

Precarious Work in the Asian Seafood Global Value Chain





*Dock workers unloaded and sorted through barrels of fish at the processing facility in Ranong, Thailand in August.
Adam Dean for the New York Times*

The outsourcing of production and processing activities to the bottom of seafood global value chains (GVCs) in Asia has resulted in intensive labour exploitation and abuse of vulnerable workers—especially women migrant workers from marginalized communities. Workers at the base of seafood value chains in Bangladesh, India and Thailand suffer non-enforcement of legal rights and violations of ILO labour standards, including restricted freedom of association, low wages, gender discrimination, workplace violence, wage theft and child and forced labour. The iteration of these rights violations across Asian countries testifies to the structural nature of these rights violations, reproduced across contexts and integrally linked to the structure of the seafood GVC. Moreover, with 200 countries currently participating in the seafood GVC, working conditions and wages in developing countries have significant impact on wages and working conditions in developing and developed countries alike.

This report details the context of intensive labour exploitation and abuse of vulnerable workers in the Asian seafood industry and elsewhere.

Part I

The Global Seafood Industry, in brief, traces the rise of global fish consumption and the evolution of the contemporary seafood GVC—including sourcing and production, processing and distribution. This first section concludes with an overview of how consumer and environmental activists have managed to address food quality and safety concerns through international institutions and non-tariff trade barriers. It also identifies the nascent dialogue emerging around the need to protect workers' rights in the seafood GVC.

Part II

Overview of the Asian Seafood Industry provides an overview of seafood value chains in Bangladesh, India and Thailand. Each overview identifies significant export commodities, traces the labour processes entailed in their production and processing and identifies workforce demographics. The basic structural overview provided in these country-level case studies of domestic seafood value chains reveals structural similarities and dissimilarities operating across Bangladesh, India and Thailand.

Part III

Precarious work in the Asian seafood industry discusses, in detail, the intensive labour exploitation and abuse faced by workers in the seafood GVC. Evidence of rights violations is drawn from existing studies and supplemented by primary research on seafood processing in India. In this section the human rights violations and consequences of precarious work in the Asian seafood processing industry are articulated thematically in order to surface the pattern of rights violations across Bangladesh, India and Thailand.

The Conclusion: precarious work in the Asian seafood industry and the global race to the bottom, links the plight of seafood industrial workers in Asia to seafood production worldwide. This final section draws upon findings from the National Guestworker Alliance (NGA) in the United States to demonstrate how in order to compete in international markets, US seafood processors employ a contingent workforce highly vulnerable to workplace abuse and exploitation.

As detailed in this report on the seafood Global Production Network (GPN), due to the scale of global trade accounted for by GVCs, there is an urgent need for global mechanisms to monitor and regulate GVCs and GPNs. The ILO—the only global tripartite institution—has a unique role to play in setting standards for all of the actors that impact fundamental principles and rights at work.

The ILO Tripartite declaration of principles concerning multinational enterprises and social policy (MNE Declaration), 2006 provides a good starting point. However, within the MNE Declaration, MNE refers only to subsidiaries or franchises. Accordingly, GVCs in their current form are not covered by this Declaration. The need of the hour is for the ILO to clarify and update its standards and mechanisms to protect workers employed by TNCs across vast GPNs.

TNCs and their suppliers have a duty to obey national laws and respect international standards—especially those pertaining to realization of the fundamental principles and rights at work. A number of ILO core labour standards, such as the Forced Labour Convention, 1930 (No. 29), 2014 Protocol to the Forced Labour Convention 1930 and accompanying Recommendation, already protect workers in value chains. However, as this report details, changes in the modern workplace and globalization of value chains has opened up new gaps in the protection of fundamental principles and rights at work. In addition to clarifying the application of existing standards in global value chains, the ILO should set new standards and enforcement mechanisms and encourage national governments to do the same.

The following recommendations emerge from our experience promoting the rights of workers in the global value chains.

1. Given the well-documented and rampant exploitation of workers and resources by MNEs operating through GVCs, and noting the limits on regulation under national legal regimes, the ILO should move towards a binding legal convention regulating GVCs.
 - 1.1 Standards under this convention must be at least as effective and comprehensive as the UN Guiding Principle on Business and Human Rights and existing OECD mechanisms, including the 2011 OECD Guidelines for Multinational Enterprises.
 - 1.2 The Convention should include the following components, among others:
 - Imposition of liability and sustainable contracting, capitalization and/or other requirements on lead firms to ensure accountability throughout the GVC.
 - Establishment of a Global Labour Inspectorate with monitoring and enforcement powers.
 - Publicly accessible transparency and traceability provisions.
 - Specific provisions that address the special vulnerability of migrant workers on GVCs.
 - Specific provisions that address the special vulnerability of women workers in GVCs.
 - Limits on the use of temporary, outsourced, self-employed, or other forms of contract labour that limit employer liability for worker protections.
2. Pursue a Recommendation on human rights due diligence that takes into account and builds upon existing due diligence provisions that are evolving under the United Nations Guiding Principles on Business and Human Rights and the 2011 OECD Guidelines for Multinational Enterprises.

3. Take the following complementary measures to protect workers employed in global value chains:
 - 3.1 Recognize the right to living wage as a human right and establish living wage criteria and mechanisms.
 - 3.2 Promote sector-based and transnational collective bargaining and urge countries to remove national legal barriers to these forms of collective action.
 - 3.3 Expand work towards the elimination of forced labour, including promoting ratification and implementation of the Forced Labour Convention, 1930 (No. 29), 2014 Protocol to the Forced Labour Convention 1930 and accompanying Recommendation.
 - 3.4 Continue programs to ensure social protection, fair wages and health and safety at every level of GVCs.
4. Convene research to inform ILO global supply chain programming, including:
 - 4.1 Research on adverse impacts of TNC purchasing practices upon
 - Core labour standards for all categories of workers across value chains.
 - Wages and benefits for all categories of value chain workers. This research should aim to satisfy basic needs of workers and their families.
 - Access to fundamental rights to food, housing, and education for all categories of value chain workers and their families.
 - 4.2 Research into the range of global actors that may have leverage over GVCs including investors, hedge funds, pension funds and GVC networks that define industry standards such as Free on Board (FOB) prices.
 - 4.3 Research into the types of technical advice needed by OECD government participants taking a multi-stakeholder approach to address risks of adverse impacts associated with products.
 - 4.4 Research into mechanisms deployed by authoritative actors within GVCs that contribute to violations of fundamental principles and rights at work, including but not limited to attacks on freedom of association, collective bargaining, forced overtime, wage theft and forced labour.
5. Organize a Tripartite Conference on the adverse impact of contracting and purchasing practices upon migrant workers' rights. This conference should focus on:
 - Protection of migrant rights as conferred under the UN International Convention on the Protection of the Rights of all Migrant Workers and Members of their Families.
 - The intersection of migrant rights and ILO initiatives to promote Decent Work in Global Supply Chains.

This report is one in a series of reports, entitled Workers' Voices from Global Supply Chains: A Report to the ILO 2016. This study of the Asian seafood global value chain was conducted by the Society for Labour and Development. It was researched and written by Shikha Silliman Bhattacharjee, JD and Vaibhav Raaj. This report was edited by Anannya Bhattacharjee and Ashim Roy. Recommendations for the ILO at the International Labour Conference, 2016 were formulated by a group of organizations, including the international Asia Floor Wage Alliance, Jobs with Justice (USA), National Guestworkers Alliance (USA), and Society for Labour and Development (India).

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AFL-CIO	American Federation of Labour- Congress of Industrial Organizations	MSC	Marine Stewardship Counsel
AFWA	Asia Floor Wage Alliance	NCBI	National Center for Biotechnology Information
BLA	Bangladesh Labour Act, 2006	NGA	National Guestworker Alliance
BFFEA	The Bangladesh Frozen Food Exporters Association	NGO	Non-governmental Organization
EC	European Commission	NTB	Non-tariff Barrier
EIA	Export Inspection Agency	OECD	Organization for Economic Cooperation and Development
ESI	Employees' State Insurance	OECD TRF	Organization for Economic Cooperation and Development Transition to Responsible Fisheries
EU	European Union	OEM	Original Equipment Manufacturer
DOF	Department of Fisheries	PSMA	Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing
FAO	Food and Agricultural Organization of the United Nations	PF	Provident Fund
FAO COFI	FAO Committee on Fisheries	PPE	Personal Protective Equipment
GPN	Global Production Network	RFB	Regional Fishery Bodies
GDP	Gross Domestic Product	SEAI	Seafood Exporters Association of India
GSP	Generalised System of Preference	SME	Small and Medium Enterprises
GVC	Global Value Chain	SPS	Sanitary and Phytosanitary
HAACP	Hazards Analysis Critical Control Point	TFFA	Thai Frozen Foods Association
ILO	International Labour Organization	TNC	Transnational Corporation
INFOSAN	International Food Safety Authorities Network	TTIA	Thai Tuna Industry Association
IPOA-IUU	International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing	UNCTAD	United Nations Conference on Trade and Development
IPEC	International Programme on Elimination of Child Labour	US	United States
IUU	Illegal, Unreported and Unregulated	USD	United States Dollar
MPEDA	Marine Products Export Development Authority	US FDA	United States Food and Drug Administration
		WHO	World Health Organization
		WTO	World Trade Organization



*Comodian migrants hauled in the nets on a Thai-flagged fishing boat in the Gulf of Thailand in august. A labour shortage in the Thai fishing industry is primarily filled by using migrants, mostly from Cambodia & Myanmar.
Adam Dean for the New York Times*

Part 1

The Global Seafood Industry

Global fish consumption

In the last half-century, world fish consumption per capita has almost doubled—from an estimated 9.9 kgs per capita in the 1960's to an estimated 19.2 kgs per capita in 2012¹. While seafood is disproportionately consumed in developed countries², consumption has also increased in developing and low-income food deficit countries. Emergence of fish as a health food for affluent consumers suggests that fish production will continue to multiply in order to meet consumer demand across the planet³.

Keeping pace with demand, the industrial growth rate of fish for consumption has averaged 3.2 percent globally—far ahead of the world population growth rate of 1.6 percent⁴. In 2012 more than 85 percent of the total fish produced from marine capture fisheries and aquaculture was for direct human consumption⁵—a marked increase from the 1980's when 71 percent of total fish production was for direct human

1 Food and Agriculture Organization of the United Nations (FAO), *The State of World Fisheries and Aquaculture 2014*, (available online: <http://www.fao.org/3/a-i3720e01.pdf>).

2 From 1961-2010, fish consumption rose from 4.9 to 10.9 kgs per capita in low income food deficit countries; 5.2 to 17.8 kgs per capita in developing countries. FAO 2014, supra note 1 at 4.

3 Bimal Prasanna Mohanty, et. al., *Food Safety, Labeling Regulations and Fish Food Authentication, Science and Technology Development/Policy Issues* (2013), 253 (available online: <http://link.springer.com/article/10.1007%2Fs40009-013-0139-x>) (citing Delgado CL, etl al., *Outlook for fish to 2020, Meeting Global demand: A 2020 vision for food, agriculture and the environmental initiative*, International Food Policy Research Institute: Washington DC, 2003).

4 FAO 2014, supra note 1 at 3.

5 Id. 4 (indicating that 136 tonnes out of a total 158 tonnes of fisheries and aquaculture production was utilized for human consumption in 2012).

consumption⁶. Fish is now among the most traded food commodities in the world, representing about 10 percent of total agricultural exports and 1 percent of world merchandise traded in value terms. Global export value in seafood for consumption peaked in 2011 at USD 129.8 billion dollars, with a growth rate of 17 percent over the previous year⁷.

Seafood global production network (GPN) and global value chains (GVC)

The rise in demand for seafood has unfolded alongside global reorganization of production and processing activities. Today, 200 countries participate in the seafood GVC⁸. In developing countries, fish consumption tends to be based upon seasonal availability of local products. In developed countries, by contrast, a growing share of fish for consumption is imported as a result of steady demand and declining domestic fish production⁹. In 2012, the European Union (EU)—the largest import market for seafood, worth USD 24.9 billion—accounted for 23 percent of world imports in fish and fishery products, excluding intra-EU trade¹⁰. The majority of fish consumed in the United States and Japan, 60 percent and 54 percent respectively, is also imported. Increased export orientation in the seafood industry is reflected in the growth rate of world trade in fish and fishery products: 8.3 percent growth per year

6 Id. at 47.

7 Id. at 7, 46.

8 Id. at 7, 46.

9 Id. at 3.

10 Id. at 50.

in nominal terms and 4.1 percent in real terms between 1976 and 2012¹¹.

Within the last two decades, the EU, US and Japan have increasingly outsourced production and processing to developing countries in Asia, Latin America and Africa. In 2011, fish was the highest exported agricultural commodity for developing countries—leaving coffee, natural rubber and cocoa far behind in value terms¹². Developing economies, whose exports represented just 34 percent of world seafood trade in 1982, saw their share rise to 54 percent of total fishery export value by 2012. In the same year, developing country exports represented more than 60 percent of the quantity (live weight) of total fishery exports. Due to reliance on seafood imports by developed countries to cover increasing consumption of fish and fishery products, developing countries have been able to supply fishery products without facing prohibitive customs duties¹³.

The Global Production Network (GPN) is a term that describes this contemporary production system, which results from the shift in international trade from exchange based on distant market relationships to one based on closely networked firms. Exchanges between firms within this network are structured so that transnational corporations (TNCs) do not formally own the overseas subsidiaries or franchisees but outsource production to them, without the burden of legal ownership. As explained by the World Investment Report 2013 by UNCTAD:

11 Id. at 50.

12 Id. at 51-52.

13 Id. at 8, 51, 52, 53 (noting that exports from developing countries have increased significantly in recent decades also thanks to the lowering of tariffs, in particular for non-value-added products; and that this trend follows the expanding membership of the WTO, entry into force of numerous bilateral and multilateral trade agreements).

Today's global economy is characterized by global value chains (GVCs), in which intermediate goods and services are traded in fragmented and internationally dispersed production processes. GVCs are typically coordinated by TNCs, with cross-border trade of inputs and outputs taking place within their networks of affiliates, contractual partners and arm's-length suppliers. TNC-coordinated GVCs account for some 80 per cent of global trade¹⁴.

As described by UNCTAD, the global production network (GPN) framework expresses the organizational linkages that the TNCs use to reorganize production through services and contractual agreements. The GPN shifts the market relationship between firms from a trade relationship to a quasi-production relationship without the risks of ownership.

As with other GPNs, the way seafood products are prepared, marketed and delivered to consumers has changed significantly. As observed by the FAO, "processing is becoming more intensive, geographically concentrated, vertically integrated and linked with global supply chains." Marine artisanal fishers and coastal agricultural communities with traditional livelihoods rooted in local systems of fishing and crop cultivation have been incorporated into global networks of commodity flows¹⁵.

Commodities may cross national boundaries several times before final consumption. Driving forces behind the seafood GVC include:

- dramatic decreases in transport and communication costs;

14 Bob Pokrant, "Brackish Water Shrimp Farming and the Growth of Aquatic Monocultures in Coastal Bangladesh," in J. Christensen, M. Tull (eds.), *Historical Perspectives of Fisheries Exploitation in the Indo-Pacific* (MARE Publication, 2014).

15 Id.

- progress in storage and preservation;
- outsourcing of processing to countries where comparatively low wages and production costs provide a competitive advantage;
- increasing consumption of fishery commodities;
- favourable trade liberalization policies;
- more efficient distribution and marketing;
- and continuing technological innovations, including improvements in processing, packaging and transportation¹⁶.

Due to these forces, fish products may be produced in one country, processed in a second and consumed in a third. The seafood GVC can be roughly subdivided into three levels:

1. Sourcing and production of raw materials, including from the sea or aquaculture;
2. Processing and export, including post-harvest sale, transportation, processing, freezing and exporting;
3. Import and distribution: sale and delivery to grocery stores and restaurants¹⁷.

Driving these networks, TNCs increasingly dictate the standard and type of product, price, conditions of production and sale. Millions of the people around the world are employed by the seafood GVC. Overall, women accounted for 15-20 percent of people engaged in sourcing and production and as high as 90 percent in secondary activities such as processing¹⁸. While the growth

16 Frank Asche and Martin D. Smith, *Trade and Fisheries: Key Issues for the World Trade Organization*, (Geneva: World Trade Organization Working Paper, 2009); FAO 2014, supra note² at 46; David Green, Automation in Seafood Processing, *J. of Aquatic Food Product Tech.*, 22:4, 337-338 (2013) (for discussion in advances in automated seafood processing).

17 This model has been adapted from Patarapong Intarakumnerd, et. al. "Innovation system of the seafood industry in Thailand," *23 Asian Journal of Technology Innovation* 2, 274 (2015).

18 FAO 2014, supra note 1 at 31.

of the seafood GVC provides employment in many developing countries, it has also led to an increase in precarious jobs with low wages and poor working conditions.

Sourcing and production: fishing and farming

In 2012, 68 percent of the people employed in sourcing and production were engaged in capture fishing while 32 percent were engaged in aquaculture. Europe and North America have experienced a decrease in the number of people engaged in capture fishing and only a marginal increase in fish farming. In contrast, Africa and Asia have shown a sustained increase in the number of people engaged in capture fishing and even higher rates of increase in those engaged in fish farming. These trends in employment have been related to higher population growth and increased economic activity in the agricultural sector in Africa and Asia¹⁹.

Fish production alone, including fishers and fish farmers, engaged an estimated 58.3 million people in 2012²⁰. Together, Africa and Asia both account for 94 percent of fishers and fish farmers. They also show the lowest output per person per year: 1.8 and 2.0 tonnes per person per year, respectively. These numbers are in stark contrast with annual average outputs of 24.0 and 20.1 tonnes per person per year in Europe and North America, respectively. The difference between these sets of numbers reflects higher degrees of industrialization in Europe and North America and the prevalence of small-scale producers in Africa

19 Id. at 28.

20 Id. at 27.

and Asia²¹.

Of the 58.3 million people engaged as fish farmers—concentrated predominantly in either Africa or Asia—37 percent were engaged full time, 23 percent were engaged part time and the remaining 40 percent were either occasional workers or had an unspecified status. In total, 63 percent of all people employed as fishers and fish farmers are not engaged in full time employment²².

Fishing

In general, employment in fishing has decreased in most European countries, North America and Japan and increased in Africa and Asia²³. The rising practice of illegal, unreported and unregulated (IUU)²⁴ exploitation of wild fish stocks—especially from the shores of developing countries—has been referred to as “ocean grabbing.” According to the former UN Special Rapporteur on the right to food, Olivier De Schutter, “ocean grabbing” can be as serious as “land grabbing” in diverting resources from local populations.²⁵

Fishing regulations are particularly challenging to enforce. Outside of a nation state’s “exclusive

21 Id. at 31.

22 Id. at 27.

23 Id. at 31.

24 Illegal, unreported and unregulated (IUU) exploitation of wild fish stocks refers to all fishing outside the ambit of laws and regulations. This includes fishing without a license, fishing in a closed area, fishing with prohibited gear, fishing in excess of quotas and fishing of prohibited species.

25 Charlotte Seager, “Fisheries in Africa are losing billions due to illegal practices,” *The Guardian*, May 8, 2014, accessed February 19, 2016, <http://www.theguardian.com/global-development-professionals-network/2014/may/08/africa-progress-report-2014>.

economic zone”—a 200 mile strip of ocean adjacent to the shoreline— fishing vessels are governed by laws of the country in which they are registered. The country of registration is referred to as the “flag state.” In order to sidestep regulation, many fishing vessels are registered in countries with no meaningful link to their operations, incentive or capacity to enforce fishing regulations. This practice has been referred to as the use of “flags of convenience”—a structural loophole that permits environmental and social abuses in this sector²⁶. For instance, recent reports accuse hundreds of Chinese owned or “flagged” vessels of taking advantage of weak enforcement by African governments to indiscriminately net tons of fish off the coasts of Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal and Sierra Leone²⁷.

The source of fish is also particularly hard to trace. Challenges associated with tracing seafood catch to its source have implications for both illegal fishing and abusive labour practices. Small fishing boats that stay out to sea for years often transfer their catch to large “motherships.” Motherships carry fuel, extra food, spare nets and workers to the trawlers; and carry fish from smaller fishing boats to ports for sale. Once a load of fish is transferred to a mothership, it is very difficult to trace whether it was caught legally or poached—by paid fishermen or bonded migrant workers. While consumers can track some seafood exports to onshore processing facilities, the source of fish caught at sea is, in most cases, invisible²⁸

26 International Transport Workers’ Federation, What are flags of convenience?, <http://www.itfglobal.org/flags-convenience/sub-page>.

27 Andrew Jacobs, Chinese “Fleets Illegally Fish in West African Waters, Greenpeace Says,” *New York Times*, May 20, 2015, accessed February 19, 2016, http://www.nytimes.com/2015/05/21/world/asia/china-west-africa-fishing-greenpeace.html?_r=0.

28 Ian Urbina, “‘Sea Slaves’: The Human Misery that Feeds Pets and Livestock,” *New York Times*, July 27,

Farming

World aquaculture production continues to grow, increasing 5.8 percent to 70.5 million tonnes in 2013 and contributing 42.2 percent of the total fish produced globally, including for non-food uses²⁹. Aquaculture can be categorized as either inland aquaculture or mariculture. Inland aquaculture generally uses freshwater, but some production operations use saline water in inland areas (e.g. Egypt) and inland saline-alkali water (e.g. China). Mariculture includes production operations in the sea and intertidal zones and land-based (onshore) saline production facilities and structures³⁰. Environmental risks associated with aquaculture include water pollution, wetland losses and mangrove destruction³¹.

Asia accounts for 88 percent of world aquaculture production by volume. In 2012, China accounted for 61.7 percent of the world’s total aquaculture production. India (6.3 percent), Vietnam (4.6 percent), Indonesia (4.6 percent), Bangladesh (2.6 percent) and Thailand (1.9 percent) also ranked among the top seven producers of farmed fish globally.³²

2015, accessed February 15, 2015, http://www.nytimes.com/2015/07/27/world/outlaw-ocean-thailand-fishing-sea-slaves-pets.html?_r=0.

29 FAO 2014, supra note 1 at 18-19.

30 Id. at 22.

31 Parashar Kulkarni, *The Marine Seafood Export Supply Chain in India: Current State and Influence of Import Requirements*, CUTS Centre for International Trade, Economics and Environments, Jaipur, India (2005).

32 FAO 2014, supra note 1 at 21-22 (listing the amount of farmed food fish production by top 15 producers in tons and percentage in Table 7, including farmed fish production information for China, India, Viet Nam, Indonesia, Bangladesh, Norway, Thailand, Chile, Egypt, Myanmar, Philippines, Brazil, Japan, Republic of Korea and United States).

Processing

Processing plants are at the apex of many domestic value chains and constitute the main interface between domestic production and international markets³³. Fish product processing plants vary in technology levels, with smaller workplaces relying entirely on manual handling of fish products and larger companies using modern, highly automated processes³⁴. Seafood processing ranges from simple gutting, heading or slicing, to more advanced value addition through breeding, cooking and individual quick-freezing³⁵. In 2012, 54 percent of fish for human consumption was processed—cured, prepared or preserved in frozen forms. Of this, 12 percent (16 million tonnes) was dried, salted, smoked or otherwise cured; 13 percent (17 million tonnes) was preserved; and 29 percent (40 million tonnes) was preserved in frozen form³⁶. The growth in seafood processing for value addition has in turn led to more residual by-products. Fish by-products are utilized for a range of purposes including fish sausages, cakes, gelatin, sauces, pharmaceuticals, cosmetics, biodiesel fertilizer and animal feed³⁷.

Outsourcing of processing activities is dictated by costs of labour and transportation; and species and final product specifications. For instance, Poland and the Baltic states process smoked and marinated products for sale in Central and Eastern Europe due to the highly sensitive shelf-

33 Bob Pokrant, “Work, Community, Environment and the Shrimp Export Industry in Bangladesh, India and Thailand,” in Michael Gillan and Bob Pokrant ed., *Trade, Labour and Transformation of Community in Asia* (Palgrave Macmillan, 2009), at 78.

34 MF Jeebhay, et. al., “World at Work: Fish processing workers,” 61 *Occup. Environ. Med.*, 471 (2004).

35 FAO 2014, supra note 1 at 43.

36 Id. at 42.

37 Id. at 45.

life of these products. Whole, frozen fish from Europe and North America, however, may be sent for labour-intensive processing to China, India, Indonesia and other developing countries and then reimported into markets of origin³⁸.

Processing facilities operate predominantly in some of the world's poorest regions or among poor workforces in developed countries. Traditional labour intensive processing methods—including filleting, salting, canning, drying and fermentation—often take place in rural economies with support from developing country governments as part of rural development and poverty alleviation strategies to generate employment³⁹.

Distribution

The concept of governance in GVC analysis is based upon the observation that value chains are rarely coordinated spontaneously through market exchange. Instead, large firms direct GVCs through their control over access to final markets⁴⁰. The seafood industry is led by supermarket chains, large retailers and food service operators that drive consumption patterns and set production requirements—including how fish is processed, packaged and shipped for distribution through retail chains⁴¹.

Consolidation within the retail sector has resulted in increasing concentration of power in the hands of a decreasing number of food product

38 Id. at 46.

39 Id. at 43.

40 Stefano Ponte, et. al., "The Blue Revolution in Asia: Upgrading and Governance in Aquaculture Value Chains," 64 *World Development* (2014), at 52.

41 Asche, supra note 15 at 8; FAO 2014, supra note 1 at 69.

importers, including major retail chains. Large supermarkets are consistently expanding their range of products to include foods that were previously supplied by small specialty outlets such as fish sellers and butchers. As these outlets vanish, control over GVCs is increasingly in the hands of large retail chains. This concentration of control moves primary decision-making regarding GVC practices to large importers and retail chains⁴².

In 2013, four supermarket retail brands—LIDL, ALDI, JUMBO and PLUS—together controlled 42.2 percent of the seafood import market in the Netherlands, 15.3 percent of the seafood import market in Germany and 8.4 percent of the seafood import market in the UK⁴³. Other major retail and food service conglomerates with significant control over the seafood GVC include Walmart, Costco, Safeway, Kroger, Publix, Darden and Trader Joe's⁴⁴.

In many areas, integrated traders coordinate trade between large retailers and sub-contracted production and processing activities—including complex networks of fishing vessels, ports and processing facilities. In this way, large integrated traders also exert control over large segments of the seafood industry. For instance, three

42 Jayasekhar Somasekharan, "Restructuring the Value Chain Governance: The Impact of Food Safety Regime on Fishery Sector of Kerala," IIFET 2014 Australia, at 11, accessed February

43 Fairfood International, *Caught in a trap: The story of poverty wages behind Asian shrimp sold in European markets* (2015), 28-29.

44 Accenture, *Exploitative Labor Practices in the Global Shrimp Industry* (2013), at 32, accessed February 20, 2016, https://www.motherjones.com/files/accenture_shrimp_report.pdf. (noting that Darden's Red Lobster chain sells more shrimp in the U.S. than any other restaurant; identifying Walmart as the largest retailer in the United States and also the largest retailer of shrimp; and noting that Costco is one of the largest seafood retailers in America).

integrated traders dominate the cannery-grade tuna market: FCF Fishery Company Ltd. (Taiwan), FCF Fishery Company (Taiwan) and TriMarine (United States). Together, these three trading companies coordinate 75-80 percent of trade in the Thai tuna market—the largest tuna market in the world⁴⁵.

The model of supermarket chains and large retailers dictating production within the seafood GVC has been referred to as a "buyer driven commodity chain." This terminology observes the role of large retailers, marketers and brands in driving geographically disbursed production and distribution systems⁴⁶. In this buyer-driven chain, large retailers have the capacity to secure the highest possible profit margins by fostering organizational flexibility and reducing and externalizing production costs⁴⁷. In short, low-cost production yields the highest returns.

Major seafood buyers define the seafood GVC by their demand for seafood products that can be supplied consistently, reliably and in large volumes; maintain stable and competitive prices; and are reviewed by consumers as convenient and attractive. Consumer demand has come to include traceability, safety and health. These concerns, however, have not extended to ensuring that fair labour practices are maintained through all stages of production, processing and distribution. Instead, as the following sections detail, low cost

45 Asia Foundation and International Labour Organization (Asia Foundation-ILO), *Migrant and Child Labour in Thailand's Shrimp and Other Seafood Supply Chains* (2015).

46 Anannya Bhattacharjee and Ashim Roy, "Bargaining in the Global Commodity Chain: the Asia Floor Wage Alliance," in Kees van der Pijl, ed., *Handbook on the International Political Economy of Production* (Cheltenham: Edward Elgar, 2015), p. 334; CS Dolan, *On Farm and Packhouse: Employment at the Bottom of a Global Value Chain*, 69 *Rural Sociology* 1, 99-126 (2004).

47 Bhattacharjee and Roy, supra note 46 at 334.

production has come to be synonymous with driving down wages and maintaining a low wage workforce⁴⁸.

Regulating the seafood industry

The global seafood market is governed by a complex system of regulations and international and national standards, including:

- World Trade Organization (WTO) tariff and non-tariff regulations;
- UN Food and Agriculture Organization (FAO) standards;
- domestic regulations; and
- a growing number of private third party certification agencies—such as Global Aquaculture Stewardship Best Aquaculture Practices (BAP), Aquaculture Stewardship Council (ASC) and Marine Stewardship Council (MSC).⁴⁹

While consumer safety and environmental groups have had significant influence over international technical and environmental standards, wage standards and working conditions have been, for the most part, set by the market⁵⁰.

Food quality and safety

Expansion in demand for fish products has been accompanied by growing interest in nutrition,

48 Bhattacharjee and Roy, supra note 46 at 340-343 (detailing a similar phenomenon in the garment global GVC).

49 Pokrant 2014, supra note 40 at 111.

50 Md Saidul Islam, "From Sea to Shrimp Processing Factories in Bangladesh," 3 *J. of South Asian Dev.* 2, 224 (2008).

food safety and waste reduction. To promote food safety and protect consumers, increasingly stringent hygiene measures have been adopted at international and national levels⁵¹. Measures to promote food safety include non-tariff trade regulations and national and regional food safety standards.

Consumer protection initiatives within the seafood industry assume regulatory force through non-tariff trade regulations. Non-tariff trade regulations include application of required product standards, control on sanitary and phytosanitary (SPS) measures, procedures for import licensing and rules of origin and conformity assessments⁵². According to the FAO, there has been no protectionist trend for fisheries tariffs and an average trend toward more liberal trade. However, tariff reductions have been offset by non-tariff barriers (NTBs)—and particularly SPS measures driven by consumer demand and health concerns. This evidence can be interpreted as a policy substitution in which tariffs have been replaced by NTB/SPS measures⁵³.

Standards set by seafood importing countries have also directly defined global food safety requirements for imported fisheries products for consumption. European Commission (EC) Directive No. 91/493/ECC (1991), prescribes health conditions that must be met in order to place fish and fishery products in the unified European market. Under European Union (EU) regulations, processing facilities that export seafood to the EU require certification by a EU-nominated inspection agency. In 1995, the United States Food and Drug Administration (US FDA) made it compulsory for

51 FAO 2014, supra note 1 at 41.

52 Id. at 53.

53 Arne Melchior, *The World Trade Organization Enlargement, Tariffs and Global Seafood Trade* (Rome: Food and Agricultural Organization of the United Nations, 2015), 14.

seafood processors and importers to comply with the Hazard Analysis Critical Control Point (HAACP), a food safety standard monitored by the US FDA. These standards have been nearly universally accepted worldwide.⁵⁴

As the seafood industry evolves, concerns for food safety have evolved to accommodate specific risks associated with the evolution of the seafood GVC. For instance, increasing consumer demand for fish has prompted attention to guaranteeing the safety, traceability⁵⁵ and authenticity of fish products. Increasing fish processing and handling of minced fish instead of whole fish specimens in global fish markets, for instance, has complicated identification of fish species. Accordingly, a number of global regulations have been implemented to assure species transparency.⁵⁶

In order to uphold global food and safety standards, almost every country in the world has a government connected authority to monitor food safety issues from production to sale.⁵⁷ National governments in developing countries have taken significant steps to adhere with food safety regulations in order to meet export standards. For instance, in 1997, Bangladesh was jolted into recognizing the authority of these regulatory agencies by a EU ban on Bangladeshi seafood exports. The ban was triggered by

54 Jayasekhar Somasekharan, “Food safety regulations and trade effects: The case of Indian seafood industry with special reference to Kerala, South India,” 7 *Globelics International Conference* (2009)(discussing, for instance, the impact of EU and HAACP food safety regulations on India’s seafood industry).

55 For further discussion of promotion of traceability, see FAO 2014, supra note 1 at 78-81, discussing traceability in context of food safety and animal health, certification related to sustainability, current regulations, traceability tools and challenges to traceability posed by the small-scale sector).

56 Mohanty, supra note 3 at 253-54.

57 Id.

unsatisfactory reports following 1997 inspections of several processing facilities by a EU inspection team.⁵⁸ Introduction of EU and HAACP food safety regulations in exporting countries has precipitated significant changes in the structure of the industry, including the rise of vertically integrated export units.⁵⁹

Environmental protection

Seafood production, whether from capture fishing or aquaculture, has a close connection to the environment. Inadequate regulation of fishing access is at the root of overexploitation of natural fish resources, degrading biological stocks and altering ecosystems. Aquaculture production directly impacts the ability of the environment to sustain future fish production. Due to the international nature of marine conservation, countries have used trade policy as an indirect means to protect the marine environment.⁶⁰

The international community also works to address environmental risks posed by the seafood industry through non-binding codes that aim to advance sustainable fishing practices. The FAO Code of Conduct for Responsible Fisheries pertains to sustainable fishing and farm-based production and aims to ensure effective conservation, management and development of living aquatic resources that respects natural ecosystems and biodiversity. The Code

58 Pokrant 2009, supra note 32 at 94; James C. Cato and Carlos A. Lima, “European Union 1997 Seafood-Safety Ban: The Economic Impact on Bangladesh Shrimp Processing,” 13 *Marine Resource Economics*, No. 3 (1998), at 220.

59 Somasekharan 2009, supra note 54 (discussing, for instance, the impact of EU and HAACP food safety regulations on India’s seafood industry).

60 Asche, supra note 15 at 2.

provides standards applicable to conservation, management and development of fisheries. It also covers capture, processing and trade of fish and fishery products. In the context of international trade, the FAO calls for global harmonization of trade standards that prioritizes conservation principles over trade benefits and gains. The FAO has produced 28 technical detailed guidelines to assist fishers, industry and governments to implement various facets of the Code. The Code, together with four International Plans of Action and two strategies provide the broad framework within which the UN FAO operates. The FAO seeks implementation of the Code, in collaboration with states and international organizations, through regional and national workshops, development of technical guidelines and assistance to countries in developing plans of action.⁶¹

The FAO promotes food safety and the long term sustainability of fishery resources through Regional Fishery Bodies (RFBs)—the primary organizational mechanism through which states work together to ensure the long-term sustainability of shared fishery resources.⁶² Due to sustained efforts, many countries have fisheries policy and legislation that are increasingly consistent with the Code. However, many states still lack policy, legal and institutional frameworks for integrated coastal management and aquaculture development.⁶³

Due to the threat posed to marine ecosystems by Illegal, unreported and unregulated (IUU) fishing, many States are striving to implement the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA–IUU). RFBs have also engaged in vigorous campaigns to combat IUU fishing.

61 FAO 2014, supra note 1 at 69-75.

62 Id. at 81.

63 Id. at 69-75.

The binding 2009 FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA) (not yet in force) also aims to combat IUU fishing. In June 2014, the FAO Committee on Fisheries (COFI) will consider the “Voluntary Guidelines for Flag State Performance.” These guidelines aim to strengthen compliance by flag States regarding fishing vessels.⁶⁴

Through labeling, consumer campaigns and certification, non-governmental organizations (NGOs) have also sought to establish environmentally linked product attributes. Such product attributes include the status of fish stock (whether it is overfished) and whether production methods harm marine diversity. While food safety has been a governmental concern, demarcation of environmental attributes has largely been pursued by private organizations.⁶⁵ The Organization for Economic Cooperation and Development (OECD) document on Transition to Responsible Fisheries (TRF) (2002) presents yet another comprehensive model for transition to sustainable fisheries.

Rights at work within the seafood GVC

While NTB/SPS measures, driven by consumer demand and health concerns, have had significant impact in shaping conditions in the global seafood trade, labour standards do not feature in WTO trade mechanisms. Instead, the WTO has explicitly delegated labour measures to the International Labour Organization (ILO). While proposals to link trade and labour standards predate WTO negotiations, attempts to bring labour standards within the WTO framework resulted in sharp divisions between governments, trade unions

64 FAO 2014, supra note 1 at 9.

65 Asche, supra note 15 at 15.

of the North and South and development sector NGOs.

The WTO framework does, however, provide some room for labour standards to be relevant in trade through the Generalised System of Preference (GSP) that some countries have used to link access to preferential trade benefits to higher labour standards. The enabling clause exemption within Most Favoured Nation requirements allows developed countries to impose zero or lower tariffs on some goods from developing countries—including based upon labour and human rights conditions.

The US and the EU both have GSP programmes. Since the introduction of the GSP programme, the EU withdrew preference from Myanmar (1997) for the systematic use of forced labour and Belarus (2006) for violations of freedom of association and collective bargaining. However, critics have noted that several other countries that retain GSP privileges have been consistently cited for grave labour standards violations from the ILO but have not faced similar actions.⁶⁶

Exemplifying how trade agreements may be used to address labour violations, the European Parliament’s Committee on Fisheries has threatened to ban imports from Thailand in response to Thailand’s inadequate legal framework governing fisheries. Violations cited include illegal fishing, poor monitoring and control of traceability systems and exploitation of thousands of stateless Rohingya boat people within the Thai seafood value chain. The EC and European External Action service report collaborating with Thailand to intervene in key

66 Kajal Bhardwaj, “The International Trade and Investment Framework and the Implementation of the Asia Floor Wage: Challenges and Opportunities,” *Towards an Asia Floor Wage: A Global South Labour Initiative for Garment Workers* (Bangalore: Books for Change, 2015), 65-71.

labour abuses in the fishing sector—particularly with regard to child and forced labour.⁶⁷

Rights at work within the seafood industry are just beginning to be articulated by the FAO. In 2012, the FAO called for more attention to human dimensions in setting standards for responsible fisheries⁶⁸ and the Rio+20 outcome document (*The Future We Want*), mentioned the employment security and human rights of fishers and their communities.⁶⁹ The agenda for Blue Growth and provisions of the Voluntary Guidelines for the Responsible Governance of Land, Fisheries and Forests in the Context of National Food Security, include attention to employment rights of those who depend upon the seafood GVC for their livelihoods. Accordingly, this approach articulates principles aimed at securing tenure, income, market access and decent living and working conditions.⁷⁰ The agenda for Blue Growth also includes access to markets for small-scale fishers and indigenous communities.⁷¹ By recognizing the rights of workers within the seafood GVC, the Blue Growth agenda begins an important conversation on protecting workers. However, these measures, promoted through voluntary compliance are unlikely to address the vulnerabilities faced by precarious workers within the seafood GVC.

Due to a range of factors—including poor capacity, limited resources, infrastructural needs and, in some cases, adverse disposition towards protective labour standards—national labour standards in developing countries remain weak. Proclivity towards driving down labour standards,

67 Georgi Gotev, “Thai seafood products could be banned, warns MEP,” *Bilaterals.org*, July 23, 2015, accessed February 14, 2016, <http://www.bilaterals.org/?thai-seafood-products-could-be>.

68 FAO 2014, supra note 1 at 8.

69 Id. at 8.

70 Id. at 76-77.

71 Id.

furthermore, is often linked to dominant global policy frameworks that prescribe labour deregulation as a prerequisite to attracting investment capital.⁷²

72 Sangeeta Ghosh, “Global Value Chains and the Garment Sector in India,” *Towards an Asia Floor Wage: A Global South Labour Initiative for Garment Workers* (Bangalore: Books for Change, 2015), 24 (citing A. Posthuma, “Beyond Regulatory Enclaves: Challenges and Opportunities to Promote Decent Work in Global Production Networks,” in A. Posthuma and D. Nathan (ed.), *Labour in Global Production Networks in India* (New Delhi: Oxford, 2010)).

Part 2

Overview of the Asian seafood industry

Asian countries contribute significantly to both marine capture and aquaculture-based seafood production. Of the 58.3 million people engaged worldwide as fishers or fish farmers in 2014, 84 percent were in Asia. The surge in seafood production in Asia has been attributed to abundant availability of cheap labour, land and other natural resources. In 2011-12, 11 Asian countries ranked among the top 18 producer countries in marine capture—accounting for more than 76 percent of global marine catch. Asia accounts for 68 percent of the global fleet of fishing vessels—approximately 3.23 million vessels. Asian countries also contribute almost 88 percent of the world's farmed food production with 96 percent of all people engaged in fish farming in Asia.⁷³

The seafood market is global, but it is also highly segmented—both by species and by product forms.⁷⁴ The following sections provide an overview of seafood value chains in Bangladesh, India and Thailand. Each overview presents significant export commodities and traces the labour processes entailed in their production and processing. These country-level overviews provide basic information on workforce demographics. Despite the significant differences in industrial development among seafood value chains in Bangladesh, India and Thailand, exploitative labour practices have been documented across the region. In order to capture regional trends, labour conditions will be discussed in Part III of this report.

Bangladesh

Since 2003, Bangladeshi seafood production

⁷³ FAO 2014, supra note 1 at 27.

⁷⁴ Asche, supra note 15 at 13.



Figure 1: Map of Bangladesh

Source: Google Maps

has grown 35 percent, due in part to significant advances in aquaculture production (Figure 2). In 2012, Bangladesh ranked the fourth largest producer of inland water-capture seafood production and the fifth largest producer of farmed fish. From 2013-14, Bangladesh's total export earnings from seafood were approximately USD 550 million from shrimp and USD 52 million from fish. In the same year, the top five countries importing Bangladeshi frozen shrimp and fish products were Belgium (USD 107.85 million), the United Kingdom (USD 105.39 million), Netherlands (USD 84.26 million), Germany (USD 67.8 million) and the US (USD 55.06 million). In addition to bringing in export revenue, fish and fishery products provide 56 percent of

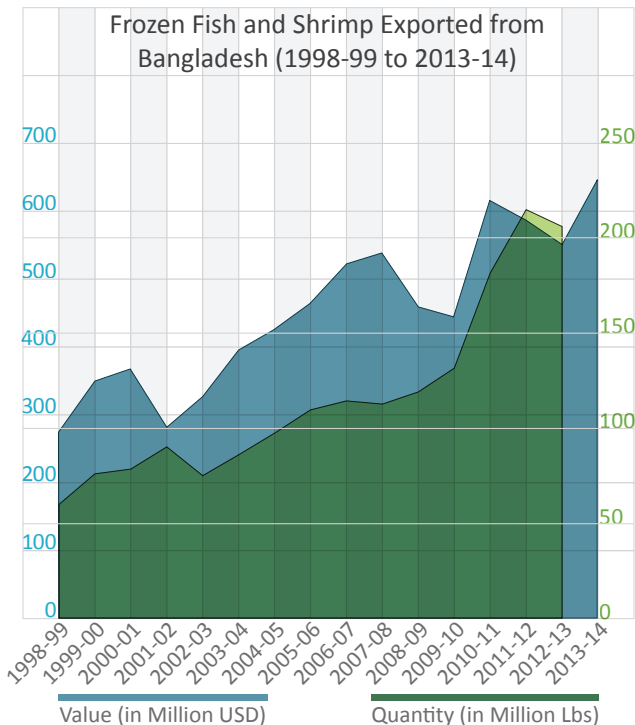


Figure 2: Frozen Fish and Shrimp Exported from Bangladesh (1998-99 to 2013-14)

Source: Bangladesh Frozen Foods Exporters Association, 2014

Bangladesh’s animal protein intake.⁷⁵

In 2015, the Bangladeshi shrimp export industry faced a demand slump. Between corresponding periods, July-August 2014-2015 and July-August 2015-2016, Bangladeshi profits from frozen shrimp exports dropped by 41 percent. Exports to major destinations, including the US, EU and Russia declined and prices fell. For instance, import prices in the EU for frozen shrimp declined from USD 12.88 to USD 8.96 per kg between 2013-2014 and 2014-2015. This slump in the Bangladeshi shrimp industry can be attributed, at least in part, to the declining strength of the Euro and Rouble and rising exports of a cheaper variety of shrimp (vannamei).⁷⁶

75 FAO 2014, supra note 1.

76 Id.

Bangladeshi shrimp value chain

In the 1990s, when the World Bank and Asian Development Bank promoted shrimp farming as an important new source of foreign exchange earnings, Bangladesh underwent a rapid growth in shrimp farms, shrimp depots, processing plants and a labour force engaged in wild shrimp collection. In 1991, shrimp farmers and hatchery collectors were granted tax exemptions and reduced rate bank loans. In 1992, the Bangladesh Government introduced the Shrimp Mohal Management Policy, supporting conversion of suitable public land to shrimp farms. Government investment and assistance to the shrimp sector has been greatest in the processing and hatchery sectors that have been dominated by wealthy Bangladeshis.⁷⁷

Today, the shrimp industry is the second largest foreign exchange commodity in Bangladesh, following the garment industry.⁷⁸ Shrimp production in Bangladesh involves a local value chain, including shrimp producers (catchers, hatchers and farmers), local depot owners and processing factories. Traders work as intermediaries at each stage of the chain.⁷⁹

The shrimp industry alone employs approximately 1 million people during peak season across the value chain. The majority of these workers are from southwestern Bangladesh where poverty is overwhelming.⁸⁰ While there is significant

77 Pokrant, supra note 14 at 119.

78 Pokrant 2014, supra note 14 at 115.

79 Islam, supra note 50 at 219.

80 Solidarity Center, *The Plight of Shrimp-Processing Workers of Southern Bangladesh*, January 2012, p.

participation by women in the Bangladesh shrimp value chain, they are concentrated in low wage labour, including fry collection and pre-processing.⁸¹ Within processing factories, women also routinely receive lower wages for the same work performed by their male counterparts.

Input suppliers: catching, hatching and sorting fry

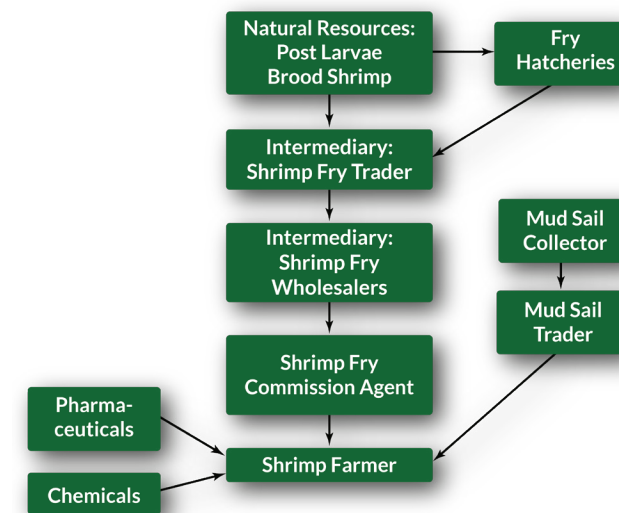


Figure 3: Shrimp fry supply chain from collectors to farmers

Source: S. Tasnoova, et. al., *Market Structure and Procurement System for Shrimp Export Industry in Bangladesh* (2010).

Wild fry (larvae) catching takes place across at least 12 districts in Bangladesh with major hubs

3, accessed online October 27, 2015, http://www.solidaritycenter.org/wpcontent/uploads/2014/11/pubs_bangladesh_shrimpreport2012.pdf.

81 Islam, supra note 50 at 221.

in Barisal, Khulna and Cox Bazaar.⁸² While there is no firm data on how many Bangladeshis engage in wild fry catching, it is estimated that several hundred thousand people collect fry along the coast and estuaries. The high season for fry collection lasts from March until August. During this period, collectors may spend between six and ten hours a day catching fry in rivers and estuaries. For the remainder of the year, fry collectors sustain themselves and their families by borrowing money and working as day labourers, honey collectors and in other temporary occupations.⁸³

In the last fifteen years, fry collection has come under intense scrutiny by ecologists for its environmental impacts and by social sector NGOs for persistent child labour at this stage of the value chain. Fry collecting, typically carried out by family groups—including young boys and girls—requires long hours of standing waist deep in water with nets. There is also evidence that fry collection threatens coastal ecosystems by affecting aquatic species diversity. Bangladesh banned fry collection in 2000 but the ban is poorly enforced and the practice persists.⁸⁴ Rather than protecting vulnerable workers, the ban has made fry collectors more open to exploitation. Fry collectors report facing extortion and threats of violence from local authorities and paramilitaries.⁸⁵

Fry can also be bred from mother shrimp in hatcheries. However, hatcheries require investment in infrastructure and feed, including

82 Sarah Gammage, et. al, *A Pro Poor Analysis of the Shrimp Sector in Bangladesh*, USAID (2006).

83 Environmental Justice Foundation, *Impossibly Cheap: Abuse and Injustice in Bangladesh’s Shrimp Industry* (2014), 11.

84 Pokrant 2014, supra note 14 at 112, 121, 122.

85 Environmental Justice Foundation, supra note 83 at 11

quiet and clean breeding rooms. Between wild and hatchery-bred fries, hatchery-bred fries are considered better quality and attract higher prices. Most small and some medium-scale farmers are unable to afford to purchase larvae. They commonly take conditional loans from traders, requiring the farmer to sell shrimp back to the trader below market price.⁸⁶

Captured and bred fry are traded through small and larger middlemen. Smaller middlemen, referred to as fry faria, buy from catchers and hatcheries to sell to larger middlemen, referred to as fry aratdars. Peak season for trading takes place from April to August each year. Farias may face considerable financial distress in off-peak season and often end up borrowing money from aratdars who, in return, command exclusive rights over the fry bought and sold by the faria.

After collecting fry from faria, catchers and hatcheries, fry aratdars, sell and transport their stock to commission agents. Fry are then sold to shrimp farms and nurseries by commission agents. In order to increase their value, fry may be kept in nurseries for nourishment and acclimatization before being sold to farms or nurseries.⁸⁷

Shrimp farming

Shrimp farming is considered the second major stage in Bangladesh's shrimp value chain. Fry collectors sell their produce to middlemen and markets from where it is purchased by shrimp farmers (Figure 3).

Farmers, then, raise shrimp in ponds over the course of three to six months until it is ready to

sell.⁸⁸ However, most shrimp farmers do not have direct market access to processing factories or foreign traders. They are instead separated from the market by layers of intermediaries, including depots and intermediaries. Only very few farmers sell directly to shrimp processing factories.⁸⁹

The financial pressures on shrimp farmers can be extreme. According to a 2012 study, shrimp farmers typically support six-member families with a daily income of 350 taka—or USD 0.83 per family member per day. Many shrimp farmers report being locked into cycles of debt with few options for livelihood diversification. Shrimp prices are fixed by the Bangladesh Frozen Foods Exporters Association (BFFEA), which holds a monopoly over the national market by uniting 96 of the 145 processing factories in Bangladesh. According to Bangladeshi shrimp farmers, prices are fixed below the value of their produce—with prices dropping in recent years. Farmers also report lengthy delays in payment with some reporting waits for more than a year before they are paid by depots. Though processing companies receive subsidy payments in instances in which shipments are cancelled or rejected, these benefits are rarely passed on to shrimp farmers and depot owners.⁹⁰

In 2014, estimates on the number of shrimp farms in Bangladesh ranged from 120,000 – 250,000.⁹¹ Farms are concentrated mainly in the southwest and southeast and cover over 217,000 hectares. Large shrimp farms are usually around 135 hectares [365 acres], with approximately 5000 fry seeded per hectare. Small shrimp farms, by contrast are an average of 4.5 hectares. While

88 Environmental Justice Foundation, *supra* note 83 at 22.

89 *Id.*

90 *Id.* at 22, 23, 29.

91 Pokrant 2014, *supra* note 14 at 112; Environmental Justice Foundation, *supra* note 83 at 22.

traditional shrimp farming was monoculture, mixed farming has increased in popularity due to potential for higher income and reduced risk of particular diseases. Farms in Bangladesh are relatively underdeveloped by international standards with low stocking densities, limited artificial feed use and poor water quality management.⁹²

In the southwest, most farms engage in shrimp-rice rotation. In the southeast, shrimp-salt rotation and shrimp only production are most common. Of Bangladesh's most popular varieties, Bagda shrimp is largely farmed in coastal Khulna, Bagerhat and Satkhira, whereas Golda shrimp (Tiger prawns) are farmed in central districts since this species does not require seawater.⁹³ Employment on shrimp farms is seasonal, drawing local and migrant Bangladeshi labour.⁹⁴

Several studies have pointed to a decline in land area devoted to rice farming and other more traditional forms of livelihood and employment opportunities due to the expansion of shrimp farms. More traditional common pool resources have been converted to private use, sharecropping opportunities in rice farming have diminished and grazing lands have been reduced. One of the most dramatic impacts of shrimp farming was the destruction and clearing of the Chakoria Sundarbans mangrove forest in Southeast Bangladesh during the 1980s and 1990s.

The sector as a whole, however, has also generated new jobs in shrimp processing, trading and distribution. These forces have prompted both migration from rural areas by marginal farmers and in-migration to shrimp farming communities. Some landless workers have secured jobs as farm guards, shrimp harvesters

92 Pokrant 2014, *supra* note 14 at 112.

93 Gammage, *supra* note 82.

94 Pokrant 2014, *supra* note 14 at 112.

and transporters of fry, prawn, ice and shrimp feed.⁹⁵

Shrimp processing

Shrimp farms sell to thousands of traders who, in turn, supply shrimp to over 10,000 shrimp depot owners.⁹⁶ Traders usually transport shrimp from farmlands to urban depots situated near processing factories. Many traders take loans from depot owners and are therefore bound to sell shrimp to particular depots. Limited pre-processing is usually done at depots, including washing, de-heading, icing and packaging.⁹⁷ Some farmers also do limited processing (de-heading and de-veining).⁹⁸

Depots, in turn, sell to independent traders and commission agents who supply to the 148 processing plants located mainly in Khulna and Chittagong.⁹⁹ Tasks in shrimp processing include de-heading, peeling and cleaning. Workers, hired and paid by contractors, earn piece-rate for completing these tasks. As casual employees, shrimp processing workers are outside the ambit of the *Factory Law, 1965* and *Industrial Relations Ordinance Act, 1979*.¹⁰⁰

Today, processing plants are high-level facilities engaged in actively monitoring hygiene and product quality in order to meet the demands of food safety regulatory standards. The Bangladesh Frozen Food Exporters Association (BFFEA), with 98 member units, represents the interests of fishery product processors domestically and internationally. In 2015, 78 BFFEA members were

95 *Id.* 119-120.

96 *Id.* at 112.

97 Islam, *supra* note 50 at 220.

98 Gammage, *supra* note 82.

99 Pokrant 2014, *supra* note 14 at 112.

100 Islalm, *supra* note 50 at 226.

86 Islam, *supra* note 50 at 220.

87 Gammage, *supra* note 82.

licensed by the Department of Fisheries (DOF) and 75 were EU approved processing plants.¹⁰¹

Working conditions and workforce demographics

Shrimp processors and exporters are the most economically and politically powerful actors in the Bangladeshi shrimp value chain. Within this model, large shrimp farmers, aratdars, small shrimp farmers, fry collectors and shrimp processing workers have progressively decreasing access to industry gains and control over working conditions and wages—with fry collectors and shrimp processing workers at the base of this value chain.

While tasked with conforming to product specifications and health standards set by supermarket chains, large retailers and food safety regulatory bodies, processors and exporters are not similarly accountable for wages and working conditions for the range of actors engaged in the domestic value chain. This has led to widespread exploitation of vulnerable workers and violation of labour rights in the Bangladeshi shrimp industry. As early as 2007, the American Federation of Labour-Congress of Industrial Organizations (AFL-CIO), likened overall conditions of work in the shrimp processing industry to those in company towns run by coal miners in the U.S. in the late 19th century. The AFL-CIO labour conditions in the shrimp industry in Bangladesh as among the worst observed in Asia, including dangerous child labour, ownership of workers’ hovels and debt bondage of local stores selling food to workers.¹⁰²

101 Pokrant 2014, supra note 14 at 112.

102 Solidarity Center, *The True Cost of Shrimp* (2007), accessed February 20, 2016, <http://www.shrimpnews.com/>

Landless women and men are the predominant labour force employed in these precarious, labour intensive and low paying positions. Fry collectors tend to be landless, unskilled and untrained, with 93 percent of women and 70 percent of men functionally illiterate.

Women who collect fry are frequently divorced, separated, deserted and widowed. They report being excluded from community activities due to the perception that fry catching is demeaning labour.¹⁰³

More than two out of three processing plant workers are women. Child labour is also prevalent across the seafood processing sector in Bangladesh. For instance, according to a 2010-11 survey of 700 permanent and contract workers in 36 seafood processing plants across Khulna, Satkhira, Bagerhat and Jessore in southwestern Bangladesh, 96 percent of workers interviewed reported that there were children between the ages of 14 and 18 working in their factories.¹⁰⁴

These already vulnerable workers are left particularly vulnerable to exploitation due to failure by Bangladeshi authorities to implement national labour laws, including those governing minimum wages, preventing exploitation of child workers and protecting workers against other forms of abuse.¹⁰⁵ As discussed in Part III: Precarious work in the Asian seafood industry, these workers face significant rights abuses and have few if any avenues for redress.

PDFsFolder/pubs_True_Cost_of_Shrimp.pdf.

103 Accenture, supra note 44 at 45.

104 Solidarity Center 2012, supra note 80 at 5.

105 Solidarity Center 2012, supra note 80; Environmental Justice Foundation, supra note 83 at 9.

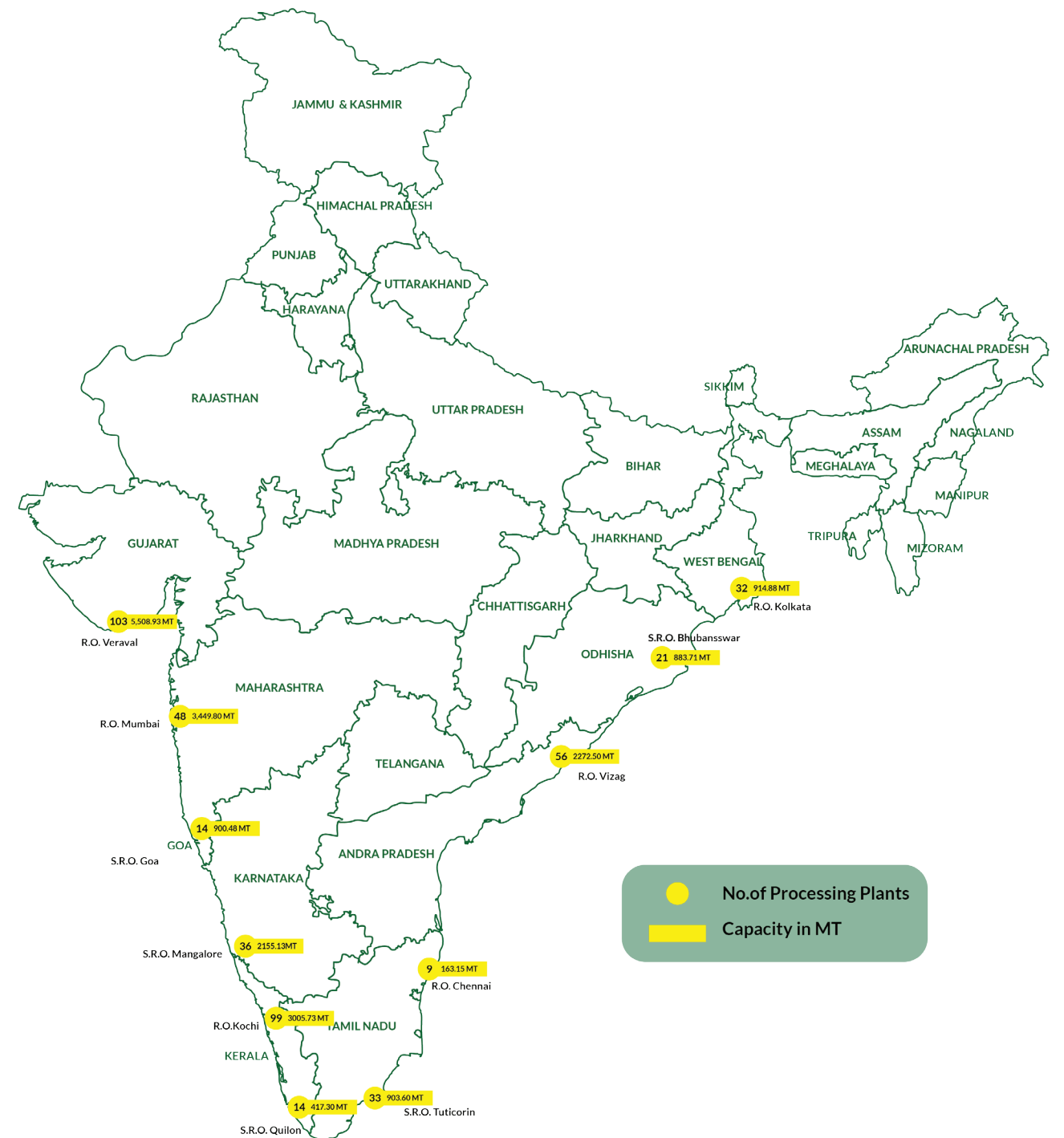


Figure 4: India region-wise processing plants with capacity, including EU/non EU certification (July 2014)

Source: India Marine Products Development Authority

India

India’s export of marine products has increased significantly in the last decade (Figure 5). In 2014/15, marine product exports from India

reached an all time high of over 5.5 billion USD.¹⁰⁶ The seafood industry in India accounts for about 1 percent of the national GDP, employing approximately 14 million people. The EU and the US are India’s two largest seafood buyers (Figure 6).¹⁰⁷ In 2013, the share of shrimp in the Indian

106 Marine Products Export Development Authority (MPEDA), “Indian Seafood exports crossed 5.5 billion US\$,” accessed on February 2, 2016, http://164.100.150.120/mpeda/news_details.php?pg=indian-seafood-exports-crossed-5-5-billion-us#.

107 Mohanty, supra note 3 at 254 (citing Indian Council

seafood export basket jumped from 52 to 70 percent. Vannamei shrimp production increased to meet rising demand due to decline in global shrimp production due to disease in aquaculture farms in Thailand, China and Vietnam.¹⁰⁸

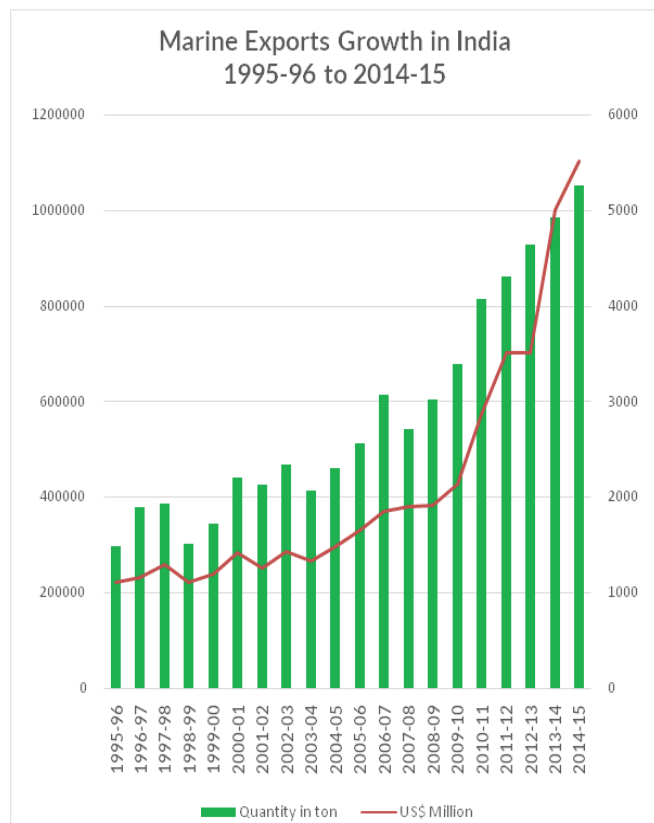


Figure 5: Marine Exports Growth in India, 1995-96 to 2014-15

Source: India Marine Products Development

Coastal Chennai, Mumbai, Kerala and Vishakapatnam are the four biggest seafood-

of Agricultural Research, Central Institute of Fisheries Technology, Growth in Export of Indian Marine Products, 1961/2-2011/12, accessed February 20, 2016, <http://www.cift.res.in/innercontent.php?contentid=MTgw>).

108 PK Krishnakumar, "Shrimps for 70% of seafood export basket on global shortage," The Economic Times, November 13, 2013, accessed February 20, 2016, http://articles.economictimes.indiatimes.com/2013-11-13/news/44031102_1_vannamei-seafood-export-basket-export-earnings

exporting ports in India.¹⁰⁹ Major processing centers are concentrated in Veraval and Porbunder, Gujarat; Mumbai and Ratnagiri, Maharashtra; Goa, Mangalore and the Kollam Kochi belt of Kerala; and Tuticorin, Nellore and Mandapam, Tamil Nadu. The peak period for fisheries activities in these areas is from September to April, with a lean season from June-August.¹¹⁰

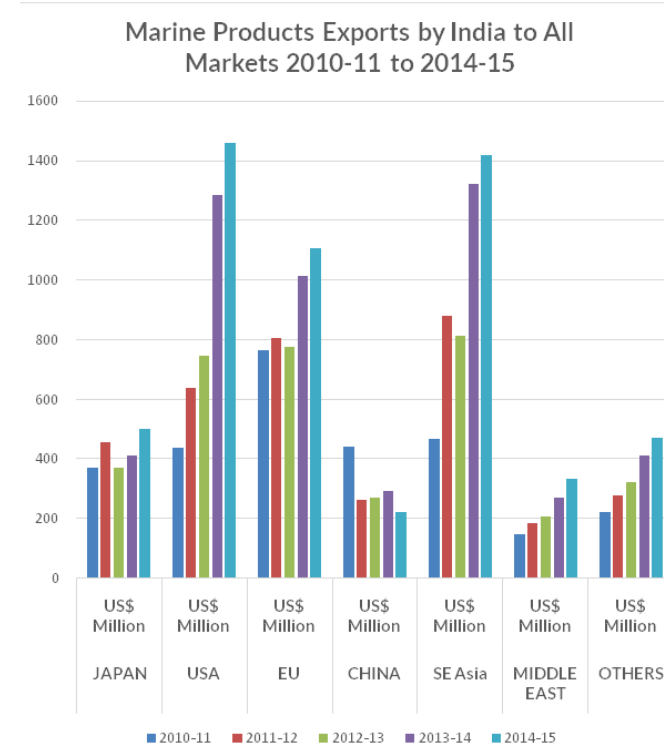


Figure 6: Marine Products Exports by India to all Markets

Source: India Marine Products Development

Despite its significance within the economy, India's seafood industry does not contribute significantly to domestic food security beyond the coastal regions.¹¹¹ Contribution of fish to total protein

109 Kulkarni, supra note 30 at 5

110 G. Dhanya, Karwar Research Center of Central Marine Fisheries, "Status of women employed in seafood pre-processing units of Alapuzha, Kerala," 33 Fishing Chimes 7, October 2013, at 42.

111 Within India, this number varies with coastal communities consuming as much as 22.7 kg per capita of

intake in India remains at 2 percent—compared, for instance to Cambodia and Myanmar where fish products contribute 37 and 22 percent respectively to total protein intake.¹¹²

Regulatory authority over the domestic seafood industry is shared between India's central and state governments. At the national level, the Department of Animal Husbandry, Dairying and Fisheries and the Ministry of Food Processing Industries are tasked with overseeing development of the seafood industry. The Marine Products Export Development Authority (MPEDA) and Export Inspection Agency (EIA) hold responsibility for export promotion. In 1997, MPEDA made compliance with HACCP regulatory standards mandatory for all seafood processing and export units. MPEDA has also mandated compliance with EU standards.

HACCP and EU regulations required Indian regulatory bodies to strike a balance between the significant costs imposed on the processing sector with secured market access. For instance, when residues of antibiotics and bacterial inhibitors were detected by EU authorities in shrimp during 2002, the Indian government imposed strict control on antibiotic use. However, recognizing the costs to processors, the government differentiated export standards for the EU and other overseas markets. Exporters to non-EU markets were granted a longer timeline to integrate preprocessing operations and to source from approved independent preprocessors. MPEDA supported improvements in hygienic controls and other food safety practices in fish processing through subsidy programmes for training and upgrading processing facilities.¹¹³

fish annually. FAO 2014, supra note 1.

112 Id.

113 Somasekharan 2014, supra note 42 at 9.

Indian seafood value chains

Within India, the seafood value chain includes fishers and fish farmers, suppliers (responsible for processing) and exporters.

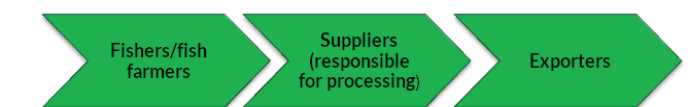


Figure 7: Indian seafood value chain

According to a 2014 study tracing value addition through the shrimp export supply chain in Eranakulam and Alapuzha districts in Kerala, the landing site price for shrimp in India's value chain is about 23 percent of the final retail price. This increases to 38 percent of the retail price at the export point. The largest value addition is made by supermarket chains (Figure 6).

Fishing and fish farming

In 2014, India ranked seventh in the world in marine capture production. Marine capture production has grown significantly in the last decade, with a growth of 15.1 percent in volume between 2003 and 2012. India also ranked second after China in production through inland water capture, registering growth of 93 percent in this area.¹¹⁴

In addition to robust capture production, India ranks second behind China among major producers of farmed fish for consumption. Within India, Andhra Pradesh is the leading producer of farmed Tiger and Pacific Shrimp—species that constitute the majority of India's exports. Other major producers of farmed shrimp include West

114 FAO, supra note 1.

Value chain node		Price (Indian rupees/kg)	Price as proportion of retail price (%)
Landing site	Price paid to the fisherman/boat owner	140.5	23.35
Auction agent	Price paid by peeling shed owner/commission agent	146.5	24.35
Peeling shed	Price paid by exporter/agent (A)	156	25.93
Exporter			1.55
	a) Conversion cost	9.3	2.31
	b) Overhead cost	13.9	3.86
	c) Total cost of production (B)	23.2	0
	Selling expenditure		0.54
	a) Packing charges	3.25	1.66
	b) Frieght charges	10.01	0.93
	c) Interest on working capital	5.62	0
	d) Interest on term loan	0.52	0.09
	e) Other selling expenses	3.9	0.65
	Total selling expenditure (C)	23.3	3.87
	Total cost of export (B+C)	46.5	7.73
	Exporters margin D -(A+B+C)	25.9	4.3
Importer/agent	Price paid to the exporter (D)	228.4	37.96
	Cold chain transport and other expenses(E)	22.4	3.72
	Importer/Importer agent's margin F-(D+E)	38.6	6.41
Whole sale importer	Price paid to the importing agent (F)	289.4	48.1
	Value addition(G)	32.1	5.33
	Importer re-processors margin H-(F+G)	70.1	11.65
Supermarkets	Price paid to the importer - reprocessor (H)	391.6	65.08
	Value addition and branding (I)	60.12	9.99
	Supermarkets margin J-(H+I)	150	24.93
Consumer	Price paid at retail outlet (J)	601.72	100

Figure 8: Table of revenue distribution along the Indian seafood value chain in Eranakulam and Alapuzha, Kerala

Source: Somasekharan 2014

Bengal, Tamil Nadu (and Pondicherry), Gujarat and Orissa.¹¹⁵ In 2009, 92,591 farmers raised brackish water shrimp. 83,824 (90.57 percent) were small farmers owning less than two hectares.¹¹⁶

115 Marine Products Export Development Authority (MPEDA), "State-wise details of shrimp and scampi production," accessed February 2, 2016, <http://164.100.150.120/mpeda/cms.php?id=eWVhci13aXNlXNwZWNpZXMt-d2lzZS1zdGF0ZS13aXNI#>

116 Pokrant 2009, supra note * at 77.

Processing

Processing in India is further subdivided into pre-processing and processing. Pre-processing includes cleaning, peeling, washing and icing fish and seafood products. Processing consists of grading, packing, weighing and freezing. The above classification suggests two types of processes that in some cases take place in distinct types of units: labour intensive, small scale units engaged in pre-processing; and capital intensive large scale units engaged in processing.¹¹⁷ Peeling

117 M.V. Shobhava Warriar, "Women at Work: Migrant Women in Fish Processing Industry," 36 Economic and Political Weekly 37, September 15-21 2001, pp. 3554-3562.

sheds in Kerala, responsible for pre-processing of shrimp, cuttlefish and squid, provide a clear example of small-scale, labour-intensive pre-processing units.¹¹⁸ The success of pre-processing operations depends upon experienced labour and the availability of raw material.¹¹⁹ Large scale, capital-intensive units, by contrast, are characterized by sophisticated technology for packing, grading and freezing pre-processed seafood products. Processing facilities have also become a destination for filleting and packaging seafood produced in other countries.

Processing units in India have been characterized as non-integrated, partially integrated and fully integrated—depending upon whether they carry out pre-processing and/or processing activities. Recent studies suggest that, at least in Kerala, pre-processing and processing are increasingly consolidated, gradually reducing the number of independent pre-processing units. The shift to integrated pre-processing by EU-approved processing facilities has led to the closure of a significant number of preprocessing operations.¹²⁰

The coexistence and recent integration of these two extremely diverse types of units has contributed to problems in regulating the industry.¹²¹ HACCP and EC Directive 91/4937 are enforced only at the level of processing units. The Seafood Exporters Association of India (SEAI) claims to have spent USD 25 million upgrading their facilities to meet the food safety regulations of importing countries.¹²² Peeling sheds and pre-processing facilities, however, remain largely outside of the purview of regulation.

118 Naveen Sathyan, et. al., "The present status of sea food pre-processing facilities in Kerala with reference to Allepey district," 4 Int. J. of Res. in Fisheries and Aquaculture 1, 39, 42 (2014).

119 Sathyan, supra note 118 at 39.

120 Somasekharan 2014, supra note 42 at 10.

121 Warriar, supra note 117.

122 Somasekharan 2014, supra note* at 1.

Working conditions and workforce demographics

In 2012, the Central Institute of Fisheries Technology noted that women played a minimal role in actual fishing and were mostly engaged in lower paid, more menial, related activities including making and mending nets.¹²³ Women also form the dominant workforce in pre-processing—more than 90 percent in prawn pre-processing centres and 70 percent in other fishery pre-processing centres.

Women engaged in pre-processing centres are disproportionately from economically backward classes. 90 percent of women engaged in seafood processing are confined to floor level work. Very few attain supervisory and technical roles. They are hired as casual, unskilled labour and do not receive job security and social security benefits.¹²⁴ Internal migrants from Kerala and Tamil Nadu make up a significant portion of workers in fish processing plants in Gujarat.¹²⁵ However, in recent years, an increasing number of migrants from North and Northeast India are also migrating for employment in the seafood processing sector in Gujarat.

The practice of employing casual workers in pre-processing allows availability of raw seafood materials to entirely dictate working conditions, including hours and the number of workers engaged at any particular time.¹²⁶ In India,

123 Central Institute of Fisheries Technology, *Indian Council of Agricultural Research, Gender in Fisheries: A Future Roadmap* (2012).

124 Naveen Sathyan, et. al., "The present status of sea food pre-processing facilities in Kerala with reference to Allepey district," 4 Int. J. of Res. in Fisheries and Aquaculture 1, 39, 42 (2014).

125 Fairfood International, supra note 43 at 16.

126 M.V. Shobhava Warriar, "Women at Work: Migrant

presence of a readily available workforce to process seafood upon its arrival is, in many cases, maintained by housing migrant workers on site at pre-processing and processing units.¹²⁷ Due to lack of regulation at the pre-processing level, as in Bangladesh, workers at the base of India's seafood value chain remain outside the ambit of national and international regulations, leaving them particularly vulnerable to abuses at work.

Thailand

In 2012, Thailand ranked as the third largest exporter of fish and fishery products in the world, after China and Norway. 90 percent of all production in the Thai seafood industry is for export, with the US, Japan and EU as the top export destinations.¹²⁸ Internationally traded marine shrimp species account for half of Thailand's seafood production.¹²⁹ Pet food is among the fastest growing exports from Thailand, more than doubling since 2009 and totaling more than USD 190 million in 2014.¹³⁰ In 2013, the total export of fish products from Thailand in value terms was estimated at about USD 8.8 billion (264.4 billion Baht).¹³¹

Within the last decade availability of domestic Women in Fish Processing Industry," 36 *Economic and Political Weekly* 37, September 15-21 2001, pp. 3554-3562. 127 This practice was documented by the Society for Labour and Development and National Guest Workers Alliance in processing hubs of Kerala and Tamil Nadu. See Case Studies of the Seafood Processing Industry in Tamil Nadu and Gujarat (2015)(unpublished findings, on file with author).

128 Fairfood International, supra note 43 at 11.

129 FAO 2014, supra note 1.

130 Ian Urbina, "'Sea Slaves': The Human Misery that Feeds Pets and Livestock," *New York Times*, July 27, 2015, accessed February 15, 2015, http://www.nytimes.com/2015/07/27/world/outla-w-ocean-thailand-fishing-sea-slaves-pets.html?_r=0.

131 Intarakumnerd, et. al. supra note 16 at 272, 273.



Figure 9: Map of Thailand

Source: Google Maps

raw material within Thailand has decreased due to declines in marine-capture fisheries and aquaculture. In 2012, for instance, the shrimp industry faced disease-related problems.¹³² Aquaculture now contributes about 80 percent of all production in Thailand. As one of the most advanced processing centres for seafood in Asia, Thailand has also emerged as a major importer of seafood as raw material.¹³³ In 2012, Thai seafood imports were valued around USD 3.3 billion (100 billion Baht).¹³⁴

The Thai Frozen Foods Association (TFFA), established in 1968, now has a membership of more than 300 seafood processors and traders. The TFFA promotes the interests of the industry in the global market.¹³⁵ TFFA membership is mandatory to gain access to international markets. The TFFA mission also includes setting

132 FAO 2014, supra note 1 at 49.

133 Id.

134 Intarakumnerd, supra note 16 at 273.

135 Seafish, "Focus on Ethical Issues in Seafood: Thailand Profile," accessed on February 2, 2015, http://www.seafish.org/media/Publications/ThailandEthicsProfile_201509.pdf.

direction for the industry and facilitating timely technological and organizational upgrades for improved competency.¹³⁶

Thai seafood value chains

Thai seafood value chains include small businesses, family-farms and very large vertically integrated firms such as the Charoen Pokphand Food Public Company. There are significant differences between value chains within Thailand. For instance, the Thai canned tuna industry is characterized by strong monitoring mechanisms and a high level of consolidation. There are only 18 players in the Thai canned tuna industry, all of which are members of the Thai Tuna Industry Association (TTIA). By contrast the Thai shrimp value chain is highly diverse with a range of players operating in different parts of the value chain.¹³⁷ A comparative study of the Thai canned tuna and shrimp value chains conducted by the Asia Foundation and the ILO found that higher regulation in the Thai canned tuna value chain has improved quality, labour and environmental standards in processing. By contrast, the diversity of players in the Thai shrimp industry has made it more difficult to regulate. The following section will attempt to cover the range of work within these distinct value chains.¹³⁸

136 Thai Frozen Foods Association (TFFA), "About Us: Mission, Vision," accessed February 2, 2015, http://www.thai-frozen.or.th/aboutus_vision_mission.php.

137 Asia Foundation and International Labour Organization (Asia Foundation-ILO), *Migrant and Child Labour in Thailand's Shrimp and Other Seafood Supply Chains* (2015), 16.

138 Id. at 17 (value chain analysis of Thailand's canned tuna and shrimp processing sectors included a desk review of literature relating to shrimp and seafood processing industries in Thailand and primary data collected through semi-structured interviews with key informants, including

Sourcing and production: fishing and farming

The Thai fishing fleet consists predominantly of bottom trawlers—boats known as the strip miners of the sea due to their use of nets weighted to sink to the ocean floor and snare anything in their path. The Thai fleet also includes purse seine boats¹³⁹ that harvest fish closer to the surface of the water.¹⁴⁰

According to UN estimates, the Thai fishing fleet faces an annual shortage of about 50,000 mariners. This shortfall is filled, in large part, by migrant workers from Cambodia and Myanmar who enter Thailand with irregular migration status. Some workers are as young as 15 years old. Migrant workers may be trafficked across borders and forced to work aboard ships. They typically do not speak the language of their Thai captains, do not know how to swim and are therefore entirely captive.¹⁴¹

Undocumented migrant workers, sent to work on unregistered vessels, are outside the bounds of labour regulations.¹⁴² Due to overfishing and low fish stocks, boats stay further out and longer at sea. As a result, vessels elude regulatory oversight for extended periods of time. Some Thai fishing vessels may go as far as Malaysian and Indonesian waters and stay out for up to a year at a time.¹⁴³

top executives in Thai seafood companies and senior government officials).

139 Purse seine boats are so named because after nets are hauled up, they are pinched at the top like old-style coin purses.

140 Urbina, supra note 130.

141 Id.

142 Id.

143 Verite, *Recruitment Practices and Migrant Labor Conditions in Nestlé's Thai Shrimp Supply Chain: An Examina-*

Without oversight and access to relief, migrant workers forced to work on Thai fishing boats report extreme workplace violence and even murder. In a United Nations survey of 50 Cambodian men and boys sold to Thai fishing boats, 29 workers said they had witnessed their captain or other officers kill a worker. Other workers reported being beaten for small transgressions, from repairing a net too slowly to mistakenly sorting fish into the wrong bucket.¹⁴⁴

To date, the Thai military and law enforcement have done little to counter misconduct on the high seas. Migrants also report government complicity in rights abuses—including being rescued by police from one smuggler only to be resold to another. However, in response to widespread reports of trafficking, forced labour and workplace violence aboard Thai fishing vessels, the Thai government says they have increased investigations and prosecutions and plan to continue doing so. The government also reports initiatives to provide identity cards to undocumented workers and establish centers for trafficking victims around the country.¹⁴⁵

Shrimp farming: hatchery-based fry production and aquaculture

In contrast to the wild fry collection that takes

tion of Forced Labor and other Human Rights Risks Endemic to the Thai Seafood Sector, 2, accessed February 16, 2016, http://www.verite.org/sites/default/files/images/NestleReport-ThaiShrimp_prepared-by-Verite.pdf.

¹⁴⁴ Urbina, supra note 130.

¹⁴⁵ Id.

place in Bangladesh, Thailand produces fry in more than 2,000 small-scale backyard hatcheries, mainly located in Chacehongsao, Chonburi and Phuket. These hatcheries produce 80 billion shrimp fry annually, or about 90 percent of Thailand's total shrimp production. The Thai government has supported hatcheries by sharing technology directly with small hatchery operators. As a result of these initiatives, the share of farms using hatchery-raised fry rose exponentially from 3 percent in 2000 to 99 percent by 2008.¹⁴⁶

The majority of shrimp aquaculture operations in Thailand are family-owned enterprises or small businesses with small land holdings. There are also, however, some large, vertically integrated conglomerates that include farms. For instance, the largest farmed shrimp producer in Thailand, Charoen Pokphand Food Public Company, is vertically integrated with feed manufacturers, brood stock farms, hatcheries, laboratory services, grow-out farms and processing plants.¹⁴⁷

Compared to Bangladesh, local value chains in Thailand are much shorter. Shrimp farmers sell directly to seafood processors and export companies. Farmers sell the majority of shrimp through central shrimp markets that facilitate competitive auction prices for produce. The Samut Sakhon shrimp market is the largest in Thailand and functions as a site for consolidating shrimp shipments from the eastern and southern regions of Thailand for processing in the central region of the country.¹⁴⁸

Seafood processing

More than 90 percent of Thai exports are made-

¹⁴⁶ Accenture, supra note 44, at 26.

¹⁴⁷ Id. at 26-27.

¹⁴⁸ Id.

to-order products for foreign customers—also known as original equipment manufacturers (OEMs).¹⁴⁹ The Thai industry has long produced for the chilled and frozen fish market segments. Within the last decade, Thailand has also emerged as the world's largest producer and exporter of canned tuna and shrimp. Thailand is currently the top supplier of canned tuna in the world with a 53 percent share of the market.¹⁵⁰ In 2013, export value of canned tuna alone was USD 2.5 billion.¹⁵¹

Tuna processing includes loining (pressure cooking, removing skin and bones and cutting into loins); and canning (further fabricating loins and packing them in cans).¹⁵² Shrimp pre-processing includes removing heads, veins and hard shells of shrimps. Second stage processing, which takes place in large factories, includes cooking, breaching and seasoning.¹⁵³

These export market segments call for significant labour intensive, low technology seafood processing.¹⁵⁴ The majority of processing takes place in five major hubs: Nakhon Si Thammarat, Samut Prakarn, Samut Sakhon, Songkhla and Surat Thani.¹⁵⁵

Migrant workers, mostly from Myanmar, form the majority of workers in the processing sector. For instance, the Thai shrimp industry alone employs 700,000 workers—80 percent of whom are migrant workers, mostly from Myanmar.¹⁵⁶

¹⁴⁹ Intarakumnerd, supra note 16 at 273.

¹⁵⁰ Asia Foundation-ILO, supra note 137 at 15.

¹⁵¹ Intarakumnerd, supra note 16 at 273-74.

¹⁵² Asia Foundation-ILO, supra note 137 at 44.

¹⁵³ Fairfood International, supra note 43 at 18.

¹⁵⁴ Intarakumnerd, supra note 16 at 273-74.

¹⁵⁵ Asia Foundation-ILO, supra note 137 at 26.

¹⁵⁶ Id. at 15.

Processing facilities

As in India, the Thai seafood processing sector includes enterprises of various sizes and structures, including large firms, small and medium enterprises (SMEs) and micro enterprises. Many large firms have full or partial vertical integration, performing several activities in the value chain including farming, processing, marketing and distribution. This section describes the structure of the Thai seafood GVC beginning with large firms and descending down the value chain to cover small and medium enterprises and micro enterprises.

Large firms

Large processing companies within Thailand not only supply to supermarket and retail chains but have also expanded into retail and distribution. For instance, Thai Union Frozen has acquired leading US brands including Chicken of the Sea; and European brands, John West and Petit Navire. Other large processing firms include CP Group, Surapon Food, Pacific Fish Processing, S&P and Prantalay. In order to ensure high quality raw materials, large firms may have their own farms or fishing fleets. Others engage local boats in contract fishing.¹⁵⁷

Small and Medium Enterprises (SMEs) and Micro Processing Units

A significant portion of Thai seafood processing takes place in SMEs and micro processing units.

¹⁵⁷ Intarakumnerd, supra note 16 at 275.

*The crew on the Thai fishing ship included two dozen Cambodian boys, some as young as 15.
Adam Dean for the New York Times*



For instance, a 2011-12 ILO-IPEC study of 512 processing facilities in the Samut Sakhon province found that in this seafood processing hub, 57 percent of processing took place in small (43 percent) and micro (14 percent) processing units.¹⁵⁸

Medium enterprises, employing more than 26 workers, for the most part, process raw seafood material supplied by export oriented, large processing companies.

The 2011-12 ILO-IPEC study in Samut Sakhon revealed that 90 percent of enterprises employing 50 or more workers process shrimp under sub-contracts from export-oriented factories. Small enterprises, employing up to 25 workers, frequently fill sub-contracts for medium and large enterprises.¹⁵⁹

Micro processing units are mainly home-based enterprises employing 6 or fewer workers, including family members and a significant number of migrant workers. These units are also commonly referred to as peeling sheds with reference to the shrimp peeling and deveining activities carried out within. Production patterns within these units are irregular and contingent upon networks of intermediaries and supply fluctuations in the raw material market.¹⁶⁰

As in Bangladesh and India, micro processing units exist largely outside the purview of regulation. Peeling sheds are highly informal. According to the TFFA, there are 97 peeling

¹⁵⁸ International Labour Organization, *Thailand's Shrimp and Seafood Industry: An Overview of Primary Processing in Samut Sakhon Province* (2012) (surveying 512 enterprises in 18 sub-districts of Samut Sakhon, interviewing enterprise-level managers and conducting focus group discussions with community members, local and provincial officials and village and community leaders).

¹⁵⁹ Id.

¹⁶⁰ Accenture, supra note 44 at 27.

sheds registered by the industry. An estimated 200 peeling sheds—including all 97 registered with the TFFA—are registered with the Thailand Department of Fisheries (DOF). The TFFA, ILO and International Programme on Elimination of Child Labour (IPEC), however, estimate that there are at least an additional 400 unregistered sheds. The Labour Rights Promotion Network, a labour rights organization working in the Thai shrimp industry, estimates that the true number of micro processing facilities is closer to 2000. The ease with which peeling sheds can be relocated contributes to the difficulty in investigating and addressing exploitative labour practices. Since TFFA members are liable for the quality of shrimp, members heavily scrutinize pre-processed shrimp to ensure that they meet established standards. However, they do not investigate labour practices associated with peeling sheds.¹⁶¹

Working conditions and workforce demographics

Particularly vulnerable workers, including the intersecting categories of migrant, female and child workers, make up a significant portion of the temporary workforce in the Thai seafood industry. An estimated 50,000 migrant workers from Cambodia and Myanmar are engaged in the Thai fishing fleet.¹⁶² 90 percent of workers in pre-processing peeling sheds and processing factories are also migrants, including a high proportion of migrant workers from Myanmar. This concentration of migrant workers in fishing and processing has been attributed to preference

¹⁶¹ Id. at 27-28.

¹⁶² Urbina, supra note 130.

among Thai people for work in other industries.¹⁶³ Migrant workers may be as young as 15 years old. Many workers enter Thailand illegally and some are trafficked across borders.¹⁶⁴

Employment paths for migrant workers vary. Some cross the border on their own and pursue work in unregistered peeling sheds through personal networks of friends or relatives already in Thailand. Agents also approach and deceive workers about the nature of employment and persuade them to enter contractual agreements that result in labour bondage. Once a migrant worker enters Thailand illegally, they may be obligated to work for particular agents who contract them to peeling sheds or fishing vessels. Often workers take several months or even years to repay debts to employers or labour brokers.¹⁶⁵

In a recent effort to address rights abuses in peeling sheds, Thai Union brought over 1000 workers from outside peeling sheds to work in its

¹⁶³ Accenture, supra note 11 at 28.

¹⁶⁴ Urbina, supra note 130.

¹⁶⁵ Accenture, supra note 11 at 48.

own plants in Samut Sakhon region. This initiative aims to improve working conditions by shortening the shrimp value chain and thereby increasing transparency around labour practices. These measures, however, can only succeed in improving labour standards if large exporters ensure that they offer in-house employment with term and conditions that meet international standards to those currently employed in subcontracted peeling sheds.¹⁶⁶

The term precarious work refers to employment that is uncertain, unpredictable and risky from the perspective of the worker. As employers within seafood GVCs seek to easily adjust their workforce in response to supply and demand conditions, they generate more non-standard work. These forms of work shift risk from multinational buyers to suppliers. Suppliers, in turn, adjust to increased risk through precarious employment relationships

¹⁶⁶ Undercurrent News, "Workers' rights group: Thai seafood sector must focus on long-term reform," Undercurrent News, January 21, 2016, accessed February 21, 2016, <https://www.undercurrentnews.com/2016/01/21/workers-rights-group-thai-seafood-sector-must-focus-on-long-term-reform/>.

Part 3

Precarious work in the Asian seafood



characterized by low wage, seasonal and temporary work. Proliferation of precarious work has a far-reaching impact upon the nature of work and workplaces and the gender-based distribution of work. Consequences of precarious work include greater economic inequality, insecurity and instability among workers. These forces have severe impacts on workers lives and their roles within their families and communities.¹⁶⁷

Outsourcing of production and processing activities in the seafood GVC has resulted in intensive labour exploitation and abuse of precarious workers in Asia, most of whom are migrant women from marginalized communities. Workers at the base of seafood value chains in Bangladesh, India and Thailand suffer non-enforcement of legal rights and violations of internationally recognized labour standards, including restricted freedom of association, low wages, gender discrimination, workplace violence, wage theft, child and forced labour and significant occupational safety and health risks. This section details rights violations in the seafood GVC in Bangladesh, India and Thailand. It draws upon evidence of rights violations documented in a range of studies as well as primary documentation of rights abuses faced by seafood processing workers in India, conducted by the Society for Labour and Development between 2012 and 2015,

Human rights violations and violations of rights at work are articulated thematically in order to surface the pattern of rights violations across Bangladesh, India and Thailand. As the *lex specialis* or specialized law in this area, this study uses ILO labour standards protecting workers as a primary benchmark to identify rights violations. The iteration of these rights violations across

¹⁶⁷ Arne L. Kalleberg, *Precarious Work, Insecure Work: Employment Relations in Transition*, 74 *American Sociological Rev.* (2009), 2.

Asian countries testifies to the structural nature of these abuses, reproduced across contexts and integrally linked to the structure of the seafood GVC.

Forced labour

The ILO Forced Labour Convention, 1930 (No. 203) prohibits all forms of forced or compulsory labour, defined as all work or service that is exacted from any person under the menace of any penalty and for which the said person has not offered himself or herself voluntarily. The Protocol of 2014 to the Forced Labour Convention, 1930 and Forced Labour (Supplementary Measures) Recommendation, 2014 (No. 29) aim to advance prevention, protection and compensation measures and intensify efforts to eliminate contemporary forms of forced and bonded labour. Precarious workers in the Bangladesh and Thai seafood industries face forced labour in the form of coercive and deceptive recruitment and cycles of bonded labour in which they are tied to fishing and processing work by debt.

Bangladesh

Bonded labour is prevalent throughout the Bangladeshi shrimp industry. Fry collectors and shrimp farmers report regular debt bondage to intermediaries. Poor and marginalized fry collectors and farmers take conditional loans as supplementary income in the low season and for start up capital—including to buy the most basic tools of the trade such as nets for fry collection. Debts accrue interest and require fry collectors and small farmers to sell their produce at fixed prices to intermediaries. Fry collectors may never escape debt cycles and can spend most of their

lives as bonded labourers.¹⁶⁸

Thailand

A 2015 assessment of six production sites in Thailand, including three shrimp farms (one in Mahachai and two in Surat Thani), two ports of origin and one docked fishing boat (in Ranong Fish Port) found evidence of forced labour and trafficking among sea and land-based workers. Workers reported being subjected to deceptive recruitment practices that started in their home countries; transported to Thailand under inhumane conditions; and charged excessive fees, leading to debt bondage.¹⁶⁹

Forced labour is prevalent within the Thai fishing fleet, which faces an annual shortage of about 50,000 workers annually according to UN estimates. This shortfall is primarily made up by migrant workers from Cambodia and Myanmar. Workers report being trafficked onto fishing vessels where they work against their will. There are also reports of migrants being drugged, captured and taken to sea to work.¹⁷⁰

Workers aboard Thai fishing vessels also report debt bondage. Debts may accrue from money owed to smugglers who recruit migrants to fishing vessels; and from cash advances taken by workers to send to their families. Workers may also end up in indentured servitude in order to clear debts for free passage from one country to another. At the extreme end of the spectrum of bondage experienced by migrant workers on Thai fishing vessels, workers reported being marooned on “prison islands” while vessels are taken to port for

¹⁶⁸ Environmental Justice Foundation, *supra* note 83 at 10. (findings are based upon in-depth interviews in 2012 with fry collectors, shrimp farmers and processing factory workers).

¹⁶⁹ Verite, *supra* note 143.

¹⁷⁰ Urbina, *supra* note 130.

dry docking and repair. Fishing boat workers have even been held in cages to prevent them from fleeing.¹⁷¹

Migrant workers from Myanmar also face coercive labour conditions in Thai shrimp pre-processing units or peeling sheds. According to the Labour Rights Promotion Network, exploitation of Migrants from Myanmar is systematic, occurring through debt bondage, deceptive recruitment and retention in exploitative working conditions.¹⁷²

Child Labour

The ILO defines child labour as work in conditions that deprive children of their childhood, their potential and their dignity and that are harmful to physical and mental development. This definition includes work that is mentally, physically, socially or morally dangerous and harmful to children; and that interferes with their schooling by depriving them of the opportunity to attend and engage in school by requiring excessively long and heavy working hours. Child labour violates international human rights standards under the ILO Worst Forms of Child Labour Convention, 1999 (No. 182) and the ILO Minimum Age Convention, 1973 (No. 138). Both Convention No. 138 and Convention No. 182 are designated fundamental Conventions under the ILO Declaration on Fundamental Principles and Rights at Work. Violating these standards, child labour is prevalent in the seafood value chains in Bangladesh and Thailand.

Bangladesh

Within Bangladesh, child labour remains commonplace, particularly at the fry collecting stage. Children become involved in fry collection

¹⁷¹ Id.

¹⁷² Accenture, *supra* note 44 at 48.

to supplement low family income. Work includes pushing nets through the river, working on boats and sifting through catch.¹⁷³

Thailand

According to estimates from the Thai Labour Rights Promotion Network, 19 percent of migrant workers employed in the seafood processing industry are below 15 years old while another 22 percent are between 15 and 17 years old.¹⁷⁴ Migrant workers as young as 15 years old are also engaged in work on Thai fishing vessels.¹⁷⁵

According to a 2015 Asia Foundation-ILO study on children working in the Thai shrimp and seafood industries, children working in seafood GVCs are more frequently exposed to occupational hazards than children working in other industries:

- 25.9 percent of children in the shrimp and seafood industries worked with fire, gas or flames;
- 23.3 percent of children working in the shrimp and seafood global value chains were working in wet and dirty conditions;
- 19.4 percent of children in the shrimp and seafood industries reported workplace injuries;
- 44.3 percent of children working in the shrimp and seafood industries reported having no personal protective equipment (PPE);
- 69.6 percent of child workers did not have a contract.

Among children working in the shrimp and seafood industries in Thailand, migrant children worked an average of 6 hours per week longer than Thai children.¹⁷⁶

¹⁷³ Environmental Justice Foundation, *supra* note 83 at 12.

¹⁷⁴ Accenture, *supra* note 44 at 48.

¹⁷⁵ Urbina, *supra* note 130 at 48.

¹⁷⁶ Asia Foundation-ILO, *supra* note 137 at 17-18.

Temporary and contract workers

The seafood industry, by nature, is subject to uncertainty associated with the production of fish and other marine species, whether sourced by capture or through farming. As employers within seafood GVCs seek to easily adjust their workforce in response to supply and demand conditions, they generate precarious work—work that is uncertain, unpredictable and risky from the perspective of the worker. Temporary and contract employment relations are common modes of maintaining a precarious workforce. These precarious employment relationships with workers engaged in labour intensive processes have allowed employers within the seafood GVC to ensure that labour costs are not expended during cycles when production wanes.

Bangladesh

In Bangladesh, according to a 2012 report, including 700 workers from 36 seafood processing plants across Khulna, Satkhira, Bagerhat and Jessore, contract workers made up between 70 percent and 80 percent of the workforce at processing plants during the peak work season. 86 percent of workers did not receive an employment letter that, along with a photo identification card, serves as an employment contract. Workers surveyed reported that management retains letters and cards filled out for workers, thereby depriving them of proof of work status and making it nearly impossible for them to establish and assert the terms of their employment.¹⁷⁷

¹⁷⁷ Solidarity Center 2012, *supra* note 80 at p. 5. <http://www.solidaritycenter.org/wpcontent/up->

India

According to a 2015 study of 120 workers in seafood processing units in Gujarat and Tamil Nadu, only 15 percent of workers held permanent positions. The majority of workers were hired by contractors as daily wage workers.¹⁷⁸ Consistent with these findings, according to a 2013 study, including 100 women working in the processing sector in Alapuzha district, Kerala,¹⁷⁹ the majority of shrimp processing workers in this area were women employed as daily wage workers and hired by contractors. Among workers surveyed, only 15.71 percent reported having provident funds.

Thailand

In Thailand, an ILO study of seafood processing enterprises in the Samut Sakhon region indicated that within the 512 enterprises surveyed, 70 percent of production line workers are temporary. In larger enterprises, the proportion of temporary workers was even higher, reaching 85 percent. Permanent positions are reserved for administrators and supervisors.¹⁸⁰

A Fairfood International study of 28 small and large shrimp processing units in Samut Sakhon region of Thailand found that only 20 percent of respondents had written job contracts. 63 percent

loads/2014/11/pubs_bangladesh_shrimpreport2012.pdf
178 This study is based upon 120 structured interviews, including workers in both cleaning and processing units. Society for Labour and Development and National Guest Workers Alliance, *Case Studies of the Seafood Processing Industry in Tamil Nadu and Gujarat* (unpublished findings, on file with author).

179 This study randomly sampled 100 women workers using a structured questionnaire to determine demographic details of the work force, wages, working conditions and health related impacts of seafood processing. Dhanya, supra note 110 at 42.

180 International Labour Organization 2012, supra note 158.

of workers had verbal contracts. The remaining 17 percent of workers had no contracts at all.¹⁸¹

As a result of strategic use of precarious employment relationships across seafood GVCs, the number of people engaged in in the Asian seafood industry full-time has declined and the number of part-time workers has grown rapidly.¹⁸² In effect, the seafood global value chain has systematically shifted the industrial risk associated with the seafood industry onto vulnerable workers at the base of GVCs.

Wage related abuses

The ILO Protection of Wages Convention, 1949 (No. 95) aims to guarantee payment of wages in a full and timely manner, whether fixed by mutual agreement, national law or regulation; or payable under a written or unwritten employment contract. The Convention applies to all persons to whom wages are paid or payable. Workers have to be informed of the conditions of their employment with respect to wages and the conditions under which their wages are subject to change.

The ILO Minimum Wage Fixing Convention, 1970 (No. 31) calls for a minimum sum payable to workers that is guaranteed by law and fixed to cover the minimum needs of workers and their families. Under the Minimum Wage Fixing Convention, 1970 (No. 31) minimum wages should be established for groups of wage earners in consultation with employers' and workers' organizations and enforced by law.

181 Fairfood International [complete citation][include

182 Mohamed F. Jeebhay, "Occupational allergy and asthma in the seafood industry—emerging issues," 17 Occupational Health Southern Africa 6, 4 (2011).

Precarious workers at the base of seafood GVCs in Bangladesh, India and Thailand frequently work by piece rate and rarely receive minimum wage. In violation of Conventions No. 95 and No.31, workers in the seafood GVC are subjected to wage theft and exceedingly low wages.

Bangladesh

Seafood processing workers in Bangladesh report a range of wage related abuses, including wage theft, underpayment and payment at piece-rate that amounts to below minimum wages. While wages for shrimp processing workers are based upon the quantity of shrimp processed, workers reported that in many establishments quantity is measured by baskets rather than weight, leading to under-calculation of the amount of seafood processed.¹⁸³

Out of 700 permanent and contract workers in 36 seafood processing plants across Khulna, Satkhira, Bagerhat and Jessore in southwestern Bangladesh, 73 percent of contract workers and 50 percent of permanent workers reported that they received less than the nationally set minimum wage.¹⁸⁴ Workers also reported being underpaid for piece-rate work.¹⁸⁵

Women workers may also be remunerated at lower rates than their male counterparts. For instance, in southwestern Bangladesh, shrimp processors predominantly employ low-income and largely uneducated women. In a 2010-11 survey of 700 workers in 36 seafood processing plants in Khulna, Satkhira, Bagerhat and Jessore in southwestern Bangladesh, women workers reported earning less than men for the same

183 Environmental Justice Foundation, supra note 83 at 36.

184 Solidarity Center 2012, supra note 80 at 5.

185 Environmental Justice Foundation, supra note 83 at 30.

work, receiving substandard benefits and having irregular access to medical and child care.¹⁸⁶

India

A 2014 study of 119 pre-processing units in Alleppy District, Kerala, including surveys with 701 randomly selected women, found that for most workers, remuneration is tied to the amount of shrimp they peel each day. As a result, 58.1 percent of workers earned wages in the range of Rs. 100- Rs. 200 per day, 26 percent of workers earned Rs. 200-300 per day and only 8.4 percent of workers earned Rs. 300 or above per day. For 93.2 percent of the women surveyed, earning from the peeling sheds was their only source of income. Many respondents reported being in debt.¹⁸⁷

In India, minimum wages for seafood processing are currently set by piece rate. In Alappuzha district, Kerala, women peelers went on strike in 2015 to protest receiving less than the government mandated piece-rate wage. Although the government-fixed minimum wage at Rs. 26 per kg, workers report getting less than Rs. 20 per kg.¹⁸⁸

Workers in Kerala also reported that they were not provided with legally mandated social security benefits: 80 percent of workers did not have Provident Fund (PF) accounts; and 90 percent of workers did not have Employees' State Insurance (ESI) cards.¹⁸⁹

186 Solidarity Center 2012, supra note 80 at 6.

187 Naveen Sathyan, supra note 124 at 1, 39, 42.

188 R. Ramabhadran Pillai, "Fish processing workers struggle for minimum wages," *The Hindu*, September 18, 2015, accessed February 20, 2016, <http://www.thehindu.com/news/national/kerala/fish-processing-workers-struggle-for-minimum-wages/article7663814.ece?text-size=small&test=2>.

189 Naveen Sathyan, supra note 124 at 1, 39, 42.

Thailand

Within the Samut Sakhon region of Thailand, workers are either employed by piece-rate or daily wage. A Fairfood International study of 77 workers in 28 small and large shrimp processing units found that 60 percent of workers received piece-rates and 40 percent received daily wages.¹⁹⁰ A 2011-12 ILO survey of 512 processing enterprises, also within the Samut Sakhon region of Thailand, found that within large enterprises (those employing 50 or more workers), 78 percent of the workforce was paid by piece-rate.¹⁹¹ Two thirds of the workers interviewed by Fairfood International stated that they considered their income insufficient for themselves and their families to survive.¹⁹²

The income of a piece-rate worker varies depending upon the quantity of seafood they can process. 53 percent of piece rate workers surveyed by Fairfood International in Samut Sakhon reported earning lower than the Thai minimum wage of 300 THB per day and 9 percent reported managing to earn minimum wage.¹⁹³ In addition to an individual worker's pace, the wages for piece-rate workers depend significantly upon the ability of the unit they work for to maintain a supply of raw material. Decline in supply, as was seen in recent years due to the breakout of Early Mortality Syndrome Disease in the Thai shrimp market, had significant impact on the earnings of piece-rate workers.

Thai workers surveyed by Fairfood International

¹⁹⁰ Fairfood International, *supra* note 43 at 8. These numbers reflect reports by 46 piece rate workers, from across 28 processing units in Samut Sakhon, interviewed by Fairfood International between 2013 and 2015.

¹⁹¹ International Labour Organization 2012, *supra* note 158.

¹⁹² Fairfood International, *supra* note 43 at 8.

¹⁹³ *Id.*

also reported wage deductions, including:

- monetary penalties for being late or damaging product (12 percent);
- monetary penalties for breaching toilet restrictions (20 percent); and
- deductions from their pay for equipment and uniforms (60 percent).

In addition to these deductions incurred by workers across the board, migrant workers reported paying money to brokers in order to enter Thailand for employment (10,000 to 14,000 THB). Deductions related to employment status, included paying for passports and work permits.¹⁹⁴

Hours of work

The ILO prohibits excessive hours of work and inadequate periods of rest on the grounds that such conditions damage workers' health and increase the risk of workplace accidents. Long working hours also prohibit workers attending to family and participating in the community. ILO standards on working time provide a framework for regulating hours of work. Relevant standards include: the Hours of Work (Industry) Convention, 1919 (No.1); Weekly Rest (Industry) Convention, 1921 (No. 14); Holidays with Pay Convention (Revised), 1970 (No. 32); Night Work Convention, 1990 (No. 171); and Part-Time Work Convention, 1994 (No. 175).

Piece-rate wages, common across seafood GVCs in Asia, foster exploitative working conditions by providing incentive for workers to shorten meal and toilet breaks and extend working hours. Extended working hours, often beyond 12 hours a day are common across the seafood industry in Bangladesh, India and Thailand.

¹⁹⁴ *Id.* at 18, 22.

Bangladesh

Processing industry workers in 36 seafood processing plants across Khulna, Satkhira, Bagerhat and Jessore in southwestern Bangladesh, reported working more hours each day than permissible under the Bangladesh Labour Act, 2006 (BLA 2006)—without receiving overtime pay. More than 73 percent of the 700 workers surveyed reported working between 26 and 30 days a month, in violation of BLA 2006 provisions requiring an adult worker employed in an industrial establishment to be allowed one day off during each week. Workers also reported being denied meal breaks, rest breaks and annual leave.¹⁹⁵

India

According to a 2015 study of 120 workers in seafood processing units in Gujarat and Tamil Nadu, 72 percent of workers reported working an excess of 12 hours per day. When questioned about overtime, workers displayed no understanding of this concept and reported receiving regular wage rates regardless of how many hours they worked. While most workers reported having a scheduled weekly leave, 81 percent explained that they rarely if ever actually received this weekly leave. Workers described these patterns as standard across the industry.¹⁹⁶

Thailand

Workers aboard Thai fishing vessels work from 18-20 hours per day. They frequently work through the night when small silver forage fish are easier to spot.¹⁹⁷

¹⁹⁵ Solidarity Center 2012, *supra* note 80 at 5.

¹⁹⁶ Society for Labour and Development, *supra* note 127.

¹⁹⁷ Urbina, *supra* note 130.

Among seafood processing workers in Samut Sakhon, Thailand Fairfood International found that a six-day work week was the norm. Of the 77 workers surveyed, 33 percent reported often working more than 12 hours and over 15% reported that 14 hour work days were common.¹⁹⁸

Freedom of association

The ILO Declaration on Fundamental Principles and Rights at Work recognizes the right to organize as one of four fundamental rights to be upheld by ILO member states. Together, the Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87) and Right to Organize and Collective Bargaining Convention, 1949 (No.98) outline the right to join a trade union and the right to organize.

The Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87) calls upon states to prevent discrimination against trade unions; protect employers' and workers' organizations against mutual interference; and undertake measures to promote collective bargaining. The Right to Organize and Collective Bargaining Convention, 1949 (No. 98), protects workers who are exercising the right to organize; upholds the principle of non-interference between workers' and employers' organizations; and promotes voluntary collective bargaining.

Bangladesh

According to a 2008 study of three districts in the Greater Khulna region of Bangladesh—

¹⁹⁸ Fairfood International, *supra* note 43.

Satkhira, Bagerhat and Jessore¹⁹⁹—women shrimp processing workers reported that they did not have a platform to address their working conditions. This study found that factory-based shrimp processing workers did not have trade unions or collective welfare associations. While factories had a Collective Bargaining Agent (CBA) that met with management annually to negotiate salaries and benefits, casual workers—who make up the majority of shrimp processing workers—were not represented in these discussions. Female workers interviewed for this qualitative study reported being unaware of procedures for forming trade unions and concerned that if they attempted to form a union, they would face harassment from management.²⁰⁰

A 2010-11 survey of 700 permanent and contract workers in 36 seafood processing plants across Khulna, Satkhira, Bagerhat and Jessore in southwestern Bangladesh, found that unions have only a small presence. Only six factories of the 36 surveyed had any type of union presence. Workers also reported that in the case of five nascent unions, employers quickly terminated union leaders or used intimidation, harassment and even physical violence to stifle union activity.²⁰¹

A review of union activities between 2010 and 2011 noted that shortly after the formation of unions, the majority of executive committee members were dismissed without cause or forced to resign. Factories surveyed included Organic Shrimp Export (Pvt) Ltd., Jahanabad Seafoods Ltd., Modern Seafood Industries, Ltd., Southfield Fisheries Industries Ltd. and Southern Food Industries.²⁰²

199 This study included observation of working conditions in these areas and qualitative interviews with 35 respondents working in a range of positions within the shrimp global value chain in Bangladesh. Field research was conducted in 2005 and 2006. Islam, supra note 50 at 217.

200 Id. at 230.

201 Solidarity Center 2012, supra note 80 at 6.

202 Environmental Justice Foundation, supra note 83

India

According to a 2015 study of 120 workers in seafood processing units in Gujarat and Tamil Nadu, none of the workers surveyed reported being involved in workers associations or trade unions. While 63 percent of workers surveyed acknowledged that some workers in their sector might be involved in unions, none of the workers surveyed had specific information about workers associations or trade unions operating in their area.²⁰³

Fishers and seafood processing workers in Kerala, India, however, have exercised their rights to freedom of association and to strike. Due to violations of government-established minimum wages, in August 2014, more than 125 processing units in Alappuzha and Enakulum districts were brought to a stand-still.²⁰⁴ In April 2015, Kerala fishers joined with workers at harbours, landing centres and processing plants to resist recommendations to allow an additional 270 vessels in an Exclusive Economic Zone. Collective action by workers in Kerala testifies to the range of issues facing workers in the seafood industry and the importance of defending their fundamental rights to freedom of association and collective bargaining.

Thailand

In Thailand, migrant workers are denied the right to freedom of association. As a result, these workers—many of whom are undocumented—are

at 30.
203 Society for Labour and Development, supra note 127.

204 Biju E. Paul, “Peeling Workers’ Stir Hits Seafood Industry in State,” *The Indian Express*, August 13, 2014, accessed February 20, 2016, <http://www.newindianexpress.com/states/kerala/Peeling-Workers%E2%80%99-Stir-Hits-Seafood-Industry-in-State/2014/08/13/article2376960.ece>.

afraid to address exploitative working conditions, forced labour and trafficking in their workplaces. Despite these barriers, however, organizations including the Migrant Worker Rights Network, led by migrant workers from Myanmar, are working with labour migrants to organize and protect themselves from trafficking and abuse.²⁰⁵

Occupational health and safety

The ILO addresses occupational health and safety in the Occupational Safety and Health Convention, 1981 (No. 155) and its Protocol of 2002, as well as in more than 40 standards dealing with occupational safety and health. In Thailand, the ILO-IPEC project is engaged in addressing hazardous child labour in shrimp and seafood processing and developing appropriate occupational health and safety practices in seafood processing.

Recent studies have shown that occupational exposure to seafood allergens causes respiratory reactions—including occupational asthma, rhinitis and conjunctivitis. Workers are exposed to these risk whether they are involved in production activities, including fishing, aquaculture, shucking oysters, trading seafood or transporting seafood; or processing, including grinding, degilling, washing shellfish and mincing seafood.²⁰⁶

205 Tula Connell, “In Thailand, Burmese Migrant Workers Toil Without Rights,” *Solidarity Center*, February 26, 2015, accessed February 21, 2016, <http://www.solidaritycenter.org/in-thailand-burmese-migrant-workers-toil-without-rights/>.

206 Mohamed F. Jeebhay and André Cartier, “Seafood workers and respiratory disease: an update,” *Current Opinion in Allergy and Clinical Immunology*, February 2010; M.F. Jeebhay, et. al, “Environmental Exposure Characterization of Fish Processing Workers,” *49 Ann. Occ. Hyg.* 5, 423-427 (2005).

In addition to these risks, workers engaged in seafood processing come into contact with a range of other occupational health and safety hazards. Health problems among fish processing workers have been attributed mainly to safety risks, excessive noise levels, low temperatures, bacterial and parasitic infections, bioaerosols containing seafood allergens, microorganisms, toxins and poor ergonomic practices. Non-fatal and fatal injuries and occupational diseases associated with seafood processing include:

- frostbite and aggravation of Raynaud’s phenomenon;
- noise induced hearing loss;
- skin infection and sepsis;
- allergic respiratory diseases (rhinoconjunctivitis, asthma, extrinsic allergic alveolitis);
- skin conditions (urticarial, contact dermatitis);
- musculoskeletal cumulative trauma disorders; and
- stress related health problems.²⁰⁷

Risks to workers are aggravated by extended working hours, lack of training, inadequate exhaust ventilation systems, cold and wet working environments and unprotected handling of fish products at various stages of the production process.²⁰⁸

Primary preventive measures are key to minimizing exposure to workplace hazards. Such measures could include:

- ongoing assessment of risk to workers based upon trends in injuries and diseases;
- adequate ventilation;
- enclosure of machinery to reduce noise levels;
- limited durations of exposure in refrigeration sections;
- rest periods in dry and warm areas;
- personal protective equipment (proper fitting

207 Jeebhay, supra note 33 at 471.

208 Id. at 471.

- gloves, boots);
- adjustable tables and platforms to address ergonomic hazards;
- emollients and moisturizers to protect skin barrier function and prevent irritant contact dermatitis;
- education and training of workers to ensure adequate precautions;
- job rotation; and
- immediate treatment of puncture and laceration wounds to prevent infection and skin exposure to allergens in fish juice.²⁰⁹

Bangladesh

Shrimp fry collectors, including children, face threats to their safety as a result of working in the Bangladeshi Sundarbans area, a large, continuous area of salt-tolerant mangrove forests. A study of two villages undertaken by the Bangladeshi National Center for Biotechnology Information (NCBI) found that wild animals—including estuarine crocodiles, bull sharks and Bengal tigers—had killed 111 people from just two villages in the Sundarbans. Of these attacks, fry collectors represented nearly 25 percent of all victims and half of all women attacked by animals. Snakes also pose a danger for Bangladeshi fry collectors, especially in coastal Barisal and Khulna divisions. Fry collectors, and especially women and children, are also at danger of drowning due to tidal currents. They are at particularly high risk because larvae concentration is at its highest during full moon periods—periods when rivers rise and currents increase.²¹⁰

According to a 2008 study of three districts in the Greater Khulna region of Bangladesh—Satkhira, Bagerhat and Jessore²¹¹—women working in

209 Id. at 471-74.

210 Environmental Justice Foundation, supra note 83 at 17.

211 This study included observation of working

shrimp processing factories are also vulnerable to a range of occupational hazards. These included fungal infection in their hands, colds, severe muscle strain and back pain, eye irritation, stomach-related illnesses, cuts and bruises. Workers reported hand infections so severe that they were unable to eat with their hands. One woman described her experience: “After working non-stop for long, 12-13 hours, we become tired, sick and exhausted. The buckets for the shrimp are so cold that our hands get frozen. We all have fungal infections.”

Although HACCP training modules recommend the use of gloves, some female workers and managers reported that women chose not to wear gloves because they slow down the work and impact their piece-rate determined earnings. Other workers reported that they were not given gloves.²¹²

India

According to a 2015 study of 120 workers in seafood processing units in Gujarat and Tamil Nadu, 73 percent of respondents reported health issues including back pain, bronchitis and cuts and wounds. 68 percent of workers surveyed reported there were no provisions for emergency medical attention provided by their workplaces.²¹³ These health risks are consistent with findings across India’s seafood processing industry. According to a 2014 study of 119 pre-processing units in Alleppy district, Kerala, including surveys with 701 randomly selected women, peeling shed workers suffered from back pain, hand

conditions in these areas and qualitative interviews with 35 respondents working in a range of positions within the shrimp global value chain in Bangladesh. Field research was conducted in 2005 and 2006. Islam, supra note 50 at 217.

212 Id. at 230.

213 Society for Labour and Development, supra note 127.

and leg numbness, rheumatic fever, joint pain, injuries, problems related to fertility, arthritis, skin disorders and various allergies. Workers were not, however, entitled to medical benefits.²¹⁴ Women workers in Alleppy district reported lack of awareness and knowledge of occupational health hazards and safety.

These health consequences are related to extended exposure to cold environments, chlorinated water and fish protein related bio-agents in the peeling sheds. Extended hours of handling tools in awkward working postures contribute to muscular pain and discomfort.²¹⁵ Other factors contributing to occupational health and safety hazards in Alleppy district include lack of proper ventilation in 57.5 percent of surveyed sheds; home-based peeling work; inadequate drainage in 50 percent of sheds surveyed; accumulation of waste materials during processing; and failure to supply workers with gloves by 95 percent of owners.²¹⁶

A 2013 study, including 100 women working in the processing sector in Alapuzha district, Kerala, also found that 61.76 percent of women reported back pain, arthritis, lacerations and other occupational hazards. Women reported that long working hours and constant exposure to cold water resulted in muscle cramps, skin irritation, eczema, respiratory problems, allergies, back pain and rheumatism. Women also reported that they had no access to medical facilities through their employers. Walk through inspection of facilities in Alapuzha revealed exposure to aerosols during cutting, scrubbing, cleaning and drying seafood; and skin exposure due to lack of personal protective devices.²¹⁷

214 Naveen Sathyan, supra note 124 at 1, 39, 42.

215 Id. at 1, 39, 40.

216 Id. at 41-42.

217 This study randomly sampled 100 women workers using a structured questionnaire to determine demograph-

According to a 2014 study of 119 pre-processing units in Alleppy District, Kerala, while workers are required to wear gloves, masks, gum boots and uniforms, 95 percent of owners do not supply these materials.²¹⁸ 22.5 percent of facilities do not even provide lavatory/bathroom facilities.²¹⁹

Thailand

Workers aboard Thai fishing vessels work on slippery decks—often at night. Most work barefoot. Due to these conditions, workers’ hands and feet have open wounds where their skin is slit from fish scales and worn by the friction of the net. Without access to medical attention, they stitch deeper cuts themselves. Infections are constant. Workers also reported losing their fingers in nylon lines linked to spinning cranks.²²⁰ Fishers who are pulled overboard, especially at nighttime, may not be recovered. A Burmese worker recounted: “Sometimes the net is too heavy and workers get pulled in to the water and just disappear.”²²¹

Workers aboard Thai fishing vessels live in cramped, unsanitary living conditions. They may sleep in no more than two hour snatches in crowded, unventilated crawl spaces.²²² Cambodian workers interviewed in Khanom fish port described being chronically sleep deprived due to lack of control over sleeping hours. They also reported limited supply of potable water to drink, shower and cook.²²³

ic details of the work force, wages, working conditions and health related impacts of seafood processing. Dhanya, supra note 110 at 42.

218 Naveen Sathyan, supra note 124 at 1, 39, 42.

219 Id.

220 Urbina, supra note 130.

221 Verite, supra note 143.

222 Urbina, supra note 130.

223 Verite, supra note 143.



*A Burmese migrant dock worker, 14 (center) helps his employer load fish at a SIFCO fish processing plant at a port in Ranong.
Adam Dean for The New York Times*



Conclusion: precarious work in the Asian seafood industry and the global race to the bottom

As detailed in this report, fish is now among the most traded food commodities in the world, representing about 10 percent of total agricultural exports and 1 percent of world merchandise traded in value terms. Today, 200 countries participate in the seafood GVC.²²⁴ Within this highly globalized industry, working conditions and wages in developing countries have significant impact on wages and working conditions in developing and developed countries alike. The plight of seafood industrial workers in Asia has implications for seafood production worldwide.

The National Guestworker Alliance (NGA)—a multi-sector membership-based US national organization dedicated to improving labour and migration conditions for contingent workers—has documented the impact of the seafood GVC on the US national seafood value chain. According to NGA findings, US seafood processors, squeezed by international markets seek to compete by employing a contingent workforce highly vulnerable to workplace abuse and exploitation.

In Louisiana and Massachusetts, for instance, seafood processors are heavily reliant on guestworkers and undocumented workers. As in Asia, seafood processing work is heavily gender segregated. On the Gulf Coast, men are paid hourly to perform boiling, loading and fishing work. Women earn piece-rate wages for peeling

224 Id. at 7, 46.

and picking work. These workers are seasonally employed. Women workers are routinely subjected to sex discrimination and sexual harassment. Across the board, migrant seafood industry workers are paid less than prevailing wages for the industry.

The legal status of migrant workers and the structure of the migration system prevents them from enforcing their workplace rights. This leads to an erosion of standards across the industry that impacts migrant and US-born workers. A historical look at seafood processing plants in the Northeastern US shows that plants that were once unionized now rely on temporary workers. These temporary workers, NGA found, were not likely to come forward to report abuse even when facing severe labour exploitation. Retaliation against workers who do come forward has taken many forms, including threats of immigration enforcement, refusal to rehire workers in subsequent seasons, physical harm, loss of work hours and surveillance.²²⁵

The impact of the seafood GVC on workers' rights worldwide testifies to the urgent need to develop global mechanisms to monitor and regulate global value chains. At present, the OECD Guidelines for Multinational Enterprises is the only global forum that establishes guidelines for multinational companies and provides an avenue for complaints. The ILO—the only global tripartite institution—has a unique role to play in setting standards for all GVC actors that protect fundamental principles and rights at work.

225 National Guestworkers Alliance, interview with JJ Rosenbaum, February 21, 2016.

Recommendations for the ILO at the International Labour Conference, 2016

As described in this report, within the seafood Global Production Network (GPN) exchange takes place through a networked structure in which supermarket chains, large retailers and food service operators do not formally own the overseas subsidiaries or franchisees but outsource production to them, without the burden of legal ownership. This GPN shifts the market relationship between firms from a trade relationship to a quasi-production relationship without the risks of ownership. The influence over production exerted by TNCs is not unique to seafood GVCs. According to the World Investment Report 2013 by the United Nations Conference on Trade and Development (UNCTAD), TNC-coordinated GVCs account for some 80 percent of global trade. Accordingly, UNCTAD has called for a “regulatory framework to ensure joint economic, social and environmental upgrading to achieve sustainable development gains.”²²⁶

Due to the scale of global trade accounted for by GVCs, there is an urgent need for global mechanisms to monitor and regulate GVCs and GPNs. At present, the complaint mechanism established by the OECD Guidelines for Multinational Enterprises (MNEs) is the only global forum that establishes guidelines for multinational companies and provides an avenue for complaints.

The ILO Tripartite declaration of principles concerning multinational enterprises and social

226 UNCTAD, 2013, supra note 14.

policy (MNE Declaration), 2006²²⁷ provides a good starting point. However, within the MNE Declaration, MNE refers only to subsidiaries or franchises. Accordingly, GVCs in their current form are not covered by this Declaration. The need of the hour is for the ILO to clarify and update its standards and mechanisms to protect workers employed by TNCs across vast GPNs.

TNCs and their suppliers have a duty to obey national laws and respect international standards—especially those pertaining to realization of the fundamental principles and rights at work. A number of ILO core labor standards, such as the Forced Labour Convention, 1930 (No. 29), 2014 Protocol to the Forced Labour Convention 1930 and accompanying Recommendation, already protect workers in value chains. However, as this report details, changes in the modern workplace and globalization of value chains has opened up new gaps in the protection of fundamental principles and rights at work. In addition to clarifying the application of existing standards in global value chains, the ILO should set new standards and enforcement mechanisms and encourage national governments to do the same.

The following recommendations emerge from our experience promoting the rights of workers in global value chains.

1. Given the well-documented and rampant exploitation of workers and resources by MNEs operating through GVCs, and noting the limits on regulation under national legal regimes, the ILO should move towards a binding legal convention regulating GVCs.
 - 1.1 Standards under this convention must be

227 The ILO Tripartite declaration of principles concerning multinational enterprises and social policy (MNE Declaration), 2006, accessed online March 1, 2016, http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---multi/documents/publication/wcms_094386.pdf.

at least as effective and comprehensive as the UN Guiding Principle on Business and Human Rights and existing OECD mechanisms, including the 2011 OECD Guidelines for Multinational Enterprises.

- 1.2 The Convention should include the following components, among others:
 - Imposition of liability and sustainable contracting, capitalization and/or other requirements on lead firms to ensure accountability throughout the GVC.
 - Establishment of a Global Labour Inspectorate with monitoring and enforcement powers.
 - Publicly accessible transparency and traceability provisions.
 - Specific provisions that address the special vulnerability of migrant workers on GVCs.
 - Specific provisions that address the special vulnerability of women workers in GVCs.
 - Limits on the use of temporary, outsourced, self-employed, or other forms of contract labour that limit employer liability for worker protections.
2. Pursue a Recommendation on human rights due diligence that takes into account and builds upon existing due diligence provisions that are evolving under the United Nations Guiding Principles on Business and Human Rights and the 2011 OECD Guidelines for Multinational Enterprises.
3. Take the following complementary measures to protect workers employed in global value chains:
 - 3.1 Recognize the right to living wage as a human right and establish living wage criteria and mechanisms.
 - 3.2 Promote sector-based and transnational collective bargaining and urge countries to remove national legal barriers to these forms of collective action.
 - 3.3 Expand work towards the elimination of forced labour, including promoting ratification and implementation of the Forced Labour Convention, 1930 (No. 29), 2014 Protocol to the Forced Labour Convention 1930 and accompanying Recommendation.
 - 3.4 Continue programs to ensure social protection, fair wages and health and safety at every level of GVCs.
4. Convene research to inform ILO global supply chain programming, including:
 - 4.1 Research on adverse impacts of TNC purchasing practices upon
 - Core labour standards for all categories of workers across value chains.
 - Wages and benefits for all categories of value chain workers. This research should aim to satisfy basic needs of workers and their families.
 - Access to fundamental rights to food, housing, and education for all categories of value chain workers and their families.
 - 4.2 Research into the range of global actors that may have leverage over GVCs including investors, hedge funds, pension funds and GVC networks that define industry standards such as Free on Board (FOB) prices.
 - 4.3 Research into the types of technical advice needed by OECD government participants taking a multi-stakeholder approach to address risks of adverse impacts associated with products.
 - 4.4 Research into mechanisms deployed by authoritative actors within GVCs that contribute to violations of fundamental principles and rights at work, including but not limited to attacks on freedom of

association, collective bargaining, forced overtime, wage theft and forced labour.

5. Organize a Tripartite Conference on the adverse impact of contracting and purchasing practices upon migrant workers' rights. This conference should focus on:
 - Protection of migrant rights as conferred under the UN International Convention on the Protection of the Rights of all Migrant Workers and Members of their Families.
 - The intersection of migrant rights and ILO initiatives to promote Decent Work in Global Supply Chains.

Bibliography

Accenture, *Exploitative Labor Practices in the Global Shrimp Industry (2013)*, accessed February 20, 2016, https://www.motherjones.com/files/accenture_shrimp_report.pdf.

Frank Asche and Martin D. Smith, *Trade and Fisheries: Key Issues for the World Trade Organization*, Geneva: World Trade Organization Working Paper, 2009).

Asia Foundation and International Labour Organization (Asia Foundation-ILO), *Migrant and Child Labour in Thailand's Shrimp and Other Seafood Supply Chains (2015)*.

Bangladesh Frozen Foods Exporter Association, Basic Informations on Shrimp and Fish Industry in Bangladesh (accessed on Feb. 1, 2016), <http://www.bffea.net/export.php>.

Kajal Bhardwaj, "The International Trade and Investment Framework and the Implementation of the Asia Floor Wage: Challenges and Opportunities, Towards an Asia Floor Wage: A Global South Labour Initiative for Garment Workers" (Bangalore: Books for Change, 2015).

Anannya Bhattacharjee and Ashim Roy, "Bargaining in the Global Commodity Chain: the Asia Floor Wage Alliance," in Kees van der Pijl, ed., *Handbook on the International Political Economy of Production* (Cheltenham: Edward Elgar, 2015).

James C. Cato and Carlos A. Lima, "European Union 1997 Seafood-Safety Ban: The Economic Impact on Bangladesh Shrimp Processing," 13 *Marine Resource Economics*, No. 3 (1998).

Central Institute of Fisheries Technology, Indian Council of Agricultural Research, *Gender in*

Fisheries: A Future Roadmap (2012).

—Growth in Export of Indian Marine Products, 1961/2-2011/12, accessed February 20, 2016, <http://www.cift.res.in/innercontent.php?contentid=MTgw>.

Tula Connell, "In Thailand, Burmese Migrant Workers Toil Without Rights," Solidarity Center, February 26, 2015, accessed February 21, 2016, <http://www.solidaritycenter.org/in-thailand-burmese-migrant-workers-toil-without-rights/>.

CL Delgado, et al., Outlook for fish to 2020, Meeting Global demand: A 2020 vision for food, agriculture and the environmental initiative, (International Food Policy Research Institute: Washington DC, 2003).

G. Dhanya, Karwar Research Center of Central Marine Fisheries, "Status of women employed in seafood pre-processing units of Alapuzha, Kerala," 33 *Fishing Chimes* 7, October 2013.

CS Dolan, "On Farm and Packhouse: Employment at the Bottom of a Global Value Chain," 69 *Rural Sociology* 1, 99-126 (2004).

Environmental Justice Foundation, *Impossibly Cheap: Abuse and Injustice in Bangladesh's Shrimp Industry (2014)*.

Fairfood International, *Caught in a trap: The story of poverty wages behind Asian shrimp sold in European markets (2015)*.

Food and Agriculture Organization of the United Nations (FAO), *The State of World Fisheries and Aquaculture 2014* (available online: <http://www.fao.org/3/a-i3720e01.pdf>).

Sarah Gammage, et. al, *A Pro Poor Analysis of the*

Shrimp Sector in Bangladesh, USAID (2006). Sangeeta Ghosh, "Global Value Chains and the Garment Sector in India," *Towards an Asia Floor Wage: A Global South Labour Initiative for Garment Workers* (Bangalore: Books for Change, 2015).

Nikita Gopal, et. al., *Women in the Seafood Processing Sector in the Post Globalization Scenario- An Analysis*, Central Institute of Fisheries Technology.

Georgi Gotev, "Thai seafood products could be banned, warns MEP," *Bilaterals.org*, July 23, 2015, accessed February 14, 2016, <http://www.bilaterals.org/?thai-seafood-products-could-be>.

David Green, "Automation in Seafood Processing," *J. of Aquatic Food Product Tech.*, 22:4, 337-338 (2013) (for discussion in advances in automated seafood processing).

International Labour Organization, *Thailand's Shrimp and Seafood Industry: An Overview of Primary Processing in Samut Sakhon Province (2012)*.

International Transport Workers' Federation, "What are flags of convenience?," <http://www.itfglobal.org/flags-convenience/sub-page>.

Patarapong Intarakumnerd, et. al. "Innovation system of the seafood industry in Thailand," 23 *Asian Journal of Technology Innovation* 2, 271-287 (2015).

Md Saidul Islam, "From Sea to Shrimp Processing Factories in Bangladesh," 3 *J. of South Asian Dev.* 2 (2008).

Andrew Jacobs, "Chinese Fleets Illegally Fish in West African Waters, Greenpeace Says," *New York*

Times, May 20, 2015, accessed February 19, 2016, http://www.nytimes.com/2015/05/21/world/asia/china-west-africa-fishing-greenpeace.html?_r=0.

Arne Melchior, *The World Trade Organization Enlargement, Tariffs and Global Seafood Trade* (Rome: Food and Agricultural Organization of the United Nations, 2015).

M.F. Jeebhay, et. al, "Environmental Exposure Characterization of Fish Processing Workers," 49 *Ann. Occ. Hyg.* 5, 423-427 (2005).

Mohamed F. Jeebhay, "Occupational allergy and asthma in the seafood industry—emerging issues," 17 *Occupational Health Southern Africa* 6, 4 (2011).

Mohamend Jeebhay, et. al., "World at Work: Fish processing workers," 61 *Occup. Environ. Med.*, 471 (2004).

Mohamed F. Jeebhay and André Cartier, "Seafood workers and respiratory disease: an update," *Current Opinion in Allergy and Clinical Immunology*, February 2010.

Arne L. Kalleberg, "Precarious Work, Insecure Work: Employment Relations in Transition," 74 *American Sociological Rev.* (2009), 2.

PK Krishnakumar, "Shrimps for 70% of seafood export basket on global shortage," *The Economic Times*, November 13, 2013, accessed February 20, 2016, http://articles.economictimes.indiatimes.com/2013-11-13/news/44031102_1_vannamei-seafood-export-basket-export-earnings.

Parashar Kulkarni, "The Marine Seafood Export Supply Chain in India: Current State and Influence of Import Requirements," CUTS Centre for International Trade, Economics and Environments,

Jaipur, India (2005).

Bimal Prasanna Mohanty, et. al., *Food Safety, Labeling Regulations and Fish Food Authentication, Science and Technology Development/Policy Issues* (2013), 253 (available online: <http://link.springer.com/article/10.1007%2Fs40009-013-0139-x>).

Marine Products Export Development Authority (MPEDA), "Indian Seafood exports crossed 5.5 billion US\$," accessed on Feb. 2, 2016, http://164.100.150.120/mpeda/news_details.php?pg=indian-seafood-exports-crossed-5-5-billion-us#.

"-Region-wise Processing Plants with Capacity on 15/07/2014," accessed Feb. 2, 2016, <http://164.100.150.120/mpeda/cms.php?id=cHJvY2Vzc2luZy1wbGFudHM=#>

"-State-wise details of shrimp and scampi production," accessed Feb. 2, 2016, <http://164.100.150.120/mpeda/cms>.

National Guestworkers Alliance, interview with JJ Rosenbaum, February 21, 2016.

Biju E. Paul, Peeling Workers' Stir Hits Seafood Industry in State, *The Indian Express*, August 13, 2014, accessed February 20, 2016, <http://www.newindianexpress.com/states/kerala/Peeling-Workers%E2%80%99-Stir-Hits-Seafood-Industry-in-State/2014/08/13/article2376960.ece>.

Bob Pokrant, Brackish Water Shrimp Farming and the Growth of Aquatic Monocultures in Coastal Bangladesh, in J. Christensen, M. Tull (eds.), *Historical Perspectives of Fisheries Exploitation in the Indo-Pacific* (MARE Publication, 2014).

—Work, Community, Environment and the Shrimp

Export Industry in Bangladesh, India and Thailand, in Michael Gillan and Bob Pokrant ed., *Trade, Labour and Transformation of Community in Asia* (Palgrave Macmillan, 2009).

Stefano Ponte, et. al., *The Blue Revolution in Asia: Upgrading and Governance in Aquaculture Value Chains*, 64 *World Development* (2014).

A. Posthuma, *Beyond Regulatory Enclaves: Challenges and Opportunities to Promote Decent Work in Global Production Networks*, in A. Posthuma and D. Nathan (ed.), *Labour in Global Production Networks in India* (New Delhi: Oxford, 2010).

R. Ramabhadran Pillai, Fish processing workers struggle for minimum wages, *The Hindu*, September 18, 2015, accessed February 20, 2016, <http://www.thehindu.com/news/national/kerala/fish-processing-workers-struggle-for-minimum-wages/article7663814.ece?textsize=small&test=2>.

Naveen Sathyan, et. al., The present status of sea food pre-processing facilities in Kerala with reference to Allepey district, 4 *Int. J. of Res. in Fisheries and Aquaculture* 1, 39, 42 (2014).

Seafish, *Focus on Ethical Issues in Seafood: Thailand Profile*, accessed on February 2, 2015, http://www.seafish.org/media/Publications/ThailandEthicsProfile_201509.pdf.

Charlotte Seager, Fisheries in Africa are losing billions due to illegal practices, *The Guardian*, May 8, 2014, accessed February 19, 2016, <http://www.theguardian.com/global-development-professionals-network/2014/may/08/africa-progress-report-2014>.

Society for Labour and Development and National Guest Workers Alliance, *Case Studies of the*

Seafood Processing Industry in Tamil Nadu and Gujarat (2015)(unpublished findings, on file with author).

Solidarity Center, *The Plight of Shrimp-Processing Workers of Southern Bangladesh*, January 2012, accessed online October 27, 2015, http://www.solidaritycenter.org/wpcontent/uploads/2014/11/pubs_bangladesh_shrimpreport2012.pdf.

Solidarity Center, *The True Cost of Shrimp* (2007), accessed February 20, 2016, http://www.shrimpnews.com/PDFsFolder/pubs_True_Cost_of_Shrimp.pdf.

Jayasekhar Somasekharan, Food safety regulations and trade effects: The case of Indian seafood industry with special reference to Kerala, South India, 7 *Globelics International Conference* (2009).

—Restructuring the Value Chain Governance: The Impact of Food Safety Regime on Fishery Sector of Kerala, IIFET 2014 Australia, accessed February 19, 2016, <http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/55641/JAY%20iifet%20reformat.pdf?sequence=2>.

S. Tasnoova, et. al., *Market Structure and Procurement System for Shrimp Export Industry in Bangladesh* (2010), accessed February 20, 2016, http://www.arsa1996.org/pictures/pdf/ARSA_IV_PRCDGS_VOL1/TRADE,%20INDUSTRY%20AND%20TECHNOLOGY%20DEVELOPMENT/2_Tasnoova_Bipa_%20236-245.pdf

Thai Frozen Foods Association (TFFA), *About Us: Mission, Vision*, accessed February 2, 2015, http://www.thai-frozen.or.th/aboutus_vision_mission.php.

Undercurrent News, Workers' rights group: Thai seafood sector must focus on long-term reform, *Undercurrent News*, January 21, 2016, accessed February 21, 2016, <https://www.undercurrentnews.com/2016/01/21/workers-rights-group-thai-seafood-sector-must-focus-on-long-term-reform/>.

United Nations Conference on Trade and Development (UNCTAD), *World Investment Report, 2013-Global Value Chains: Investment and Trade for Development*, accessed March 1, 2016, http://unctad.org/en/PublicationsLibrary/wir2013_en.pdf.

Ian Urbina, 'Sea Slaves': The Human Misery that Feeds Pets and Livestock, *New York Times*, July 27, 2015, accessed February 15, 2015, http://www.nytimes.com/2015/07/27/world/outlaw-ocean-thailand-fishing-sea-slaves-pets.html?_r=0.

Verite, *Recruitment Practices and Migrant Labor Conditions in Nestlé's Thai Shrimp Supply Chain: An Examination of Forced Labor and other Human Rights Risks Endemic to the Thai Seafood Sector*, accessed February 16, 2016, http://www.verite.org/sites/default/files/images/NestleReport-ThaiShrimp_prepared-by-Verite.pdf.

M.V. Shobhava Warriar, *Women at Work: Migrant Women in Fish Processing Industry*, 36 *Economic and Political Weekly* 37, September 15-21 2001, pp. 3554-3562.

