rights to freedom of association, and collective bargaining under law and the trade union coverage is around 2%, among the lowest of any country in the world. Nevertheless, there are initiatives and organizations in Thailand in which Thai-led fishers or seafood unions include migrant workers as members, albeit within the constraints of Thai law. The Fishers' Rights Network, established by the International Transport Workers' Federation in 2017, is an example of an organization that has been actively organizing migrant fishers in Thailand. Although it is not a union in the traditional sense due to legal restrictions, it acts in a similar manner by advocating for better wages, working conditions, and social security benefits for fishers. It has also engaged in distributing medicine and first aid kits and raising awareness about the benefits of trade unions among fishers (Rogovin, 2020).

Given this void, NGOs and CSOs have taken on roles that traditionally would have been undertaken by trade unions. These organizations are not membership based and do not rely on member mobilizations

or collective actions. Their funding tends to be project based. Workers sometimes seek help from NGOs when they feel they have been exploited. For example, the Labour Protection Network in Samut Sakhon, Stella Maris in Songkhla, and SAFWA were all providing a range of services to workers in the fishing and seafood industry, some of which may be provided by trade unions in other settings. They provided learning opportunities, such as teaching Thai to migrants and providing information on workers' rights; they intervened with boat and factory owners when disputes with workers developed; they hired lawyers if needed; and they ran campaigns that lasted years, ensuring that workers gained compensation when unjustly treated by their employers.

4.8 The Supply Chain

4.8.1 Location of Labor Exploitation in the Supply Chain

The study found indicators of forced labor at multiple points in the supply chain: on fishing boats, during sorting marine catch at docks, and in domestic processing factories. Indicators of forced labor were not consistently reported. They were only reported by some workers on some boats, at some docks, and in some factories. Not all boats, docks, or factories had forced labor, and in those that did, not every worker interviewed in that location reported experiencing indicators of forced labor.

The 180 fishers who were interviewed for this study worked on 64 different boats. Of these boats, 19 had cases of forced labor—2 were in Samut Sakhon, 13 were in Songkhla, and 4 were in Ranong (Table 15). As noted, although some of the fishers on these 19 boats indicated that they were working under conditions of forced labor, other fishers on the same boats did not. Of 53 trawler boats, 17% had cases of forced labor, and of 91 purse seine boats, 13% had cases of forced labor. In addition, interviews took place at 16 different piers, and 6 had cases of forced labor—2 in Samut Sakhon, 1 in Songkhla, and 3 in Ranong. In total, eight dock workers experienced forced labor at these six piers. In addition to fishers and dock workers, 18 factory workers reported experiencing forced labor. Of these 18 workers, 12 worked in factories in Samut Sakhon, 4 in Ranong, and 2 in Songkhla. These 18 cases of forced labor occurred at 5 locations in Samut Sakhon, 2 locations in Ranong (including 1 shrimp factory), and 2 locations in Songkhla. Taken together, this information highlights issues of forced labor throughout the domestic supply chain of all three locations where data collection occurred.

Table 15. Cases of forced labor by types of fishing boats

Type of boat	Distribution of sample of fishers by type of boat		Percentage of sample experiencing forced labor by boat type	
	%	n	%	n
Trawler	29.4	53	17.0	9
Pair trawler	7.8	14	7.1	1
Purse seine	50.6	91	13.2	12
Squid boats	1.1	2	50.0	1
Other	11.1	20	0.0	0

4.8.2 Overview of Seafood Production and Processing in Thailand

Thailand's robust seafood processing industry is sustained by commercial fishing through numerous large-scale ports in the Gulf of Thailand and the Andaman Sea, and by imports of seafood to supplement declining annual catches. The Thai fishing industry supports seafood processing facilities that produce minimally processed and semi-processed seafood and various value-added goods. These goods are predominantly exported to meet global demand, led by the export of canned tuna (UNCOMTRADE,

2023). Although 75% of Thailand's marine fish capture (excluding shellfish) is used for human consumption, the remaining 25% is used for manufacturing fishmeal for animal feed (USDA FAS, 2018). Fishmeal animal feed is used as feedstock to support shrimp aquafarms and poultry and swine production, and it is an important feedstock for the pet food industry, both as a direct input and as animal feed to animals used in the production of pet food. This study focuses on the downstream use of fishmeal by shrimp aquafarms and the pet food industry. Both sectors are important to the Thai economy, but the explosive growth of the pet food sector has resulted in a pet food export value that is three times that of shrimp exports. The top destination markets for pet food and shrimp are provided in Appendix 5, Figure A-1.

4.8.3 Domestic Seafood Production

Nearly every Thai province is involved in the fishing and seafood industry. This activity is organized by official government statistics into two main categories: captured and cultured seafood. Captured seafood includes marine and inland capture, and cultured seafood consists of coastal and freshwater aquaculture. In 2022, marine catch accounted for more than half of Thailand's domestically procured seafood (see Table 16) (Department of Fisheries, Thailand Ministry of Agriculture and Cooperatives, 2023)

Table 16. Domestic seafood catch, by source

Year	Total (1,000 tons)	Captured		Cultured		Value (Million USD)[9]
		Marine	Inland	Coastal aquaculture	Freshwater aquaculture	
2020	2,600.2	1,472.0	116.8	556.8	454.6	4,761.79
2021	2,402.9	1,299.5	112.6	540.1	450.7	4,775.56
2022	2,386.7	1,279.8	105.7	534.2	467.0	5,049.93

Source: Fisheries Statistics of Thailand, 2022

[9] Conversion rate from Baht to USD based on official exchange rate, January 12, 2024

Thailand's total national marine seafood catch has declined sharply over the last two decades, falling from a peak annual catch of 4,118,500 tons in 2005 to 2,386,700 tons in 2022, a decrease of just over 42%. This reduction in absolute catch volume is in part due to a longstanding decline in the relative productivity of fishing efforts in the area. The catch per unit effort[10] in the waters around Thailand has declined continuously since 1961 (Achavanuntakul et al., 2014; Environmental Justice Foundation, 2023). The reduction in catch and productivity is due to a variety of factors, including decades of IUU fishing, overfishing by commercial boats, and environmentally destructive fishing practices such as bottom trawling that have reduced the aquatic animal supply.

Thai trawler vessels use nets that are dragged near or along the seafloor; these vessels can indiscriminately catch a large number of fish, including juveniles of economically important species. As a result, they are considered to have a damaging impact on marine ecosystems. As of 2020, even though trawlers represent only a small fraction (approximately 5%) of the fishing vessels in Thailand, they are responsible for almost 50% of total marine catch landings (Environmental Justice Foundation, 2023).

Thai fishing vessels
Source: ICF

The striking historical drop in catch volumes, as well as several high-profile reports of both environmental destruction and labor exploitation, led to an international outcry over Thai fishing industry environmental and labor standards (Clark & Longo, 2022; Wilhelm et al., 2020). International trade sanctions and increased domestic government regulation resulted in a reduction in the number of commercial fishing boats and some improvements in fishing practices.[11] Most notably, the EU yellow card issued in 2015 ushered in a dramatic increase in Thai government regulation of labor

[10] Catch per unit effort is a measure of the amount of a given target species that can be captured with one standard unit of fishing effort (often measured in kilograms per hour). Sustained reductions in "catch per unit effort" generally indicate a decrease in the overall population of a given stock, often due to overexploitation (Panayotou, 1982).
[11] In 2022, there were 9,500 registered commercial fishing boats, down from a high of 13,289 in year 2015. The number of artisanal fishing vessels has not followed a similar pattern of decline but has fluctuated greatly. In 2015, there were 33,203 which fell to 21,460 in 2019, before rebounding to 50, 639 in 2022 (Thai Fishing Vessels Statistics, 2022).

practices of fishing vessels and fisheries legislation in the form of the 2015 Fisheries Act.[12] To counter overfishing, the Thai Fishing Department bans commercial fishing in different parts of the Thai exclusive economic zone for up to several months at a time. For example, as of the middle of February 2024, a three-month commercial fishing ban was initiated in the Gulf of Thailand to protect spawning mackerel (Thai PBS World, 2024).

4.8.3.1 Imports of Seafood into Thailand

As Thailand has seen a reduction in domestic marine catches, it has increased imports of seafood to meet the demands of its robust seafood processing industry. Fresh catch from Burma, Indonesia, and Malaysia are imported at the fishing piers, and while subject to import regulations, ships carrying this seafood are not required to follow the more stringent labor and environmental laws that apply to Thai-flagged vessels. There are reports that some Thai commercial shipping vessels elected to switch their vessel registration from Thailand to nearby Southeast Asian countries (Burma, Malaysia, and Indonesia) to avoid Thai government regulations, as illustrated through the following quotes from industry representatives:

> *"There are many reasons. For example, if it's a Thai-flagged ship, it must have an observer reporting the movements of the ship. There are expenses involved, and it's a significant burden. Most importantly, the ship's movement must be monitored in real-time, by what we call the Vessel Monitoring System (VMS). The ship must report to Thailand within 24 hours. Since we are fishing in foreign waters, it's practically impossible."*
>
> *—Industry expert (KII 17)*

> *"They are Thai ships, but they have changed their nationality to Malaysian."*
>
> *—Industry representative (KII 25)*

Under this practice, seafood sold by these formerly Thai-flagged vessels is recorded as a foreign import. Although research was unable to quantify the volume of catch that is sold under former Thai-flagged vessels, the trend is important to highlight because it allows for a more nuanced understanding of marine catch import statistics and outlines the challenges of regulating the international fishery sector.

4.8.4 Domestic Sale of Marine Catch

Fishing vessels, whether foreign or domestic, that dock at Thai piers mark the first step in the seafood industry supply chain. Typically, boat workers will do a rough sort of marine catch at sea to separate out trash fish, but once in port, the catch is further sorted by quality, species, and size. The sorting on shore can be done by either hired workers or boat workers, depending on the owner's arrangements. Trash fish are separated out, to be sold for further processing into fishmeal for animal feed.

Upon docking, domestic fishing vessels are required to undergo random inspection by the PIPO control center. Foreign vessels also undergo additional inspections, pay import fees, and file customs documentation. The importation of seafood from international vessels is documented through Import Movement Documents.

[12] In 2016, the Fisheries Act also introduced a traceability system to regulate migrant workers in the fisheries sector. As per the new regulations, seafaring migrant workers are mandated to register with the seabook database and apply for a seabook to work on a specific fishing vessel.

The fish is sold according to its species and quality through a complex and varied marketing system in which catch can be sold through auctions, direct factory sales, or independent brokers. The variation in sales practices for each port surveyed in this study is outlined in this section. Through these different trading venues, buyers aim to purchase a particular type of seafood, and independent brokers tend to specialize by the type of marine catch. As one private sector actor explained:

> *"…Each boat has dedicated merchants, and they sort fish that would go to factories for filleting, like mackerel, red snapper, barramundi, and threadfin fish. Other types like squid and crabs are collected by different merchants."*
>
> *—Industry representative (KII 25)*

Larger commercial wholesale buyers purchase seafood at large markets such as Thai Seafood Market (Talad Talay Thai) in Samut Sakhon,[13] to distribute to downstream vendors and consumers across Thailand. This system plays a crucial role in the supply chain, efficiently connecting seafood from a variety of ports to consumers and industry throughout the country.

> *"The Thai Seafood Market is a major marketplace that sells and auctions both raw and processed fish and seafood products. These products are distributed throughout the country by brokers. These brokers participate in fish auctions at the Mahachai Fish Marketing Organization and then resell to smaller traders. This seafood market serves as a hub for various seafood products, either in their raw form or minimally processed into items like salted or dried fish. The market offers an array of seafood, including anchovy, white scale fish, squid, fish snack, three-taste fish, and black kingfish, among others."*
>
> *—Seafood processing business owner (KII 4)*

> *"… because the boats catch a variety of fish, and the factories only use certain types. The Thai Seafood Market has vans coming from all over Thailand. It's the largest market in the country, and there's another one in Mae Klong."*
>
> *—Industry representative (KII 9)*

Example of fish snack products (dried seafood shop in Samut Sakhon, 2024)
Source: ICF

[13] The largest seafood market in Thailand, the Thai Seafood Market (Talad Talay Thai) in Samut Sakhon, is a relatively new wholesale market (*Mahachai Market-Municipal Port*, 2020).

4.8.4.1 Description of Fish Markets in Surveyed Ports

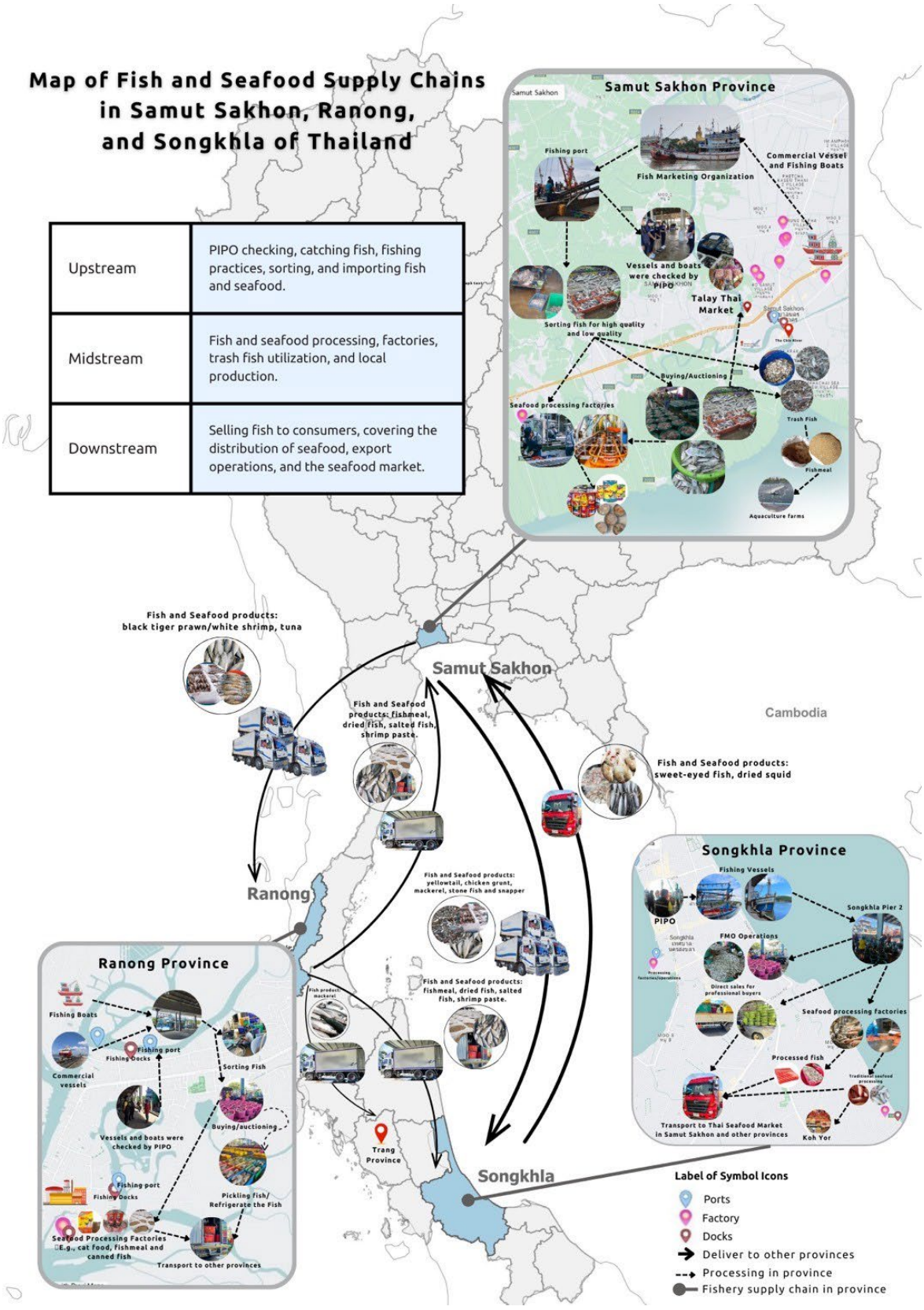
For this study, worker surveys were conducted at three marine ports, which collectively represent 12% of the national marine catch: Samut Sakhon (56,373 tons), Songkhla (34,841 tons), and Ranong (34,478 tons) (Fisheries Statistics of Thailand, 2022).[14]

As established fishing ports, these three locations each have multiple wharves or landing sites, some of which are operated by private owners and others that are operated by local governments or the Fish Marketing Organization (FMO) (Yoshimura et al., 2016) (see Appendix 7 for maps of the surveyed ports and Figure 4 for a flow chart of the supply chains in Samut Sakhon, Ranong, and Songkhla). The Thai FMO, established in 1953 and overseen by the Thai Ministry of Agriculture and Cooperatives, is a state entity dedicated to the management and development of the Thai fishing industry. The FMO oversees several fish markets and dozens of landing sites at piers along Thailand's coastline, both on the Gulf of Thailand and the Andaman Sea. FMO facilities at fishing piers provide essential infrastructure for the unloading and trading of fish and seafood, including large managed covered trading areas and lots that may be rented out for the trading of fish and seafood (Fish Marketing Association, 2020).

The following sections describe the facilities, selling practices, and local stakeholders at each of the three ports where workers were surveyed for this study.

[14] The largest fishing port in the country is Chumphon, reporting 110,525 tons of commercial fishery in 2022, representing 11% of the country's total, closely followed by Prachuap Khiri Khan (104,523 tons) and Nakhon Si Thammarat (100,943 tons) (Fisheries Statistics of Thailand, 2022).

Figure 4. Map of fish and seafood supply chains in Samut Sakhon, Ranong, and Songkhla



4.8.4.2 Samut Sakhon

The fishing port of Samut Sakhon is located at the mouth of the Tha Chin River, opening to the Gulf of Thailand (SHIPNEXT, 2023). Most fishing boats operating out of Samut Sakhon target areas relatively near the port, with a typical voyage duration of 24 hours in targeting fish like yellowtail or chicken grunt during the day and species like mackerel, stone fish, and snapper at night. Some boats, however, venture farther out, reaching as far as Songkhla Province in the Gulf of Thailand. Given the distance between Samut Sakhon and Songkhla, these vessels might operate away from their home port for several weeks to months, depending on the fishing operations, catch goals, and type of fishing gear used. It is common for these boats to visit other ports along the Thai coast for supplies or crew changes, or to offload catch, which can extend the duration of their trips. At the Samut Sakhon landing site, operated by the Mahachai FMO, facilities include channels for the boats to unload fish. Some fish are sold directly at the pier, largely to middlemen or buyers seeking stock processing facilities (KII 25, KII 5). Most, however, are sold at the nearby Thai Seafood Market (Talad Talay Thai) in Samut Sakhon (KII 4, KII 5). The Talad Talay Thai Market, established and operated by private investors and fishing businesses, operates as a comprehensive trading center for fresh and processed fish and seafood and a commercial hub for Samut Sakhon province (Thailand Department of Internal Trade, 2022).

As Samut Sakhon Province contains a number of large seafood processing factories, it has become a seafood processing hub, especially for canned fish. These factories process seafood from domestic and imported catch, which can be co-mingled at any point in the supply chain from port to factory, both from foreign vessels arriving directly at Samut Sakhon, as well as from container shipments at ports in Rayong, Khlong Toei, and Tha Chalom. The need to import seafood to supplement reduced supply from Thai waters has hurt smaller companies in the area, which lack the capability or capacity to import. As noted by one government official:

> *"Now, most factories are large-sized. The small-sized ones could not continue operating. Primarily, they struggled to find raw materials to compete with the large-sized factories."*
>
> *—Government official (KII 6)*

4.8.4.3 Ranong

The fishing industry in Ranong has been shifting in recent years from one characterized by traditional fishing enterprises to a more hierarchical one in which large, Thai-flagged "mother ships" purchase fish from smaller fishing vessels—many of which are registered in nearby Burma—and transport the aggregate catch back to port for sale. The operators of these large Thai ships essentially act as middlemen, purchasing and reselling fish caught by smaller fishing operations less able to navigate the complex and costly regulations governing sales at the port. Thai-flagged traditional fishing vessels that still operate out of the port tend to fish in the province's extensive inland waters or travel south to access shoals off the coast of Phang-Nga Province (KII 13, KII 16). Fishing vessels offload their catch at one of Ranong's many fishing docks. These docks, some of which are privately owned and others that are operated by the local government, accommodate Thai-flagged fishing vessels as well as vessels importing fish and seafood from nearby Burma. Much of the catch offloaded in Ranong is sold to professional buyers sent by fish processing companies, including companies headquartered elsewhere in Thailand and others located in Malaysia and Vietnam. These sales are conducted through both direct sale and auctions. For sales taking place on one of the private docks, the owners of the dock generally earn 4% commission on any goods sold.

"Yes, an auction system. All auctions, everyone has the right to participate. But they're (other owner of fish pier business) not on the same level as us (owner of a big fish pier business). They don't supply factories, just local markets. But we supply to factories. They also make animal food, they separate it into two areas, fish source and cat food." (KII 14)

Bulk sales of mackerel, tuna, and sardines are commonly made to buyers for seafood processing factories in other Thai provinces (KII 14). According to industry experts interviewed as part of this study, mackerel purchased in Ranong is typically sent to canning factories in Samut Sakhon or in Trang Province. Other seafood purchased in Ranong generally goes to processing factories—like Sigo Ltd., Golden Seafood International, V.I. International, Ranong Frozen Foods, and Siam Chai International—for freezing or further processing. Low-quality fish and fish scraps from the market (trash fish) are generally sold to one of Ranong's several large fishmeal factories.

4.8.4.4 Songkhla

Fishing vessels operating out of Songkhla tend to undertake longer voyages due to decreasing fish populations in nearby waters, with an average trip taking between 7 to 20 days and venturing as far away as the waters near Phetchaburi Province. These vessels generally bring their catch to be sold at Songkhla Pier 2, where fishers can unload their fish or seafood at a large and covered trading area operated by the FMO.

"They rent space from Songkhla Fishing Port for fish processing and aquatic product processing."
—CSO representative (KII 19)

From that trading area, professional buyers purchase the majority of the daily catch through direct sales.

"Each province is different. It's not the same as Ranong, Phuket, Taphut, or Nang Yon. They all use auction systems. But if it's like Pattani or Songkhla, they have their own regular buyers."
—Industry representative (KII 25)

These buyers either send the purchased fish for further processing, either at nearby factories or in facilities elsewhere in the country, or send it to be resold at seafood markets, such as the Thai Seafood Market in Samut Sakhon.

Songkhla hosts five major processing operations, known as "longs," and a series of smaller facilities. Fish processed in these facilities are generally manually filleted and packed for resale. Approximately 80% of these products are sent to factories in Samut Sakhon, and about 20% to factories in Songkhla (KII 25). In addition to traditional seafood processing, over the past three years, there has been a rise in production of sweet-eyed fish and dried squid. These products are bought by merchants and resold as souvenirs at Koh Yor, a famous tourist destination in the province.

4.8.5 Domestic Processing

4.8.5.1 Processing Plants

Across Thailand there are approximately 1,200 registered seafood processing plants (Fisheries Statistics of Thailand, 2022), a 20% decrease from 2017 when Thailand reported a record number of 1,500 processing plants. However, these numbers should be understood to be approximate and likely exclude some small enterprises. A government official in Samut Sakhon, for instance, indicated that even fisheries officials were not always aware of the locations of all the small processing plants (KII 6). According to interview responses, the smaller processing facilities tend to cater to the local market and

the production of downstream goods for individual consumption, such as fish balls, fish sauce, and fish cakes. These products are then sold to companies that label and market the products under their own brand for either domestic consumption or export.

> *"Yes, we are aware of the large-sized businesses because they are still operational. However, the small-sized businesses are away in the alleyways. It's hard to say that their business has ended without an on-site visit. These small-sized businesses include the processing of meatballs, fish balls, fishcakes among others, and some without a brand."*
>
> *—Government official (KII 6)*

Small processing facilities in the informal market system have higher risks of using forced labor because it is not being regulated and is often hidden.

> *"… in the lower tiers of the supply chain, such as small companies, this is where the highest risk [of forced labor] lies. For instance, those involved in basic food processing. In such cases, some companies may not even be registered. Some are conglomerates conducting business without formal registration, meaning they haven't entered the system. Not being in the system implies they aren't obligated to comply with the law, and no one has inspected them. Therefore, the highest risk lies in these areas."*
>
> *—CSO lead (KII 15)*

Medium and large-scale processing facilities can be organized around a single downstream product or operate as a vertically integrated multi-product facility. As with small enterprises, seafood manufacturing plants will both manufacture for a single private label and produce goods for multiple brands, who then label, market, and sell the consumer products under their unique brand. These larger companies are often members of trade associations, such as the Thai Frozen Food Association, Thai Feed Mill Association, Thai Fishmeal Producers Association, Thai Shrimp Association, National Fisheries Association of Thailand, Thai Overseas Fisheries Association, Thai Food Processors Association, and Thai Tuna Industry Association.

Many companies are engaged in efforts to reduce illegal fishing and promote more sustainable environmental fishing practices in the production of fishmeal, and these companies adhere to Thai labor laws. Trade associations have also joined together under the Thai Sustainable Fishery Roundtable to work on environmental, labor, and fishery management issues. However, critics argue that not enough has been accomplished. Some officials interviewed for this study believe that forced labor conditions were most likely to be found in smaller enterprises, but research for this study also found indicators of forced labor at larger processing facilities. Factory workers stressed the role of language barriers, stating:

> *"I don't want to make a complaint. Because this is not my country. We're working in another country, and we don't understand their language. And money can win in everything in every sector these days. The people who don't have money are going to lose for sure. And it is worse because we don't understand their language, if it's in my country, it would be different."*
>
> *—Female factory worker (ID1 7)*

> *"I joined a shrimp factory before joining my current factory. It was the Cow Factory [a term the Burmese workers named it] … We were treated like cows. The workers' leaders were yelling all the time to 'work fast, work fast.' They were pushing all workers to work harder and faster. It was not worth the 310 baht per day for what we got paid. We get paid a daily pay rate, but they forced workers to work like we were being paid by kilos. They forced workers to race each other*

and compete with each other. When we had to finish three kilos of shrimps within one hour. They watched which table could finish first. The table that finished last would be shouted at and scolded. That is why we had to work fast. Even if we want to go drink water, we could not go. Even though we were thirsty, we could not go to have a drink otherwise we would be late. If we want to pee, we could not. We have to hold it. If I went to the toilet, our table would be the last. We were made to compete in work like this."

—Female factory worker (IDI 2)

4.8.5.2 Fishmeal

The demand for wild caught fishmeal has been criticized by environmental and human rights organizations for driving destructive unsustainable fishing practices and labor abuses (Human Rights Watch, 2018a). Understanding the production, domestic sale, and international trade of fishmeal is critical to understanding how it ends up in downstream products such as shrimp and pet food.

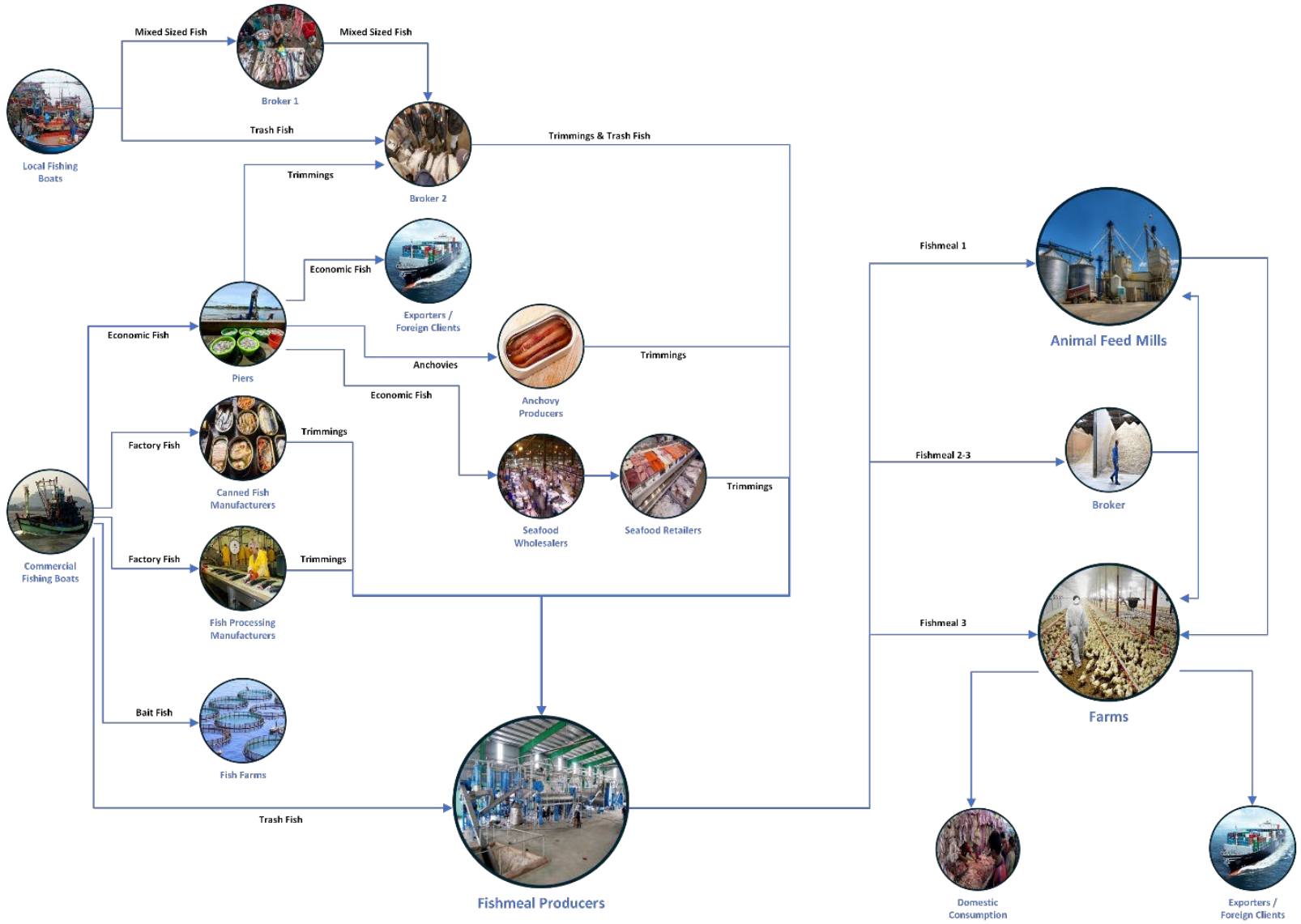
Fishmeal in Thailand is produced both in dedicated fishmeal processing plants and vertically integrated and multi-product factories. As of 2021, there were 99 plants producing fishmeal (International Fish Trade Analysis Group, 2023).

Fishmeal factories procure raw material inputs, namely trash fish and seafood processing byproducts, from three main categories of suppliers: fishing vessels, brokers, and seafood processing plants. Fishmeal factories may purchase these goods through:

- Owning their own fishing vessel to secure the catch
- Establishing a unique contractual relationship with a boat owner
- Working with brokers who purchase seafood at the pier or market on a daily basis
- Using intercompany transfer of byproducts (bones, heads, skin) from a sister seafood processing facility
- Working with brokers who procure seafood waste products (shells, bones, heads) from supermarkets and aquafarms

The upstream traceability fishmeal is obscured by the multiple possible points of sale of marine catch (shipping vessel, piers, auction houses, and wholesalers) and seafood waste byproducts (piers, seafood processing factories, supermarkets, aquafarms) through both formal and informal sales contracts. Likewise, the downstream traceability of fishmeal in animal feed is obscured as it is channeled through a variety of buyers (brokers, animal feed mills, processing facilities). Furthermore, as this study has found indicators of forced labor at various points in the supply chain (fishing vessels, piers, processing facilities) it becomes increasingly difficult to ensure that forced labor was not used at some point in the supply chain. The complexity of trading relationships for upstream inputs and downstream products of fishmeal is outlined in Figure 5.

Figure 5. Upstream inputs and downstream uses of fishmeal



Source: ICF

A nascent industry in the 1960s, fishmeal production doubled in size during the 1980s, and peaked at 490,000 tons in 2012 before retracting in the last decade. By 2022, Thai fishmeal production was 70% of 2012 production levels (Moreto et al., 2020). The contraction is attributed to the reduction in marine catch due to overfishing, increased environmental and labor regulations, and closure of some fishmeal processing facilities.

Table 17. Thai fishmeal production: 2021–2022

Year	Total (tons)
2021	350,000
2022	340,000

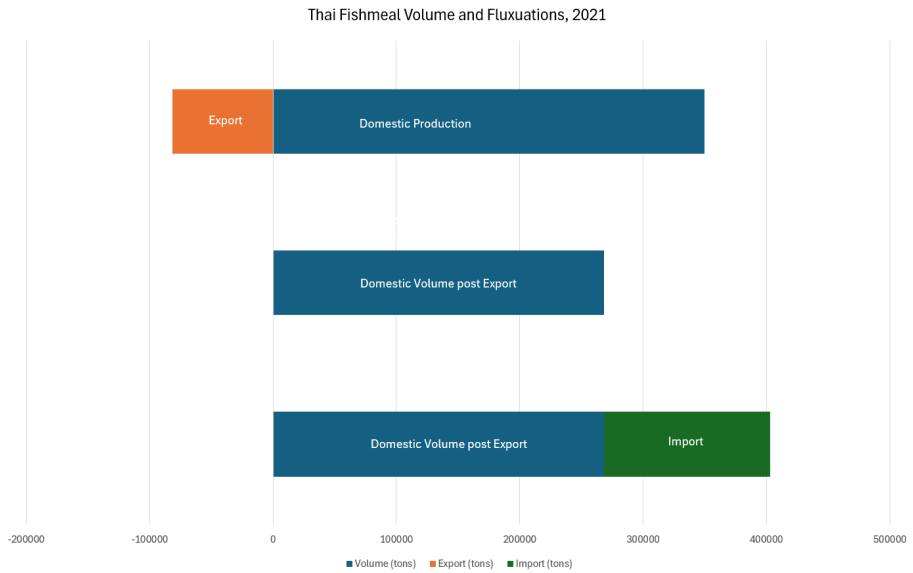
Source: Moreto et al., 2020

In 2021, approximately 65% of the 350,000 tons of fishmeal produced domestically in Thailand was consumed domestically in animal feed (including pet food), and 35% was exported (UNCOMTRADE, 2023; Appendix 4; The Fish Site, 2012; Oerareemitr, 2022). Fishmeal is used by feed mills to produce animal feed, as one industry expert explained:

> *"In Thailand, it [fishmeal] goes mainly to the factories that produce animal feed, which use it as an ingredient for feeding chickens and pigs. […] Yes, and also for fish and cat food. For fishmeal, it is mostly used for chicken and other animal feeds. They use it as a component for feeding chickens, pigs, and other animals."*
>
> *—Industry expert (KII 17)*

In 2021, the vast majority of Thai fishmeal exports ($145,467,426 USD, 134,314 tons) were shipped to China (76.9%), followed by Japan (10.6%), Vietnam (4.3%), and Indonesia (3.8%). In the same year, Thailand also imported $88,463,557 USD (81,507 tons) of fishmeal, primarily from Burma (40.1%) and Vietnam (23.4%) (UNCOMTRADE through Panjiva, 2023). Figure 6 graphically represents the volume of fishmeal imported to and exported from Thailand, relative to domestic production.

Figure 6. Thailand's import and export of fishmeal, by volume, 2021



Source: ICF, UNCOMTRADE, 2023 (HS 2301.10); USDA FAS, 2019

As summarized in Table 18, this indicates that Thailand exported 38.4% of the fishmeal it produced and supplemented 215,686 tons of domestically produced fishmeal with 81,507 tons of imports. Thus, of the presumed total industrial consumption of 297,193 tons of fishmeal in animal feed, 27.4% was imported.[15]

Table 18. Fishmeal production, exports, imports, 2021

Fishmeal, 2021	Volume (tons)
Domestic production	350,000
Exports from Thailand	134,314
Imports to Thailand	81,507

Source: UNCOMTRADE, 2023 (HS 2301.10); USDA FAS, 2019

The quality of input materials impacts the quality of fishmeal. Thailand produces a lower quality (higher fat, lower protein) fishmeal than is typically provided in the international market. Fishmeal can be divided into two categories: "shrimp grade fishmeal" containing 60% protein or higher, or "fishmeal" containing less than 60% protein.

Industry representatives indicated that the price of inputs is heavily dependent on their protein content. For example, shrimp heads and shells can be ground, but they might only fetch 1–2 baht per kilogram due to low protein levels, whereas a higher protein fish might sell for 10–11 baht per kilogram (KII 10). However, as fresh fish is perishable, the high costs of labor, transport, and cold storage mean that if demand is low, it may be more cost-effective for a trader to sell a higher quality fish at below-market price. As industry experts explained:

> *"So, the price of trash fish depends on the type. Once it's processed into powder, it has a certain amount of protein. […] [If demand is low] they reduce the price. Instead of having to arrange and present it nicely with ice to keep it fresh, I accept selling it at a lower price, saving on labor. I have to accept this option."*
>
> *—Industry expert (KII 10)*

However, although slightly higher quality fish may occasionally end up in fishmeal, the majority is sourced from trash fish and byproducts of seafood processing, especially tuna.

> *"If a fish is ordered for those purposes, there's no way it will be used for making fishmeal because the cost is too high. Fishmeal usually comes from the byproducts of the canning industry. For example, after making canned fish, there will be fish bones and parts that are not edible. These are then processed into fish meal."*
>
> *—Industry expert (KII 17)*

Fishmeal domestically consumed in Thailand is commonly sold to feed mills, which produce specialized animal feed products to account for the different nutritional needs of various species, including shrimp

[15] In 2021, Thailand also imported 348,251 tons of meat meal, valued at $198 million USD (HS 2301.20). The top three suppliers by value were Germany (29%), France (19%), and Italy (13%). Review of shipping data only showed Thai imports from Brazil and the United States; imports under meat meal were primarily described as beef meal; and shipping records from the EU were not available. This quantity of meat meal is equivalent to the amount of fishmeal Thailand produced in 2021. Thailand exported 1,523 tons of meat meal, 91% to Burma. Shipping data were limited, but Thai exports under this category were either poultry meals or misclassified product (UNCOMTRADE, through Panjiva, 2023).

and fish aquaculture, poultry, swine, and pet food. More vertically integrated manufacturing facilities may produce their own fishmeal for in-house use in downstream products. According to the Thai Fishmeal Producers Association, in 2021, fishmeal was used for animal feed production, a majority of which was consumed by shrimp and fish aquafarms (Aqua Culture Asia Pacific, 2022).

4.8.6 Shrimp Aquafarms

The aquaculture industry, particularly the shrimp market, is the predominant animal feed end use in Thailand. Fishmeal content in shrimp feed varies but constitutes approximately 12%–22%.[16] It is estimated that three-quarters of the fishmeal used in white leg shrimp feed is sourced from fishery and/or aquaculture byproducts, and the remainder is sourced from the domestic trawl fleet (Seafood Watch, 2020). Approximately 11% of the Thai trawl fleet catch currently enters the shrimp feed supply chain (Seafood Watch, 2020). Shrimp farmers in Thailand can be categorized into three groups based on size of their farms—large-scale farmers with ponds over 40 rai, medium-scale farmers with ponds about 10–40 rai in size, and small-scale farmers with ponds less than 10 rai. Most shrimp farmers in Thailand are small-scale and use personal or rented ponds.

The farming process involves introducing saline water into the pond and carefully managing the salinity as the shrimp grow. Similarly, the feeding process is also based on the shrimp's size and age. For smaller shrimp, powdered fish is used, and shrimp are transitioned to different feed types as they grow. Along with the shrimp feed, farmers also introduce probiotics and yeast enzymes into the ponds on a daily basis.

Shrimp feed is supplied by feed mills operated by large companies like Charoen Pokphand Foods (CPF), Thai Union, and Grobest (Charoen Pokphand Foods, n.d.; Grobest Group, n.d.; Thai Union Feedmill, n.d.). As per Thailand shrimp expert, Putth Songsangjinda, in 2020 there were 22 feed mills producing shrimp feed and between 50 to 100 suppliers of feed and equipment to the sector (Fletcher, 2020).

Numerous wholesalers operate between the feed mills and the shrimp farms (McNevin, 2020). Shrimp farmers interviewed for this study (KII 22 and KII 24) reported buying ready-made feeds from Grobest and CPF and buying different varieties of feed as per age and size of the shrimp. One individual (KII 22) also had an established relation with CPF, in which CPF undertakes free testing of the pond for the farmer, and in return, the farmer buys some of his shrimp breeds from CPF and sells some of his post-harvest shrimp to CPF. The entire production cycle for shrimp can last about 120 days. The workers on shrimp farms, as per the shrimp farmers interviewed for this study, are primarily from Burma, who live on the farms for extended periods with their families; when local labor is insufficient, additional workers from Burma are often employed. For harvesting the shrimp, local teams of 5–10 people are employed.

Different types of shrimp are categorized and sold based on their quality. High-quality shrimp, such as premium-grade, shabu-shabu, and sea horse shrimp, are typically sold wholesale to fine dining restaurants. Slightly lower-quality shrimp are sold in retail markets. Even poorer-quality shrimp are processed into shrimp meat, which is then used for making snacks like rice crackers. The lowest quality shrimp are ultimately sold as dried shrimp.

[16] Main ingredients in feed used in aquaculture in recent years have been soybean and soymeal products (41%), fishmeal (22%), wheat flour and wheat products (13%), rice products (7%), corn (6%), cassava products (5%), land animal protein sources (3%), plant protein source (2%), and fish oil (1%) (Krongpong, 2017).

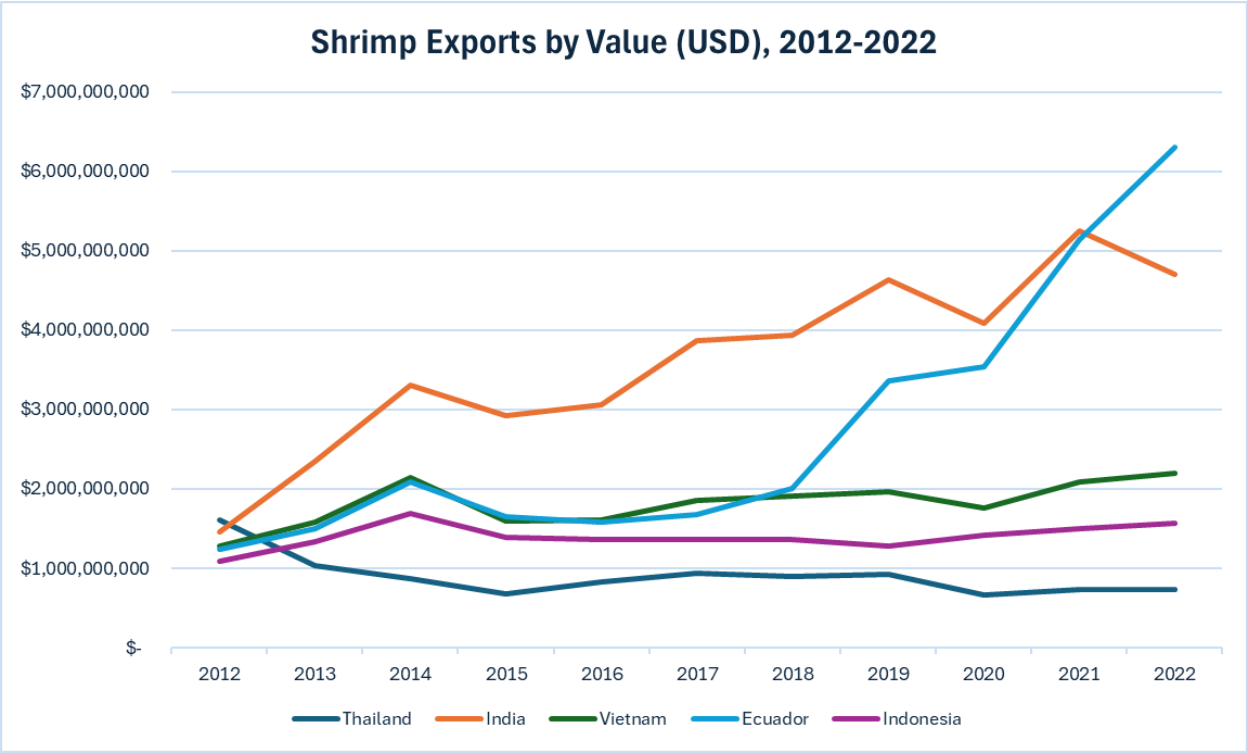
There are four main channels for selling shrimp. The first option is to sell to brokers, who are regular buyers with established relationships with multiple vendors. The broker negotiates a mixed-size price for the shrimp; they buy directly from the farms and sell on major shrimp platforms in Samut Sakhon, where shrimp are sorted and sold by size. Shrimp sold in these markets may also be exported abroad. The second channel is seafood markets, where farmers sell the shrimp directly. Many farmers prefer selling to middlemen at the farm gate, due to the additional transportation cost and market fee incurred for selling in the seafood market. The third option is for farmers to sell to bulk buyers who directly contact farmers, but such sales are infrequent. Finally, there are cold storage and wholesale markets, although this channel for sales has declined due to government regulations on market organization.

Thailand's shrimp export market has declined in the last decade in both relative and absolute terms. In 2012, Thailand was the largest shrimp exporter in the world, and by 2021, Thailand exports fell to $726 million USD, representing 3.3% of global exports. Although Thailand's shrimp production has fallen in absolute terms, it was also eclipsed by rapid growth of the shrimp industry in India (23.5%) and Ecuador (23.0%), which collectively supply approximately half of all global shrimp exports (UNCOMTRADE, through Panjiva, 2023). Key informants indicated that child labor was a problem in the shrimp industry eight to nine years ago. They reported that, currently, there is no forced labor or child labor found in inland shrimp production due to strict government regulations and shrimp peeling sheds being shut down. In the words of two industry stakeholders:

> *"Government regulations enforced strict control over shrimp sheds to meet factory standards and reduce the risk of forced labor or exploitation. Factories now handle shrimp peeling operations themselves, following the standards and ensuring better product quality. Thus, there is no forced labor or exploitation because the traditional shrimp sheds were closed down."*
>
> *—Ship owner (KII 22)*

> *"In 2014–2015, there were several cases of children working in shrimp peeling with their families in shrimp sheds that some children might be under 18 years old being forced into labor in shrimp processing establishments. But now, these shrimp sheds no longer exist, and there is no child labor anymore."*
>
> *—Industry stakeholder (KII 9)*

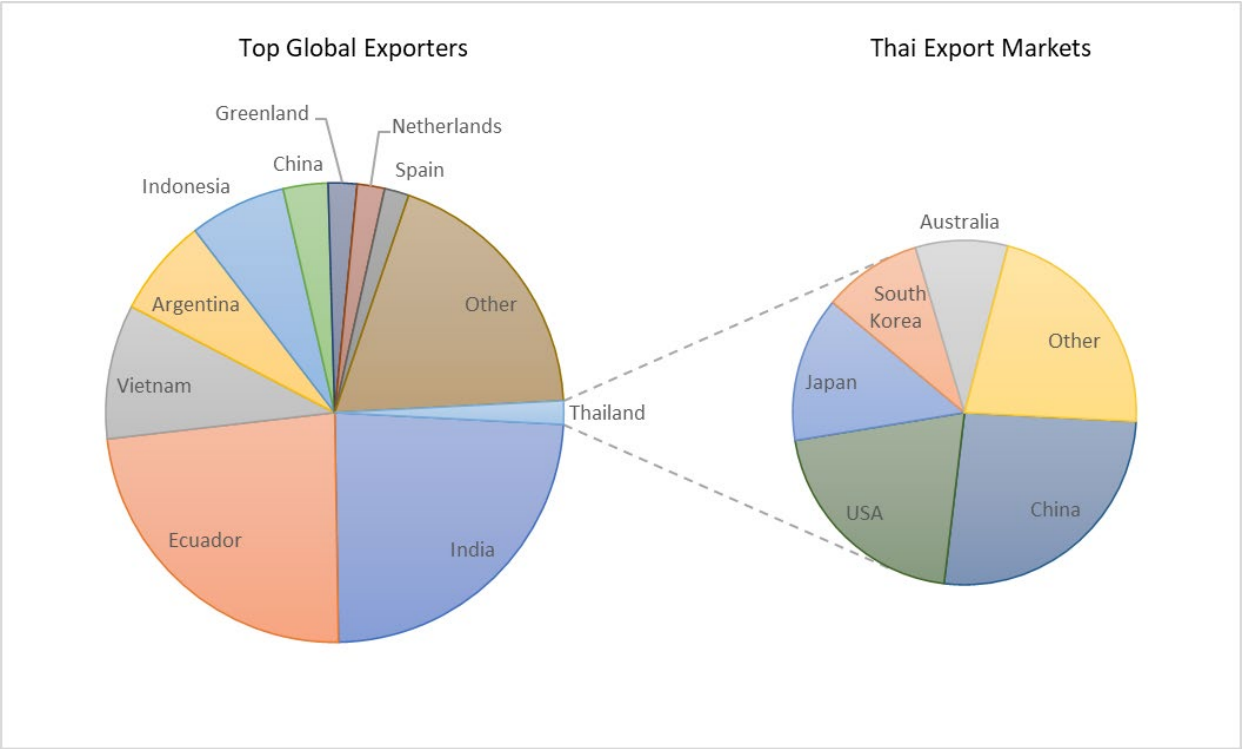
Figure 7. Top five shrimp exporters, 2012–2022



Source: ICF, UNCOMTRADE through Panjiva, 2023

In 2021, the most important destination markets for Thai shrimp were China (31.7%) and the United States (27.7%), the world's two largest destination markets for shrimp (UNCOMTRADE through Panjiva, 2023; Appendix 4).

Figure 8. Top export markets by percentage for shrimp, 2021

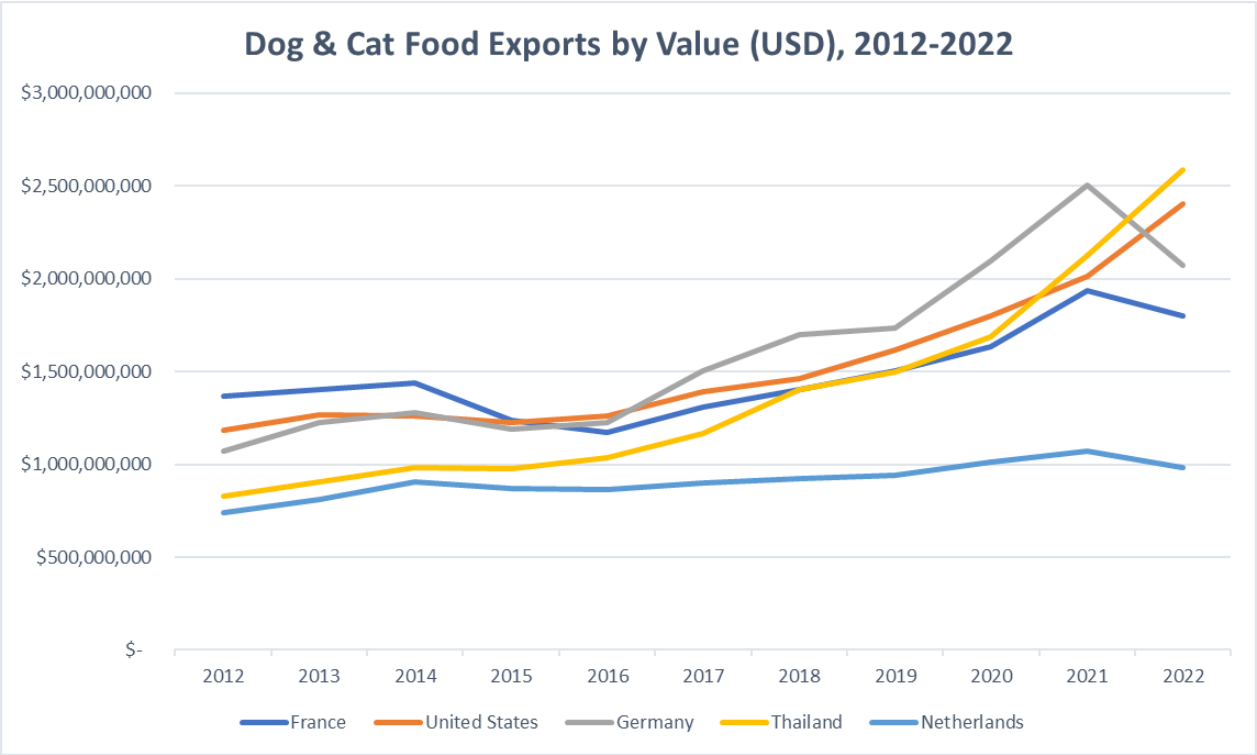


Source: UNCOMTRADE, 2021. HS Codes: 0306.16, 0306.17, 0306.35, 0306.36, 0306.95

4.8.6.1 Pet Food

Although Thailand's share of the global shrimp market has declined, Thailand's value of dog and cat pet food exports have increased 211% in the last decade.

Figure 9. Top five dog and cat pet food exporters, 2012–2022



It is unknown what percentage of dog and cat pet food contains fishmeal.[17] However, the importance of fishmeal as input material to the pet food industry due to both its nutritional value and low cost has been well documented for nearly two decades (De Silva & Turchini, 2008; Ryder et al., 2012). The Marine Ingredient Organization estimated in 2019 that 164,600 metric tons of fish were meal used in pet food production (Marine Ingredients in Petfood, n.d.). Pet owners value the nutritional content of marine-sourced fishmeal in pet food, as it is rich in amino acid proteins, omega-3 fatty acids, and minerals (Fish Meal, 2018). Although the industry values the cost-effective use of seafood processing waste and inexpensive trash fish captured through controversial trawling, the pet food industry in Thailand grew out of the manufacturing of canned tuna. The first canned tuna plant was established in Thailand in 1972, and by the mid-1980s until the present, Thailand has dominated the global supply of canned tuna[18] (Gamarro et al., n.d.; UNCOMTRADE, 2023). As the canning industry grew, it sought to turn seafood processing waste (fins, head, eyes, bones) into fishmeal for use in animal feed and pet food.[19] The existing canning facilities easily transitioned between canned tuna for human consumption and canned pet food.

Current manufacturers of pet food include local brands, original equipment manufacturers that sell products to multiple brands, and private label production for multinational companies (Thailand Pet

[17] As outlined in Section 4.8.6.2 on pet food exports, 20% of Thai exports of pet food are labeled as containing fish. Non-fish pet food exports may contain meat fed with animal feed that contains fishmeal.

[18] Thailand remains a global leader in canned fish exports, exporting $2.4 billion USD in canned fish in 2021.

[19] The percentage of fishmeal used in petfood production in Thailand is not publicly available. SUPA71 researchers requested interviews from industry players. Thai Union Songkhla and Mars Petcare formally rejected interview requests, citing company policies against participating in external studies. Unicourt Company and Charoen Pokphand did not respond to multiple outreach efforts.

Food Makers Go Superpremium as Demand Grows, 2022). Research discovered various transactional and corporate relationships between Thai fishmeal producers and downstream animal feed and pet food producers, pointing to both the commercial sale and in-house production of fishmeal. Data limitations do not allow for a comprehensive overview of all Thai fishmeal producers and their downstream affiliations. However, select examples highlighted below provide some details on various Thai fishmeal producers and their business relationships with downstream animal food and pet food producers.

- TC Union Agrotech Co., Ltd., is a Thai fishmeal producer that is a subsidiary of Thai Union Group, which plays a significant role in the general operations of TC Union Agrotech Co., Ltd., through the funding of operational spaces and provision of necessary equipment and machinery. TC Union uses byproducts from its cannery industry to produce fishmeal. In turn, Thai Union Group uses fishmeal in the production of pet food (Thai Union Group Public Company Limited, 2023; Global Companies, n.d.; TradeKey, n.d.; TC Union Agrotech Co., Ltd., n.d.; Thai Union Group Public Company Limited, n.d.).
- Sirisaeng Arumpee Co., Ltd., is a Thai fishmeal, fish oil, and fish soluble product producer and indicates numerous transactional relationships with major buyers, including Thai Union Group (pet food producer), Inteqc Feed Co., Ltd. (shrimp, fish, pig, poultry, and bovine feed producer), Charoen Pojohand Foods (fish, shrimp, pig, duck, and poultry feed producer), and Cargill (pet food producer and parent company of various pet food/animal feed producers).[20] All of these major buyers of Sirisaeng Arumpee Co., Ltd., fishmeal use fishmeal in the production of both pet food and animal feed (Thai Union Group Public Company Limited, n.d.; Sirisaeng Arumpee Co., Ltd, n.d.; Inteqc Group, n.d.; CPF, n.d.; Cargill, n.d.).
- Samila Fishmeal Company is a Thai fishmeal producer that is affiliated under the same group—Siam International Group—as Siam International Food Co., Ltd., which produces both seafood and seafood-based pet foods. Available corporate records indicate that Samila Fishmeal Company owns 11% of Siam International's shares, and five major shareholders of Siam International hold 69.92% of Samila Fishmeal Company's shares (Sal Forest Ltd., & Oxfam (Thailand), 2014; Siam International Food Co., Ltd., n.d.a; Siam International Food Co., Ltd., n.d.b).
- Asian Alliance International Public Company Limited is a subsidiary of the Thai Asian Sea Corporation Public Company Limited conglomerate and is a manufacturer and distributer of fishmeal and wet pet food products, among other seafood products such as fish broth, tuna products, and fish oil. It uses fish byproducts from the production of frozen seafood in the in-house production of fishmeal and holds an annual fishmeal production capacity of 6,000 tons. Asian Pets Care Corporation Co., Ltd., is a subsidiary of Asian Alliance International Public Company Limited, which owns 100% of company shares. Asian Pets Care Corporation is a large-scale producer of Hajiko-brand dog food and Monchou dog and cat food. In addition, Thaiya Corporation (Shanghai) Co., Ltd., is an additional subsidiary of Asian Alliance International Public Company Limited. Notably, Thaiya Corporation is involved in a joint venture with Shangdong Taiya Meisi Pet Foods Co., Ltd., a Chinese pet food company, of which it holds 10% of shares, and Asian Pets Care Corporation Co., Ltd., holds a 41% stake (Asian Group, n.d.; Asian Alliance International, n.d.a; Asian Alliance International, n.d.b).

[20] Cargill subsidiaries include EWOS, which produces aquaculture feed, Nutrena, which produces livestock and poultry feed, and Purina, which produces pet food (Cargil, n.d.).

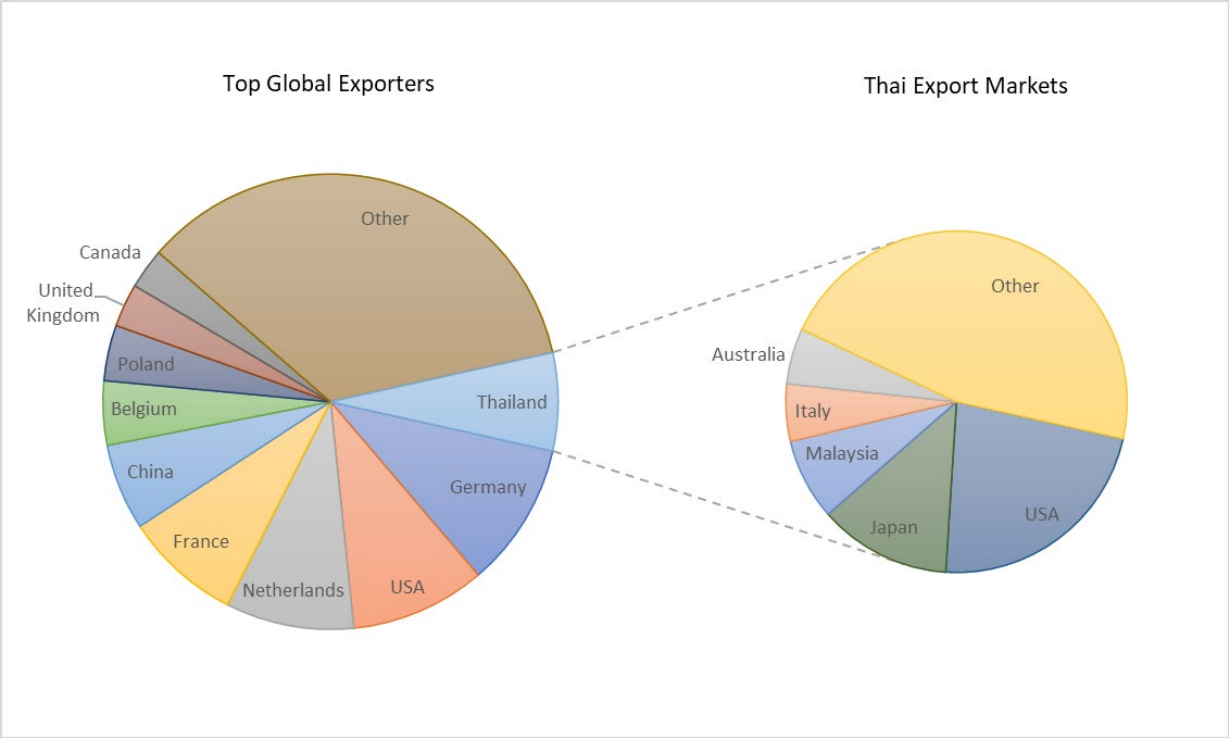
Although there are a limited number of fishmeal manufacturers, the corporate connections outlined above reveal examples of how in-house production of fishmeal, or ties between subsidiaries within a conglomerate, facilitate the production and sale of fishmeal for use in pet food and animal feed that is not fully traceable. However, this highlights the economic ties and the importance of fishmeal supply in the production of pet food.

4.8.6.2 Exports and International Downstream Tracing of Pet Food

International trade statistics divide pet food into two categories: (1) pet food for dogs and cats (HS 2309.10), and (2) pet food for all pets, such as birds and fish (HS 2309.10). Globally, these two types of pet food are equally traded. However, Thailand leans heavily toward exporting dog and cat pet food. In 2021, 83.5% of Thailand's pet food exports (HS 2309) were dog and cat pet food (HS 2309.10).

However, even when combining statistics for both categories of pet food, Thailand is still a major global exporter (HS 2209). In 2021, Thailand supplied 6.4% of global exports of all pet food (HS 2309), making it the fifth largest supplier behind Germany (10.4%), the United States (9.7%), the Netherlands (9.2%), and France (8.4%).

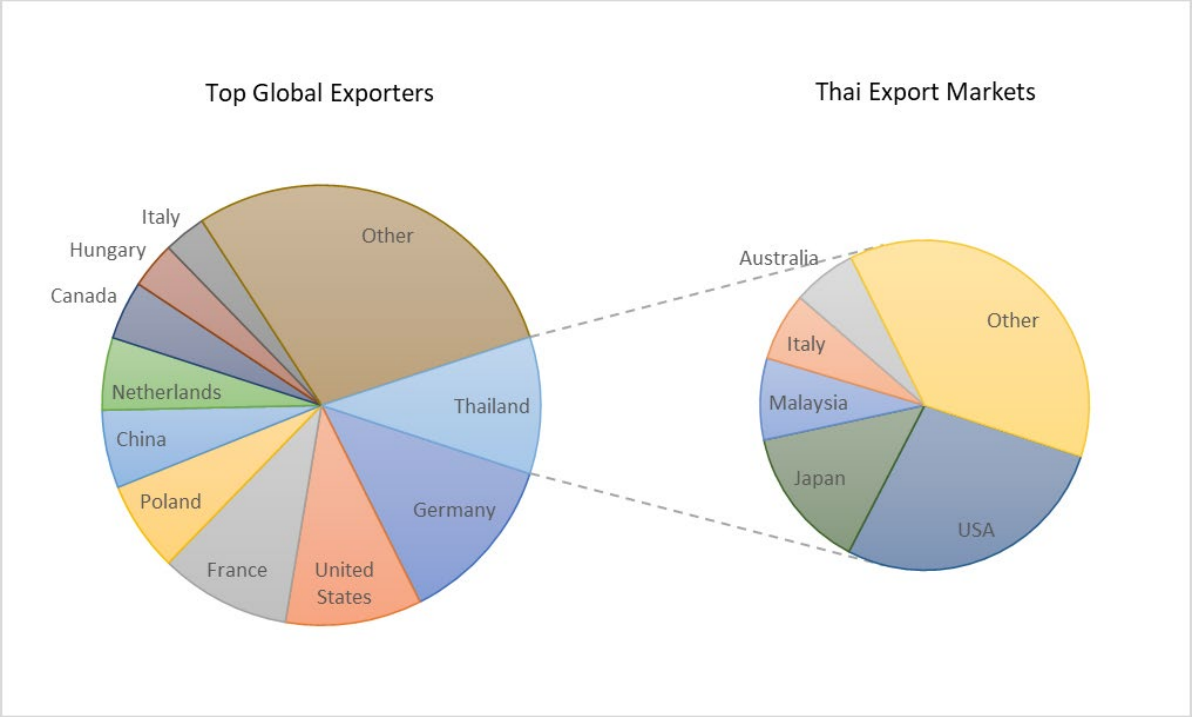
Figure 10. Top export markets by percentage for pet food, 2021



Source: UNCOMTRADE, 2021. HS Codes: 2309

Thailand does, however, play a more dominant global role in the supply of dog and cat pet food. In 2021, Thailand was the second largest global exporter, with 10.6% of the global market share, second only to Germany (12.5%). Almost half of Thailand's $2.1 billion USD exports of dog and cat pet food were imported by the United States (27.6%) and Japan (14.0%), followed by Malaysia (8.0%), Italy (6.7%), and Australia (6.3%) (UNCOMTRADE through Panjiva, 2023; Appendix 4).

Figure 11. Top export markets by percentage for dog and cat pet food, 2021



Source: UNCOMTRADE, 2021. HS Codes: 2309.10

In 2022, Thailand's dog and cat pet food exports continued to rise, increasing 18%, from $2.2 billion USD to $2.6 billion USD, making Thailand the largest global exporter in 2022. (UNCOMTRADE through Panjiva, 2023).

Thai dog and cat pet food exports are predominantly meat-based. According to the Thai Pet Food Association, in 2021, 89% of dog and cat pet food exports (by value) contained meat; of that, 20% was labeled as fish and 80% as non-fish meat. Although the percentage of non-fish meat is unknown, according to industry experts and pet food product lines, a major amount of pet food contains chicken meat, sourced from local poultry suppliers who use fishmeal in their chicken feed[21,22] (tpfadmin, n.d.).

As pet food is a final end product intended for consumption, macroeconomic trade statistics are the most informative data source to understand which national markets are consuming pet food that is at risk of having been produced with forced labor in the upstream supply chain. Shipping records of major exporters of pet food are consistent with research findings on the major producers of pet food, including Perfect Companion Co., Bevos Prima Center & Perfect Companion Group Co. Ltd., Mars Food, US Pet Nutrition (Parent Company Thai Union Group), Nestle Trading, and Wellpet LLC.

Many canned, wet, and dry pet foods often contain fishmeal as an inexpensive nutritious filler, which will appear directly on the ingredient label. Marketing material often advertises on company websites

[21] Fishmeal is used as a source of protein in poultry feed due to its high levels of amino acids, such a methionine and lysine, and balance of unsaturated fats, minerals, and vitamins. Generally, the use of fishmeal is limited to 5% to 10% of poultry diet content (Jacob, n.d.).
[22] Thailand's fishery and agricultural industries are able to supply 95% of the input materials to pet food manufacturers (Thailand Pet Food Market Details Growing Exports | Pet Food Processing, 2022; tpaadmin, n.d.).

and on the product label itself the protein and healthy fat value of fishmeal. In addition, shipping records highlighted a number of pet food snacks and treats that some consumers may not realize constitute pet food—such as dog chew treats or gravy for cats—as definitions of terminology such as "food," "snacks," and "treats" vary between stakeholders (Panjiva, 2023).

Furthermore, pet food products shipped from Thailand contain meat from poultry and seafood that were likely fed with fishmeal-based feed. For example, shipping records show the sale of dog treats from Gambol Co., Ltd., to Simply Protein for Pets, a pet food company based in Atlanta (Panjiva, 2023). The company website products listed are exclusively dog jerky treats made of salmon or chicken (Simply Protein for Pets | Natural Dog Treats, n.d.). Based on research of the supply chain in Thailand, there is a risk that seafood procured with forced labor was processed into fishmeal for use in animal feed for poultry or fish, which were then used to manufacture dog chew treats. Likewise, shipping records document the sale of pouch pet food from Unicord Public Co., Ltd., to the Hartz Mountain Corporation ("Hartz") based in New Jersey (Panjiva, 2023). Hartz's product website includes many pet food items for cats and dogs, including a pouch of cat gravy with an ingredient label indicating that the cat gravy is a product of Thailand. Although the ingredient label does not list fishmeal, the second ingredient is chicken (Hartz, n.d.). Therefore, as in the example of dog jerky treats, even if fishmeal is not listed as an ingredient, there is a risk that the upstream ingredients and processing steps used forced labor.

Research also points to the additional risk that at each step in the supply chain—sale at pier, fishmeal processing facility, feed mill, poultry farm, fish aquafarm, pet food processing facility—there is a risk of forced labor.

5. Conclusion and Recommendations

Despite claims by the Thai Department of Fisheries that Thai fishing and seafood production is environmentally and socially responsible and free from human trafficking, this study found that forced labor still exists within the industry. It can be found on fishing boats, at the docks where fish and seafood are sorted, and in the processing factories.

Nevertheless, it must be stated that the Thai fishing industry is being transformed, as a result of both tighter regulations and declines in fishing, leading to some improvements within the industry. No cases of child labor on the boats were observed, and the cases of forced labor that were observed were not systemic—this is, where forced labor was reported, not all workers within these establishments were being exploited in this way. Further, Thai companies, particularly large enterprises, have undertaken initiatives to reduce and hopefully eliminate both forced labor and child labor from their supply chains.

The study found the following:

- Despite claims that PIPO staff can determine through the VTS and logbooks whether fishers were working the correct number of hours, qualitative data from workers indicated that fishers were working excessive hours without proper breaks. There is a lack of clear guidance from authorities regarding how to measure work and rest hours.
- Port inspections are inconsistent and ineffective according to qualitative interviews.
- Previous research indicated that vessel owners, brokers, and senior vessel crew members subject men and boys to forced labor on fishing boats. This study found that this was the case for men, but not for boys. Interviews suggested that in the past, boys had worked as fishers, but this did not seem to be the case anymore, according to those interviewed.
- Fishers are paid irregularly, and some are paid below the legal minimum wage.

- Incidences of captains threatening, beating, and drugging fishers have been reported in previous research. In this study, violence on the boats and use of drugs were reported. However, the violence reported in the interviews was often between fishers, and fishers had their own supply of drugs.
- Data indicate that some vessel owners and captains confiscate fishers' identity documents.
- Some fishers had difficulties returning home because of unpaid wages and a lack of legitimate identity documents.
- Some employers make confusing wage deductions for documentation fees, advances, and other charges, making it difficult for workers to accurately account for their wages.
- Some workers in the IDIs noted corruption of some government officials who protect fishing vessel owners.

Thus, it can be concluded that marine catch in Thailand is at risk of being caught, sold, and processed by forced labor. Fishmeal is produced from marine catch and byproducts of seafood processing facilities, and it is used by animal feed facilities to produce animal feed for shrimp and fish aquafarms and poultry and pig farms, as well as a direct input into pet food. Furthermore, the pet food industry not only uses fishmeal as an input, but it also sources domestically raised seafood and poultry fed with fishmeal feed for use in the manufacturing of pet food products. In addition, Thailand imports fishmeal from Vietnam and Burma, countries with fishmeal feedstock (shrimp and fish, respectively) which are on the U.S. Department of Labor's List of Goods Produced by Child Labor or Forced Labor, thereby raising concern that fishmeal imports may also have been produced by forced labor or child labor.

The downstream use of fishmeal in Thailand supports export-oriented industries, such as the production of aquafarm shrimp and pet food. Although the shrimp export industry is contracting, the pet food export industry is realizing explosive growth. As of 2022, Thailand is the world's largest dog and cat pet food exporter, with exports totaling $2.6 billion USD. It is likely that many downstream domestic consumers of shrimp and pet food are unaware of the role that forced labor plays in the production of raw material inputs and their processing at interim manufacturing steps in the supply chain.

5.1 Recommendations for the Government of Thailand

Based on the study findings, following are recommendations for the Government of Thailand to consider continuing for the improvement of labor conditions in the fishing industry.

- Develop policies to enable migrant workers to join and form unions so they have the right to association, to organize, and to have collective bargaining. This would allow migrant workers to more effectively advocate for their rights.
- Unlink immigration status of migrant workers from their employer. If a migrant worker leaves an abusive employer, their immigration status should not be in jeopardy.
- Continue the structural reforms that were introduced after the yellow card that seem to have improved (although not solved) fishing and labor practices to ensure that the Thai fishing industry is free from IUU fishing while also improving labor practices.
- Undertake further buybacks of boats from those who wish to leave the industry.
- Fully implement ILO Convention C188. Thailand is a leader within South-East Asia and beyond in terms of this ILO convention. To ensure that Thailand remains in this leadership role, it needs to do the following:
    - Establish regulations that encompass the goals of the convention, such as to improve the working and living conditions aboard fishing vessels to protect fishers' rights.

    - Support capacity-building initiatives for PIPO and other government officials and industry stakeholders to understand the provisions of C188 and their responsibilities under the convention. This includes training on inspections and labor rights enforcement.
    - Engage in campaigns to raise awareness among fishers and industry stakeholders about the rights and protections afforded under C188. This should include information on the importance of work agreements, rest periods, repatriation rights, and access to medical care.
    - Foster collaboration between other governments within the region, the private sector, NGOs, CSOs, and international organizations to share best practices, resources, and technologies that facilitate compliance with C188.
    - Establish partnerships that leverage collective expertise to improve labor conditions in the fishing industry globally.
- Increase PIPO inspections, as they have declined (which could have been potentially been affected by the COVID-19 pandemic).
- Assist PIPO officials to determine how inspections can be improved. The study identified fishers without necessary documentation and cases of forced labor, two issues that the PIPO inspections are meant to address.
- Undertake an awareness campaign to create greater transparency and confidence among migrant workers so they are more willing to report labor violations.
- Conduct an assessment of the electronic payment system. This study found that not all fishers were being paid electronically to their banks, and some boat owners were withdrawing payments on behalf of fishers. Further, not all fishers found the electronic payment system practical.
- Address wage violations by boat owners, as the research indicated that some pay their workers below minimum wage, pay irregularly, and make confusing wage reductions.
- Determine why so few workers, whether they are on the boats, at the docks, or in factories, have work contracts.
- Address debt bondage through the following:
    - Ensure that past reforms are properly enforced and, if necessary, initiate new reforms that regulate recruitment agencies and labor brokers to prevent exploitative practices that lead to debt bondage. This includes the prohibition of recruitment fees charged to workers.
    - Promote direct hiring practices over the use of labor brokers, reducing the risk of workers incurring debts that lead to bondage.
    - Work with large companies, NGOs, and CSOs to provide financial literacy training and support services to workers, helping them manage their earnings and avoid falling into debt traps.
    - Offer legal assistance to workers trapped in debt bondage, facilitating their exit from such situations and pursuing justice against those responsible for their exploitation.
    - Regulate recruitment agencies, eliminate recruitment fees paid by workers, promote direct hiring, provide financial literacy training, and offer legal assistance to affected workers.
- Work with small and medium-sized companies so they can comply with the 2015 Fisheries Act. Larger enterprises, whether they are large boat owners or large companies, are better able to comply with this law, and it seems that the smaller enterprises are more likely to be using forced labor.

- The Thai Ministry of Public Health with its village health volunteers and migrant health workers, along with NGOs and CSOs working in the fishing industry, should improve migrant access to health services and develop programs to address work and safety issues, such as injuries and preventable diseases such as beriberi. Related to beriberi, such a program should determine the best means to provide thiamin to fishers in particular, and whether such a scheme is effective in tackling this disease.
- Promote Wi-Fi onboard vessels so workers can communicate with their land-based support networks.

5.2 Recommendations for Thai Companies

Large Thai companies involved in the fishing and seafood industry have a blueprint to address forced labor and child labor in their supply chains; namely to work towards what Thai Union has undertaken to date. Nevertheless, the study offers the following recommendations for these companies:

- Promote the adoption of mechanisms for the identification and remediation of forced labor risks by developing a zero-tolerance policy toward labor abuses, ensuring clear communication of the policy to all stakeholders and implementing consequences for violations.
- Enhance supply chain transparency by investing in traceability systems to track products and prevent forced labor.
- Collaborate with suppliers to enforce worker rights standards, including strict prohibitions on forced and child labor, with termination clauses for non-compliance.
- Implement transparent supply chains by investing in technologies and processes that enhance transparency in their supply chains. This includes traceability systems that can track products from catch to consumer, ensuring that forced labor does not taint the supply chain.
- Work with their suppliers to adhere to the same worker rights standards that they hold. This would involve establishing and enforcing strict supplier standards that prohibit forced labor and child labor. Contracts with suppliers should include clauses that allow for termination in cases in which labor abuses are identified
- Implement strict labor standards throughout the supply chain, including on fishing boats, at docks, and in the factories. This would include ensuring that all workers have contracts, that they receive fair wages, that have reasonable working hours, the elimination of recruitment fees paid by workers, and safe working conditions.
- Develop and implement worker empowerment programs that educate workers on their rights, provide them with the tools to report abuses, and ensure access to grievance mechanisms without fear of retaliation. Ideally, these trainings should take place with NGOs and CSOs working with migrant workers, so the training sessions can take place in Burmese and Khmer as well as in Thai.
- Further enhance collaboration with government agencies, NGOs, CSOs, and other stakeholders concerned about workers' rights.
- Conducting regular independent audits of working conditions on fishing vessels that supply fish products, at the docks, and in processing factories. These audits should be random and unannounced and conducted by third-party organizations with expertise in identifying forced labor and ensuring compliance with labor laws.
- Commit to continuous improvement by reviewing and updating policies and practices based on lessons learned, changing circumstances, and evolving best practices in addressing forced labor and child labor.

- Ensure that boats within their supply chain add or upgrade Wi-Fi systems onboard vessels so workers can communicate with their land-based support networks.

Medium and small-sized Thai companies involved in the fishing and seafood industry need to be targeted by the Thai government, large Thai companies, NGOs, and CSOs if forced labor and child labor are to be fully removed from this industry. Unlike large companies, they have limited resources and capacity. Nevertheless, they could do the following:

- Participate in industry associations focusing on ethical sourcing and responsible business practices. Where possible, work with larger companies that are active in countering forced labor and child labor. These larger companies would be able provide guidance, resources, and even opportunities for collaboration.
- Partner with government agencies, NGOs, and CSOs that specialize in labor rights. These groups could provide training sessions for the employers in Thai and for their workers in Burmese and Khmer.
- Undertake fair labor practices, including fair wages, reasonable working hours, and safe working conditions.
- Do not charge fees when workers start employment and when they wish to change employers.
- Be transparent with their workers about any charges, such as food and housing, while ensuring that any debts are not based on excessive interest rates.

5.3 Recommendations for NGOs and CSOs

NGOs and CSOs working in the fishing and seafood industry in Thailand are limited by resources. Presently they are assisting both individual workers and the wider migrant communities within the fishing ports. With expanded resources they could do the following:

- Expand their cooperation with the private sector to work with medium and small enterprises. This could include providing training sessions for both employers and migrant workers on issues of worker rights, ideally in Thai, Burmese, and Khmer.
- Improve migrant access to medical services and enhance healthcare programs to address work and safety issues, such as work injuries and preventable disease such as beriberi affecting fishers, dock workers, and factory workers.

5.4 Recommendations for the U.S. and Other Governments

Countries that are actively involved in assisting Thailand to address labor abuse within the fishing and seafood industry, along with other sectors of Thailand's economy, need to provide further support, and undertake monitoring and research with the Thai government, Thai business community, and NGO and CSO partners to ensure that Thailand can successfully counter labor forced labor and child labor. In particular, these governments could do the following:

- Examine the role of forced and child labor in fishing industries in a regional context, especially in Southeast Asia, where fishing vessels may flag in a country for regulatory ease while operating marine catch sales out of multiple international ports.
- Pressure the Thai government to ratify and implement ILO Conventions 87 and 98 and continue to support organizations in Thailand that are supporting labor rights.
- Assist the Thai government so the country's legal system matches all C188 regulations.

- Continue to provide training to law enforcement officials so they can properly enforce labor rights.

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Appendix 1: Research Instruments

Survey Questionnaire

Response Criteria (ASK ALL if not otherwise stated)	Question Number	Question and Responses	Response indicates involuntariness indicator	Response indicates coercion indicator
	DATE			
	TIME			
	DEVICE ID			
	INTERVIEWER NAME			
	RESPONDENT ID			
	PROVINCE	[answer]		
	District	[answer]		
	NAME OF THE LOCATION	[answer]		
		Hello my name is _____. Before beginning the survey, I would like to read you some information so that you understand what's involved with the study. This study is conducted by **SUPA71** and ICF, a private research and consulting company. This survey is part of a study which seeks to better understand the labor experiences among people who work in the Fishing Industry in Thailand Everything you say is confidential. None of your coworkers or employers will know what you tell me. Your name will not be used in any report. Data from this study may be shared with other researchers or made available in public databases for the purposes of advancing research on these topics. Prior to doing so, all personally identifying information is removed. Participation in this study is voluntary, and if you do not participate there will be no consequences. The risk of doing this survey is that some of our questions are personal and might bring up painful memories that make you feel uncomfortable. If you feel uncomfortable answering any of the questions, it is okay for you to skip those questions. If the survey becomes too tiring or upsetting, we can take a break, reschedule, or stop the interview. We know your time is valuable, for your participation in this study you will receivea token of appreciation of the value 100 Thai Baht. Should you choose to participate in this study, your contributions will help to shine a light on the situation of labor conditions within		

		the fishing industry and will also help us to better understand the supply chain of fish and shrimp. Your answers will help inform future programming to help other workers. I will answer any questions that you have about the study before we begin. Do you have any questions about the study? If you have any questions in the future, or if you later change your mind and do not want us to include the information you provided in our study, you may contact Kanokwan Suwannarong at +66 2 932 9822 or ksuwannarong@supa71.com [IF YES, ANSWER BEFORE CONTINUING]		
	STARTING_NOTE	INTERVIEWER: DO NOT READ RESPONSE OPTIONS ALOUD UNLESS INDICATED. LISTEN TO THE RESPONSE AND SELECT THE MOST APPROPRIATE RESPONSE OPTION(S). DO NOT READ UPPERCASE TEXT ALOUD.		
		SECTION 1: GENERAL INFORMATION		
	S1Q01	How old are you? [IF NEEDED, SAY: Your best guess is fine]		
	S1Q02	What is your gender identity?		
		1. MALE		
		2. FEMALE		
		3. OTHER		
		4. PREFER NOT TO SAY		
	S1Q03	Where were you born?		
		1. THAILAND		
		2. BURMA		
		3. CAMBODIA		
		4. LAOS		
		5. OTHER COUNTRY		

		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER COUNTRY	S1Q03_OTHER	RECORD OTHER COUNTRY OF BIRTH [ENTER 77 FOR "DON'T KNOW" ENTER 99 FOR "REFUSED"]		
ASK IF Thailand	S1Q03A	In which province in Thailand were you born?		
		1. BANGKOK		
		2. AMNAT CHAROEN		
		3. ANG THONG		
		4. BUENG KAN		
		5. BURIRAM		
		6. CHACHOENGSAO		
		7. CHAI NAT		
		8. CHAIYAPHUM		
		9. CHANTHABURI		
		10. CHIANG MAI		
		11. CHIANG RAI		
		12. CHONBURI		
		13. CHUMPHON		
		14. KALASIN		
		15. KAMPHAENG PHET		
		16. KANCHANABURI		
		17. KHON KAEN		
		18. KRABI		
		19. LAMPANG		
		20. LAMPHUN		
		21. LOEI		

		22. LOPBURI		
		23. MAE HONG SON		
		24. MAHA SARAKHAM		
		25. MUKDAHAN		
		26. NAKHON NAYOK		
		27. NAKHON PATHOM		
		28. NAKHON PHANOM		
		29. NAKHON RATCHASIMA		
		30. NAKHON SAWAN		
		31. NAKHON SI THAMMARAT		
		32. NAN		
		33. NARATHIWAT		
		34. NONG BUA LAM PHU		
		35. NONG KHAI		
		36. NONTHABURI		
		37. PATHUM THANI		
		38. PATTANI		
		39. PHANG NGA		
		40. PHATTHALUNG		
		41. PHAYAO		
		42. PHETCHABUN		
		43. PHETCHABURI		
		44. PHICHIT		
		45. PHITSANULOK		
		46. PHRA NAKHON SI AYUTTHAYA		
		47. PHRAE		
		48. PHUKET		

		49. PRACHINBURI		
		50. PRACHUAP KHIRI KHAN		
		51. RANONG		
		52. RATCHABURI		
		53. RAYONG		
		54. ROI ET		
		55. SA KAEO		
		56. SAKON NAKHON		
		57. SAMUT PRAKAN		
		58. SAMUT SAKHON		
		59. SAMUT SONGKHRAM		
		60. SARABURI		
		61. SATUN		
		62. SING BURI		
		63. SISAKET		
		64. SONGKHLA		
		65. SUKHOTHAI (SUKHOTHAI THANI)		
		66. SUPHAN BURI		
		67. SURAT THANI		
		68. SURIN		
		69. TAK		
		70. TRANG		
		71. TRAT		
		72. UBON RATCHATHANI		
		73. UDON THANI		
		74. UTHAI THANI		
		75. UTTARADIT		

		76. YALA		
		77. YASOTHON		
		777. DON'T KNOW OR NOT SURE		
		999. REFUSED TO ANSWER		
ASK IF BURMA	S1Q03B	In which province in Burma were you born?		
		1. AYEYARWADY REGION		
		2. BAGO REGION		
		3. CHIN STATE		
		4. KACHIN STATE		
		5. KAYAH STATE		
		6. KAYIN STATE		
		7. MAGWAY REGION		
		8. MANDALAY REGION		
		9. MON STATE		
		10. NAYPYIDAW UNION TERRITORY		
		11. RAKHINE STATE		
		12. SAGAING REGION		
		13. SHAN STATE		
		14. TANINTHARYI REGION		
		15. YANGON REGION		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF CAMBODIA	S1Q03C	In which province in Cambodia were you born?		
		1. BANTEAY MEANCHEY		
		2. BATTAMBANG		

		3. KAMPONG CHAM		
		4. KAMPONG CHHNANG		
		5. KAMPONG SPEU		
		6. KAMPONG THOM		
		7. KAMPOT		
		8. KANDAL		
		9. KOH KONG		
		10. KRATIÉ		
		11. MONDULKIRI		
		12. PHNOM PENH		
		13. PREAH VIHEAR		
		14. PREY VENG		
		15. PURSAT		
		16. RATANAKIRI		
		17. SIEM REAP		
		18. PREAH SIHANOUK		
		19. STUNG TRENG		
		20. SVAY RIENG		
		21. TAKÉO		
		22. ODDAR MEANCHEY		
		23. KEP		
		24. PAILIN		
		25. TBOUNG KHMUM		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF LAOS	S1Q03B	In which province in Laos were you born?		
		1. ATTAPEU PROVINCE		

		2. BOKEO PROVINCE		
		3. BOLIKHAMXAI PROVINCE		
		4. CHAMPASAK PROVINCE		
		5. HOUAPHANH PROVINCE		
		6. KHAMMOUANE PROVINCE		
		7. LUANG NAMTHA PROVINCE		
		8. LUANG PRABANG PROVINCE		
		9. OUDOMXAY PROVINCE		
		10. PHONGSALY PROVINCE		
		11. SALAVAN PROVINCE		
		12. SAVANNAKHET PROVINCE		
		13. VIENTIANE PROVINCE		
		14. VIENTIANE PREFECTURE		
		15. SAINYABULI PROVINCE		
		16. SEKONG PROVINCE		
		17. XAISOMBOUN PROVINCE		
		18. XIANGKHOUANG PROVINCE		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S1Q04	Have you ever attended school?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF EVER ATTENDED SCHOOL	S1Q04A	What is the highest educational attainment level you have completed?		
		1. PRESCHOOL/NURSERY SCHOOL		

		2. SOME PRIMARY		
		3. COMPLETED PRIMARY		
		4. SOME SECONDARY		
		5. COMPLETED SECONDARY OR HIGHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S1Q05	Have you ever worked in the fishing industry in Thailand?		
		1. YES		
		2. NO --> END INTERVIEW		
		77. DON'T KNOW --> END INTERVIEW		
		99. REFUSED TO ANSWER --> END INTERVIEW		
	GI_READ	READ: For the following questions, please think about your most recent job working in the fishing industry. If you had more than one job, think about your main job.		
	S1Q06	Approximately when did you start this work? [INTERVIEWER: SELECT MONTH (IF KNOWN)]		
		1. JANUARY		
		2. FEBRUARY		
		3. MARCH		
		4. APRIL		
		5. MAY		
		6. JUNE		
		7. JULY		
		8. AUGUST		
		9. SEPTEMBER		
		10. OCTOBER		
		11. NOVEMBER		

		12. DECEMBER		
	S1Q06_YEAR	YEAR		
	S1Q07	S1Q14. Do you still have this job?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF DOES NOT STILL HAVE JOB	S1Q07A	S1Q15. Approximately when did you stop working this job? [INTERVIEWER: SELECT MONTH (IF KNOWN)]		
		1. JANUARY		
		2. FEBRUARY		
		3. MARCH		
		4. APRIL		
		5. MAY		
		6. JUNE		
		7. JULY		
		8. AUGUST		
		9. SEPTEMBER		
		10. OCTOBER		
		11. NOVEMBER		
		12. DECEMBER		
ASK IF DOES NOT STILL HAVE JOB	S1Q07A_YEAR	S1Q15_YEAR. YEAR		
		[PROGRAMMING NOTE: END INTERVIEW IF ENDED JOB MORE THAN ONE YEAR AGO]		
	S1Q08	Did you relocate to take this job, including temporarily?		

		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF RELOCATED FOR JOB	S1Q08A	Did you relocate from another part of Thailand or a different country?		
		1. THAILAND		
		5. DIFFERENT COUNTRY		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF RELOCATED FROM ANOTHER PROVINCE	S1Q08B	From which province in Thailand did you most recently relocate from?		
		1. BANGKOK		
		2. AMNAT CHAROEN		
		3. ANG THONG		
		4. BUENG KAN		
		5. BURIRAM		
		6. CHACHOENGSAO		
		7. CHAI NAT		
		8. CHAIYAPHUM		
		9. CHANTHABURI		
		10. CHIANG MAI		
		11. CHIANG RAI		
		12. CHONBURI		
		13. CHUMPHON		
		14. KALASIN		

		15. KAMPHAENG PHET		
		16. KANCHANABURI		
		17. KHON KAEN		
		18. KRABI		
		19. LAMPANG		
		20. LAMPHUN		
		21. LOEI		
		22. LOPBURI		
		23. MAE HONG SON		
		24. MAHA SARAKHAM		
		25. MUKDAHAN		
		26. NAKHON NAYOK		
		27. NAKHON PATHOM		
		28. NAKHON PHANOM		
		29. NAKHON RATCHASIMA		
		30. NAKHON SAWAN		
		31. NAKHON SI THAMMARAT		
		32. NAN		
		33. NARATHIWAT		
		34. NONG BUA LAM PHU		
		35. NONG KHAI		
		36. NONTHABURI		
		37. PATHUM THANI		
		38. PATTANI		
		39. PHANG NGA		
		40. PHATTHALUNG		
		41. PHAYAO		

		42. PHETCHABUN		
		43. PHETCHABURI		
		44. PHICHIT		
		45. PHITSANULOK		
		46. PHRA NAKHON SI AYUTTHAYA		
		47. PHRAE		
		48. PHUKET		
		49. PRACHINBURI		
		50. PRACHUAP KHIRI KHAN		
		51. RANONG		
		52. RATCHABURI		
		53. RAYONG		
		54. ROI ET		
		55. SA KAEO		
		56. SAKON NAKHON		
		57. SAMUT PRAKAN		
		58. SAMUT SAKHON		
		59. SAMUT SONGKHRAM		
		60. SARABURI		
		61. SATUN		
		62. SING BURI		
		63. SISAKET		
		64. SONGKHLA		
		65. SUKHOTHAI (SUKHOTHAI THANI)		
		66. SUPHAN BURI		
		67. SURAT THANI		
		68. SURIN		

		69. TAK		
		70. TRANG		
		71. TRAT		
		72. UBON RATCHATHANI		
		73. UDON THANI		
		74. UTHAI THANI		
		75. UTTARADIT		
		76. YALA		
		77. YASOTHON		
		777. DON'T KNOW OR NOT SURE		
		999. REFUSED TO ANSWER		
ASK IF RELOCATED FROM ANOTHER COUNTRY	S1Q08C	From which country did you relocate?		
		1. BURMA		
		2. CAMBODIA		
		3. LAOS		
		4. OTHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF ANSWERED 4 TO S1Q08C	S1Q08C_OTHER	S1Q08C_OTHER. RECORD OTHER COUNTRY		
ASK IF ANSWERED 1 TO S1Q08C	S1Q08D	From which province in Burma did you most recently relocate?		
		1. AYEYARWADY REGION		
		2. BAGO REGION		
		3. CHIN STATE		

		4. KACHIN STATE		
		5. KAYAH STATE		
		6. KAYIN STATE		
		7. MAGWAY REGION		
		8. MANDALAY REGION		
		9. MON STATE		
		10. NAYPYIDAW UNION TERRITORY		
		11. RAKHINE STATE		
		12. SAGAING REGION		
		13. SHAN STATE		
		14. TANINTHARYI REGION		
		15. YANGON REGION		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
Ask if answered 2 to S1Q08C	S1Q08D.2	From which province in Cambodia did you most recently relocate?		
		1. BANTEAY MEANCHEY		
		2. BATTAMBANG		
		3. KAMPONG CHAM		
		4. KAMPONG CHHNANG		
		5. KAMPONG SPEU		
		6. KAMPONG THOM		
		7. KAMPOT		
		8. KANDAL		
		9. KOH KONG		
		10. KRATIÉ		
		11. MONDULKIRI		

		12. PHNOM PENH		
		13. PREAH VIHEAR		
		14. PREY VENG		
		15. PURSAT		
		16. RATANAKIRI		
		17. SIEM REAP		
		18. PREAH SIHANOUK		
		19. STUNG TRENG		
		20. SVAY RIENG		
		21. TAKÉO		
		22. ODDAR MEANCHEY		
		23. KEP		
		24. PAILIN		
		25. TBOUNG KHMUM		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
Ask if answered 3 to S1Q08C	S1Q08D.3	From which province in Laos did you most recently relocate?		
		1. ATTAPEU PROVINCE		
		2. BOKEO PROVINCE		
		3. BOLIKHAMXAI PROVINCE		
		4. CHAMPASAK PROVINCE		
		5. HOUAPHANH PROVINCE		
		6. KHAMMOUANE PROVINCE		
		7. LUANG NAMTHA PROVINCE		
		8. LUANG PRABANG PROVINCE		
		9. OUDOMXAY PROVINCE		

		10. PHONGSALY PROVINCE		
		11. SALAVAN PROVINCE		
		12. SAVANNAKHET PROVINCE		
		13. VIENTIANE PROVINCE		
		14. VIENTIANE PREFECTURE		
		15. SAINYABULI PROVINCE		
		16. SEKONG PROVINCE		
		17. XAISOMBOUN PROVINCE		
		18. XIANGKHOUANG PROVINCE		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S1Q09	Do you work for an employer or for yourself?		
		1. EMPLOYER		
		2. SELF		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S1Q10	What type of workplace do you have – is it a boat, on the docks, in a factory, or in aquaculture?		
		1 FISHING BOAT		
		2 ON THE DOCKS		
		3 IN A FACTORY		
		4 IN AQUACULTURE		

		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF S1Q10=1	S1Q10.1	On your last fishing trip, what type of boat is it?		
		1 TRAWLER		
		2 PAIR TRAWLER		
		3 PURSE SEINE		
		4 SQUID BOATS		
		55. OTHER		
		77. DON'T KNOW		
		99. REFUSED		
ASK IF S1Q10=1	S1Q10.2	On your last fishing trip, was the boat captain Thai?		
		1. YES		
		2. NO		
		77. DON'T KNOW		
		99. REFUSED		
ASK IF S1Q10=1	S1Q10.3	On your last fishing trip, were there Thai crew members on the boat?		
		1. YES		
		2. NO		
		77. DON'T KNOW		
		99. REFUSED		
ASK IF S1Q10=1	S1Q10.4	On your last fishing trip how long were you at sea?		
		1. A DAY/NIGHT		
		2. MORE THAN ONE DAY UP TO ONE WEEK		
		3. MORE THAN A WEEK BUT LESS THAN 30 DAYS		
		4. 31 DAYS OR LONGER		
		77. DON'T KNOW		

		99. REFUSED		
ASK IF WORKING ON FISHING BOAT (S1Q10 ANWER 1)	S1Q10A	Which of the following are you catching? READ ANSWERS ALOUD SELECT ALL THAT APPLY		
		1 trash fish		
		2 fish (other than “trash fish” or tuna)		
		3 shrimp		
		4 crabs		
		5 squid and cuttlefish		
		6. Mollusks		
		7 tuna		
		55. Did you catch anything else?		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF OTHER		RECORD OTHER		
ASK IF WORKING ON THE DOCKS (S1Q10 ANSWER 2)	S1Q10A	What type of catch do you sort or process on the dock? READ ANSWERS ALOUD SELECT ALL THAT APPLY		
		1 trash fish		
		2 fish (other than “trash fish” or tuna)		
		3 shrimp		
		4 crabs		
		5 squid and cuttlefish		

		6. Mollusks		
		7 tuna		
		55. Did you sort or process any other type of catch? else		
		77. DON'T KNOW OR NOT SURE		
IF OTHER		RECORD OTHER		
ASK IF WORKING IN FACTORIES (S1Q10 ANSWER 3)	S1Q10A	Which of the following activities best describes your job in the factory? READ ANSWERS ALOUD SELECT ALL THAT APPLY		
		1 washing		
		2 chilling or freezing		
		3 skinning, gilling, gutting, or filleting		
		4 peeling		
		5 shucking		
		6 smoking, salting, or drying		
		7 canning		
		8 bottling		
		9 preserving offal		
		10 supervising the staff		
		11. Do you perform any other activities?		
		77. DON'T KNOW OR NOT SURE		
IF OTHER		RECORD OTHER		
ASK IF WORKING IN FACTORIES (S1Q10 ANSWER 3)	S1Q10A.1	Where do the fish products that you are processing come from? Do they come from… READ RESPONSES ALOUD AND SELECT ALL THAT APPLY		
		1 an aquaculture farm in Thailand		
		2 a Thai port		

		3 From another country		
		7 DON'T KNOW OR NOT SURE		
		9 REFUSED		
ASK IF WORKING IN AQUACULTURE (S1Q10 ANSWER 4)	S1Q10A	Which of the following activities best describes your job? READ ANSWERS ALOUD SELECT ALL THAT APPLY		
		1 feeding		
		2 grading		
		3 processing		
		4 preparations for sale		
		5 monitoring water quality		
		6 checking for diseases and parasites		
		7 supervising the staff		
		11 Does something else best describe your job?		
		77 DON'T KNOW OR NOT SURE		
IF OTHER		RECORD OTHER		
ASK ALL	S1Q10A	What happens to the seafood you catch or process? Is it used to make… READ ANSWERS ALOUD SELECT ALL THAT APPLY		
		1 food for direct human consumption		
		2 fishmeal		
		3 fish sauce		
		4 canned petfood		
		5. canned tuna		
		6 anything else?		
		77 DON'T KNOW OR NOT SURE		
ASK IF OTHER	S1Q10A_OTHER	_OTHER RECORD OTHER		

	S1Q10B	Who buys the seafood you process? SELECT ALL THAT APPLY		
		1 A FACTORY IN THAILAND		
		2 A FARMER IN THAILAND		
		3 A MARKET		
		4 A HOTEL OR RESTAURANT		
		5 OTHER RETAILER IN THAILAND		
		6 EXPORTED ABROAD		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S1Q11	In which of these activities have you engaged in the most recent month you worked? READ ALOUD RESPONSE OPTIONS AND SELECT ALL THAT APPLY		
		1. fishing		
		2. boat work that is not fishing		
		3. sorting		
		4. fish feed production		
		5. fish raising		
		6. washing		
		7. chilling or freezing fish		
		8. skinning, gutting, gilling, or filleting		
		9. peeling		
		10. shucking		
		11. smoking, salting or drying		
		12. canning or bottling		
		13. preserving offal		
		14. grading		

		15. feeding		
		16. processing		
		17. preparations for sale		
		18. monitoring water quality		
		19. checking for diseases and parasites		
		20. supervising the staff		
		55. other work related to fishing		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S1Q11_OTHER_WORK	_OTHER_WORK. Please specify other work related to fishing industry.		
	S1Q11C	On which of these activities do (did) you spend the most time?		
		[PROGRAMMING NOTE: DISPLAY RESPONSES SELECTED ABOVE]		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
		SECTION 2: RECRUITMENT		
	S2Q	Next, we would like to ask you a few questions about how you started in your job.		

	S2Q01	Did anyone help you get this job?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF SOMEONE HELPED GET JOB	S2Q01A	Who helped you get this job? INTERVIEWER: SELECT ALL THAT APPLY. ASK "Anyone else?" BEFORE MOVING ON.		
		1. FAMILY MEMBER		
		2. FRIEND		
		3. RECRUITMENT AGENT IN THAILAND		
		4. RECRUITMENT AGENT IN RESPONDENT'S OWN COUNTRY		
		4. CIVIL SOCIETY ORGANIZATION (CSO)		
		55. OTHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S2Q01A_OTHER	_OTHER. Please specify		
	S2Q01B	Do you have a legal working permit?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		

ASK IF YES FOR QUESTION S2Q01B	S2Q01B.1	What legal documents do you have? INTERVIEWER: SELECT ALL THAT APPLY		
		1 CERTIFICATE OF IDENTITY (CI)		
		2 PASSPORT		
		3 VISA (MOU)		
		4 VISA (CABINET RESOLUTION)		
		5 PINK CARD		
		6 BORDER PASS		
		7 WORK PERMIT		
		8 SEA BOOK CERTIFICATION		
		9 IN PROCESS: TEMPORARY WORK PERMIT (ALREADY SUBMITTED WORK PERMIT APPLICATION, DOCUMENTS RECEIVED TO BE CONFIRMED)		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S2Q02	Were you free to refuse this work?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF NOT FREE TO REFUSE	S2Q02A	Why weren't you free to refuse this work? INTERVIEWER: SELECT ALL THAT APPLY. ASK "Any other reason?" AT LEAST TWICE BEFORE MOVING ON.		
		1. THREATS OR VIOLENCE AGAINST RESPONDENT OR RESPONDENT'S FAMILY BY EMPLOYER/RECRUITER		CO_VIOLENCE
		2. RESTRICTION ON RESPONDENT'S MOVEMENT BY EMPLOYER/RECRUITER		CO_MOVEMENT

		3. DEBT BONDAGE OR MANIPULATION OF DEBT (DEBT TO EMPLOYER/RECRUITER)		CO_DEBT
		4. WITHHOLDING OF VALUABLE DOCUMENTS (SUCH AS IDENTITY DOCUMENTS, SCHOOL CERTIFICATES, OR RESIDENCE PERMITS) BY EMPLOYER/RECRUITER		CO_DOCUMENTS
		5. DEPORTATION OR THREATS OF DEPORTATION		CO_VULNERABILITY
		6. EXCLUSION FROM FUTURE EMPLOYMENT		CO_VULNERABILITY
		7. EMPLOYER WOULD HAVE CAUSED OTHER PEOPLE FROM MY FAMILY TO LOSE THEIR JOBS/LAND/ASSETS		CO_VULNERABILITY
		55. OTHER		
		66. WORK OPPORTUNITIES ARE SCARCE/WOULD HAVE NO MONEY/ETC		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S2Q02A_OTHER	_OTHER. Please specify		
	S2Q03	Do (did) you have a written contract for this work?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF WRITTEN CONTRACT	S2Q03.1	What language is the contract written in? INTERVIEWER: SELECT ALL THAT APPLY		
		1 THAI		
		2 BURMESE		
		3 KHMER		
		4 LAO		
		5 ENGLISH		
		55 OTHER		

		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S2Q03.1_OTHER	Please specify		
ASK IF WRITTEN CONTRACT	S2Q03.2	Could you understand the contents of the contract?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF NO WRITTEN CONTRACT	S2Q03A	Did you have a verbal agreement for this work?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
[ASK IF WORKS FOR AN EMPLOYER]	S2Q04	Before you started the job, did you receive information about the nature of the work you would be doing from a recruiter or your employer? TRANSLATOR: NATURE OF THE WORK REFERS TO THE FUNDAMENTAL DUTIES OF THE JOB, THE TYPE OF JOB		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF KNEW NATURE OF WORK	S2Q04A	Is the nature of your work different from how it was described to you by a recruiter or your employer before you started?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		

		99. REFUSED TO ANSWER		
ASK IF NATURE OF WORK CHANGED ANSWERED 1 TO S2Q04A	S2Q04B	Did the employer ask for your agreement before changing the nature of the work?		
		1. YES		
		2. NO	IN_NATURE	
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF EMPLOYER ASKED AGREEMENTANSWERED 1 TO S2q04b	S2Q04C	Could you have refused the change in the nature of the work?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF COULD NOT REFUSE ANSWERED 1 TO S2Q04C	S2Q04D	Why couldn't you have refused the change in the nature of the work? [INTERVIEWER: LISTEN AND SELECT ALL THAT APPLY. ASK "Any other reason?" TWICE BEFORE MOVING ON.]		
		1. THREATS OR VIOLENCE AGAINST RESPONDENT OR RESPONDENT'S FAMILY BY EMPLOYER/RECURITER		CO_VIOLENCE
		2. RESTRICTION ON RESPONDENT'S MOVEMENT		CO_MOVEMENT
		3. DEBT BONDAGE OR MANIPULATION OF DEBT (DEBT TO EMPLOYER/RECRUITER)		CO_DEBT
		4. WITHHOLDING OF WAGES OR OTHER PROMISED BENEFITS		CO_WITHWAGES
		5. FINE OR DEDUCTION FROM WAGES		CO_WITHWAGES
		6. WITHHOLDING OF VALUABLE DOCUMENTS (SUCH AS IDENTITY DOCUMENTS, SCHOOL CERTIFICATES, OR RESIDENCE PERMITS)		CO_DOCUMENTS
		7. DEPORTATION OR THREATS OF DEPORTATION		CO_VULNERABILITY

		8. EXCLUSION FROM FUTURE EMPLOYMENT		CO_VULNERABILITY
		9. EMPLOYER WOULD HAVE CAUSED OTHER PEOPLE FROM MY FAMILY TO LOSE THEIR JOBS/LAND/ASSETS		CO_VULNERABILITY
		10. DENIAL OF RIGHTS OR PRIVILEGES		CO_VULNERABILITY
		11. DISMISSAL OR THREATS OF DISMISSAL		CO_VULNERABILITY
		55. OTHER		
		66. NEEDED THE WORK/MONEY		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF RIGHTS OR PRIVILEGES WOULD BE DENIED	S2Q04D_OTHER_RP	_OTHER_RP. Which rights or privileges would be denied?		
ASK IF OTHER	S2Q04D_OTHER	_OTHER. Please specify		
[ASK IF WORKS FOR AN EMPLOYER]	S2Q05	Before you started the job, did you receive information about what your earnings would be from a recruiter or your employer?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF RECEIVED INFO IF ANSWERED 1 TO S2Q05	S2Q05	Were your actual earnings higher, lower, or as promised by a recruiter or your employer?		
		1. HIGHER		
		2. LOWER		
		3. AS PROMISED		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		

		SECTION 3: LIVING CONDITIONS		
[ASK IF WORKS FOR AN EMPLOYER AND DOES NOT WORK ON A BOAT ASK IF HAS A RECRUITER AND DOES NOT WORK ON A BOAT]	S3Q01	Does (Did) your employer, recruiter, or agent provide your housing?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF EMPLOYER PROVIDES HOUSING	S3Q01A	Could you have lived somewhere else and still worked at your job?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF COULD NOT LIVE ELSEWHERE IF ANSWERED 2 TO S3Q01A	S3Q01B	Why not? [INTERVIEWER: LISTEN AND SELECT ALL THAT APPLY]		
		1. EMPLOYER, MANAGER, OR RECRUITER WOULD NOT LET ME/ THEY REQUIRE THAT I LIVE HERE		
		2. I CAN'T AFFORD TO LIVE SOMEWHERE ELSE		
		3. I CAN'T FIND ANOTHER PLACE		
		4. OTHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		

ASK IF OTHER	S3Q01B_OTHER	_OTHER. Please specify		
ASK IF LIVES IN EMPLOYER MANDATED HOUSING ASK IF WORKS ON A BOAT	S3Q02	How would you describe the quality of your accommodation? Would you say very good, good, bad, or very bad?		
		1. VERY GOOD		
		2. GOOD		
		3. NEUTRAL (NEITHER GOOD NOR BAD)		
		4. BAD		
		5. VERY BAD	IN_LIVING IF AT LEAST 1 OTHER NEGATIVE LIVING CONDITION AND EMPLOYER MANDATES HOUSING	
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF LIVES IN EMPLOYER MANDATED HOUSING	S3Q02A_ALT	On average, how many people sleep (slept) in the room you sleep in?		
		1. 1-4 PEOPLE		
		2. 5-8 PEOPLE		

		3. 9 OR MORE PEOPLE	IN_LIVING IF AT LEAST 1 OTHER NEGATIVE LIVING CONDITION AND EMPLOYER MANDATES HOUSING	
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF LIVES IN EMPLOYER MANDATED HOUSING	S3Q02B	Does (Did) your housing have any major damage?		
		1. YES	IN_LIVING IF AT LEAST 1 OTHER NEGATIVE LIVING CONDITION AND EMPLOYER MANDATES HOUSING	
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF LIVES IN EMPLOYER MANDATED HOUSING	S3Q02C	Do (Did) you feel safe in your housing?		
		1. YES		
		2. NO	IN_LIVING IF AT LEAST 1 OTHER NEGATIVE LIVING CONDITION AND EMPLOYER MANDATES HOUSING	
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		

ASK IF LIVES IN EMPLOYER MANDATED HOUSING	S3Q02D	Do (Did) you have a safe space in your housing to store your belongings?		
		1. YES		
		2. NO	IN_LIVING IF AT LEAST 1 OTHER NEGATIVE LIVING CONDITION AND EMPLOYER MANDATES HOUSING	
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF WORKS ON A BOAT	S3Q02E	Do you have a safe space on the boat to store your belongings?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF WORKS ON A BOAT	S3Q02F	Do (Did) you have access to sleeping quarters?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF WORKS ON A BOAT	S3Q02H	While on the boat how often did/do you have access to communication with family, friends, or NGOs – would you say never, sometimes, often, or always?		
		1. NEVER		
		2. SOMETIMES		
		3. OFTEN		
		4. ALWAYS		

		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	FOM_READ	READ: Now I will ask you about your freedom of movement at work and outside of work. Please answer these questions about your work environment in general and disregard any special restrictions because of COVID-19.		
	S3Q03	During working hours, can you leave your workplace if needed?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF CANNOT LEAVE WORK PLACE	S3Q03A	Why can't you leave your workplace during working hours? INTERVIEWER: LISTEN AND SELECT ALL THAT APPLY		
		1. SUBJECT TO FINES/DEDUCTIONS/DISMISSAL		
		2. SUBJECT TO VERBAL/PHYSICAL ABUSE		
		3. PHYSICALLY UNABLE TO LEAVE		
		4. REPUTATION/WORK PRODUCT WOULD SUFFER		
		5. OTHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER		_OTHER. Please specify		
IF PHYSICALLY UNABLE TO LEAVE ANSWERED 3 TO S3Q03A	S3Q03B	How are you prevented from leaving? INTERVIEWER: LISTEN AND SELECT ALL THAT APPLY		
		1. WOULD BE STOPPED BY SUPERVISOR		CO_MOVEMENT
		2. GUARDS		CO_MOVEMENT
		3. LOCKED DOORS/GATES		CO_MOVEMENT

		4. ISOLATED WITHOUT TRANSPORT		CO_MOVEMENT
		5. OTHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER		_OTHER. Please specify		
IF LIVES IN EMPLOYER PROVIDED HOUSING THAT IS NOT ON BOAT	S3Q04	Are you free to leave the area of your lodgings outside of work hours?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF NOT FREE TO LEAVE ANSWERED 2 TO S3Q04	S3Q04A	Who prevents you from coming and going outside of work hours? [INTERVIEWER: LISTEN AND SELECT ALL THAT APPLY]		
		1. EMPLOYER/MANAGER/WORKPLACE SECURITY		CO_MOVEMENT
		2. RECRUITER		CO_MOVEMENT
		3. OUTSOURCING AGENCY		CO_MOVEMENT
		4. FAMILY/SPOUSE		
		5. LEGAL RESTRICTION		
		6. OTHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S3Q04A_OTHER	_OTHER. Please specify		

[ASK IF WORKS FOR AN EMPLOYER]	S3Q05	Does your employer hold any of your important documents, such as your passport?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF EMPLOYER HOLDS DOCS	S3Q05A	Can you access your documents if needed?		
		1. YES		
		2. NO		CO_DOCUMENTS
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
		SECTION 4: DEBT AND PAYMENT		
[ASK IF WORKS FOR AN EMPLOYER ASK IF WAS RECRUITED]	S4Q01	Sometimes workers are in debt to their employers or recruiters, for example after paying for the MOU or health insurance. While working in your most recent job, were you ever in debt to your employer or recruiter?		
		1. YES		CO_DEBT IF AT LEAST ONE COERCION BELOW
		2. NO		

		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF HAS DEBT (ANSWERED 1 TO S4Q01)	S4Q01A	Did you feel that the terms of the debt were reasonable? IF RESPONDENT HAS MULTIPLE DEBTS, ASK ABOUT THE MOST RECENT DEBT TO EMPLOYER/RECRUITER.		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF HAS DEBT(ANSWERED 1 TO S4Q01)	S4Q01B	Have you paid off your debt? IF RESPONDENT HAS MULTIPLE DEBTS, ASK ABOUT THE MOST RECENT DEBT TO EMPLOYER/RECRUITER.		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF HAS PAID OFF DEBT ANSWERED 1 TO S4Q01B	S4Q01C	How many months did it take you to pay off the debt?		
		[MONTHS]		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF HAS NOT PAID OFF DEBT ANSWERED 2 TO S4Q01B	S4Q01D	How many months do you expect it to take to pay off your debt?		
		[MONTHS]		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		

ASK IF IN DEBT(ANSWERED 1 TO S4Q01)	S4Q01E	If you were to leave your job before paying off your debt, what might happen? INTERVIEWER: SELECT ALL THAT APPLY. ASK "Anything else?" AT LEAST TWICE BEFORE MOVING ON.		
		1. THREATS OR VIOLENCE AGAINST RESPONDENT OR RESPONDENT'S FAMILY BY EMPLOYER/RECRUITER		CO_VIOLENCE
		2. RESTRICTION ON RESPONDENT'S MOVEMENT		CO_MOVEMENT
		3. WITHHOLDING OF WAGES OR OTHER PROMISED BENEFITS		CO_WITHWAGES
		4. FINE OR DEDUCTION FROM WAGES *BEYOND THE VALUE OF THE DEBT*		CO_WITHWAGES
		5. WITHHOLDING OF VALUABLE DOCUMENTS (SUCH AS IDENTITY DOCUMENTS, SCHOOL CERTIFICATES, OR RESIDENCE PERMITS)		CO_DOCUMENTS
		6. DEPORTATION OR THREATS OF DEPORTATION		CO_VULNERABILITY
		7. EXCLUSION FROM FUTURE EMPLOYMENT		CO_VULNERABILITY
		8. EMPLOYER WOULD HAVE CAUSED OTHER PEOPLE FROM MY FAMILY TO LOSE THEIR JOBS/LAND/ASSETS		CO_VULNERABILITY
		9. I WOULD BE ARRESTED OR PROSECUTED		CO_VULNERABILITY
		10. WITHHOLDING OF MATERIAL GOODS AS COLLATERAL		
		55. OTHER		
		66. NOTHING		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S4Q01E_OTHER	_OTHER. Please specify		

	S4Q02	Now I would like to ask you about your earnings. Please only include the earnings from your basic wages, not any overtime pay or bonuses you may receive. Include only the amount you take home, after any deductions by your employer. About how much do you earn in baht for a typical day's work? INTERVIEWER: IF RESPONDENT IS PAID IN KIND OR IN ANOTHER CURRANCY, ASK RESPONDENT TO ESTIMATE VALUE IN BAHT		
		[AMOUNT EARNED]		
		77 DON'T KNOW		
		99 REFUSED TO ANSWER		
ASK IF PROVINCE IS SAMUT SAKHOR	S4Q03	On a typical day, are your earnings less than 353 BAHT? INTERVIEWER: IF RESPONDENT IS PAID IN KIND, ASK RESPONDENT TO ESTIMATE WHETHER VALUE IS LESS THAN 353 BAHT PER DAY.		
ASK IF PROVINCE IS SONGKLA	S4Q03	On a typical day, are your earnings less than 340 BAHT? INTERVIEWER: IF RESPONDENT IS PAID IN KIND, ASK RESPONDENT TO ESTIMATE WHETHER VALUE IS LESS THAN 340 BAHT PER DAY.		

ASK IF PROVINCE IS RANONG	S4Q03	On a typical day, are your earnings less than 332 BAHT? INTERVIEWER: IF RESPONDENT IS PAID IN KIND, ASK RESPONDENT TO ESTIMATE WHETHER VALUE IS LESS THAN 332 BAHT PER DAY.		
		1. YES	IN_WAGES	
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S4Q04	Who pays you?		
		1. SITE OWNER		
		2. SUBCONTRACTOR		
		3. MANPOWER AGENCY		
		4. BOAT OWNER		
		5. OTHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S4Q04_OTHER	_OTHER. Please specify		
		Are your typical earnings enough to meet your basic needs for food and shelter?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
[ASK IF WORKS FOR AN EMPLOYER]	S4Q05	Does your employer impose a production quota/target?		

		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF QUOTA	S4Q05A	What is the quota/target?		
		[AMOUNT]		
ASK IF QUOTA	S4Q05A.1	INDICATE THE UNIT OF MEASUREMENT of the quota		
		1 WEIGHT		
		2 VOLUME		
		3. COUNT		
		4. LENGTH		
		5. PACKAGE PRODUCTS (SUCH AS TINS)		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF QUOTA	S4Q05B	Do you consider the quota/target to be a reasonable amount for an individual worker working alone?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF QUOTA	S4Q05C	What might happen if you fail to meet the quota/target? INTERVIEWER: SELECT ALL THAT APPLY. ASK "Anything else?" AT LEAST TWICE BEFORE MOVING ON.		
		1. THREATS OR VIOLENCE AGAINST RESPONDENT OR RESPONDENT'S FAMILY BY EMPLOYER/RECRUITER		CO_VIOLENCE
		2. RESTRICTION ON RESPONDENT'S MOVEMENT		CO_MOVEMENT
		3. DEBT BONDAGE OR MANIPULATION OF DEBT (DEBT TO EMPLOYER/RECRUITER)		CO_DEBT

		4. WITHHOLDING OF WAGES OR OTHER PROMISED BENEFITS		CO_WITHWAGES
		5. FINE OR DEDUCTION FROM WAGES		CO_WITHWAGES
		6. WITHHOLDING OF VALUABLE DOCUMENTS (SUCH AS IDENTITY DOCUMENTS, SCHOOL CERTIFICATES, OR RESIDENCE PERMITS)		CO_DOCUMENTS
		7. DEPORTATION OR THREATS OF DEPORTATION		CO_VULNERABILITY
		8. EXCLUSION FROM FUTURE EMPLOYMENT		CO_VULNERABILITY
		9. EMPLOYER WOULD HAVE CAUSED OTHER PEOPLE FROM MY FAMILY TO LOSE THEIR JOBS/LAND/ASSETS		CO_VULNERABILITY
		10. DENIAL OF RIGHTS OR PRIVILEGES		CO_VULNERABILITY
		11. DISMISSAL OR THREATS OF DISMISSAL		CO_VULNERABILITY
		55. OTHER		
		66. NOTHING/ EARN LESS MONEY/ REPUTATION WOULD SUFFER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S4Q05C_OTHER_RP	_OTHER_RP. Which rights or privileges would be denied?		
ASK IF OTHER	S4Q05C_OTHER	_OTHER. Please specify		
		SECTION 5: WORKING CONDITIONS		
	S5Q01	Do children under age 18 work at the place where you work?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF S5Q01 = 1	S5Q01.1	Are the children Thais, migrants or both?		

		1. THAIS		
		2. MIGRANTS		
		3. BOTH THAIS AND MIGRANTS		
		77. DON'T KNOW		
		99. REFSED		
ASK IF S5Q01 = 1	S5Q01.2	Are the children boys, girls, or both?		
		1. BOYS		
		2. GIRLS		
		3. BOTH		
		77. DON'T KNOW		
		99. REFUSED		
ASK IF S5Q01.2 = 3	S5Q01.3	Would you say mostly boys, mostly girls, or about half and half?		
		1 MOSTLY BOYS		
		2 MOSTLY GIRLS		
		3 ABOUT HALF AND HALF		
		77. DON'T KNOW		
		99. REFUSED		
ASK IF S5Q01 = 1	S5Q01.4	Do the children do this work … READ ALOUD; SELECT ALL THAT APPLY		
		1 during school hours		
		2 after school hours		
		3 during school holidays		
		77. DON'T KNOW		
		99. REFUSED		

	S5Q02	Now I would like to ask some more questions about your own work. We would like to know about any dangerous work or work in hazardous conditions you do or did. Does or did your work often involve exposure to... ...excessive noise without appropriate protective equipment?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S5Q02A	[READ IF NECESSARY: Does or did your work often involve exposure to..] …extreme heat without sufficient breaks or without access to clean water?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S5Q02B	[READ IF NECESSARY: Does or did your work often involve exposure to.] …dangerous chemicals without appropriate protective equipment?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S5Q02C	[READ IF NECESSARY: Does or did your work often involve exposure to.] …dangerous or sharp tools or heavy machinery without appropriate protective equipment?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		

		99. REFUSED TO ANSWER		
	S5Q02D	[READ IF NECESSARY: Does or did your work often involve exposure to.] …carrying unreasonably heavy loads?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S5Q02E	[READ IF NECESSARY: Does or did your work often involve exposure to.] …dust or strong fumes without appropriate protective equipment?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S5Q02F	[READ IF NECESSARY: Does or did your work often involve exposure to.] … being offered drugs or forced to take drugs on the boat		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
		[READ IF NECESSARY: Does or did your work often involve exposure to.] water-related hazards or boats lacking adequate safety measures that could cause risks associated with drowning, hypothermia, and injuries from handling fishing gear?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		

		99. REFUSED TO ANSWER		
	S5Q02G	[READ IF NECESSARY: Does or did your work often involve exposure to.] …anything else you consider dangerous?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S5Q02_OTHER	_OTHER. What other dangerous work do, or did you do?		
ASK DOES HAZARDOUS WORK	S5Q03	Before starting your job, did you know you would be exposed to these hazards?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF DOES HAZARDOUS WORK	S5Q04	Could you have refused to do these hazardous activities?		
		1. YES		
		2. NO	IN_HAZARDOUS	
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF COULD NOT REFUSE	S5Q04A	Why couldn't you refuse to do these hazardous activities? INTERVIEWER: SELECT ALL THAT APPLY. ASK "Any other reason?" AT LEAST TWICE BEFORE MOVING ON.		
		1. THREATS OR VIOLENCE AGAINST RESPONDENT OR RESPONDENT'S FAMILY BY EMPLOYER/RECURITER		CO_VIOLENCE
		2. RESTRICTION ON RESPONDENT'S MOVEMENT		CO_MOVEMENT

		3. DEBT BONDAGE OR MANIPULATION OF DEBT (DEBT TO EMPLOYER/RECRUITER)		CO_DEBT
		4. WITHHOLDING OF WAGES OR OTHER PROMISED BENEFITS		CO_WITHWAGES
		5. FINE OR DEDUCTION FROM WAGES		CO_WITHWAGES
		6. WITHHOLDING OF VALUABLE DOCUMENTS (SUCH AS IDENTITY DOCUMENTS, SCHOOL CERTIFICATES, OR RESIDENCE PERMITS)		CO_DOCUMENTS
		7. DEPORTATION OR THREATS OF DEPORTATION		CO_VULNERABILITY
		8. EXCLUSION FROM FUTURE EMPLOYMENT		CO_VULNERABILITY
		9. EMPLOYER WOULD HAVE CAUSED OTHER PEOPLE FROM MY FAMILY TO LOSE THEIR JOBS/LAND/ASSETS		CO_VULNERABILITY
		10. DENIAL OF RIGHTS OR PRIVILEGES		CO_VULNERABILITY
		11. DISMISSAL OR THREATS OF DISMISSAL		CO_VULNERABILITY
		55. OTHER		
		66. NEEDED THE WORK/MONEY		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S5Q04A_OTHER_RP	_OTHER_RP. Which rights or privileges would be denied?		
ASK IF OTHER	S5Q04A_OTHER	_OTHER. RECORD OTHER		
	S5Q05	Do (did) you usually wear any protective gear while working in this job?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		

IF WEARS PROTECTIVE GEAR	S5Q05A	What do (did) you wear? INTERVIEWER: LISTEN AND SELECT ALL THAT APPLY		
		1. PROTECTIVE GOGGLES		
		2. HELMET		
		3. EAR-PLUGS		
		4. FACE SHIELD		
		5. RESPIRATOR OR DUST MASK		
		6. PROTECTIVE CLOTHING (EX: LEATHER, ASBESTOS, LIFE VESTS)		
		7. GLOVES		
		8. SHOES		
		55. OTHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S5Q05A_OTHER	_OTHER. RECORD OTHER		
	S5Q06	Have you ever gotten hurt or sick because of your work in this job?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF EVER HURT/SICK ANSWERED 1 TO S5Q06	S5Q06A	What types of injury or sickness have you had? INTERVIEWER: LISTEN AND SELECT ALL THAT APPLY		
		1. HEAD INJURY		
		2. INJURY TO OR DEAFNESS IN EARS		
		3. EYE INJURY		
		4. INJURY TO SHOULDER		

		5. INJURY TO OR SWELLING IN HANDS		
		6. SMOKE, DUST, OR CHEMICAL DAMAGE TO LUNGS		
		7. INJURY TO ABDOMEN		
		8. BACK STRAIN/ PAIN IN BACK		
		9. INJURY TO KNEES OR LEGS		
		10. TWISTED ANKLE		
		11. INJURY TO FEET		
		12. HEAT STROKE		
		13. BURN FROM FIRE		
		14. CHEMICAL BURN		
		15. CUTS/WOUNDS		
		55. OTHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S5Q06A_OTHER	_OTHER. RECORD OTHER		
IF EVER HURT/SICK ANSWERED 1 TO S5Q06	S5Q06B	How did you get hurt or sick? INTERVIEWER: LISTEN AND SELECT ALL THAT APPLY		
		1. GETTING CAUGHT IN THE FISHING GEAR		
		2 SEVERE SEA SICKNESS		
		3 LACK OF FOOD		
		4 LACK OF FRESH WATER		
		5 SELF HARM		
		6 TOO MANY PEOPLE ON THE BOAT		
		7. TOOL ACCIDENT		
		8. MACHINERY ACCIDENT		

		9. INSUFFICENT VENTILATION		
		10. VIOLENCE BY COWORKER/EMPLOYER		
		11. DROWING OR WATER RELATED INJURIES		
		12. BERI BERI		
		55. OTHER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S5Q06B_OTHER	_OTHER. RECORD OTHER		
[ASK IF WORKS FOR AN EMPLOYER]	S5Q07	Does your employer require you to work for other employers?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF ANSWERED 1 TO S5Q07	S5Q07A	Could you have refused to work for other employers?		
		1. YES		
		2. NO	IN_OTHEMPL	
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF ANSWERED 2 TO S5Q07A	S5Q07B	Why couldn't you refuse to work for other employers? INTERVIEWER: SELECT ALL THAT APPLY. ASK "Any other reason?" AT LEAST TWICE BEFORE MOVING ON.		
		1. THREATS OR VIOLENCE AGAINST RESPONDENT OR RESPONDENT'S FAMILY BY EMPLOYER/RECURITER		CO_VIOLENCE
		2. RESTRICTION ON RESPONDENT'S MOVEMENT		CO_MOVEMENT
		3. DEBT BONDAGE OR MANIPULATION OF DEBT (DEBT TO EMPLOYER/RECRUITER)		CO_DEBT

		4. WITHHOLDING OF WAGES OR OTHER PROMISED BENEFITS		CO_WITHWAGES
		5. FINE OR DEDUCTION FROM WAGES		CO_WITHWAGES
		6. WITHHOLDING OF VALUABLE DOCUMENTS (SUCH AS IDENTITY DOCUMENTS, SCHOOL CERTIFICATES, OR RESIDENCE PERMITS)		CO_DOCUMENTS
		7. DEPORTATION OR THREATS OF DEPORTATION		CO_VULNERABILITY
		8. EXCLUSION FROM FUTURE EMPLOYMENT		CO_VULNERABILITY
		9. EMPLOYER WOULD HAVE CAUSED OTHER PEOPLE FROM MY FAMILY TO LOSE THEIR JOBS/LAND/ASSETS		CO_VULNERABILITY
		10. DENIAL OF RIGHTS OR PRIVILEGES		CO_VULNERABILITY
		11. DISMISSAL OR THREATS OF DISMISSAL		CO_VULNERABILITY
		55. OTHER		
		66. NEEDED THE WORK/MONEY		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S5Q07B_OTHER_RP	_OTHER_RP. Which rights or privileges would be denied?		
ASK IF OTHER	S5Q07B_OTHER	_OTHER. Please specify		
	S5Q08	On average, excluding overtime, how many hours do you work per week?		
		[NUMBER]		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		

	S5Q09	Do (did) you ever work overtime?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF WORKS OVERTIME	S5Q09A	On average, how many hours of overtime do you work per week?		
		[NUMBER]	IN_OVERTIME IF OVER LEGAL LIMIT	
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF WORKS OVERTIME	S5Q09B	What might happen if you refused to work overtime? INTERVIEWER: SELECT ALL THAT APPLY. ASK "Anything else?" AT LEAST TWICE BEFORE MOVING ON.		
		1. THREATS OR VIOLENCE AGAINST RESPONDENT OR RESPONDENT'S FAMILY BY EMPLOYER/RECRUITER		CO_VIOLENCE
		2. RESTRICTION ON RESPONDENT'S MOVEMENT		CO_MOVEMENT
		3. DEBT BONDAGE OR MANIPULATION OF DEBT (DEBT TO EMPLOYER/RECRUITER)		CO_DEBT
		4. WITHHOLDING OF WAGES OR OTHER PROMISED BENEFITS		CO_WITHWAGES
		5. FINE OR DEDUCTION FROM WAGES		CO_WITHWAGES
		6. WITHHOLDING OF VALUABLE DOCUMENTS (SUCH AS IDENTITY DOCUMENTS, SCHOOL CERTIFICATES, OR RESIDENCE PERMITS)		CO_DOCUMENTS
		7. DEPORTATION OR THREATS OF DEPORTATION		CO_VULNERABILITY
		8. EXCLUSION FROM FUTURE EMPLOYMENT		CO_VULNERABILITY

		9. EMPLOYER WOULD HAVE CAUSED OTHER PEOPLE FROM MY FAMILY TO LOSE THEIR JOBS/LAND/ASSETS		CO_VULNERABILITY
		10. DENIAL OF RIGHTS OR PRIVILEGES		CO_VULNERABILITY
		11. DISMISSAL OR THREATS OF DISMISSAL		CO_VULNERABILITY
		55. OTHER		
		66. NOTHING/ EARN LESS MONEY/ REPUTATION WOULD SUFFER		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S5Q09B_OTHER_RP	_OTHER_RP. Which rights or privileges would be denied?		
ASK IF OTHER	S5Q09B_OTHER	_OTHER. RECORD OTHER		
	S5Q10	How many days do (did) you usually work each week?		
		1 DAY		
		2 DAYS		
		3 DAYS		
		4 DAYS		
		5 DAYS		
		6 DAYS		
		7 DAYS		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S5Q11	Was there an agreed end date when you began working in this job?		

		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF THERE WAS AN END DATE	S5Q11A	Did you work beyond this agreed end date?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF WORKED BEYOND END DATE	S5Q11B	Did you agree to the change to the end date?		
		1. YES		
		2. NO	IN_LONGER	
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
	S5Q12	Can you raise concerns about your working conditions without fear of retaliation?		
		1. YES		
		2. NO		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF CAN'T RAISE CONCERNS (ANSWERED 2 TO S5Q12)	S5Q12A	What might happen if you raised concerns about your working conditions? INTERVIEWER: SELECT ALL THAT APPLY. ASK "Anything else?" AT LEAST TWICE BEFORE MOVING ON.		
		1. THREATS OR VIOLENCE AGAINST RESPONDENT OR RESPONDENT'S FAMILY BY EMPLOYER/RECRUITER		CO_VIOLENCE

		2. RESTRICTION ON RESPONDENT'S MOVEMENT		CO_MOVEMENT
		3. DEBT BONDAGE OR MANIPULATION OF DEBT (DEBT TO EMPLOYER/RECRUITER)		CO_DEBT
		4. WITHHOLDING OF WAGES OR OTHER PROMISED BENEFITS		CO_WITHWAGES
		5. FINE OR DEDUCTION FROM WAGES		CO_WITHWAGES
		6. WITHHOLDING OF VALUABLE DOCUMENTS (SUCH AS IDENTITY DOCUMENTS, SCHOOL CERTIFICATES, OR RESIDENCE PERMITS)		CO_DOCUMENTS
		7. DEPORTATION OR THREATS OF DEPORTATION		CO_VULNERABILITY
		8. EXCLUSION FROM FUTURE EMPLOYMENT		CO_VULNERABILITY
		9. EMPLOYER WOULD HAVE CAUSED OTHER PEOPLE FROM MY FAMILY TO LOSE THEIR JOBS/LAND/ASSETS		CO_VULNERABILITY
		10. DENIAL OF RIGHTS OR PRIVILEGES		CO_VULNERABILITY
		11. DISMISSAL OR THREATS OF DISMISSAL		CO_VULNERABILITY
		55. OTHER		
		66. NOTHING		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S5Q12A_OTHER_RP	_OTHER_RP. Which rights or privileges would be denied?		
ASK IF OTHER	S5Q12A_OTHER	_OTHER. Please specify		

[ASK IF WORKS FOR AN EMPLOYER]	S5Q13	If you decide (decided) to stop working with this employer, can (could) you leave without negative consequences by your employer?		
		1. YES		
		2. NO	IN_NOQUIT	
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
IF CAN'T QUIT	S5Q13A	Can you tell me in your own words how the employer or recruiter keeps (kept) you from quitting your job? INTERVIEWER: SELECT ALL THAT APPLY. ASK "Anything else?" AT LEAST TWICE BEFORE MOVING ON.		
		1. THREATS OR VIOLENCE AGAINST RESPONDENT OR RESPONDENT'S FAMILY BY EMPLOYER/RECRUITER		CO_VIOLENCE
		2. RESTRICTION ON RESPONDENT'S MOVEMENT		CO_MOVEMENT
		3. DEBT BONDAGE OR MANIPULATION OF DEBT (DEBT TO EMPLOYER/RECRUITER)		CO_DEBT
		4. WITHHOLDING OF WAGES OR OTHER PROMISED BENEFITS		CO_WITHWAGES
		5. WITHHOLDING OF VALUABLE DOCUMENTS (SUCH AS IDENTITY DOCUMENTS, SCHOOL CERTIFICATES, OR RESIDENCE PERMITS)		CO_DOCUMENTS
		6. DEPORTATION OR THREATS OF DEPORTATION		CO_VULNERABILITY
		7. EXCLUSION FROM FUTURE EMPLOYMENT		CO_VULNERABILITY

		8. EMPLOYER WOULD HAVE CAUSED OTHER PEOPLE FROM MY FAMILY TO LOSE THEIR JOBS/LAND/ASSETS		CO_VULNERABILITY
		55. OTHER		
		66. NO COERCION ("NEEDED JOB, COULDN'T QUIT")		
		77. DON'T KNOW OR NOT SURE		
		99. REFUSED TO ANSWER		
ASK IF OTHER	S5Q13A_OTHER_RP	_OTHER_RP. Which rights or privileges would be denied?		
ASK IF OTHER	S5Q13A_OTHER	_OTHER. RECORD OTHER		
	S5Q14	What is the name of the place where you work (worked) for the job we've been talking about? [INTERVIEWER: RECONFIRM CONFIDENTIALITY IF NEEDED.]		
	S5Q14A	Where is your workplace located? INTERVIEWER: RECORD AS MUCH DETAIL AS POSSIBLE.		
	END_TIME			
	SURVEY_END	END INTERVIEW Thank you very much for sharing your experience.		

Supply Chain Key Informant Interview Guide

Introduction and Respondent Background:

1. Could you please tell us about yourself and also your role and responsibility? What do you focus on?
    a. Is there other experience you have in the fishing and seafood industry?
    b. (PROBE FOR SPECIFIC KNOWLEDGE BASE AROUND FISH AND SHRIMP)
2. Can you describe your organization's work directly in the **fishing and seafood** industry?
    a. What kind of activities in this area do you and your organization undertake?
    b. (IF THE ORGANIZATION IS NOT DIRECTLY INVOLVED ASK) If your work is not directly related, how are you familiar with issues regarding the **fishing and seafood industry?**
3. Do you know about the fishing and seafood industry, including shrimp farming supply chain?
    a. IF SO, which of the following parts of the fishing industry are you most familiar with:
        i. Seafood Processing
        ii. Shrimp
        iii. trash fish

iv. fish meal
v. pet food?
vi. Other parts? What is that? Could you explain more on this industry?

b. (PROBE: Please explain FOR ALL INDICATED FAMILIARITIES)
c. IF NOT, GO TO QUESTIONS ABOUT LABOR CONDITIONS

(INTERVIEWER: USE THE ANSWER TO QUESTION 3 TO DETERMINE THE CONTEXT OF SUPPLY CHAIN QUESTIONS, ASK FISH MEAL SUPPLY CHAIN QUESTIONS TO THOSE MOST FAMILIAL WITH THE FISH MEAL SUPPLY CHAIN, ETC)

Supply Chain Theme General:

(INTERVIEWER: FOR QUESTIONS WITH "(trash fish, fish meal, shrimp, or pet food containing shrimp or fish)" PLEASE SELECT THE GOOD OR GOODS THAT MATCH THE RESPONDENTS' KNOWLEDGE BASE. RESTATE THE QUESTION OR PROBE FOR EACH GOOD AS NEEDED)

1. How does the fishing and seafood industry, and shrimp farming work in Thailand? Kindly explain.
    a. (PROBE FOR SPECIFICS ON FISHING BOATS AND SHRIMP AQUACULTURE)
    b. What laws and regulations provide the foundation for the operations of the industry?
        i. (PROBE FOR SPECIFIC LABOR LAWS)
2. Do you know if there are any list(s) or mapping of **ports, boat companies, processing factories and aquaculture sites** in **Thailand**?
    a. How would someone access any of these lists?
3. Who are the major stakeholders and influencers in the fishing and seafood industry (ex: local and international NGOs, trade associations, informal business networks, owners, buyers, traders, foreign investors, and local Civil Society Organizations (CSOs))?
    a. (PROBE FOR SPECIFICS RELATED TO FISHING AND SHRIMP INDUSTRIES)
    b. PROBE FOR DIFFERENCES REALTED TO SHRIMP AQUACULTURE)
4. Please describe the production process of (trash fish, fish meal, shrimp, or pet food containing shrimp or fish) from the beginning to the end?
    a. How are these goods transported or traded?
    b. (PROBE TO SEE IF THE RESPONDENT CAN EXPLAIN THE PRODUCTION PROCESS OF ANOTHER TYPE OF CATCH)
5. After (fishing (trash fish, fish meal, shrimp) or harvesting shrimp (aquaculture)), what processing occurs within Thailand?
    a. What other goods, byproducts, or downstream goods are produced in-country? Are these consumed domestically or exported?
    b. If exported, to which countries?
6. Are there any lists or mapping of fish processing facilities in Thailand?
    a. What about for fishmeal and pet food made from shrimp or fish specifically?
    b. How would someone access the list?
7. What type of products does fish and shrimp from **Thailand** end up in? (Probe for both intermediary goods and finished/end goods?)

8. Does the (trash fish, fish meal, shrimp, or pet food containing shrimp or fish) produced in **Thailand** end up in any products produced domestically? (PROBE FOR INTERMEDIARY GOODS AND END GOODS)?
    a. (PROBE FOR ADDITIONAL CATCH OR PET FOOD CONTAINING SHRIMP BASED ON RESPONDENT'S EXPERTISE)
    b. IF SO: what domestic industries or companies use (trash fish, fish meal, shrimp, or pet food containing shrimp or fish) as a material input?
        1. (PROBE ALL GOOD OPTIONS THAT HAVE ALREADY BEEN MENTIONED BY THE RESPONDENT I.E. TRASH FISH, FISH MEAL, ETC)
        2. What do the domestic industries and companies use (trash fish, fish meal, shrimp, or pet food containing shrimp or fish) as an input for?
        3. (PROBE ALL GOOD OPTIONS THAT HAVE ALREADY BEEN MENTIONED BY THE RESPONDENT I.E. TRASH FISH, FISH MEAL, ETC)
9. How have current or former trade policies and international pressures impacted the fishing sector?
    a. (PROBE FOR SPECIFICS ON: FISHING BOATS, ONSHORE PROCESSING FACILITIES, SHRIMP AQUACULTURE)
10. Have there been any socio-political events that have impacted the (trash fish, fish meal, shrimp, or pet food containing shrimp or fish) supply chain? If yes, such as? How?
11. Have there been changes in policies or efforts from the Royal Thai Government that have impacted the supply chain? If so, please explain.
    a. (PROBE FOR ADDITIONAL CATCH OR PET FOOD BASED ON RESPONDENT'S EXPERTISE)
12. What can you tell us about the labor standards in the fishing and seafood industry?
    a. What are the primary concerns across the industry when it comes to labor standards?
    b. What are the different certifications available for companies in the supply chain?
        i. Is it common for companies to have these certifications (PROBE FOR SPECIFICS)
    c. Are there children working across the industry, if so, in which parts and how old are the children? (PROBE FOR SPECIFICS: Migrant children, boys or girls, are they in or out of school?)
    d. (PROBE FOR SPECIFICS ON: FISHING BOATS, PROCESSING FACILITIES, SHRIMP AQUACULTURE)
13. Do you know any projects trying to trace fish products? If so, explain about it?
        i. (Probe for specifics on what the initiatives are and who is promoting them (e.g. government, international corporations, domestic companies)

Supply Chain Labor Exploitation Questions:

(INTERVIEWER: USE THE SAME GOOD/INDUSTRY EXPERTISE USED IN THE LAST SECTION WHEN SELECTING FROM FISH, FISH MEAL, SHRIMP, AND PET FOOD AS INDICATED IN THE FOLLOWING QUESTIONS)

1. How might one track (trash fish, fish meal, shrimp, or pet food containing shrimp or fish) from the point of catch or aquafarm through the domestic supply chain?
    a. (PROBE FOR SPECIFICS BASED ON THE SUPPLY CHAIN OF A CORPORATE/ LARGE INDUSTRY PLAYERS VERSUS ARTISANAL AND SMALL-SCALE PRODUCERS.)

b. Is there a point in the supply chain where you anticipate tracking would no longer be possible? (PROBE FOR SPECIFICS ON WHAT STAKEHOLDER THE TRACEABILITY ENDS WITH, EX: INTERMEDIARY BUYER, EXPORTER, ETC.)
    i. (SPECIFIC PROBE) When does the mixing of trash fish and/or shrimp) from different sites occur, how does mixing occur?

2. What is your overall impression of working conditions in the fishing as well as seafood industry?

a. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, PROCESSING FACILITIES, AND SHRIMP AQUACULTURE)

b. What specific forced labor indicators do workers face (i.e. withheld wages, hours violations, etc.)
c. What factors make a worker in this sector vulnerable to forced labor?
    i. (PROBE FOR SPECIFICS ON DEMOGRAPHICS – AGE RANGE, GENDER, MIGRATORY STATUS such as legal, illegal, MOU, border pass etc.)
d. Are you aware of any industries or occupations in which workers are working on an involuntary basis or are otherwise unable to leave their jobs?

3. During which stages of the (trash fish, fish meal, shrimp or pet food containing shrimp or fish) supply chain are risks for forced labor most prevalent?
    a. What are the risk factors at each stage (particularly at sea, harvest (aquafarms) and processing)?
        i. PROBE FOR SIMILARITIES AND DIFFERENC
4. What types of downstream goods are being produced from trash fish, fish meal, shrimp or pet food containing shrimp or fish) obtained through forced labor?
5. Who are the main stakeholders in the fishing and seafood industry of Thailand involved in the sale and processing of (trash fish, fish meal, shrimp, or pet food containing shrimp or fish) using forced labor?
    a. PROBE FOR SPECIFICS ON: FISHING BOATS, ONSHORE PROCESSING FACILITIES, SHRIMP AQUACULTURE)
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Conclusion

1. Could you suggest any organizations or individuals that are well informed about the fishing and seafood, shrimp farming supply chain that we could interview? Why should we interview them?

2. Is there anything else you would like to add?

Labor Conditions Key Informant Interview Guide

Labor Conditions Section

(INTERVIEWER: BASED ON THE INTERVIEWEE, ALL QUESTIONS SHOULD BE CONTEXTUALIZED TO SPEAK TO CONDITIONS ON BOATS VERSUS CONDITIONS ON THE SHORE (PROCESSING OR SHRIMP

AQUACULTURE). ASK THESE THREE INITIAL SCREENING QUESTIONS TO DETERMINE THE FOCUS OF THE INTERVIEW)

1. Does your organization work on issues related to the fishing and seafood industry, and shrimp farming including processing of fish?
    a. If yes, please explain.
    b. IF NOT, how familiar are you with issues concerning the onshore fishing and seafood industry including shrimp farming?
2. Does your organization work on issues related to fishing boats?
    a. If yes, please explain.
    b. IF NOT, how familiar are you with issues concerning the fishing boats?
3. Does your organization work on issues related to shrimp aquaculture (shrimp farming?)
    a. If yes, please explain.
    b. IF NOT, how familiar are you with issues concerning shrimp aquaculture (shrimp farming)?

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(INTERVIEWER: BASED ON THE ANSWERS TO QUESTIONS 1, 2 AND 3 CONTEXTUALIZE THE FOLLOWING QUESTIONS TO BEST FIT THE TOPIC OF BOATS OR ONSHORE LABOR CONDITIONS. BE SURE TO ASK ADDITIONAL ANNEX OF BOAT OR ONSHORE QUESTIONS)

Forced Labor Questions

1. (IF NOT ALREADY ASKED IN SUPPLY CHAIN QUESTIONS) What is your overall impression of working conditions in the fishing and **seafood** industry?
    a. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, ONSHORE PROCESSING FACILITIES, SHRIMP AQUACULTURE)
    b. What are the main issue areas you are aware of?
    c. What factors make a worker in this sector more vulnerable to forced labor?
        i. (PROBE FOR SPECIFICS ON DEMOGRAPHICS – AGE RANGE, GENDER, MIGRATORY STATUS-legal/illegal, MOU, border pass, etc.
2. What do you think of worker-employer relations in the industry?
    a. PROBE FOR SPECIFICS ON: (FISHING BOATS, ONSHORE PROCESSING FACILITIES, SHRIMP AQUACULTURE)

Recruitment

1. In your understanding, how do individuals become employed in the fishing sector (PROBE FOR KNOWLEGE FOR FISHERS, PROCESSING WORKERS, AND SHRIMP AQUACULTURE WORKERS)
2. How much did they pay? Which route did they use?
    a. (PROBE AS RELEVANT): Do all workers gain employment through MOU system? If not, why?
    b. What other ways they gain employment?
    c. Do most workers have legal work permits? If not, why?
    d. (PROBE AS RELEVANT): I Is it usual that they gain employment through a subcontractor or through an employment agency? If not, what is the system?

        i. IF SO, what is the relationship between the subcontractor/agency and the owner of the worksite?
    e. What are the specific recruitment methods used and do they differ among types of employers?
        i. (PROBE FOR USE OF MOU'S ON BOATS)
    f. Do workers need to pay to gain their employment – please explain?
    g. Based on your understanding/experience, are third party recruiters used in recruitment for the industry? Are these recruiters here in Thailand or in another country?
        i. PROBE: IF YES, (REQUEST DETAILS, SUCH AS WHO PAYS THE RECRUITER AND NAME OF RECRUITER)
    h. What about recruitment through friends or family? How?
        i. how much are typical recruitment fees? How long does it take a worker to pay the fees off?
        ii. Who are the fees allocated among?
2. Do workers in the **fishing** sector typically have a contract?
    a. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, PROCESSING FACILITIES, ANDSHRIMP AQUACULTURE)
3. Are contracts usually verbal or written?
    a. If written, do workers usually understand the contents of the contract? (PROBE: WRITTEN IN A LANGUAGE THE WORKER CAN UNDERSTAND; WORKER IS LITERATE OR ALLOWED TO HAVE SOMEONE READ IT; WORKER IS GIVEN SUFFICIENT TIME TO EXAMINE THE CONTRACT)
4. Are you aware of any reports of anyone being sold or taken by force to work on the (fishing boats/onshore processing facilities/aquafarms)?
    a. PROBE FOR SPECIFICS ON: (FISHING BOATS, ONSHORE PROCESSING FACILITIES, SHRIMP AQUACULTURE)
5. Where are the workers from? Which countries? Do you know what their ethnic background is?
    a. Are there any Thai workers and IF SO, what is their role?
    b. What about women's employment? (PROBE FOR BOATS OR PROCESSING AND AQUACULTURE BASED ON EXPERTISE OF INTERVIEWEE)
6. Can you describe the terms of employment? (full/part time, working hours, benefits, leaves, etc.)
    a. (ASK FOR DIFFERENCES BETWEEN FISHERS, PROCESSING WORKERS, AND SHRIMP AQUCULTURE WORKERS)
    b. What kinds of promises are typically made to workers regarding working and living conditions and benefits?
    c. Are these promises/agreements fulfilled?
    d. Can you think of any form of deception that may be practiced during the recruitment phase? Explain

Earnings, Hours, Benefits & Debt

1. In your experience, what are the key issues that workers face in terms of their wages and benefits?

a. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, PROCESSING FACILITIES, SHRIMP AQUACULTURE)
    i. Do workers get paid regularly and on time? How and how often are they paid?
    ii. Do workers encounter situations of withheld wages or wage deductions? How much are the withholdings or deductions?
    iii. Do workers typically receive more or less than the minimum wage?
        1. If less, are you aware of coercive practices used to set a worker's wage?
    iv. How much are workers typically paid? (Do all types of work receive more or less the same or are there differences)
2. Who actually makes the payment and in what form?
    a. Do all workers have ATM cards? Are there problems in using these cards?
    b. Are workers let go (fired) without receiving their due wages? In what situations?
3. How many hours does a worker typically work? Are they paid for all hours worked?
    a. (FOR ALL PROBES BELOW ASK FOR DIFFERENCES BETWEEN FISHERS, PROCESSING WORKERS, AND SHRIMP AQUCULTURE WORKERS)
        i. How often do employees work overtime or past their agreed hours?
        ii. What happens to a worker if they refuse to work overtime or past their agreed hours?
        iii. Are workers paid the legally required overtime rate? (If applicable)
        iv. Are they required to work on call?
        v. What would happen if they refused.

BOAT SPECIFIC QUESTIONS:

1. Do workers ever receive a proportion of the profits from the catch?
    - If yes, how do they receive the contribution? What are the justifications of the contribution?
    -

Working Conditions, Hazardous Work & Coercion:

1. What are the main risk factors for labor exploitation in the fishing **and seafood (aquaculture)** industry?
    a. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, PROCESSING FACILITIES, SHRIMP AQUACULTURE)
        i. In what segments of the industry and its supply chain is exploitation most visible?
        ii. Are you aware of specific companies and/or production sites throughout the supply chain that are particularly exploitative?
2. What are the most common hazards workers face in the **fishing** sector?
    a. Do workers consent to do this work? What would happen if they refused?
    b. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, PROCESSING FACILITIES, SHRIMP AQUACULTURE)
3. In your understanding, are there sufficient health and safety standards in place in the **fishing sector**?
    a. Please explain.

    b. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, ONSHORE PROCESSING FACILITIES, SHRIMP AQUACULTURE)
4. Is it common place to hear of or witness coercion or threats from employers toward workers in the fishing sector?
    a. Are any subgroups of workers more vulnerable to abuse? IF SO, who? (MEN? WOMEN? MIGRANT WORKERS? Thai?
        i. Could you give me a sense of the percentage of workers who experience this?
    b. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, ONSHORE PROCESSING FACILITIES, SHRIMP AQUACULTURE)
5. Can workers in the fishing sector leave their jobs if they choose?
    a. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, ONSHORE PROCESSING FACILITIES, SHRIMP AQUACULTURE)
        i. IF NOT, why / in what situations? (PROBE ABOUT WORKERS IN DEBT)
        ii. Do workers who leave or attempt to leave their job face any consequences?
        iii. Do the fishers/ onshore workers have access to their identity documents?
        iv. Does this impact their ability to leave their job?
6. How did COVID-19 impact work (EITHER ON THE SHORE OR ON FISHING BOATS)?
    a. (PROBE FOR IMPACT ON WORK OPPORTUNITIES, WORKING CONDITIONS, USE OF PPE, IMPACT ON WAGES, LOSS OF JOBS, ETC)
    b. Has work (ON BOATS OR ON SHORE) returned to normal or have there been long-lasting changes?

BOAT SPECIFIC QUESTIONS

1. Have you heard of situations where boat captains threaten, beat, and drug fishers to work longer and sell fishermen drugs as a means to generate additional debt?
    a. Please explain.
2. If workers fall sick on the boats, what happened? In case of a death on the boat, what happened?
    a. What happens when a fisher goes missing?
    •

Surveillance & Living Conditions (if applicable)

1. What kind of involvement do employers have in workers' lives outside of work?
    a. (PROBE FOR BOAT WORKERS WHEN THEY ARE ON SHORE?
    •
2. How do workers access goods and services to meet their basic needs? (PROBE FOR DIFFERENCES WHEN FISHER IS AT SEA AND ON SHORE)
    a. Where do workers buy food, clothing, and health services?
        i. Are workers reliant on employers for these items? How often?
        ii. Are these items ever bought on credit? Under what conditions?
        iii. How do they receive healthcare services when they get sick or injured?
3. Who provides the living arrangements for workers?

a. Can you please describe the different types of employer-provided housing? (E.G., ON THE FACTORY SITE OR FLOOR, IN A DORM, ETC.)
b. By your estimation, what proportion of workers live in employer-provided housing in the Fishing industry?
    i. (PROBE FOR DIFFERENCES AMONG FISHERS, SHRIMP AQUAFARMERS, AND PROCESSING WORKERS)
    ii. For those living in provided housing, can they come and go freely outside of working hours?
    iii. (PROBE FOR DIFFERENCES BASED ON DIFFERENT TYPES OF HOUSING:)
    iv. (TELL US ABOUT THE HOUSING, HOW GOOD OR BAD IS IT?, HOW ABOUT THE TOILETS?
c. Are there fees or any costs associated with employer provided housing?
    i. Please explain.

4. Do employers monitor / limit the communications of their workers? IF SO, how?
    a. (PROBE FOR DIFFERENCES AMONG FISHERS, SHRIMP AQUAFARMERS, AND PROCESSING WORKERS)
5. Are workers able to leave their workplaces freely or if they request to leave (i.e. for an appointment, family emergency, etc).
    a. Are you aware of workers being locked in or under guard while working?
    b. (PROBE FOR DIFFERENCES AMONG FISHERS, SHRIMP AQUAFARMERS, AND PROCESSING WORKERS)

ONSHORE WORKER ADDITIONAL QUESTIONS:

1. Does the employer retain any identity documents as part of their housing? If yes, is the worker able to freely access them on demand?
    a. (PROBE FOR DIFFERENCES BETWEEN PROCESSING LOCATIONS AND AQUAFARMS)
    b. Ask where the identify documents are kept and stored.

BOAT WORKER ADDITIONAL QUESTIONS:

1. Does the employer retain any identity documents as part of their housing? If yes, is the worker able to freely access them on demand?
    a. (PROBE ABOUT LOCATION OF DOCUMENTS WHEN A FISHER IS ON SHORE)
    b. Ask where the identity documents are kept and stored.
2. How do workers access goods and services to meet their basic needs?

    (PROBE FOR SPECIFICS WHEN ASHORE)

3. Can you describe the living conditions on boats?
    a. Are there fees or any costs associated with living on the boat?
    b. Do employers monitor / limit the communications of their workers? IF SO, how?
    •

Grievance procedures & Industry/Government Initiatives:

1. In your experience, what understanding do workers in the fishing sector typically have of their rights?

a. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, ONSHORE PROCESSING FACILITIES, SHRIMP AQUACULTURE)
b. What are the areas of their rights in which worker awareness is low?

2. What mechanisms are available for submitting grievances?
    a. Have you heard of or observed any retaliation for submission of grievances?
    b. Do workers encounter any barriers in submitting grievances?
3. Are you aware of any efforts by government entities or others to improve labor conditions in the **fishing industry**?
    a. PROBE FOR SPECIFICS, USING INTERVIEWEE EXPERTISE ON: (FISHING BOATS, ONSHORE PROCESSING FACILITIES, SHRIMP AQUACULTURE)
        i. IF SO, please explain
        ii. In your opinion, are there key gaps in policy and practice from the government and/or industry in terms of workers' rights and working conditions?
            1. Please explain.

BOAT SPECIFIC INDUSTRY AND GOVERNMENT INITIATIVES

1. What impact has the signing of the C188 Work in Fishing Convention had on the working conditions on the boats?
    - (POTENTIAL PROBES)
    a. Has it affected how long the boats are out at sea?
    b. Has the signing of the convention affected whether workers documents are or are not being controlled by the captains?
    c. Has the signing of the convention affected worker safety? How?
    d. Has it affected living conditions on the boats? IF SO, how?
    e. Has the signing of the convention affected the recruitment process?
2. How well do you believe that the Thai government is implementing the convention?
    a. What more does the Thai government need to do to ensure that the convention is fully implemented?
3. How effective is the PIPO system at addressing labor conditions and concerns?
    a. Boats go out and in depending on the tide, is the PIPO system working 24 hours?
4. How affective are the sea inspections? Please explain key strengths and weaknesses of the sea inspections
    a. Can you explain how seabooks are checked in reality? Does it match policy?
    b. What can you tell us about stories of fishers having fake seabooks?
5. What impact did the EU yellow card have on the Thai fishing fleet?
    a. Did working conditions on the boats improve as a result of the yellow card?
    b. Are there any continued impacts on the Thai fishing boats as a result of the yellow card?

Child Labor:

ON BOATS:

1. Do you know of any cases of children working on fishing boats? How old are they?
    a. IF SO, please explain in as much detail as you have.
    b. When did this take place? How recently? Where were the children from? What else can you tell me about this?

2. How common do you think the problem of child labor on the boats is?
    a. What can you tell us about these children? Are they Thai or migrant children? If migrants, where are they from?
    b. Boys or girls, or both?

ON SHORE:

1. Do you know of any cases of children working in the onshore fishing industry?
    a. IF SO, please tell us much as possible about this, including ages of children
    b. What part of the process are they involved in (SUCH AS IN SORTING, PEELING, HOME-BASED WORK ETC.)?
    c. (PROBE ABOUT CHILDREN WORKING IN SHRIMP AQUACULTURE, FISH PROCESSING, AND THE PROCESSING OF PET FOOD MADE WITH SHRIMP OR FISH)
2. How do children become involved in the fishing industry?
    a. Why are they doing this work? (POTENTIAL PROBES: ARE THEY JUST HELPING THEIR PARENTS? OR ARE THEY DOING THIS WORK FOR ECONOMIC SURVIVAL FOR THEMSELVES OR FOR THEIR FAMILIES?)
    b. (PROBE ABOUT DIFFERENCES FOR CHILDREN WORKING IN SHRIMP AQUACULTURE, FISH PROCESSING, AND THE PROCESSING OF PET FOOD MADE WITH SHRIMP OR FISH)
3. What can you tell us about the children who are commonly involved in the fishing industry?
    a. Are they Thai or migrant children? If migrants, where are they from?
    b. Are they boys or girls, or both?
    c. Do they combine this work with schooling?
4. How long would these children be working for?
    a. Every day? Most days? Just once in a while?
    b. Or just after school, on weekends or during holidays?

Conclusion:

1. As per your roles, what did your organization support to resolve the above-mentioned issues? What were the results of the support?
2. Could you suggest any organizations or individuals that are well informed about the **fishing sector** supply chain or child labor in the industry that we could interview?
    a. What about any publicly available industry reports/publications?
3. Is there anything else you would like to add?

Worker Interview Guide

Introduction:

1. Could you briefly tell us about yourself?
2. Could you please tell us about your work?
    a. (PROBE FOR SPECIFICS ON IF THE WORK IS RELATED TO FISHING, PROCESSING, OR SHRIMP AQUACULTURE)
    b. How long have you been doing it?

Recruitment:

1. How did you first hear about your current job?
2. Can you please explain how you got this job?
    a. Was a recruiter involved? Did your employer recruit you or was it a third party?
    b. Was there a recruitment fee, IF SO, how much and how did you pay it?
    c. Did you have to borrow any money or take on any debt from your recruitment? IF SO, please explain the nature of that debt and who the debt is owed to

Contracts:

1. Do you have a verbal or written contract or agreement with your current employer? (Photos of the contract if possible)
    a. If you have a written contract, were you given a chance to review it? Did you understand the contents? (PROBE: WHETHER RESPONDENT IS LITERATE OR HAD THE CONTRACT READ TO THEM, WHETHER RESPONDENT SPEAKS THE LANGUAGE OF THE CONTRACT)
    b. (IF WRITTEN) Do you have a copy of your contract? In your own language?
2. Do the actual terms of your work match what you were originally promised? (EXAMPLE TYPE OF WORK, LOCATION, WAGES, ETC.)
    a. IF NOT, please explain.
    b. In your experience, to what extent has your employer honoured your contract? (PROBE FOR CONTRACT VIOLATIONS)
3. Do you know what the conditions for ending your contract are if you wanted to leave?

Working Conditions:

1. Please describe your relationship with your employer.
    a. Have you ever experienced any harassment or abuse by your employer? IF SO, please describe your experience and how have you dealt with it? (PROBE TO UNDERSTAND HOW HARASSMENT/ABUSE HAPPENS)
    b. Do you know or have you seen other workers experience any harassment or abuse? Can you give an example? (GENTLY PROBE FOR DETAILS)
2. How do you assess your workload? Do you have enough time during your normal hours to do your work?
    a. What is your workload or daily target for your tasks?
    b. How many hours do you work every day and week?
    c. How many rest periods do you get in a day? Do you always receive these rest periods? If not, why not?
    d. Does your employer do anything to make you work harder or faster? IF SO explain
    e. What happens when workers do not meet their workload or target? Probe for penalties/threats.
3. Do you work overtime, IF SO, how often/ for how many hours (daily, a few times a week, etc)?

    a. If applicable, are you paid the legally mandated amount? What amount are you paid?
    b. Could you turn down overtime if you wanted or do you feel compelled to work overtime?
    c. How would your employer respond if you turned down overtime?
    d. (IF WORKING ON A BOAT) Do you receive any legally mandated rest hours?
    e. (IF WORKING ON A BOAT) How often do your work hours include nightwork?
4. What are the most hazardous (dangerous) parts of your job? How frequently are you performing those tasks?
    a. Were these tasks clear to you before you started the job?
    b. Are you provided with the proper equipment to conduct these tasks safely?
    c. What effects have these tasks had on your health and safety?
5. What types of injuries are commonly associated with work in this sector?
    a. Have you ever been injured on the job? IF SO. please elaborate.
6. Can you tell me how and how much you are paid?
    a. How often are you paid? Is this always the same or does it change? Please explain.
        i. Who pays you?
        ii. Are your payments from your employer ever late? If yes, please explain.
        iii. Is your pay sent to your bank account? If not, why not? (Confirm that the worker has a bank account)
        iv. Are you able to access this money via an ATM? Are there any problems doing so?
    b. Are you paid by the hour or by piece-rate (production)?
    c. Is this the same pay you were promised before you started working? Is it the amount written in your contract?
7. If you are paid in piece-rate, do you think you are paid fairly for the work you do? Why or why not?
    a. Have you ever faced non-payment of your wages? IF SO, can you recall why and how did you react to it?
8. Have you taken on any debts from your employment?
    a. IF SO, to whom?
    b. IF SO, in exchange for what?
    c. How long have you been in debt and how are you repaying it?
        i. What are the terms of your debt (interest, repayment date, etc.). Do these feel fair? IF NOT, why?
9. If you are unhappy about your pay, working conditions, hours, etc., is there a way for you to report these complaints/grievances (workers association, union, industry co-operative, etc.)?
    a. How does your company react to worker complaints (wages, quotas, etc.) and grievances?
10. Do you know or have you seen other workers experience any harassment or abuse? What did you observe? How did they deal with it?
    a. To your knowledge, is this a common problem in this industry?
11. If you had to leave work for any reason, would you be able to do so?
    a. IF NOT, why?
    b. (FOR BOAT WORKERS: Is it possible to return to shore for any reason aside from regularly scheduled returns?) Does your boat return at least once every 30 days?) (PROBE FOR WHAT HAPPENS IN THE CASE OF SICKNESS AND INJURY)

12. Can you tell me about any breaks you receive during your day such as for meals or to use the bathroom?
    a. If you cannot take a break to use the bathroom or have a meal what prevents you from doing so?

Living Conditions:

1. Please tell me a little about the place where you live (PROBE IF HOUSING IS EMPLOYER PROVIDED)
    a. (FOR BOAT WORKERS) Can you tell me about where you live when you are ashore?
    b. Do you live in any form of employer provided housing?
2. If you live in employer provided housing, on shore and/or at sea, did you choose to do so or was this required by your employer? Why? What are the advantages/disadvantages?
    a. Are you required to pay for this housing?
    b. If it was required by your employer what reason did, they give?
3. If you live in employer provided housing on shore and while at sea, can you describe both to me? - do you have a private space or do you share it? If you share it with how many people? Who are they?
    a. Do you have access to drinkable water? And enough food?
    b. Do you have access to a bathroom – is it private or public?
    c. Do you feel safe? IF NOT, what feels unsafe?
4. If you live in employer provided housing on shore, do you have freedom to leave your housing during non-work hours, are there certain instances where you cannot?
5. Where do you buy food and clothing?
    a. Do you ever buy these items with credit? Under what terms?

Children:

1. Are you aware of children working in the **Fishing industry?**
    a. IF SO, in what parts of the industry and what tasks do they perform? How old are they?
    b. (PROBE FOR SPECIFICS ON FISHING, PROCESSING, AND SHRIMP AQUACULTURE)
2. In your work have you seen any children working at the worksite?
    a. IF SO, are they Thai or migrant children? If migrant children, where are they from?
    b. IF SO, are they boys or girls?
    c. IF SO, what tasks have you seen them perform?
    d. Are you aware of if they are accompanied by an adult/parent or are they alone?
3. Do you have any children and IF SO, how old are they?
    a. (IF RESPONDENT HAS CHILDREN, IF NOT SKIP) Do your children work in fish, shrimp or pet food production? Why or why not?
        i. IF SO, what tasks do they perform?
        ii. IF SO, how often do they accompany you at the worksite?

    If no have children, continue to ask the following questions.*****

4. What types of fishing industry activities do people under 18 typically do?
    a. (PROBE FOR SPECIFICS ON FISHING, PROCESSING, AND SHRIMP AQUACULTURE)

    b. What activities are more suited to younger children, which to adolescents?
    c. Girls versus boys?
5. Who decides that a child will work?
    a. Do the children decide to work? IF SO, why do they make this decision?
    b. Does an adult, such as a parent decide for the children? IF SO, why do they make this decision?
    c. What happens if that child refuses?
    d. If it was not the child who decided to do this work, could they choose to stop working? Have you ever seen this happen?
    e. Do you feel that children are forced to work – please explain?
6. What changes would need to happen in your community to prevent people under 18 from working in production activities in the fishing industry (INTERVIEWER: SPECIFIY FISHING, SHRIP FARMING, OR PET FOOD BASED ON INTERVIEW SO FAR)?
7. Are children performing activities on the worksite treated the same as adults? IF NOT, what is the difference?
    a. Have you seen any children being injured?
    b. Have you seen any children being mistreated?
    c. What about their pay? Is it the same as adults or different? Please explain.

(INTERVIEWER: THANK THE RESPONDENT FOR THEIR PARTICIPATION AND INSIGHTS SO FAR. INFORM THEM THAT YOU ARE DONE ASKING ABOUT WORKING CONDITIONS AND HAVE TWO FINAL QUESTIONS FOR THEM. INFORM THEM THAT ONE QUESTION WILL BE ABOUT FISH OR SHRIMP PRODUCTS PRODUCED AT THEIR WORKSITE AND THAT WHILE THEY MIGHT NOT HAVE A COMPETE ANSWER ANY INSIGHTS, THEY HAVE FOR US WILL BE VALUABLE.)

Supply Chain:

1. (IF A FISHER) After the trash fish leaves the boat you work on do you know where it goes? Who buys and sells it? Do you know what buyers use the trash fish for?
2. (IF A PROCESSING WORKER) After the fishmeal or pet food made from shrimp or fish leaves the facility you work at do you know where it goes? Who buys and sells it?
3. (IF A WORKER ON A SHRIMP AQUAFARM) After the shrimp are harvested and leave the farm you work at, do you know where they go? Who buys and sells the shrimp? Do you know what buyers use the shrimp from your workplace for?

Conclusion:

1. Is there anything else you would like to add?

Appendix 2: Child labor and forced labor definitions

Child labor:

Child Labor: "Child labor is defined by ILO Conventions 138 on the Minimum Age for Admission to Employment and 182 on the Worst Forms of Child Labor. It includes employment below the minimum age as established in national legislation, hazardous unpaid household services, and the worst forms of child labor: all forms of slavery or practices similar to slavery, such as the sale or trafficking of children, debt bondage and serfdom, or forced or compulsory labor; the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic purposes; the use, procuring or offering of a child for illicit activities; and work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children." (ILO, 1973; United States Department of Labor, n.d.)

Child Labor Conventions: The ILO Convention on Child Labor, 1973 (No. 138) aims to abolish child labor by requiring countries to establish a minimum age for work as well as employment (typically 14-15 years) of age while also allowing for light work for children under that age (ILO, 1973). The convention also requires nations to establish policies to eliminate child labor. In Article 3 the convention defines the "minimum age for admission to any type of employment or work which by its nature or the circumstances in which it is carried out is likely to jeopardize the health, safety or morals of young person" to be 18 years old. The ILO Worst Forms of Child Labour Convention, 1999 (No. 182) (ILO, 1999b) defines the worst forms of child labor as:

- all forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict;
- the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances;
- the use, procuring or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties;
- work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children (hazardous child labor)

Hazardous child labor is then further defined in Article 3 of the ILO Worst Forms of Child Labour Recommendations, 1999 (No 190) (ILO, 1999a) as:

- work which exposes children to physical, psychological or sexual abuse;
- work underground, under water, at dangerous heights or in confined spaces;
- work with dangerous machinery, equipment and tools, or which involves the manual handling or transport of heavy loads;
- work in an unhealthy environment which may, for example, expose children to hazardous substances, agents or processes, or to temperatures, noise levels, or vibrations damaging to their health;
- work under particularly difficult conditions such as working for long hours or during the night or work where the child is unreasonably confined to the premises of the employer.

Forced Labor:

Forced labor: The ILO Forced Labour Convention, 1930 (No. 29) defines, in its Article 2, forced or compulsory labor for the purposes of the Convention as "all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily." For statistical purposes, a person is classified as being in forced labor if engaged in any work that is both under the threat of menace of a penalty and involuntary.

- **Menace of Penalty**: Threat and menace of any penalty are the means of coercion used to impose work on a worker against a person's will.
    - Workers can be:
        - actually subjected to coercion, or
        - verbally threatened by these elements of coercion, or
        - be witness to coercion imposed on other co-workers in relation to involuntary work.
    - Elements of coercion may include, inter alia:
        - threats or violence against workers or workers' families and relatives, or close associates;
        - restrictions on workers' movement;
        - debt bondage or manipulation of debt;
        - withholding of wages or other promised benefits;
        - withholding of valuable documents (such as identity documents or residence permits); and
        - abuse of workers' vulnerability through the denial of rights or privileges, threats of dismissal or deportation.
- **Involuntariness:** Involuntary work refers to any work taking place without the free and informed consent of the worker.
    - Circumstances that may give rise to involuntary work, when undertaken under deception or uninformed, include, inter alia:
        - unfree recruitment at birth or through transaction such as slavery or bonded labor;
        - situations in which the worker must perform a job of different nature from that specified during recruitment without a person's consent;
        - abusive requirements for overtime or on-call work that were not previously agreed with the employer;
        - work in hazardous conditions to which the worker has not consented, with or without compensation or protective equipment;
        - work with very low or no wages;
        - in degrading living conditions imposed by the employer, recruiter, or other third-party;
        - work for other employers than agreed;
        - work for longer period of time than agreed;
        - work with no or limited freedom to terminate work contract.

Appendix 3: HS Codes

Seafood and fish products HS Glossary

Product	HS Code	HS Definition
	0301	Live Fish.
	0302	Fish, fresh or chilled, excluding fish fillets and other fish meat of heading 03.04.
	0303	Fish, frozen, excluding fish fillets and other fish meat of heading 03.04.
	0304	Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen.
	0305	Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process
	0306	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked crustaceans, whether in shell or not, whether or not cooked before or during the smoking process; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine.
Seafood	0307	Molluscs, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked molluscs, whether in shell or not, whether or not cooked before or during the smoking process.
	0308	Aquatic invertebrates other than crustaceans and molluscs, live, fresh, chilled, frozen, dried, salted or in brine; smoked aquatic invertebrates other than crustaceans and molluscs, whether or not cooked before or during the smoking process.
	1603	Extracts and juices of meat, fish or crustaceans, molluscs or other aquatic invertebrates.
	1604	Prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs.
	1605	Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved.
	0306.16	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked crustaceans, whether in shell or not, whether or not cooked before or during the smoking process; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine. Frozen: Cold-water shrimps and prawns (*Pandalus spp., Crangon crangon*)
	0306.17	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked crustaceans, whether in shell or not, whether or not cooked before or during the smoking process; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine. Frozen: Other shrimps and prawns
Shrimp	0306.35	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked crustaceans, whether in shell or not, whether or not cooked before or during the smoking process; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine. Frozen: Other shrimps and prawns

Product	HS Code	HS Definition
	0306.36	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked crustaceans, whether in shell or not, whether or not cooked before or during the smoking process; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine. Live, fresh or chilled: Other shrimps and prawns
	0306.95	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked crustaceans, whether in shell or not, whether or not cooked before or during the smoking process; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine. Other: Shrimps and prawns
	0307.42	Cuttlefish and squid: Live, fresh or chilled
Squid	0307.43	Cuttlefish and squid: Frozen
	0307.46	Cuttlefish and squid: Other
Fishmeal	2301	Flours, meals and pellets, of meat or meat offal, of fish or of crustaceans, molluscs or other aquatic invertebrates, unfit for human consumption; greaves.
Fish Oil	1504	Fats and oils and their fractions, of fish or marine mammals, whether or not refined, but not chemically modified.
Pet Food	2309	Preparations of a kind used in animal feeding.
	2309.10	Dog or cat food
	2309.90	Other [than dog or cat food]

Appendix 4: Export Values

Export of Seafood by HS Code, 2017–2021

Good	HS Code	2017	2018	2019	2020	2021	Top destination market for 2021 (percentage)
Live fish	0301	$35,580,185	$37,412,934	$36,496,324	$32,231,151	$42,154,194	USA (29.5%)
Fresh fish	0302	$54,655,583	$53,418,251	$55,182,456	$60,631,935	$75,020,719	Malaysia (77.4%)
Frozen fish	0303	$59,512,892	$73,838,752	$78,201,980	$99,323,142	$94,438,323	China (38.5%)
Fish fillets	0304	$154,341,075	$163,535,929	$171,106,457	$149,074,159	$180,178,208	Japan (50.2%)
Dried fish	0305	$95,294,717	$49,837,787	$75,252,536	$78,609,839	$67,710,875	Sri Lanka (29.5%)
Crustaceans	0306	$981,770,020	$928,613,485	$958,440,354	$706,950,948	$803,671,760	China (37.6%)
Mollusc	0307	$333,418,037	$309,860,388	$289,250,762	$255,602,665	$266,534,040	Italy (30.7%)
Invertebrates	0308	$31,737,421	$19,484,047	$26,506,043	$18,688,804	$29,486,736	Japan (40.6%)
Extracts	1603	$16,191,657	$17,110,270	$16,128,418	$15,110,088	$14,324,746	Japan (32.8%)
Prepared fish	1604	$2,586,579,629	$2,870,666,488	$2,933,914,971	$2,822,079,190	$2,424,030,090	USA (26.0%)
Preserved inv.	1605	$1,025,423,944	$915,038,585	$813,459,442	$763,285,849	$820,093,073	USA (41.0%)

Source: UNCOMTRADE through Panjiva, 2021

Exports of Shrimp and Pet Food by HS Code, 2017–2021

Good	HS Code	2017	2018	2019	2020	2021	Top destination market for 2021 (percentage)
Shrimp	0306.16	$4,532,820	$3,067,500	$2,150,241	$791,569	$1,106,810	USA (36.2%)
	0306.17	$872,961,940	$790,587,372	$777,479,423	$609,347,634	$670,346,066	China (30.8%)
	0306.35	$2,057,774	$3,013,709	$3,236,744	$4,973,964	$1,890,400	Malaysia (70.7%)
	0306.36	$92,805,308	$128,314,144	$153,910,546	$69,530,919	$82,684,294	China (48.4%)
	0306.95	$11,396,880	$22,493,574	$23,723,389	$18,019,674	$21,150,852	Hong Kong (33.7%)
Pet food	2309.10	$1,210,027,621	$1,452,881,796	$1,557,158,269	$1,758,045,630	$2,204,389,63	USA (26.6%)
	2309.90	$284,775,026	$288,886,467	$317,283,921	$314,707,205	$419,389,334	Vietnam (20.2%)

Source: UNCOMTRADE, 2021. HS Codes: 0306.16, 0306.17, 0306.35, 0306.36, 0306.95, 2309.10, 2309.90

Top 5 Importers of Seafood from Thailand 2021

Destination country	Trade value (USD)	% of total seafood export value from Thailand
USA	$1,248,092,917	25.4%
Japan	$870,072,915	17.7%
China	$418,470,873	8.5%
Australia	$280,325,852	5.7%
Canada	$195,139,685	4.0%

Source: UNCOMTRADE, 2021. HS Codes: 0301, 0302, 0303, 0304, 0305, 0306, 0307, 0308, 1603, 1604, 1605

Top 5 Importers of Fishmeal from Thailand, 2021

Destination country	Trade value (USD)	% of total fish meal export value from Thailand
China	$111,840,145	76.9%
Japan	$15,483,740	10.6%
Vietnam	$6,306,280	4.3%
Indonesia	$5,468,882	3.8%
Malaysia	$3,331,254	2.3%

Source: UNCOMTRADE, 2021. HS Codes: 2301.20

Top 5 Importers of Shrimp from Thailand, 2021

Destination country	Trade value (USD)	% of total shrimp export value from Thailand
China	$246,138,333	31.7%
USA	$176,465,767	22.7%
Japan	$90,636,474	11.7%
South Korea	$37,438,207	4.8%
Australia	$34,374,100	4.4%

Source: UNCOMTRADE, 2021. HS Codes: 0306.16, 0306.17, 0306.35, 0306.36, 0306.95

Top 5 Importers of Pet Food from Thailand, 2021

Destination country	Trade value (USD)	% of total pet food export value from Thailand
USA	$591,086,151	22.5%
Japan	$328,370,917	12.5%
Malaysia	$201,236,682	7.7%
Italy	$142,420,239	5.4%
Australia	$139,224,260	5.3%

Source: UNCOMTRADE, 2021. HS Codes: 2309

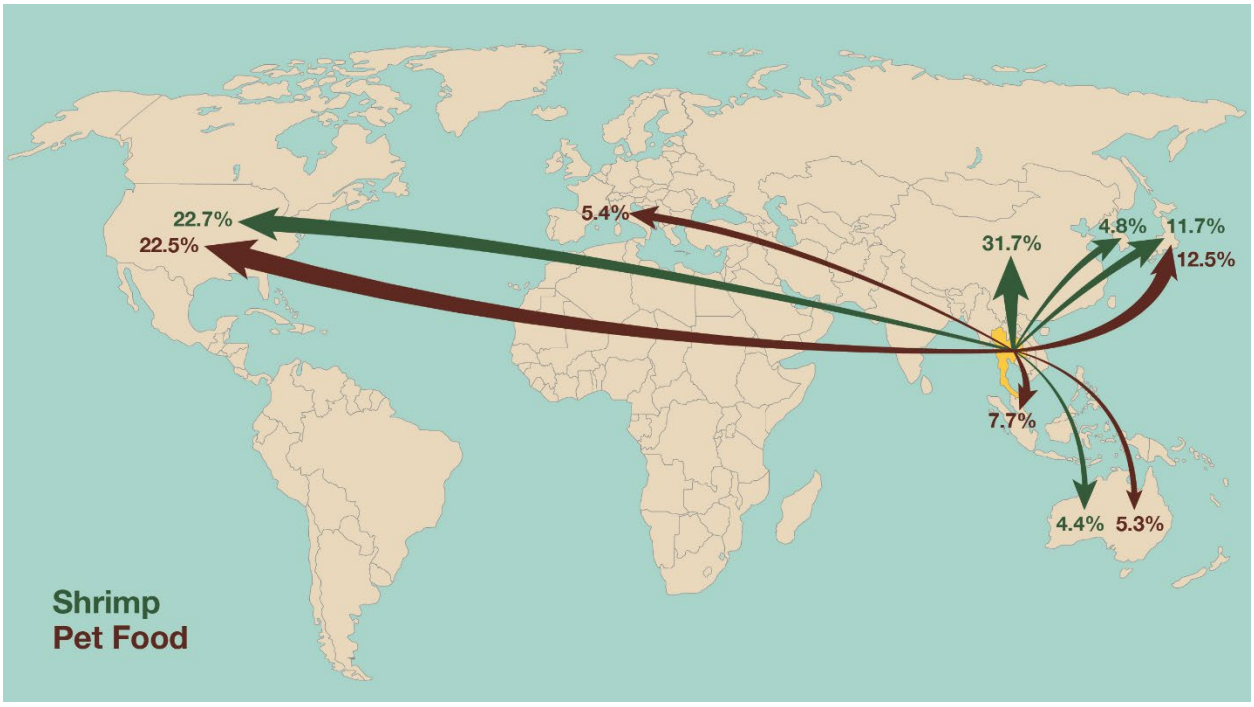
Top 5 Importers of Dog and Cat Pet Food from Thailand, 2021

Destination country	Trade value (USD)	% of total pet food export value from Thailand
USA	$585,852,472	27.6%
Japan	$297,683,324	14.0%
Malaysia	$169,503,864	8.0%
Italy	$142,420,238	6.7%
Australia	$134,703,023	6.3%

Source: UNCOMTRADE, 2021. HS Codes: 2309.10

Appendix 5: Destination Markets

Figure A1. Top five destination markets for Thai shrimp and pet food exports, by percentage, 2021



Source: ICF; UNCOMTRADE, 2023

Thai Destination Markets' Top 5 Sources of Imported Shrimp, 2021

Destination market for Thai shrimp	Destination markets' Sources of shrimp imports	Trade value (USD)	Percent of total shrimp import value by destination market
China	Ecuador	$2,172,886,512	53.8%
	India	$724,665,984	18.0%
	Thailand	$246,138,333	6.1%
	Vietnam	$141,587,343	3.5%
	Canada	$110,789,145	2.7%
USA	India	$2,694,728,877	42.0%
	Ecuador	$1,350,038,974	21.1%
	Indonesia	$1,092,531,265	17.0%
	Vietnam	$473,675,281	7.4%
	Mexico	$243,826,088	3.8%
Japan	India	$361,793,415	22.6%
	Vietnam	$317,506,544	19.8%
	Indonesia	$267,304,213	16.7%
	Argentina	$169,401,535	10.6%
	Thailand	$90,636,474	5.7%
South Korea	Vietnam	$241,754,204	44.0%
	Ecuador	$74,841,933	13.6%
	China	$70,023,208	12.8%
	Malaysia	$40,657,067	7.4%
	Thailand	$37,438,207	6.8%

Destination market for Thai shrimp	Destination markets' Sources of shrimp imports	Trade value (USD)	Percent of total shrimp import value by destination market
Australia	Vietnam	$126,690,448	64.4%
	Thailand	$34,374,100	17.5%
	China	$16,177,795	8.2%
	Malaysia	$12,945,193	6.6%
	Australia	$2,518,614	1.3%

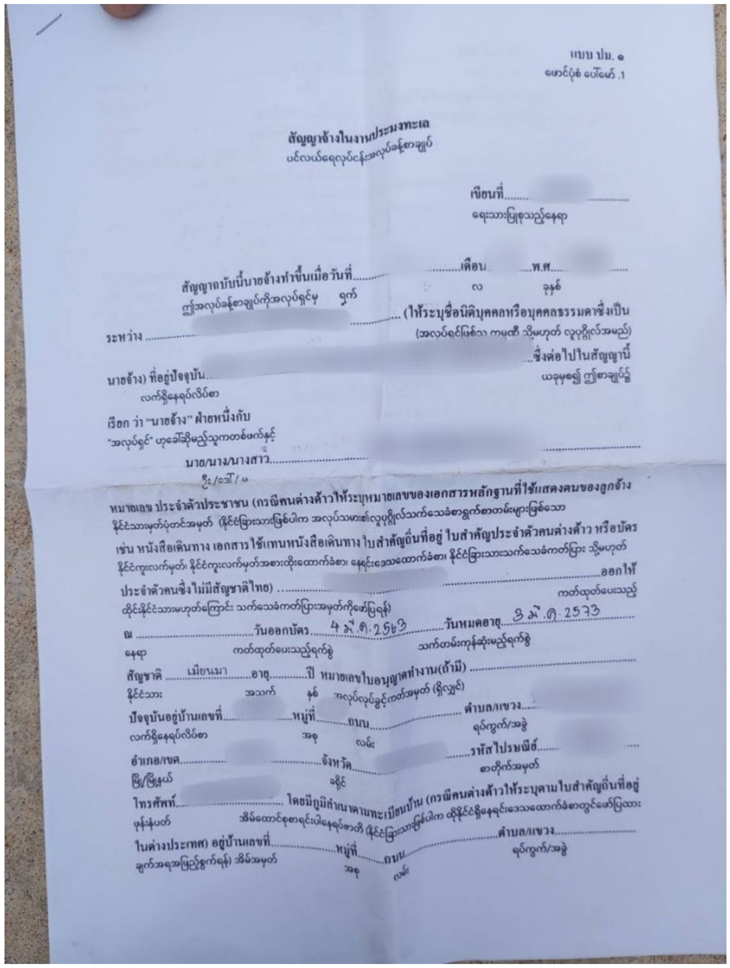
Source: UNCOMTRADE, 2021. HS Codes: 0306.16, 0306.17, 0306.35, 0306.36, 0306.95

Thai Destination Markets' Top 5 Sources of Imported Pet Food, 2021

Destination market for Thai pet food	Destination markets' sources of pet food imports	Trade value (USD)	Percent of total pet food import value by destination market
USA	Thailand	$591,086,151	23.4%
	Canada	$515,150,546	20.4%
	China	$304,264,893	12.1%
	France	$145,517,720	5.8%
	Malaysia	$119,740,201	4.7%
Japan	Thailand	$328,370,917	28.0%
	USA	$206,334,652	17.6%
	China	$140,718,682	12.0%
	France	$118,594,262	10.1%
	Australia	$64,029,063	5.5%
Malaysia	Thailand	$201,236,682	40.0%
	China	$53,058,823	10.6%
	Vietnam	$44,710,596	8.9%
	USA	$30,165,726	6.0%
	France	$18,191,739	3.6%
Italy	France	$293,647,423	24.0%
	Germany	$205,502,658	16.8%
	Thailand	$142,420,239	11.7%
	Netherlands	$108,210,211	8.9%
	Spain	$99,857,695	8.2%
Australia	USA	$159,676,868	26.2%
	Thailand	$139,224,260	22.9%
	France	$81,699,458	13.4%
	China	$35,817,629	5.9%
	New Zealand	$35,714,214	5.9%

Source: UNCOMTRADE, 2021. HS Codes: 2309

Appendix 6: Example of Fisher's Work Contract



แบบ ปม. ๑

สัญญาจ้างในงานประมงทะเล

เขียนที่........

สัญญาฉบับนี้นายจ้างทำขึ้นเมื่อวันที่............เดือน..........พ.ศ..........

ระหว่าง ....(ให้ระบุชื่อนิติบุคคลหรือบุคคลธรรมดาซึ่งเป็น

นายจ้าง) ที่อยู่ปัจจุบัน..............................ซึ่งต่อไปในสัญญานี้

เรียก ว่า "นายจ้าง" ฝ่ายหนึ่งกับ

นาย/นาง/นางสาว..............................

หมายเลข ประจำตัวประชาชน (กรณีคนต่างด้าวให้ระบุหมายเลขของเอกสารหลักฐานที่ใช้แสดงตนของลูกจ้าง เช่น หนังสือเดินทาง เอกสารใช้แทนหนังสือเดินทาง ใบสำคัญถิ่นที่อยู่ ใบสำคัญประจำตัวคนต่างด้าว หรือบัตรประจำตัวคนซึ่งไม่มีสัญชาติไทย) ....ออกให้

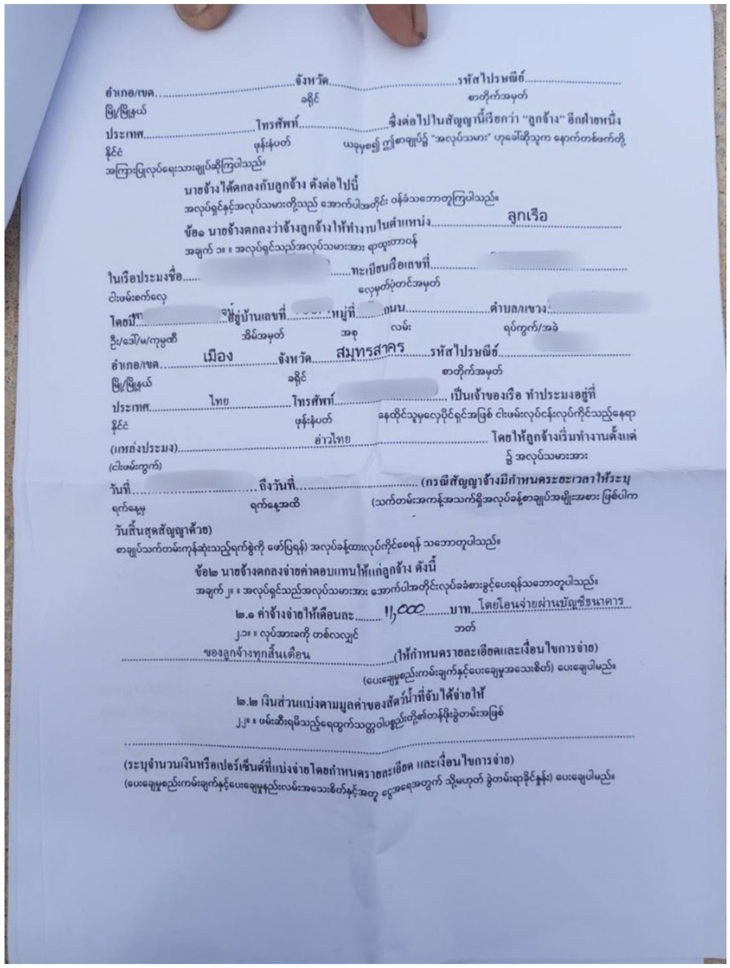
ณ ....วันออกบัตร.....4 มิ.ย. 2563.....วันหมดอายุ.....3 มิ.ย. 2573.....

สัญชาติ.....เมียนมา.....อายุ..........ปี หมายเลขใบอนุญาตทำงาน(ถ้ามี)..............

ปัจจุบันอยู่บ้านเลขที่..........หมู่ที่..........ถนน..........ตำบล/แขวง..........

อำเภอ/เขต..........จังหวัด..........รหัสไปรษณีย์..........

โทรศัพท์.......... โดยมีภูมิลำเนาตามทะเบียนบ้าน (กรณีคนต่างด้าวให้ระบุตามใบสำคัญถิ่นที่อยู่ในต่างประเทศ) อยู่บ้านเลขที่..........หมู่ที่..........ถนน..........ตำบล/แขวง..........



อำเภอ/เขต.................................จังหวัด.................................รหัสไปรษณีย์.............................
မြို့/မြို့နယ် ခရိုင် စာတိုက်အမှတ်
ประเทศ...............................โทรศัพท์......................ซึ่งต่อไปในสัญญานี้เรียกว่า "ลูกจ้าง" อีกฝ่ายหนึ่ง
နိုင်ငံ ဖုန်းနံပတ် ယခုမှစ၍ ဤစာချုပ်၌ "အလုပ်သမား" ဟုခေါ်ဆိုသူက နောက်တစ်ဖက်တို့
အကြားပြုလုပ်ရေးသားချုပ်ဆိုကြပါသည်။

นายจ้างได้ตกลงกับลูกจ้าง ดังต่อไปนี้
အလုပ်ရှင်နှင့်အလုပ်သမားတို့သည် အောက်ပါအတိုင်း ဝန်ခံသဘောတူကြပါသည်။

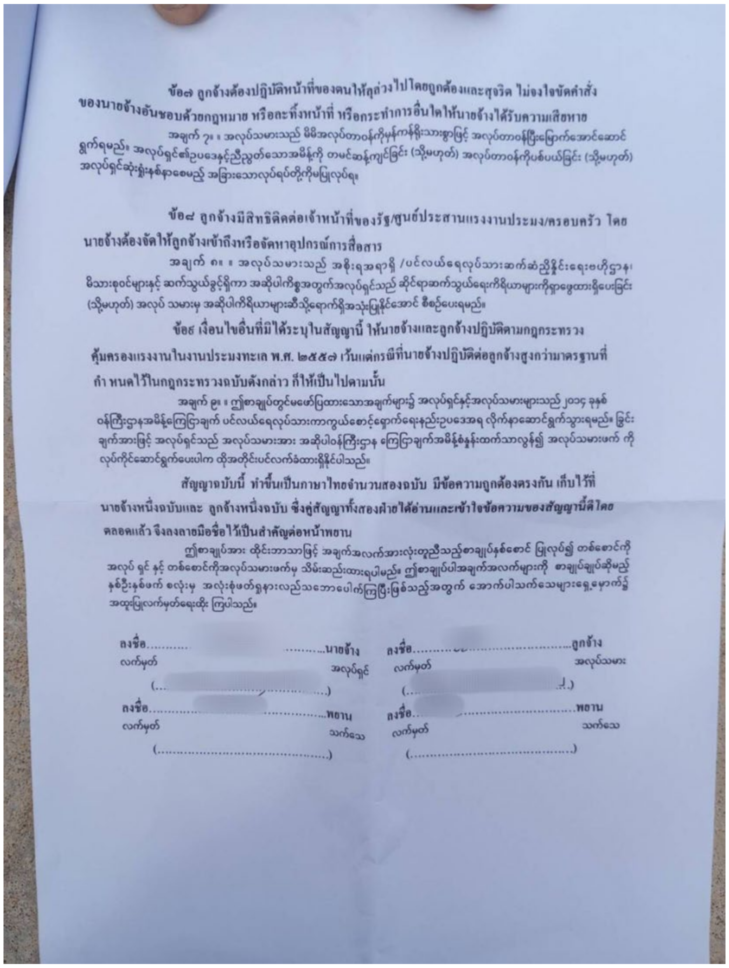
ข้อ๑ นายจ้างตกลงว่าจ้างลูกจ้างให้ทำงานในตำแหน่ง..........ลูกเรือ..........
အချက် ၁။ ။ အလုပ်ရှင်သည်အလုပ်သမားအား ရာထူးတာဝန်

ในเรือประมงชื่อ.....................ทะเบียนเรือเลขที่..............................
ငါးဖမ်းစက်လှေ လှေမှတ်ပုံတင်အမှတ်
โดยมี....................อยู่บ้านเลขที่..........หมู่ที่.......ถนน.....................ตำบล/แขวง.....................
ဦး/ဒေါ်/မ/ကုမ္ပဏီ အိမ်အမှတ် အစု လမ်း ရပ်ကွက်/အခွဲ
อำเภอ/เขต.....เมือง.....จังหวัด.....สมุทรสาคร.....รหัสไปรษณีย์.............................
မြို့/မြို့နယ် ခရိုင် စာတိုက်အမှတ်
ประเทศ.....ไทย.....โทรศัพท์..............................เป็นเจ้าของเรือ ทำประมงอยู่ที่
နိုင်ငံ ဖုန်းနံပတ် နေထိုင်သူမှလှေပိုင်ရှင်အဖြစ် ငါးဖမ်းလုပ်ငန်းလုပ်ကိုင်သည့်နေရာ
(แหล่งประมง)..........อ่าวไทย..............................โดยให้ลูกจ้างเริ่มทำงานตั้งแต่
(ငါးဖမ်းကွက်) ၌ အလုပ်သမားအား
วันที่..............................ถึงวันที่..............................(กรณีสัญญาจ้างมีกำหนดระยะเวลาให้ระบุ
ရက်နေ့မှ ရက်နေ့အထိ (သက်တမ်းအကန့်အသတ်ရှိအလုပ်ခန့်စာချုပ်အမျိုးအစား ဖြစ်ပါက
วันสิ้นสุดสัญญาด้วย)
စာချုပ်သက်တမ်းကုန်ဆုံးသည့်ရက်စွဲကို ဖော်ပြရန်) အလုပ်ခန့်ထားလုပ်ကိုင်စေရန် သဘောတူပါသည်။

ข้อ๒ นายจ้างตกลงจ่ายค่าตอบแทนให้แก่ลูกจ้าง ดังนี้
အချက် ၂။ ။ အလုပ်ရှင်သည်အလုပ်သမားအား အောက်ပါအတိုင်းလုပ်ခခံစားခွင့်ပေးရန်သဘောတူပါသည်။

๒.๑ ค่าจ้างจ่ายให้เดือนละ..........11,000..........บาท.....โดยโอนจ่ายผ่านบัญชีธนาคาร
၂.၁။ ။ လုပ်အားခကို တစ်လလျှင် ဘတ်
..........ของลูกจ้างทุกสิ้นเดือน..........(ให้กำหนดรายละเอียดและเงื่อนไขการจ่าย)
(ပေးချေမှုစည်းကမ်းချက်နှင့်ပေးချေမှုအသေးစိတ်) ပေးချေပါမည်။

๒.๒ เงินส่วนแบ่งตามมูลค่าของสัตว์น้ำที่จับได้จ่ายให้
၂.၂။ ။ ဖမ်းဆီးရမိသည့်ရေထွက်သတ္တဝါပမာဏပေါ်မူတည်၍တန်ဖိုးခွဲတမ်းအဖြစ်
....
(ระบุจำนวนเงินหรือเปอร์เซ็นต์ที่แบ่งจ่ายโดยกำหนดรายละเอียด และเงื่อนไขการจ่าย)
(ပေးချေမှုစည်းကမ်းချက်နှင့်ပေးချေမှုနည်းလမ်းအသေးစိတ်နှင့်အတူ ငွေအရေအတွက် သို့မဟုတ် ခွဲတမ်းရာခိုင်နှုန်း) ပေးချေပါမည်။



ข้อ๗ ลูกจ้างต้องปฏิบัติหน้าที่ของตนให้ลุล่วงไปโดยถูกต้องและสุจริต ไม่จงใจขัดคำสั่งของนายจ้างอันชอบด้วยกฎหมาย หรือละทิ้งหน้าที่ หรือกระทำการอื่นใดให้นายจ้างได้รับความเสียหาย

အချက် ၇။ ။ အလုပ်သမားသည် မိမိအလုပ်တာဝန်ကိုမှန်ကန်ရိုးသားစွာဖြင့် အလုပ်တာဝန်ပြီးမြောက်အောင်ဆောင်ရွက်ရမည်။ အလုပ်ရှင်၏ဥပဒေနှင့်ညီညွတ်သောအမိန့်ကို တမင်ဆန့်ကျင်ခြင်း (သို့မဟုတ်) အလုပ်တာဝန်ကိုပစ်ပယ်ခြင်း (သို့မဟုတ်) အလုပ်ရှင်ဆုံးရှုံးနစ်နာစေမည့် အခြားသောလုပ်ရပ်တို့ကိုမပြုလုပ်ရ။

ข้อ๘ ลูกจ้างมีสิทธิติดต่อเจ้าหน้าที่ของรัฐ/ศูนย์ประสานแรงงานประมง/ครอบครัว โดยนายจ้างต้องจัดให้ลูกจ้างเข้าถึงหรือจัดหาอุปกรณ์การสื่อสาร

အချက် ၈။ ။ အလုပ်သမားသည် အစိုးရအရာရှိ /ပင်လယ်ရေလုပ်သားဆက်ဆံညှိနှိုင်းရေးဗဟိုဌာန၊ မိသားစုဝင်များနှင့် ဆက်သွယ်ခွင့်ရှိကာ အဆိုပါကိစ္စအတွက်အလုပ်ရှင်သည် ဆိုင်ရာဆက်သွယ်ရေးကိရိယာများကိုရှာဖွေထားရှိပေးခြင်း (သို့မဟုတ်) အလုပ် သမားမှ အဆိုပါကိရိယာများဆီသို့ရောက်ရှိအသုံးပြုနိုင်အောင် စီစဉ်ပေးရမည်။

ข้อ๙ เงื่อนไขอื่นที่มิได้ระบุในสัญญานี้ ให้นายจ้างและลูกจ้างปฏิบัติตามกฎกระทรวงคุ้มครองแรงงานในงานประมงทะเล พ.ศ. ๒๕๕๗ เว้นแต่กรณีที่นายจ้างปฏิบัติต่อลูกจ้างสูงกว่ามาตรฐานที่กำหนดไว้ในกฎกระทรวงฉบับดังกล่าว ก็ให้เป็นไปตามนั้น

အချက် ၉။ ။ ဤစာချုပ်တွင်မဖော်ပြထားသောအချက်များ၌ အလုပ်ရှင်နှင့်အလုပ်သမားများသည် ၂၀၁၄ ခုနှစ် ဝန်ကြီးဌာနအမိန့်ကြေငြာချက် ပင်လယ်ရေလုပ်သားကာကွယ်စောင့်ရှောက်ရေးနည်းဥပဒေအရ လိုက်နာဆောင်ရွက်သွားရမည်။ ခြွင်းချက်အားဖြင့် အလုပ်ရှင်သည် အလုပ်သမားအား အဆိုပါဝန်ကြီးဌာန ကြေငြာချက်အမိန့်စံနှုန်းထက်သာလွန်၍ အလုပ်သမားဖက် ကိုလုပ်ကိုင်ဆောင်ရွက်ပေးပါက ထိုအတိုင်းပင်လက်ခံထားရှိနိုင်ပါသည်။

สัญญาฉบับนี้ ทำขึ้นเป็นภาษาไทยจำนวนสองฉบับ มีข้อความถูกต้องตรงกัน เก็บไว้ที่นายจ้างหนึ่งฉบับและ ลูกจ้างหนึ่งฉบับ ซึ่งคู่สัญญาทั้งสองฝ่ายได้อ่านและเข้าใจข้อความของสัญญานี้ดีโดยตลอดแล้ว จึงลงลายมือชื่อไว้เป็นสำคัญต่อหน้าพยาน

ဤစာချုပ်အား ထိုင်းဘာသာဖြင့် အချက်အလက်အားလုံးတူညီသည့်စာချုပ်နှစ်စောင် ပြုလုပ်၍ တစ်စောင်ကို အလုပ် ရှင် နှင့် တစ်စောင်ကိုအလုပ်သမားဖက်မှ သိမ်းဆည်းထားရပါမည်။ ဤစာချုပ်ပါအချက်အလက်များကို စာချုပ်ချုပ်ဆိုမည့် နှစ်ဦးနှစ်ဖက် စလုံးမှ အလုံးစုံဖတ်ရှုနားလည်သဘောပေါက်ကြပြီးဖြစ်သည့်အတွက် အောက်ပါသက်သေများရှေ့မှောက်၌ အထူးပြုလက်မှတ်ရေးထိုး ကြပါသည်။

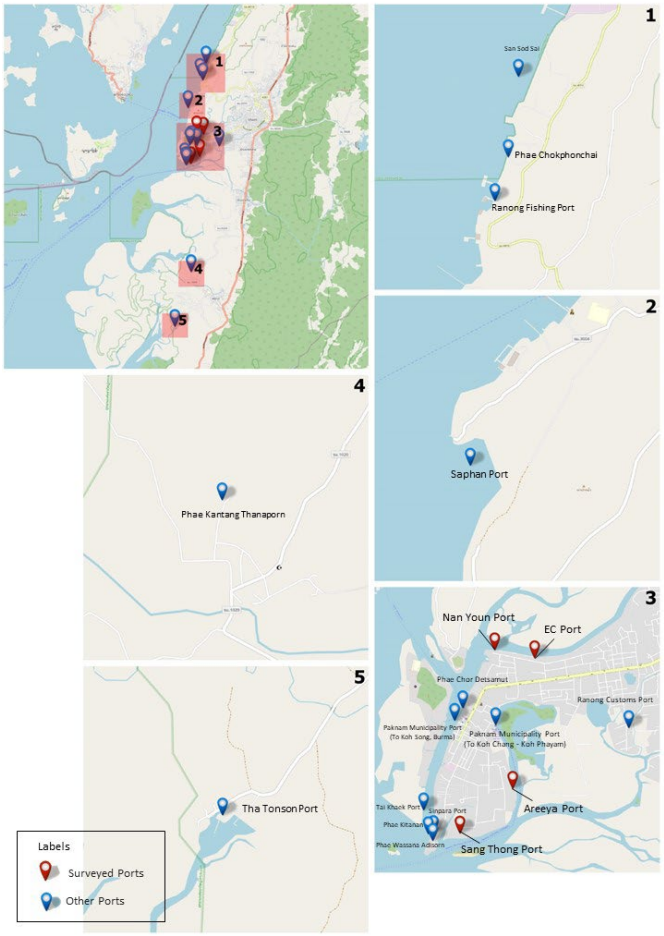
ลงชื่อ........... ....นายจ้าง လက်မှတ် အလုပ်ရှင် (... ....)	ลงชื่อ.......... ....ลูกจ้าง လက်မှတ် အလုပ်သမား (... ..)
ลงชื่อ.......... ....พยาน လက်မှတ် သက်သေ (..)	ลงชื่อ.......... ....พยาน လက်မှတ် သက်သေ (..)

Appendix 7: Maps of the Surveyed Ports

Figure A2. Fishing ports surveyed in Samut Sakhon

Source: Samut Sakhon PIPO Center (https://www4.fisheries.go.th/local/index.php/main/welcome/pipo-samutsakhon)

Figure A3. Fishing ports surveyed in Ranong



Source: Ranong PIPO Center (https://www4.fisheries.go.th/local/index.php/main/site/pipo-ranong)

Figure A4. Fishing ports surveyed in Songkhla

Source: Songkhla PIPO Center (https://www4.fisheries.go.th/local/index.php/main/welcome/pipo-songkhla)

Appendix 8: Major Fishmeal and Pet Food Manufacturing Companies

Province	Major fishmeal companies	Major pet food companies
Samut Sakhon	Thachin Fishmeal Industrial Co., Ltd	Inteqc Feed Co., Ltd
	Nivat Fishmeal Industry Co., Ltd.	Sirisaeng Arumpee Co., Ltd
	Sahamitr Fishmeal Co., Ltd	Thai Union
	Fareast Fishmeal Co., Ltd	Unicord public company Ltd. (Parent company: SeaValue)
	Ruammitr Phokaphan Industry Limited Partnership	Asian Alliance International Public Company Limited
	TC Union Agrotech Co., Ltd.	MMP International Co., Ltd
	Siam Precious Feeds Co., Ltd	Pataya Food Industries Ltd
		Chotiwat Manufacturing Public Co., Ltd
		SPF Dana (Thailand) Co. or Symrise Pet Food Thailand
Ranong	Krungdhep Mahakij Co., Ltd.	
	Kantang Tanaporn Co., Ltd. (affiliated with the Kantang Group)	
	Sahapramong Fishmeal Ranong Co., Ltd (also affiliated with the Kantang group)	
Songkhla	Sermsin Fish Product	Paechae Songkhla Co., Ltd
	Samila Fishmeal Company	Siam International Food Co., Ltd
		I-Tail Corporation Public Company Limited