

2. Literature review

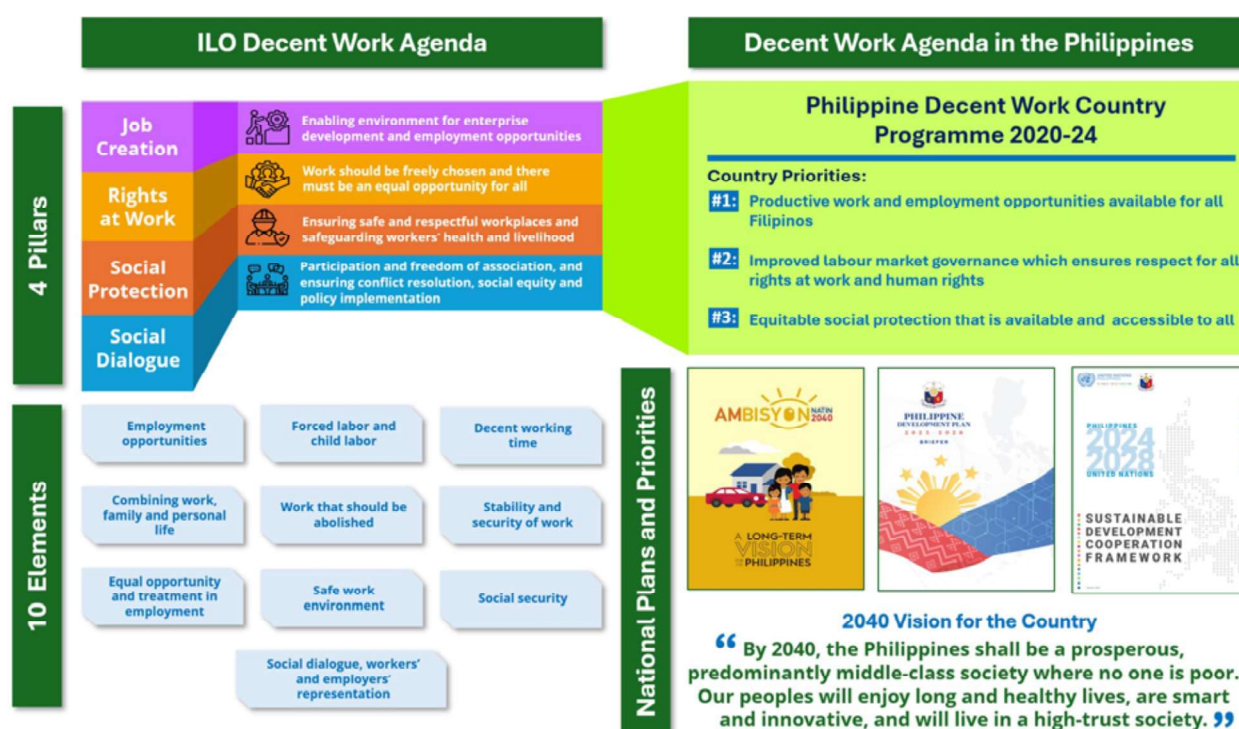
The following literature review provides an overview of the state of aquaculture on a national scale, focusing on shrimp and seaweed value chains.

The literature review draws from various sources, including grey literature and technical reports from authoritative bodies such as the Bureau of Fisheries and Aquatic Resources (BFAR), the Philippine Statistics Authority (PSA), and the Food and Agriculture Organization (FAO). The study also refers to peer-reviewed research articles, as well as media resources for further insights and trends. All sources are appropriately cited throughout the report.

2.1. Overview of decent work agenda and its application in the Philippines

The overall goal of decent work is to effect positive change in people's lives at national and local levels. The ILO's *Decent Work Agenda* has four pillars: employment creation, social protection, rights at work, and social dialogue. In the Philippines, the Decent Work Agenda encapsulates employment aspirations and policy goals. Developed through dialogue with government and representatives of employers and workers organizations, the agenda describes the overall framework in which actors promote decent work (ILO n.d.a). It is being implemented and monitored at the country level through its country programs, such as the Philippine *Decent Work Country Programme (DWCP) 2020-24* (see Figure 1; Institute for Labour Studies 2008). It serves as the country's integrated strategic roadmap for stakeholders and partners in supporting labour and employment goals and priorities of the country (ILO 2020).

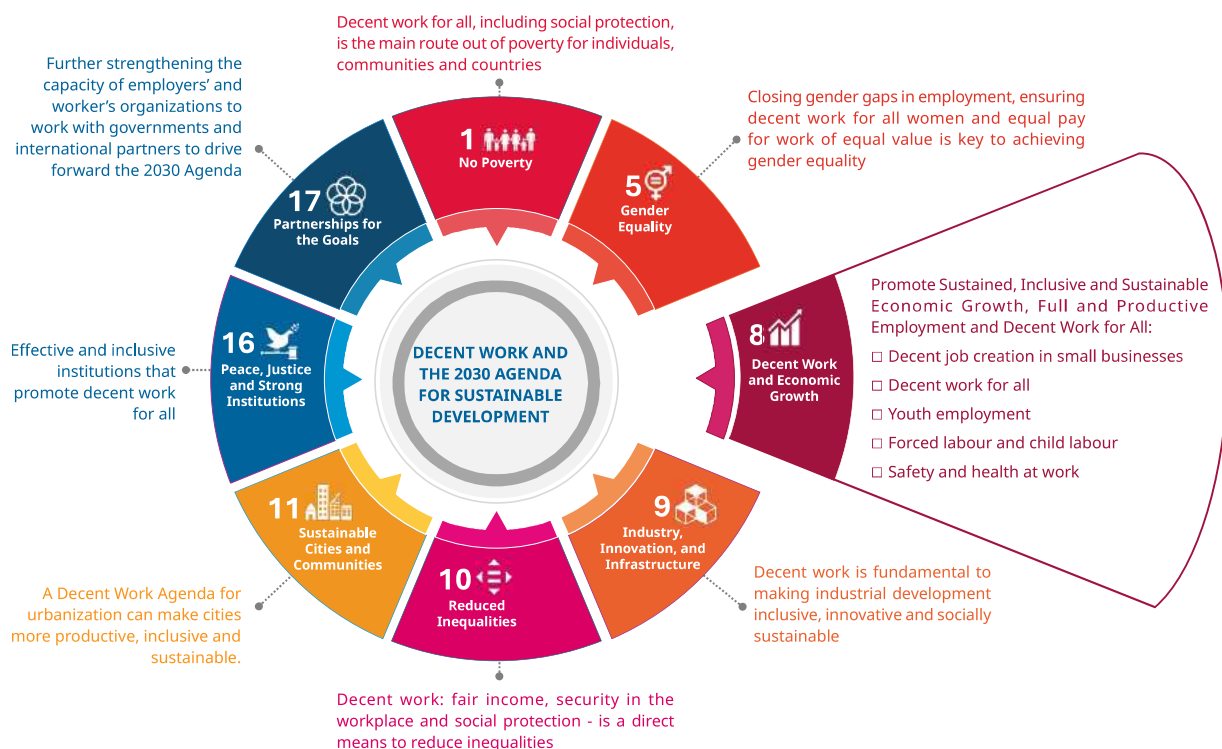
► Figure 1. Pillars and Elements of ILO Decent Work Agenda and Application in the Philippines



National, social, and economic development priorities of the Philippines are aligned with the Decent Work Agenda, as illustrated in Figure 1. These include the “Ambisyon Natin 2040,” which is the country’s 25-year long-term plan. Implementation of this vision and serving as a medium-term plan is the “Philippine Development Plan (PDP).” The Decent Work Agenda is also aligned with the Philippines’ 2024-2028 United Nations (UN) Sustainable Development Cooperation Framework.

Specific to the fisheries sector, the three country priorities under the Philippine Decent Work Country Programme, as outlined in Figure 1, priorities #1 and #3 include expanding opportunities to the fishery sector (ILO 2020). Moreover, agriculture and fisheries form part of the priority sectors targeted by “Ambisyon Natin 2040” (NEDA 2016). The country aims to modernize its agriculture and fisheries sectors, boost the sector’s productivity and resiliency through various interventions, and develop a blue economy, according to the PDP 2023-2028. The country also plans to expand coverage of free agricultural insurance, increase support for accessing green financing, and develop education and training services for fisherfolk (NEDA 2023). These are also reflected in the UN Sustainable Development Cooperation Framework under its second outcome (UN 2023).

► **Figure 2. Decent Work Agenda in the Sustainable Development Goals (SDGs)**



2.2. National and international frameworks for decent work and responsible business conduct

The Decent Work Agenda is supported by both legal frameworks (national and international) and normative frameworks (binding and non-binding). Compliance with regulatory requirements forms the foundation of decent work that normative frameworks enhance and build upon. These normative frameworks interlink decent work with responsible business conduct, and they play a crucial role in enhancing decent work standards in global supply chains, particularly in sectors like aquaculture. Relevant examples of such frameworks are the UN's Guiding Principles on Business and Human Rights, Organisation for Economic Co-operation and Development (OECD) Due Diligence Guidance for Responsible Business Conduct, and ILO's Tripartite Declaration of Principles concerning Multinational Enterprises (MNE) and Social Policy (MNE Declaration). By protecting human rights, expediting due diligence, and ensuring fair labour standards, these frameworks create fair workplaces, safe conditions, and thriving communities. In aquaculture, where businesses interact closely with local communities and ecosystems, adherence is crucial for ethical conduct, community well-being, and environmental sustainability across the supply chain.

2.2.1. Philippine regulations

In the Philippines, under the [1987 Philippine Constitution](#), one of the state policies is to affirm labour as a primary social economic force, and thus the state shall protect the rights of workers and their welfare (P.H. Const. art. II, § 18). It continues to expound on social justice and human rights, stating that Congress shall give priority to the enactment of measures for protecting the rights of all the people to human dignity, and reduce and remove inequalities. It also guarantees the rights of workers to self-organize, perform collective bargaining, and other peaceful activities, including strike action (P.H. Const. art. XIII, § 3). The Labor Code of the Philippines was enacted in 1974, and serves as the overall governing law and framework on labour relations in the country. The main governing agency on labour relations is the Department of Labour and Employment (DOLE), with support from other agencies depending on the set of circumstances. Labour laws and regulations in the Philippines covering the aquaculture industry are mapped in Table 2. This is followed by a mapping of standards and policies related to labour in the aquaculture industry in Table 3, and national plans and frameworks with regards to labour in Table 4.

Historically, the Labor Code has been amended several times, and new laws and legislation was passed to further support it. One such example is Republic Act (R.A.) No. 11058, an Act Strengthening Compliance with Occupational Safety and Health Standards, concerning Chapter 2 of the Labor Code. There is also R.A. No. 10395, an Act Strengthening Tripartism, enacted given Article 275 of the Labor Code.

Women's and children's rights are given priority through R.A. No. 9710, The Magna Carta of Women, the principles of which having been adapted from the Universal Declaration of Human Rights. Under this law, all national government agencies (NGAs) and Local Government Units (LGUs) are to plan, budget, monitor, and evaluate their own Gender and Development (GAD) programs for addressing gender issues and concerns. They are also to assign a GAD focal point for each department composed of a committee and a technical working group. Furthermore, LGUs are encouraged to develop their GAD code, which will serve as the basis for identifying their GAD programs, activities, and projects. All these are to be done in consultation with the women of their respective localities.

► **Table 1. Mapping of Philippine Labour Laws and Regulations Covering the Aquaculture Industry (Part 1 of 4)**

Law/ Regulation:	Main Target:	Governing Agencies:	Purpose and Objectives:	Relevant coverage:
P.D. No. 442: Labor Code of the Philippines	PH Labour Market	DOLE, NEDA, DTI	To promote and maintain a state of full employment; to protect every citizen desiring to work; and to facilitate and regulate the movement of workers	• Regulations on recruitment, working conditions such as hours of work, rest periods, and leaves, wages, employment for special groups such as women, minors (no child below 15) and homeworkers, occupational health and safety, employees' compensation benefit and other benefits such as medical, dental, disability, death and income, employee promotion and termination • Policy on labour organizations, trade unionism and collective bargaining and negotiations, and establishment of grievance machinery within the worker organization • Formulation of the National Manpower Plan, Council, and Skills Centre to establish training institutions and ensure efficient allocation, development and utilization of manpower
R.A. No. 11058: An Act Strengthening Compliance with Occupational Safety and Health Standards	All Establishments	DOLE	To ensure that the provisions of the Labor Code of the Philippines, all domestic laws, and international standards on occupational safety and health (OSH) are being fully enforced and complied with by employers	• Duties of employer to provide a workplace free of hazards and ensure compliance with OSH standards in the workplace, to inform and train all workers on safety and health, and to provide free Personal Protective Equipment (PPE) • Establishment of an OSH programme and its inclusions, and an OSH committee and a safety officer and their duties • Provision for Employee's compensation claim for filing benefits arising from work-related disabilities or death
DOLE D.O. No. 238: Rules on the Administration and Enforcement of Labour Standards	All Establishments	DOLE	Pursuant of the Labor Code and R.A. No. 11058, to further strengthen DOLE's exercise of visatorial and enforcement of its power to secure compliance with labour and OSH standards	• DOLE's approaches in administration and enforcement of labour standards: technical and advisory visits (TAV), labour inspection, and OSH Investigation • Identification of priority establishments for inspection: engaged in hazardous work, employment of children/women, construction, ships and vessels, contracting arrangements, and others

R.A. No. 10395: An Act Strengthening Tripartism	All Establishments	NPTC	To strengthen and amend Article 275 of the Labor Code, which declares tripartism in labour relations as a state policy	• DOLE to call for a national, regional or industrial tripartite conference for consideration and adoption of voluntary code principles for promoting social justice and aligning labour movement relations Functions of the NPTC include: monitoring implementation and compliance of tripartite instruments, participate in tripartite conferences, review existing labour, economic and social policies, formulate recommendations and proposals, advise the DOLE in formulating policies, and adopting its own programs for its objectives
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Legend: Presidential Decree (**P.D.**); Republic Act (**R.A.**); Department Order (**D.O.**); Number (**No.**) | Department of Labour and Employment (**DOLE**); Department of Trade and Industry (**DTI**); National Economic and Development Authority (**NEDA**); National Tripartite Industrial Peace Council (**NPTC**); Occupational Safety and Health (**OSH**);

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► **Table 2. Mapping of Philippine Labour Laws and Regulations Covering the Aquaculture Industry (Part 2 of 4)**

Law/ Regulation:	Main Target:	Governing Agencies:	Purpose and Objectives:	Relevant coverage:
R.A. No. 9710: The Magna Carta of Women	Women and Children	PCW, CHR, GAD committee	To affirm women's rights as human rights; to intensify efforts in fulfilling the duties on human rights for women	• It covers protection of women from violence, undertaking of special measures to ensure women representation in decision-making and access to education and training, and other benefits such as maternal care, special leaves, and decent work • Institutionalization of GAD programs for NGAs and LGUs to address gender issues and concern and development of GAD code per LGU based on consultation with their women constituents. This is in pursuant to R.A. No. 7192: Women in Development and Nation Building Act • See also: R.A. No. 7877: Anti-Sexual Harassment Act R.A. No. 11313: Safe Spaces Act (Bawal Bastos Law)

R.A. No. 7160: Local Government Code of 1991	PH Labour Market	LGUs	To have an effective allocation among LGUs of their respective powers, functions, responsibilities, and resources; to establish a structure that will meet the priority needs and service requirements of its community	• Provision of basic services and facilities for - o Barangay: Maintenance of barangay health centre and facilities related to hygiene and sanitation and solid waste collection, and maintenance of “Katarungang pambarangay,” a group for settling disputes among residents or those arising in the workplace - o Municipality: Implementation of programs on primary health care, social welfare services, solid waste disposal system or environmental management system, facilities to serve the needs of the municipality such as clinics and health centres - o Province: Assistance in organization of fishermen’s cooperatives and other collective organizations, health services including hospitals, and access to credit financing • Provision for the establishment of an Agriculturist, mandatory for provincial, optional for city and municipal. Their functions include: ensure maximum assistance and access to resources for aquaculture enterprises, enforce rules and regulations on aquaculture and advice the governor/mayor on all matters related to aquaculture
R.A. No. 11962: Trabaho Para sa Bayan Act	MSMEs	NEDA, DTI, DOLE	To promote employability and wellness through skills training and enhancement programs; to provide comprehensive support and incentives to MSMEs	• It serves as the State’s master plan on employment generation through decent jobs, sustainable enterprises, and economic transformation on MSMEs • Formulation of KPIs and action plans on the ff: supporting establishments, upskilling the workforce, incentivizing employers, empowering workforce rights under the Labor Code and other labour policies, enhancing tripartism and social dialogues, establishing standards for training, etc.

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► **Table 3. Mapping of Philippine Labour Laws and Regulations Covering the Aquaculture Industry (Part 3 of 4)**

Law/ Regulation:	Main Target:	Governing Agencies:	Purpose and Objectives:	Relevant coverage:
E.O. No. 138: Full Devolution of Certain Functions of the Executive Branch to Local Governments (Mandanas Ruling)	PH Labour Market	Committee on Devolution (chaired by DBM, co- chaired by DILG), LGUs, NGAs	To formally mandate the Mandanas Ruling, which the share of LGUs from national taxes thereby increasing their budget allocation, and devolution of functions, facilities, and resources from NG to LGUs	• Widens the function and increase the resources of LGUs for their programme and services • Establishment of a growth equity fund to address marginalization and high poverty incidence • Development of Capacity building for NGAs and LGUs • Establishment of a results-based monitoring and evaluative systems for evaluating performance and delivery of function and services • Recognition of the importance of the role of NGOs, CSOs and POs
R.A. No. 8425: Social Reform and Poverty Alleviation Act	Poor and marginalized sectors including fisherfolk and the informal sector	NAPC, LGUs	To adopt an area- based, sectoral, and focused intervention to poverty alleviation; to actively pursue reform of productive economic resources to basic sectors; to institutionalize and enhance the Social Reform Agenda (SRA)	• Adoption and integration of SRA in the National Anti-Poverty Action Agenda, and its corresponding reforms • Identification of the sector-specific flagship programs, which includes fisherfolk • Institutionalization of cross-sectoral flagship programs: institution-building in governance, livelihood programs, expansion of micro-finance services, and infrastructure development • Creation of the NAPC council and its guiding principles, powers, and functions • Establishment of the People's Development Trust Fund and other micro-finance services for the poor
P.D. No. 1152: Philippine Environment Code	Priority Sectors including the Fisheries Sector (under Title IV, Chapter I)	NEPC	To establish a system of rational exploitation of fisheries and aquatic resources and encourage citizen participation	• Provision for the measure of rational exploitation of fisheries and aquatic resources, including the ff.: undertaking of manpower and expertise development, acquiring the necessary facilities and equipment for fisheries-related activities, and reviewing all existing rules and regulations for fisheries and aquatic resources for formulating guidelines and systematic enforcement

P.D. No. 704: Fisheries Decree of 1975	Fisheries Sector	BFAR	To revise and consolidate all fishery laws and decrees in order to promote and encourage activities of persons, associations, cooperatives or corporations engaged in the fishing industry for maximizing economic utilization of its fishery resources	- Establishment of the BFAR and its functions: prepare and implement a Fishery Industrial Development Programme, and to arrange special technical assistances and training programs for the enhancement of the fishery industry - Creation of the Fishery Industry Development Council and its functions: formulate and establish policy guidelines for the fishery industry - Establishment of the fisheries loan and guaranteed fund, as administered by BSP, to provide special loan and financial assistance to those engaged in the fisheries industry - See also: P.D. No. 43: Fishery Industry Development Decree
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► **Table 4. Mapping of Philippine Labour Laws and Regulations Covering the Aquaculture Industry (Part 4 of 4)**

Law/Regulation:	Main Target:	Governing Agencies:	Purpose and Objectives:	Relevant coverage:
R.A. No. 8550: Philippine Fisheries Code	Fisheries Sector	DA, DENR, BFAR, NFARMC	To protect the rights of fisherfolk and their local communities; to provide support to the fishery sector; to grant private sector the privilege to utilize fishery resources	On Aquaculture: Issuance of Fishpond Lease agreement (FLA) and its provisions, establishment of a code of practice for aquaculture, formulation of incentive system for compliance, grant of privileges and license to operate for fish pens, fish cages, and other structures, and registration system of fish hatcheries, fish breeding facilities and private fishponds with LGUs On Post-Harvest Facilities: Activities and Trades: Formulation of a Comprehensive Post-harvest and Ancillary Industries Plan, establishment of post-harvest facilities for fishing communities, registration and licensing, and provisions on importation and exportation of fishery products

				• Institutionalization of The Fisheries and Aquatic Resources Management Councils (FARMCs) per municipal/city and their functions • See also: F.A.O. No. 196: Guidelines on the Creation and Implementation of FARMCs • R.A. No. 10654: Amending the Fisheries Code
R.A. No. 8435: Agriculture and Fisheries Modernization Act of 1997	Agriculture and Fisheries Sector	DA and other NGAs	To empower the agriculture and fisheries sector by ensuring their equitable access to resources, income opportunities, basic and support services, and infrastructure	• Formulation and implementation of a modernization plan focusing on 5 major areas, which includes poverty alleviation and social equity, and Income enhancement and profitability • Provision of access to credit by farmers and fisherfolk • Establishment of a market information system that will increase efficiency of trading services and linkages of farmers and fisherfolk to markets • Establishment of a complete and integrated system of agriculture and fisheries education and training programs
R.A. No. 11901: The Agriculture, Fisheries and Rural Development Financing Enhancement Act of 2022	Agriculture and Fisheries Sector	LBP, DBP, BSP, DA	To promote rural development by enhancing access of rural communities and agricultural and fisheries households to financial services and programs	• Establishment of an Agriculture, Fisheries and Rural Development Financing System that will provide loans and investments for the sector, such as an affordable basic deposit accounts and low interest rates for loans • Design and implementation of capacity building programs that will develop and improve the skillset of farmers and fisherfolk to increase their productivity and profitability through business ventures and access to financing channels

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► Table 5. Mapping of Philippine Standards Related to Labour in the Aquaculture Industry

Law/ Regulation:	Main Target:	Governing Agencies:	Purpose and Objectives:	Relevant coverage:
Occupational Safety and Health (OSH) Standards	All Establishments	OSH Centre	To protect every workers against dangers of injury, sickness or death through safe and healthy conditions	• Definition of OSH-related terms such as imminent danger, hazardous workplaces, work safety, work accident, work injury and safety • Duties of employer to provide a workplace free of hazards and ensure compliance with OSH standards in the workplace • Provision for DOLE inspection all establishments to determine compliance at least once a year and DOLE investigations on reported complaints and violations • Provisions on OSH training, health and safety committee, safety standards for premise of establishments, control and prevention of hazards, maintaining healthy and suitable work environment, PPEs and safety devices, handling and control of hazardous substances and contaminants, and other specific facilities that pose a danger
Harmonized Gender and Development Guidelines (HGDG)	All Establishments; also sector-specific including fisheries	NEDA, PCW, NGAs, LGUs	To provide NGAs and LGUs a common set of tools for integrating gender concerns into their development programs (GAD); to help achieve gender equality and empower women through such programs	• A set of guidelines and principles in preparing, developing and implanting GAD programs, both in general and sector specific, which includes the fisheries sector, see: GAD-Checklist-for-Fisheries • Two stages for programme and project development following the outlined 10 GAD elements or requirements: 1st stage is Project identification and 2nd stage is Project design phase. Each stage has its own GAD checklist to track progress and summarize the outcomes of each stage • Project identification stage: Identification of gender issues and women's special needs that must be addressed through a set of gender analysis guide questions • Project Design and Formulation stage: Articulation of goal/purpose/objective and inclusion of outcomes for GAD programs, support for gender-responsive interventions, review using gender analysis, and inclusion of monitoring targets and indicators

Philippine National Standard: Code of Good Aquaculture Practices (GAqP)	Fisherfolk and the Fisheries Sector	DTI, BFAR	To prevent or minimize the risk associated with aquaculture production, covering 4 aspects: food safety, animal health and welfare, environmental integrity and socio-economic	On socio-economic: • Farms should have a pro-active anti-child labour and anti-discriminatory practice (No incidence of child labour) • Labourers should receive the same rate for the same line of work • All labourers should undergo health and safety orientation and first-aid kit near workstation and protective gear should be available • Labour laws on wages, leaves, and holidays must be followed • Living conditions for labourers must be safe and clean, provided housing with individual beds and decent toilets, and a separate room for women • Farm should not impact access of local community to common resources, such as impeding them from fishing near fishing grounds Sector Specific GAqPs are also available for Shrimp and Crab and for Seaweed
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► **Table 6. Mapping of Philippine National Plans and Frameworks covering the Aquaculture Industry (Part 1 of 2)**

Law/ Regulation:	Main Target:	Governing Agencies:	Purpose and Objectives:	Relevant coverage:
AmBisyon Natin 2040	PH Nation and the PH Labour Force	NEDA and all NGAs	It is the country's long-term vision since 2015, setting the goals and aspirations of the nation in the next 25 years by identifying the constraints being faced by and the ambitions of the people, especially those in the priority sectors, including the agriculture and fisheries	The vision statement is a result of an active and collaborative consultations and Focused Group Discussions (FGDs) among various sectors and stakeholders, including the fisheries sector. Key constraints: Shortage of jobs and lack of job stability, government inefficiencies in providing services and implementing interventions, government corruption, and lack of proper access to healthcare Primary visions: • Prosperity for all: job security, better-quality and higher-paying jobs, career growth and savings, and entrepreneurship • Health: access to proper healthcare, and social protection • Education: access to college education for children, and equal opportunity for high quality education • Just and fair society: good governance, fair politics, citizen-centred systems, and region-focused programs • Vibrant, culturally diverse, and resilient communities: conflict management, disaster resilience, and cost and quality of living
Philippine Development Plan (PDP) 2023-2028	PH Nation and the PH Labour Force	NEDA and all NGAs	It provides a comprehensive roadmap for policies, programs, and legislative priorities to reach development outcomes based on the president's 8-point socioeconomic agenda and serves as the 2nd medium- term plan and implementation of "Ambisyon Natin 2040."	Part of the strategy framework and outcomes are the Modernization of agriculture and fisheries, boosting the sector's productivity and resilience, and development of a blue economy, a practical ocean-based economic model, which prioritized the nation's wealth on coastal and marine resources. These are achieved through: • Implementation of Fisheries Management Area (FMA) plans (12 FMAs were established within the country's territory, and the programs include active discussion with stakeholders, technical support, and capacity building) See also: FMA Briefer

			It seeks to reinvigorate job creation, accelerate poverty reduction, and strengthen economic sectors	• Promotion of viable livelihood options for coastal communities • Establishment of digital documentation and traceability for sustainable fisheries, such as the National Farmers and Fisherfolk Registry System (NFFRS) • Upgrading technology centres and Province-led Agriculture and Fisheries Extension Systems (PAFES) by providing additional funding to provincial LGUs • Investing more in hatcheries, mariculture parks and feed mills and improving access to inputs • Developing education, training, and capacity building courses through “Technical Vocational Education and Training (TVET)” programme, including topics on agriculture-fisheries • Expanding coverage of free agricultural insurance for fisherfolk and financing schemes for smallholder primary producers • Increasing the sector’s access to market and investments • Passing priority bills in relation to agriculture and fisheries, such as the amending of Section 61 of the Fisheries code to improve efficiency and transparency in the trade of fishery products, legislations to increasing insurance provision and financing programs for fisherfolk, and the “Young Famers and Fisherfolk Challenge Act” to encourage youth involvement in the sector
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► **Table 7. Mapping of Philippine National Plans and Frameworks covering the Aquaculture Industry (Part 2 of 2)**

Law/ Regulation:	Main Target:	Governing Agencies:	Purpose and Objectives:	Relevant coverage:
Philippines 2024 -2028 United Nations Sustainable Development Cooperation Framework	PH Nation and the PH Labour Force	Joint Steering Committee (JSC) co- chaired by NEDA, DFA, and UN-RC; NGAs	It is the joint strategic planning framework between UN and the Philippine government to accelerate the 2030 Agenda for Sustainable Development and the SDGs. It is aligned with and supports the "Ambisyon Natin 2040" and the PDP 2023-2028	It was formulated through active consultations with tripartite and other development partners and the UN. It lists down 3 primary strategic priorities and outcomes aligned with PDP 2023-2028, with active support from the UN through various interventions. The 2nd of the 3 outcomes is the generation of decent work and livelihood opportunities, and the indicative outputs or key activities are: • Improving policies and systems to modernize agriculture and fisheries opportunities integrated to the global value chains and demonstrating livelihood models to make it more financially resilient • Strengthening investments and developing financial products and services including insurance to agriculture and fisheries sector • Providing technical assistance aligned with the principles of blue economy, such as scaling up of marine-based industries to provide employment and livelihood opportunities and income for coastal communities • Developing a competitive and equal labour force whose rights are protected and promoted, and safe and fair working environment is provided • Enhancing rights-based, inclusive environment to address inequalities and support equal opportunities

National Agriculture and Fisheries Modernization and Industrialization Plan (NAFMIP) 2021-2030	Agriculture and Fisheries Sector	DA and other NGAs, LGUs	It serves as the country's 10-year directional plan and strategic blueprint for agricultural progress through cooperation and joint action among stakeholders, building up to the Agriculture and Fisheries Modernization Act of 1997	The NAFMIP considers the following outputs/outcomes: • Establishing a Commodity System Plan where agricultural commodities are consolidated into 5 systems, one of which is fisheries-based, to diversify the value chain and increase income and employment opportunities for workers in agriculture and fisheries sector • Preparing and implementing an Integrated Spatial Planning Framework (ISPF) by operationalizing specific spatial areas such as the Agri-Fisheries Industrial Business Corridors (AFBICs) and Fisheries Management Areas (FMAs) that would link farmers, fisherfolk, and worker association to the market and investors. • Devolution of functions to LGUs for the implementation and operationalization of the plans and policies
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The Local Government Code (P.D. No. 7160) enumerates the functions, services and facilities under the barangay, municipal, and provincial levels. It also establishes the designation of an agriculturist per province (optional for city and municipal), who serves as the consultant and point person between LGU leaders and fisheries enterprises.

Laws on empowering the labour and employment status of the country are also provided, given the “Trabaho Para sa Bayan Act” or R.A. No. 11962, and the adoption of the Labour and Employment Plan (LEP) 2023-2028. Additionally, full adoption of the Mandanas Ruling through E.O. No. 138 strengthens the function and capacity of LGUs for their programs and projects, which could include labour relations.

The fisheries sector is considered among the ‘poor sectors’ in the country. To help support and alleviate poverty, the “Social Reform Alleviation Act” or R.A. No. 8425 (also called the “NAPC or National Anti-Poverty Commission Law”) was legislated. It provides development and financing programs centred on poor sectors, including the fisheries. There is also the Philippine Environment Code or P.D. No. 1152, which stipulates establishing necessary manpower and expertise development and facilities for rationally exploiting the country’s fishery resources.

Laws and regulations specific to the fisheries sector include the Fisheries Decree (P.D. No. 704), the Philippine Fisheries Code (R.A. No. 8550), the Agriculture and Fisheries Modernization Act of 1997 (R.A. 8435) and the Agriculture, Fisheries and Rural Development Financing Enhancement Act of 2022 (R.A. No. 11901). These serve as the backbone for implementing rules and regulations in the Philippine fisheries sector (see Table 2).

Standards relating to labour and applicable to the aquaculture industry are identified and summarized in Table 3. The Occupational Safety and Health Standards (OSHS), as published by the Occupational Safety and Health (OSH) Center, were first formulated in 1978 in compliance with Article 162 of the Labor Code. This set of standards was a product of a successful collaboration between DOLE, ILO Manila office, and the tripartite sectors. The Philippine OSH standards serve as the mainframe for an employer to ensure worker safety in the workplace.

The primary framework followed by NGAs and LGUs for developing Gender and Development (GAD) programs is the Harmonized Gender and Development Guidelines (HGDG). It was first published in 2004, and prepared by NEDA in partnership with PCW and the Official Development Assistance - Gender and Development (ODA-GAD) Network¹. In 2016, HGDG was integrated into the Investment Coordination Committee (ICC) by requiring the GAD checklist, gender analysis, and other documents of it be submitted along the project evaluation form for the project evaluation report.

The Code of Good Aquaculture Practices (GAqP) under the Philippine National Standards serve as the fundamental guidelines on best industry practices for the aquaculture industry. It was developed as part of the ASEAN roadmap for ASEAN Community 2009-2015².

National plans and frameworks, as outlined in Table 4, serve as the blueprint for the country’s future direction. “Ambisyon Nation 2040” is the country’s long-term plan while the Philippine Development Plan (PDP) 2023-2028 is the 2nd medium-term plan in line with it. The fisheries sector plays a big part in the country’s future and thus it remains a priority for nation-building³. Specific to the agriculture and fisheries sector is the 10-year National Agriculture and Fisheries Modernization and Industrialization Plan (NAFMIP) by the Department of Agriculture (DA).

1 Funded by the UN Development Programme and Asian Development Bank

2 International consultations and references were undertaken for its development, such as the EU Trade Related Technical Assistance (TRTA) project, FAO Technical Guidelines on Aquaculture Certification, and ASEAN GAqP for shrimp farming and for food fish.

3 A framework established in partnership with the United Nations is the Sustainable Development Cooperation Framework, which is also aligned with the national plans

2.2.2. International labour standards

The international labour standards are legal instruments drawn by the constituents of the International Labour Organization (ILO) for setting out a basic framework for rights at work⁴.

ILO has categorized its standards into three types: conventions, protocols, and guidelines. Conventions and protocols are both legally-binding, submitted for consideration of ratification. They lay down the basic principles to be implemented by the ratifying countries. Recommendations are non-binding and usually serve to supplement the conventions and protocols. ILO Conventions and protocols are further classified as either fundamental, governance or technical.

2.2.2.1. ILO Declaration on Fundamental Principles and Rights at Work

The [ILO Declaration on Fundamental Principles and Rights at Work](#), originally adopted in 1998 and amended in 2022, is a core document outlining the five fundamental obligations and commitments that all ILO member states, including the Philippines, are expected to uphold (ILO 2022). These obligations are:

1. **Freedom of Association and the Effective Recognition of the Right to Collective Bargaining:** This ensures workers have the right to join unions and bargain collectively for better working conditions.
2. **Elimination of All Forms of Forced or Compulsory Labour:** This prohibits practices like human trafficking and debt bondage.
3. **Effective Abolition of Child Labour:** This aims to eliminate the exploitation of children in the workforce.
4. **Elimination of Discrimination in Respect of Employment and Occupation:** This promotes equal opportunities for all workers without discrimination based on race, gender, religion, or other factors.
5. **A Safe and Healthy Working Environment (added in 2022):** This emphasizes the importance of ensuring safety and health in the workplace.

As of 2024, the Philippines has ratified nine out of 10 conventions related to the FPRW, with the Occupational Safety and Health Convention, 1981 remaining unratified. ILO monitors member states' adherence to these standards through annual reporting, review and recurrent discussions at the International Labour Conference in Geneva.

As of 2022, the Philippines is still for follow-up on the ratification for Protocol 29 on Forced Labour. The adherence to these principles can be measured by its active engagement in these follow-up systems, as well as the implementation of specific national policies and measures to protect labour rights and standards (ILO 2023).

2.2.2.2. ILO MNE Declaration

The International Labour Organization's (ILO) [Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy \(MNE Declaration\)](#) adopted in 1977 and revised in 2006 and 2017, serves as a voluntary framework for promoting responsible business conduct among multinational enterprises (MNEs) worldwide. Unlike legally binding conventions, the MNE Declaration provides guidelines for MNEs, governments, and employers' and workers' organizations to foster equitable labour practices, social dialogue, and sustainable economic development. Its principles align with global business and human rights agendas, including the UN Guiding Principles on Business and Human Rights and the OECD Guidelines, emphasizing corporate responsibility to respect labour rights as human rights. By aligning national policies with the Declaration, countries like the Philippines can strengthen their governance frameworks, improve working conditions, and attract responsible foreign investment.

⁴ ILO is a specialized agency of the United Nations dedicated to promoting social justice and fair treatment for workers worldwide. It is a unique tripartite structure consisting of 187 member states, including the Philippines (ILO 2024a).

The MNE Declaration is particularly relevant to Philippine aquaculture, where multinational involvement is growing, and labour rights, occupational health and safety, and environmental sustainability are critical concerns. By implementing its guidelines, the sector can ensure fair treatment of workers while enhancing economic productivity. The Declaration also promotes gender equality by advocating for equal opportunities, equal pay for equal work, and policies supporting women's entrepreneurship and the transition from informal to formal economies. Encouraging social dialogue and collaboration among governments, businesses, and labour organizations can further drive inclusive economic development in the country.

Additionally, ILO [country case studies](#) highlight how various nations have successfully leveraged the MNE Declaration to promote decent work, sustainable practices, and economic growth. Examples include Argentina's job creation initiatives, Ghana's responsible labour practices, and Nepal's focus on sustainable agriculture. The Philippines can draw lessons from these efforts, adopting proactive strategies to address labour challenges, foster international cooperation, and create a stable, productive workforce. Such measures not only improve the nation's labour market but also contribute to its long-term economic development and global competitiveness.

2.2.3. United Nations policies and frameworks on human rights

The United Nations upholds a framework for human rights protection, as outlined in the [Universal Declaration of Human Rights \(UDHR\)](#) adopted by the UN General Assembly in 1948. With 193 member countries, the United Nations advocates fundamental freedoms and equality for all people, regardless of nationality, ethnicity, religion, or other status. These rights cover civil, political, economic, social, and cultural aspects, to ensure dignity and justice around the world. The Philippines, as a member state, is bound by such principles and is obliged to adhere to international standards of human rights (UN OHCHR n.d.a).

2.2.3.1. International Bill of Human Rights

The International Bill of Human Rights comprises three foundational frameworks: the Universal Declaration of Human Rights (UDHR), the International Covenant on Civil and Political Rights (ICCPR), and the International Covenant on Economic, Social and Cultural Rights (ICESCR). The UDHR articulates a broad spectrum of rights, including civil, political, economic, social, and cultural rights. The ICCPR focuses on civil and political rights such as freedom of speech, assembly, and religion, while the ICESCR emphasizes economic, social, and cultural rights like the right to work, education, and healthcare. By following international human rights standards, aquaculture businesses can reduce the possibility of forced labour, child labour, and exploitation, urging a fair and ethical industry. Also, respecting workers' rights and offering equitable access to opportunities can boost production, quality, and reputation – ultimately contributing to the long-term survival and resilience of the aquaculture industry on a worldwide scale (UN OHCHR n.d.b).

2.2.3.2 UN Guiding Principles on Business and Human Rights

The [UN Guiding Principles on Business and Human Rights](#), adopted by the UN Human Rights Council in 2011, is a global standard that prevents and addresses negative human rights impacts caused by business activity. These principles emphasize the obligation of states to protect individuals within their jurisdiction from human rights violations committed by businesses. Some businesses negatively impact their employees' human rights, such as through underpayment and sudden termination, while others affect local communities and environments (UN OHCHR 2011). By integrating human rights considerations into business strategies and practices, companies can provide decent working conditions and contribute positively to sustainable development while avoiding harm to employees and communities.

These principles involve shared obligations for both states and businesses and are structured around three pillars: protect, respect, and remedy. The "Protect" pillar emphasizes the state's duty to protect human rights, requiring governments to enact and enforce laws and policies that prevent human rights abuses by businesses and to foster an atmosphere where corporations respect human rights. The "Respect" pillar focuses on the corporate responsibility to respect human rights, emphasizing that businesses must avoid infringing on the rights of

individuals and communities affected by their operations and include human rights concerns in their corporate policies, procedures, and decision-making frameworks. Finally, the “Remedy” pillar emphasizes the need for grievance procedures for impacted parties and effective remedies for victims of human rights abuses, as well as promoting a human rights-aware culture across their operations and supply chains and performing human rights due diligence processes (UN OHCHR 2011). Collaboration among states, companies, and governments can foster an environment where human rights are respected, upheld, and corrected, ultimately leading to fair working conditions for employees.

In the Philippine aquaculture sector, where businesses closely interact with coastal communities and marine environments, adherence to these principles is crucial. Implementing these guidelines is essential for establishing fair labour practices, promoting community engagement, and safeguarding human rights in the workplace.

2.2.4. OECD Due diligence guidance for responsible business conduct

The [Organisation for Economic Co-operation and Development \(OECD\) Due Diligence Guidance for Responsible Business Conduct \(RBC\)](#) is designed to support businesses in implementing the OECD Guidelines for Multinational Enterprises (MNEs) on RBC. It aims to promote the development of shared understandings of RBC’s due diligence among stakeholders and governments. Furthermore, the OECD Guidelines for MNEs recognize and promote the beneficial roles of enterprises in economic, environmental, and social advancement. However, they also acknowledge that business operations may hurt human rights, the environment, bribery, labour, corporate governance, and consumers (Ministerie van Buitenlandse Zaken 2024). The OECD Due Diligence Guidelines also aligns with the UN Guiding Principles on Business and Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, the ILO Conventions and Recommendations referenced within the OECD Guidelines for MNEs, and the ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy. Currently, 56 countries adhere to the OECD Guidelines, including the United Kingdom, the United States of America, and Japan (Ministerie van Buitenlandse Zaken 2024).

According to the OECD Guidelines for MNEs, due diligence is the approach that enterprises must utilize to identify, prevent, mitigate, and account for managing the actual and probable negative impacts in their business operations, supply chain, and business partnerships. The OECD guidelines cover the following topics about due diligence for responsible business conduct (RBC): human rights, employment and industrial relations, environment, combatting bribery, solicitation and extortion, consumer interests, and disclosures. Activities discussed in the guidance include the embedding of RBC into policies and management systems, identifying and mitigating potential adverse impacts on the enterprise’s operations, tracking implementation and results, communicating results of due diligence to stakeholders, and provision for remediation and grievance processes. These guidelines cover all multinational enterprises (MNEs) and all entities within its group, including parent and local (OECD 2018).

With this, the OECD Due Diligence Guidance for Responsible Business Conduct is crucial in promoting decent work conditions within the Philippine aquaculture sector. The Guidance can help enterprises evaluate and manage labour-related risks and guarantee fair treatment and safe and healthy work conditions for workers. In addition, enterprises can quickly identify and alleviate issues such as forced labour, wage discrimination, gender-based violence or sexual harassment, and unsafe working conditions, as the workers’ welfare is their utmost priority.

2.2.5. Other sector-specific standards and frameworks

2.2.5.1. FAO Code of Conduct for Responsible Fisheries

The [FAO Code of Conduct for Responsible Fisheries](#) provides a framework for promoting sustainable and responsible management of global fisheries resources. The Food and Agriculture Organization (FAO) adopted the Code in 1995, with the goal of promoting long-term conservation and sustainable use of aquatic ecosystems while also addressing fisheries’ social and economic components. It emphasizes precautionary concepts, ecosystem-

based management, and waste and bycatch reduction. By encouraging cooperation among stakeholders, promoting sound governance, and integrating scientific knowledge, this Code of Conduct strives to achieve environmentally sound, socially equitable, and economically viable fisheries practices worldwide (FAO 2024).

2.2.5.2. FAO Good Practice Guidelines (GPG) on National Seafood Traceability Systems

[Good Practices Guidelines \(GPG\) on national seafood traceability systems](#) is a guideline designed to improve transparency and accountability in the seafood supply. The FAO developed these guidelines to help countries establish effective traceability systems that track seafood from catch to consumption chain and tackle illegal, unreported, and unregulated (IUU) fishing. IUU fishing negatively influences fisheries' economic, social, and ecological aspects and food security. The GPG on National Seafood Traceability Systems promotes the use of standardized data collection methods, interoperable technologies, and stakeholder participation to improve traceability across borders and throughout the seafood value chain (FAO 2018).

2.2.5.3. Aquaculture Stewardship Council (ASC)

International standards on aquaculture, as released by different international organizations such as the Aquaculture Stewardship Council (ASC), are being promoted through certifications and labelling programs. Recently, the ASC had just published a revised and consolidated [set of standards for aquaculture farms](#), integrating species-specific standards into one cohesive treatise. Their human rights requirements, based on ILO conventions and other international standards, include human rights awareness, prevention of forced and child labour, prevention of discrimination, health and safety, collective bargaining and freedom of association, transparent contracts, wages, working hours, workplace conduct report, employee accommodation, grievance mechanism, and community engagement (ASC n.d.).

2.2.5.4. Global Sustainable Seafood Initiative (GSSI)

The Global Sustainable Seafood Initiative (GSSI) is another international organization which provides benchmarking on aquaculture sustainability and global alignment of seafood certifications such as the ASC. Through its partnership with the Sustainable Supply Chain Initiative (SSCI), they have integrated a social [benchmarking tool](#), which gives aquaculture companies access to auditing and certification programs for transparent and sustainable social practices (GSSI n.d.a). Benchmarking requirements include that a human rights policy is in place and being implemented, the producer does not engage in forced and child labour, there is freedom of association, there is no discrimination at the workplace, there is an existing operational health and safety management system, chemical safety procedures are in place, employment terms and conditions are written and informed, workers are paid appropriate wages, working hours are acceptable, there is a form of grievance mechanism, and the business must be ethical and transparent in their social disclosures (GSSI n.d.b).

2.2.6. Nation-specific standards

Others, such as the United States (US), European Union (EU) and Japan have their specific laws, policies, and standards on labour, human rights and due diligence. Understanding these is important for the Philippines since these nations/trading blocs are among its top export markets.

European Union (EU)

The EU has released their strategic guidelines for more sustainable and competitive aquaculture for 2021-2030. Part of the guidelines work to ensure social acceptance and recognition of the value of the aquaculture industry to the EU through communication, integration into local communities, and data collection and monitoring (European Commission 2021). In terms of labour standards, the [EU labour law](#) has been in effect since 1997, although there are still no standards specific to aquaculture (European Parliament 2020a). For due diligence, the EU has been preparing [mandatory due diligence for supply chains](#) since 2020 (European Parliament 2020b), with the proposal being approved and adopted in the first quarter of 2024. Part of this due diligence is the monitoring of labour law and human rights compliance (European Commission 2024). However, there is still no specific due diligence legislation for fisheries and aquaculture.

United States (US)

Similar to the EU, the United States also does not have clear labour standards and policies specific to aquaculture (USDA 2024). Nevertheless, the US is closely monitoring labour and human rights compliance in their fisheries and seafood supply chain. In 2020, they released their [human trafficking report in the seafood supply chain](#), identifying a list of countries with high risk, in which the Philippines is included. One of the report's recommendations is to develop FAO guidance specific for fish value chain actors on labour (NOAA 2020). The Bureau of International Labour Affairs is also keen on addressing labour issues in the fisheries sector. They provide tools like "Comply Chain" for risk assessment and due diligence, and they are working on "Measurement, Awareness Raising, and Policy Engagement (MAP16)" project together with ILO to develop a handbook for labour risk identification (ILAB n.d.). In terms of due diligence, the US enforces the 19 U.S.C. 1307, which prevents goods manufactured by prohibitive forms of labour (such as child labour) from entering the US, but this is general and not specific to aquaculture (CBP 2020).

Japan

In 2020, Japan launched its [National Action Plan on Business and Human Rights for 2020-2025](#) based on the UN guiding principles that include the [Guidelines on Respecting Human Rights in Responsible Supply Chains](#) (2022). Although it is not legally binding, business enterprises engaging in business activities in Japan are encouraged to follow and implement such guidelines, regardless of the size or sector. This includes enterprises inside and outside of the country, and other related supply chain partners and suppliers. Concerning the aquaculture sector, suppliers to Japanese marine companies are also subjected to these guidelines. Under these guidelines, business enterprises are expected to formulate their human rights policy, conduct human rights due diligence, and provide remedy to adverse human rights impacts. The scope of human rights is covered in the International Bill of Human Rights and ILO Declaration on Fundamental Principles and Rights at Work (METI 2022).

2.2.7. Decent work and responsible business in trade policy

Foreign trade agreements (FTAs) enable developing countries to boost their economy by having free trade through zero or discounted tariffs on selected export commodities with prosperous nations such as the US, EU and Japan. These also promote a sustainable supply chain through labour and environmental provisions and sanctions.

The Philippines has been part of both the EU (since 2014) and US (since 2016) international trade agreements through their General System of Preference (GSP). GSP provides duty-free or zero-tariffs on selected products, including fishery products such as shrimp, for import to the EU (under [EU GSP](#)) and US (under [US GSP](#)) (DTI 2021). The Philippine trade agreement with EU was renewed and resumed on 18 March 2024 (DTI 2024b). Meanwhile, the US GSP expired in 2020 and is set for renewal, potentially in 2024. This renewal is also being pushed through by other countries covered by the US GSP (Gonzales 2024).

As part of these agreements, the beneficiary countries such as the Philippines must strictly comply and implement labour and human rights standards such as the right to organize and bargain, prohibition of child labour, anti-discrimination, and acceptable work conditions like minimum wages, hours of work and occupational safety and health standards (European Parliament and of the Council 2012; Office of the United States Trade Representative 2020).

The Philippines is also one of the 14 member economies of the Indo-Pacific Economic Framework (IPEF) for Prosperity launched by the US in 2022. The framework seeks to advance sustainable and resilient supply chain, especially for Micro, Small and Medium Enterprises (MSMEs). It has four pillars, where the second pillar is on [supply chains](#), with the IPEF supply chain agreement signed in February 2024. The agreement seeks to enhance transparency between the parties involved, diversify the supply chain by utilizing multiple suppliers, and promote labour rights. Furthermore, part of it is the establishment of the IPEF Labour Rights Advisory Board with representatives from each country. The duties of the board include inviting worker and employer organizations to ILO International Labour Conference, identifying supply chain risks and concerns, exploring opportunities for technical assistance and capacity building, and publishing annual technical reports on labour rights (US Department of Commerce 2024).

Another international partnership is the [Philippines-Japan Economic Partnership Agreement \(PJEP\)](#), which has allowed free trade between the two countries since 2008. Trade and goods exempted from duties and tariffs include goods of sea-fishing and taken by vessels from the sea (DTI n.d.). Part of the agreement is the careful consideration of adherence to local and international labour laws and standards (MOFA 2006).

The Philippines also secured two additional FTAs in 2023: the Regional Comprehensive Economic Partnership (RCEP) and a bilateral trade pact with South Korea. RCEP is considered the largest FTA in the world, with participating ASEAN member countries such as China, Japan, South Korea, Australia, and New Zealand. The RCEP entered force in the Philippines on 2 June 2023, providing tariff reductions on 15 agricultural commodities. The trade pact with South Korea is the country's third bilateral FTA (the first one is the Japan FTA and the second being the EU GSP), which entered into effect on 7 September 2023, expanding the banana export to South Korea (Crismundo 2023).

2.3. Overview of the Philippine aquaculture industry

The aquaculture subsector is a cornerstone of the Philippine fisheries sector, alongside marine capture fisheries (encompassing municipal and commercial fisheries) and inland capture fisheries (FAO 2014). Aquaculture stands out as the leading contributor to the country's fisheries production, accounting for 56 per cent of the total fisheries production in 2023 (PSA 2024a). Over the span of a five-year period (2014–2018), aquaculture has retained its status as the top contributor to Philippine fishery production, consistently yielding over 2 million metric tons annually. In 2023, Agriculture, Forestry, and Fishing (AFF) contributed 8.6 per cent to GDP. Fishing and Aquaculture contributed 11.3 per cent of Gross Value Added (GVA) of AFF (PSA 2024b).

Employment statistics further underscore the significance of aquaculture, as in 2022, the sector provided employment to 259,448 individuals, or 11.27 per cent of the 2.3 million registered individuals working in the fisheries sector (BFAR 2023). Thus, aquaculture employed approximately 0.55 per cent of 46.89 million employed persons (PSA 2023). The wider agribusiness sector was identified as a key employment generator by the Department of Labour and Employment (DOLE) JobsFit 2022 Labour Market Information Report, signifying the sector's potential to generate employment and absorb the bulk of the workforce (Aquino 2018). However, the fisheries sector remains the poorest among the other basic sectors, with a poverty incidence of 30.6 per cent in 2021 (PSA 2023).

Private ownership of aquaculture farms is common in the sector, apart from hatchery operations that are usually government-owned. Typically, aquaculture systems are operated by owners as standalone operations, often with assistance from family members. On the other hand, systems run by large-scale operators usually employ farm managers and caretakers (Olalo 2001).

Fish catches are usually landed at private, traditional, or government-operated landing centres. These government-operated fish ports are under the management of the Philippine Fisheries Development Authority (PFDA) or Local Government Units (LGUs). The aquaculture subsector predominantly uses the country's seven main fish ports for auctioning products to the domestic market (FAO 2014).

The sector is regulated by several key legislative acts and government agencies. The Philippine Fisheries Code of 1998, which falls under the jurisdiction of the Department of Agriculture (DA), includes laws related to fisheries development, management, and conservation, an emphasis on achieving food security and long-term sustainability. Within the DA, the Undersecretary for Fisheries and Aquatic Resources is responsible for overall supervision, while the Bureau of Fisheries and Aquaculture Resources (BFAR) serves as the primary agency for the management of fisheries and aquatic resources. BFAR is supported by its research arm, the National Fisheries Research and Development Institute (NFRDI) (FAO n.d.)

The [Philippine Fisheries Code](#) establishes Fisheries and Aquatic Resources Management Councils (FARMCs). These councils, including the National Fisheries and Aquatic Resources Management Council (NFARMC), municipal or city (M/CFARMC), and Integrated FARMC (IFARMC), are crucial in the preparation of fisheries development plans and the enforcement of regulations at local levels. The [Fisheries Administrative Order \(F.A.O.\) No. 196](#) details the creation and operation of these FARMCs.

Philippine aquaculture encompasses a wide array of species and culture systems (i.e., fish culture in brackish water and freshwater ponds, cages, and pens) and spans various ecosystems (i.e., freshwater, brackish water, and marine environments). Among the most cultured species in the aquaculture sector are seaweeds, milkfish ("bangus", *Chanos chanos*), tilapia, shrimp/prawns, and groupers ("lapu-lapu") (PSA 2023). However, this study will focus on shrimp and seaweed, two major aquaculture exports.

Seaweed and its derivatives stand as the second-largest export by value within the fisheries sector, boasting a value of PhP 19.03 billion (USD 349 million), or 28.8 per cent of total export value in 2022. Meanwhile, shrimp ranks 8th, with a value of PhP 1.076 billion (USD 19.74 million), or 1.6 per cent of total export value in 2022 (BFAR 2023)

Despite these achievements, the Philippine aquaculture industry has faced a downward trend in its global ranking over the past two decades. While it once contributed 5.0 per cent to the global farmed fish supply, this share plummeted to around 1.2 per cent by 2011. This decline highlights the uneven distribution of aquaculture production and the varying levels of aquaculture development among nations (FAO 2018).

Furthermore, evolving global trade policies are exerting mounting pressure on the industry to enhance its product standards. In response, the Bureau of Investments (BOI) promotes the seal of origin for selected Philippine aquaculture exports for products that comply with international standards. The country has also adopted the Hazard Analysis Critical Control Point (HACCP) system to manage food safety. Despite these efforts, the Philippines grapples with persistent challenges in accessing international markets for its fishery products (FAO 2018).

2.3.1. Shrimp industry

Shrimp and prawns are historically among the most extensively traded aquaculture products. They are mainly produced through intensive shrimp farming in regions like Latin America, East Asia, and Southeast Asia. The bulk of these products are directed towards North America, Europe, and Japan (FAO 2022).

Top species cultured in the Philippines are giant black tiger shrimp (*Penaeus monodon*) or “sugpo” and Pacific white shrimp (*Penaeus vannamei*) or “suati” (BFAR 2022b). Grow-out farms may be classified as extensive, semi-intensive, and intensive based on economic and technological differences, such as stocking density and annual production, feeding management and equipment, and biosecurity protocol. Intensive farming is more capital-intensive, requiring additional investment in items such as artificial feeds (Shang et al. 1998).

The shrimp production chain involves various stages: inputs from hatcheries and feed manufacturers, cultivation practices in ponds, harvesting techniques, processing into frozen and value-added products, and distribution to domestic and international markets. Key stakeholders include farmers, hatcheries, feed manufacturers, processors, traders, government agencies like DA-BFAR, and research institutions. Support mechanisms include training programs for farmers, financial assistance, technical services, research and development initiatives, and biosecurity regulations to ensure disease management and quality standards.

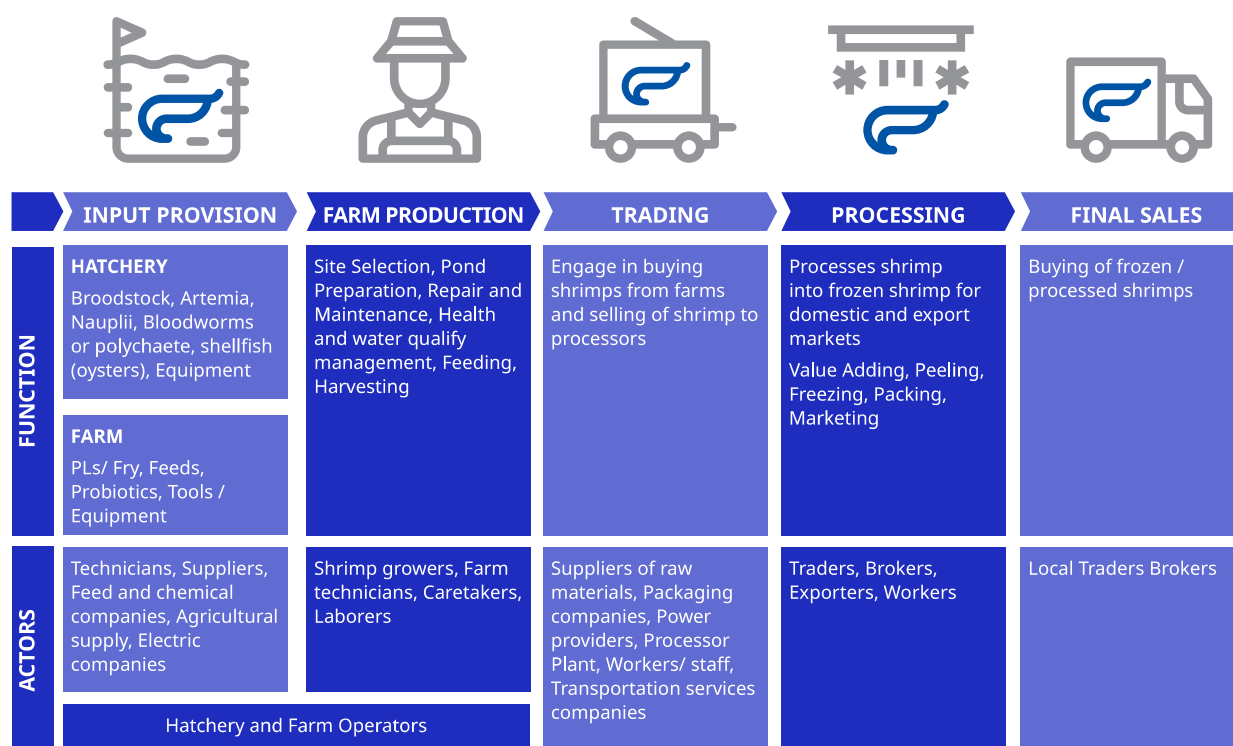
There are two marketable forms of shrimp: fresh and processed. The majority of the fresh shrimp is for the local market, while processed shrimp is usually marketed as an export product. For processed shrimp, processors either source the shrimp directly from the farmers or source them from traders who consolidate from various farmers. The latter practice is more common (BFAR 2022b). The value chain map for the Philippine processed shrimp industry, with traders in between, as per BFAR's [Philippine Shrimp Industry Roadmap 2021-2040](#), is presented in Figure 3.

The first segment is input provision, where inputs are classified into hatchery inputs and farm inputs. Hatchery refers to a land-based structure growing or culturing crustaceans for breeding and fish production. Meanwhile, farming refers to raising crustaceans where their growth is dependent on the supplied nutrients. Hatchery inputs include broodstock and artemia and their food sources constitute nauplii and bloodworms. Farm inputs commonly include fish fry, feeds, and probiotics (BFAR 2022b).

After the inputs come production, where growing and harvesting of shrimp are done. Construction, management, maintenance, and operation of shrimp farms are vital for the eventual harvest and sell-out of shrimp products (BFAR 2022b).

The role of traders varies depending on the situation. They can serve as an intermediate between farmers and processors, or as sellers/exporters if the processors source the shrimp directly from the farmers. Traders acting as an intermediate between farmers and processors is a more common scheme due to the lack of direct linkage between farmers and processors. Small-scale shrimp producers often require a middleman/trader to sell their produce to domestic regional markets (BFAR 2022b). However, traders usually dictate low buying prices, especially for small shrimps.

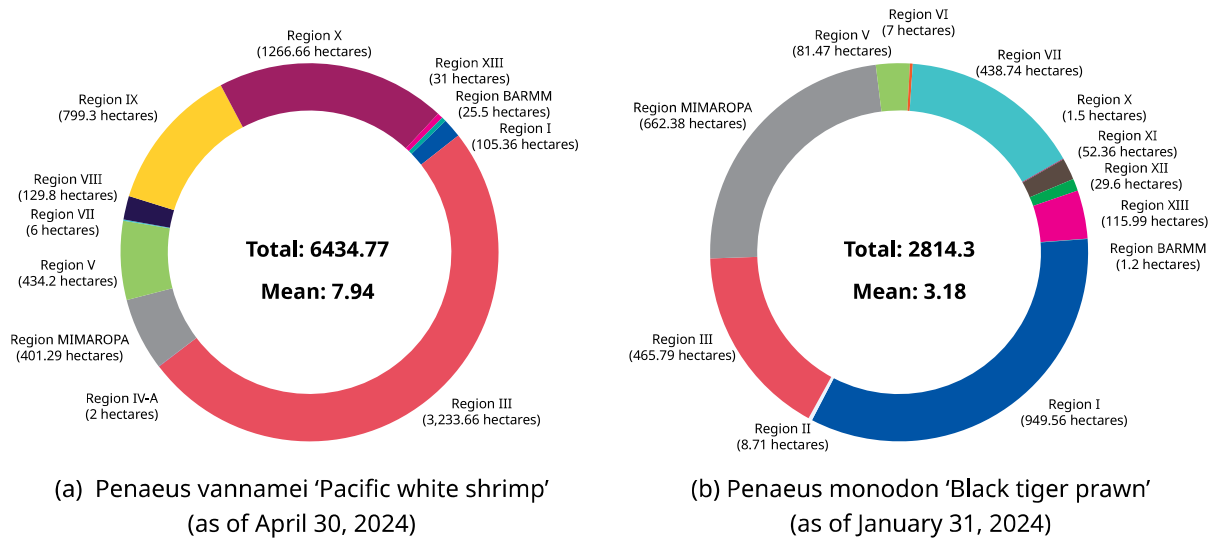
► Figure 3. Value Chain Map for Philippine Processed Shrimp for Export (based on BFAR 2022b)



BFAR publishes two series of reports monthly for the number of registered aquaculture farms. The BFAR-National Fisheries Laboratory Division ([published report](#) as of 1 June 2024) states that there are 536 registered aquaculture farms (intensive and extensive), of which 34 farms cultivate *P. monodon* and 76 farms cultivate *P. vannamei*.

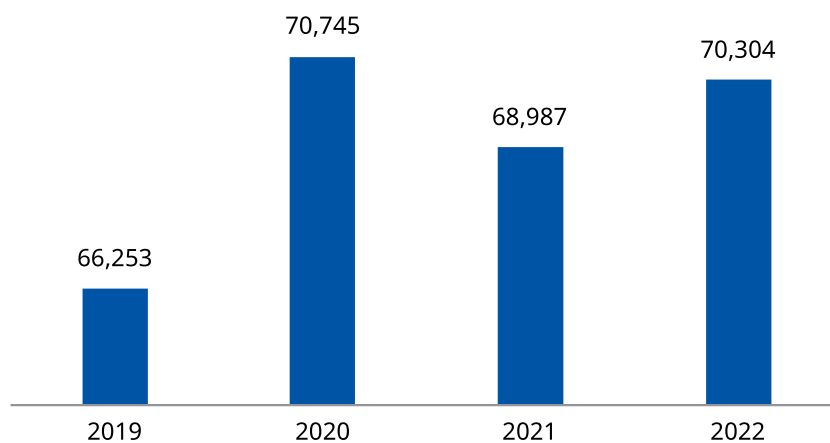
However, BFAR's National Shrimp Production Programme (NSPP) [reports](#) state that there are 905 registered *P. vannamei* extensive grow-out farms (as of 30 April 2024) and 835 registered *P. monodon* extensive grow-out farms is 835 (as of 31 January 2024). The reports do not contain information on intensive shrimp farms. The size of extensive farms cultivating *P. vannamei* ranges from 0.0012 to 60 ha., on average 3.18 ha and most farms being at 1 ha. For extensive farms cultivating *P. monodon*, the smallest farm is at 0.00040 ha. and the largest being 635 ha. On average, the size of *P. monodon* farms is 7.94 ha. and most farms are 1 ha. The top regions with the largest productive areas for *P. vannamei* are Region I, MIMAROPA, and Region III, while for *P. monodon* are Region III, X and IX.

► **Figure 4. Productive Area (in hectares) of Registered Extensive Aquaculture Farms per Region cultivating (a) *Penaeus vannamei* 'Pacific white shrimp' and (b) *Penaeus monodon* 'Black tiger prawn' (BFAR 2024)**

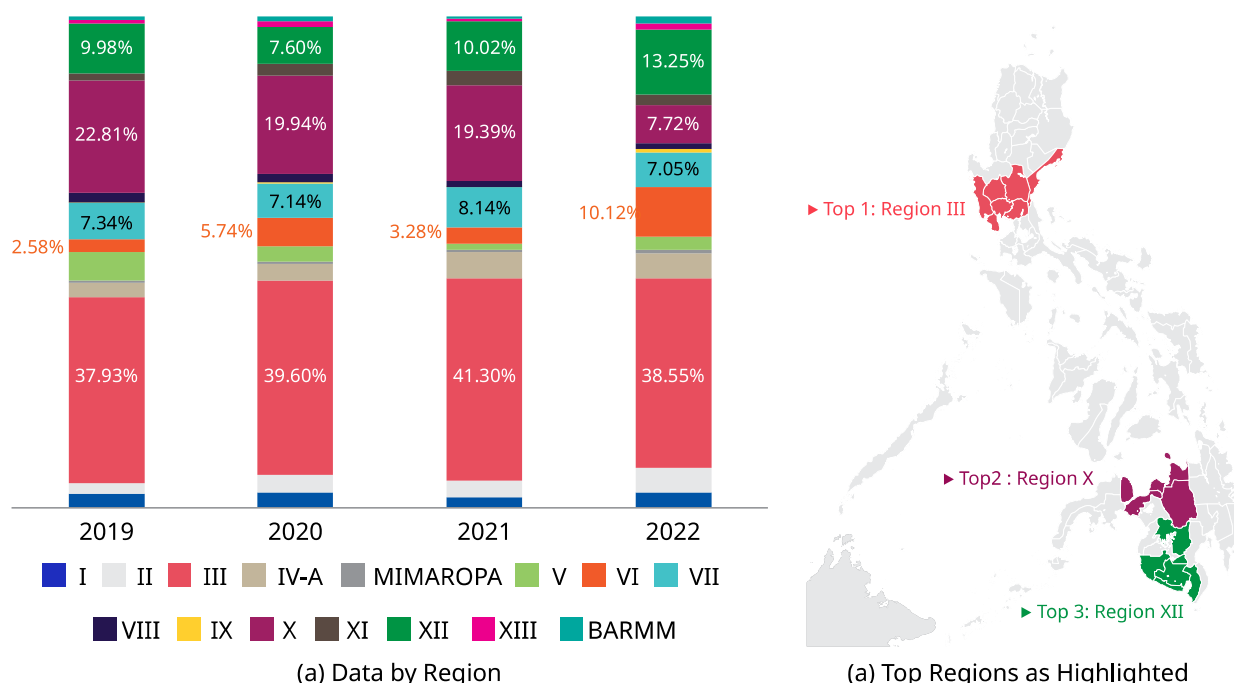


The Philippines' total shrimp production volume (in MT) from 2019 to 2022 is illustrated in Figure 5, as per BFAR's Philippine Fisheries Profile for 2019-2022 based from the PSA data (BFAR 2020-2023). The shrimp production volume experienced a surge from 2019 to 2020, where it peaked in 2020. Region III consistently had the highest share of total shrimp in 2019 to 2022, followed by Region X and Region XII (Figure 6).

► **Figure 5. Philippines Total Shrimp Production Volume (in MT) 2019-2022 (BFAR 2020-2023)**



► **Figure 6. Philippines Total Shrimp Production Volume (a) Data by Region (in % contribution) 2019-2022 and (b) Top Regions as Highlighted in Map (BFAR 2020-2023)**



Apart from production volume, shrimp farms fall under the purview of DOLE's OSHS investigation for compliance in workplaces, conducted by the Bureau of Working Conditions (BWC). Results of OSHS investigation in 2022 and 2023 for the whole aquaculture sector is summarized in Table 5 and for prawn culture in Table 6 (DOLE BWC 2023). No data in the table means that no inspections were conducted for that region or year. It is worth noting that compliance rate changes with the number of establishments, and thus may decrease as more are inspected.

► **Table 8. OSHS Compliance Rates for Aquaculture per Region 2022-2023 (DOLE BWC 2023)**

Region:	2022				2023			
	# of Establishments:	# of Workers:	GLS:	OSHS:	# of Establishments:	# of Workers:	GLS:	OSHS:
PH (Total)	40	3683	87.50%	75%	29	1317	86.21%	72.41%
NCR	5	61	100%	60%	2	33	100%	0%
I	1	66	0%	100%	-	-	0%	-
II	4	529	100%	75%	3	259	100%	100%
III	3	73	100%	100%	1	44	100%	100%
IVB	1	181	100%	0%	-	-	-	-
VI	1	50	0%	0%	-	-	-	-
VII	2	90	50%	50%	3	138	100%	0%
VIII	1	47	0%	0	-	-	-	-
IX	2	105	100%	100%	1	36	100%	100%
XI	2	79	100%	100%	2	77	100%	100%
XII	18	2402	94.44%	83.33%	17	730	94.12%	82.35%

2.3.2. Seaweed industry

Seaweed is a significant aquaculture product, contributing almost 70 per cent of the total production from aquaculture and aquatic plants. Producers mainly farm *Kappaphycus alvarezii*, *Kappaphycus striatum* (cottonii), and *Eucheuma denticulatum* (spinosum) as they are used for carrageenan production. Seaweed has consistently been among the top three fisheries exports of the country. It is exported as raw dried seaweed (RDS), semi-refined carrageenan (SRC), and refined carrageenan (RC) (BFAR 2022a).

Seaweed farming techniques are categorized into shallow water and deep-water farming. Shallow water farming, which utilizes stake or bottom methods, is the most straightforward and cost-effective approach. However, it is more vulnerable to “ice-ice” disease and grazing by small pelagic fishes. On the other hand, deep water farming involves methods such as monoline, raft, and spider web systems. This generally offers higher production capacity, yields, and produces higher value seaweed species (FAO 2014).

The seaweed production chain involves several stages: inputs like seedlings and farm equipment, cultivation practices, harvesting techniques, processing into products such as dried seaweed and carrageenan, and distribution to local and international markets. Key stakeholders include farmers, cooperatives, processors, traders, government agencies like DA-BFAR, and research institutions. Support mechanisms for the industry encompass training programs, financial assistance, technical services, research and development initiatives, and regulatory policies to ensure quality control and export standards.

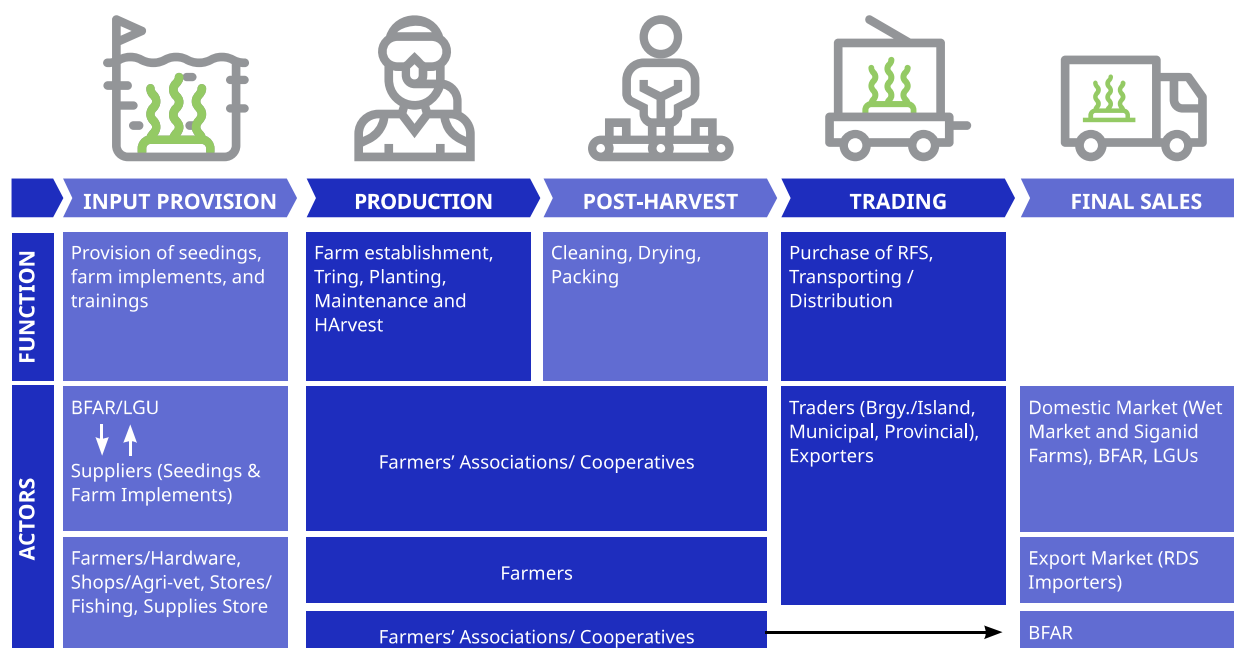
Seaweeds for export are usually in the form of raw dried seaweed or processed as carrageenan. The value chain map for the Philippine dried seaweed, as per BFAR's Philippine-Seaweed-Industry-Roadmap 2022-2025, is presented in Figure 7, while for semi-refined and refined carrageenan in Figure 8.

The value chain of raw dried seaweed starts with input provision, where the necessary input materials such as seedlings are provided by the government and/or bought from/by farmers themselves. Next is production, where seaweed farming is carried out. When the seaweeds have fully grown, it can be harvested, thus achieving one full cycle. Harvested seaweeds are then brought to buyers/distributors, where farmers can either sell them to local traders, or directly sell it to the local wet market, or sell it to seedlings contractors, which will then be marketed to BFAR/LGUs for distribution of propagules to other farmers (BFAR 2022a).

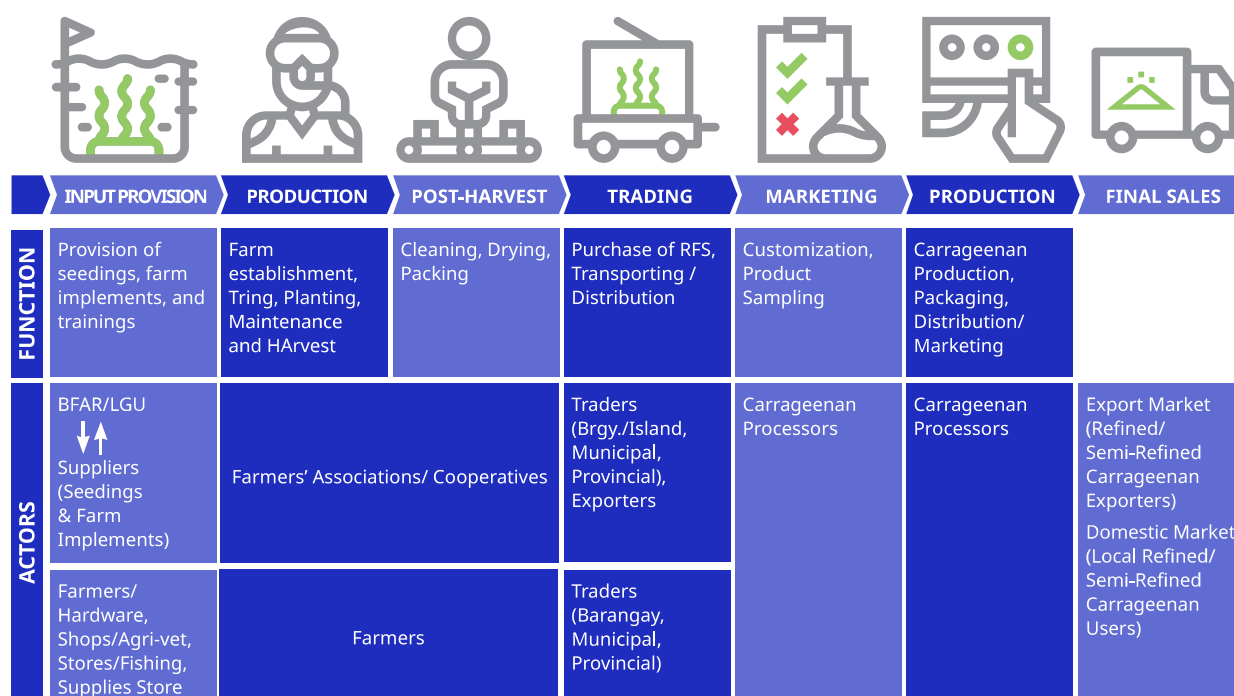
The post-harvest stage includes drying, where moisture content of the final product is an important factor for determining its quality. Although the additional drying step entails higher cost, it is compensated by a higher buying price per kg and being more exportable to foreign markets. Philippine dried seaweed is an attractive export product, sought after by other countries due to its quality, and so traders and exporters play a valuable role in its value chain (BFAR 2022a).

For semi-refined and refined carrageenan, additional steps are present in its value chain map, namely marketing and processing. Traders consolidate the harvests of small-scale seaweed farmers for transport and selling to the processors. They may also perform post-harvest drying. Processors turn the seaweed into carrageenan, a common food additive used as a thickener and emulsifier (BFAR 2022a). The demand for carrageenan is dominated by global markets, although local demand for food processing is also present.

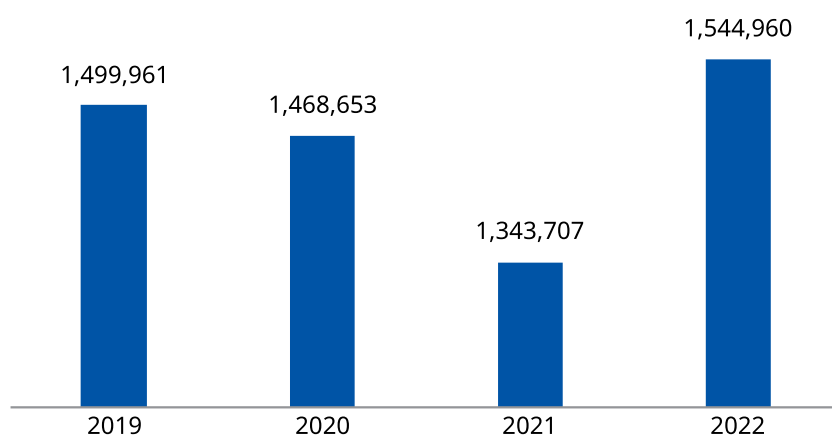
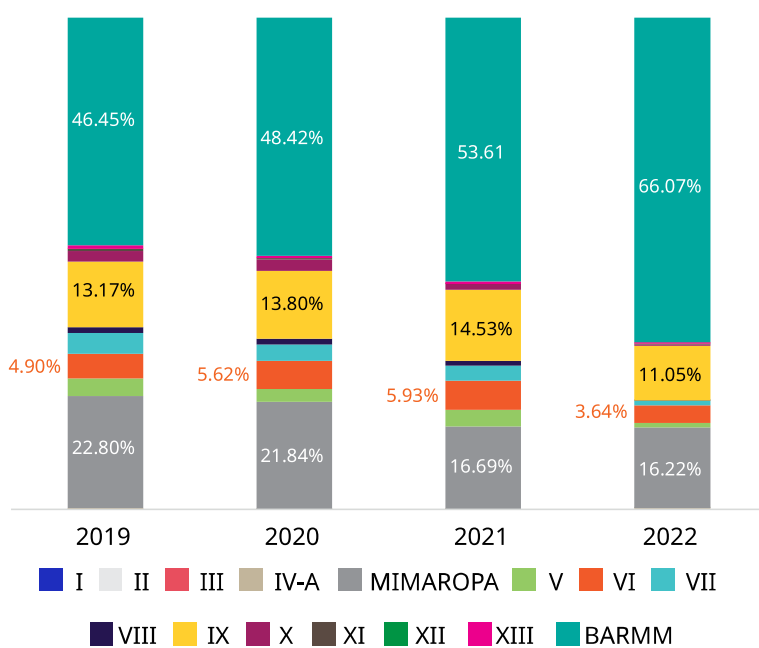
► Figure 7. Value Chain Map for Philippine Dry Seaweed for Export (based on BFAR 2022a)



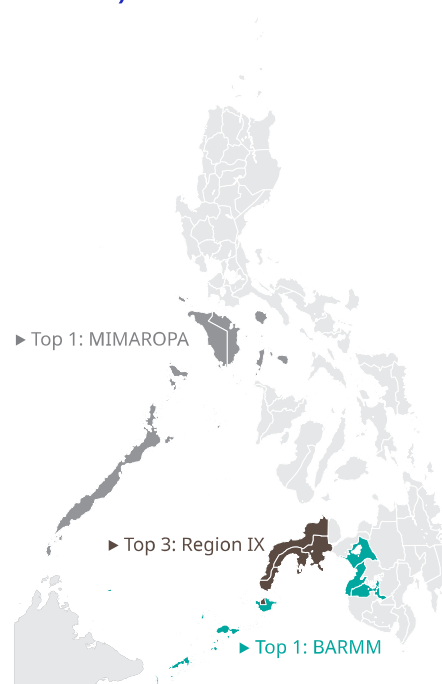
► Figure 8. Value Chain Map for Philippine Semi-refined and Refined Carrageenan for Export (based on BFAR 2022a)



Philippines' total seaweed production volume ranged from 1.34 to 1.54 million MT for the years 2019 to 2022, the highest recorded being in 2023 (Figure 9). Among the Philippine Regions, BARMM has produced the largest seaweed volume, followed by MIMAROPA then by Region IX, and this ranking was consistent from 2019 to 2022 (Figure 10).

► **Figure 9. Philippines Total Seaweed Production Volume (in MT) 2019-2022 (BFAR 2020-2023)**► **Figure 10. Philippines Total Seaweed Production Volume (a) Data by Region (in % contribution) 2019-2022 and (b) Top Regions as Highlighted in Map (BFAR 2020-2023)**

(a) Data by Region



(a) Top Regions as Highlighted

2.3.3. Contribution of shrimp and seaweed to Philippines' total fisheries export value

From 2019 to 2022, seaweeds generated 19-29 per cent of overall Philippine fisheries export value, maintaining their second place ranking out of the total fisheries exports (Figure 11). The seaweed export value also increased by almost 40 per cent from 2019 to 2022. In comparison, shrimp contribution declined, from contributing 4.0 per cent in 2019 down to 2.0 per cent in 2020 to 2022, moving from 4th down to 8th in the list of top contributors. The decline in the export value of shrimp is more than 50 per cent in 2022 relative to 2019.

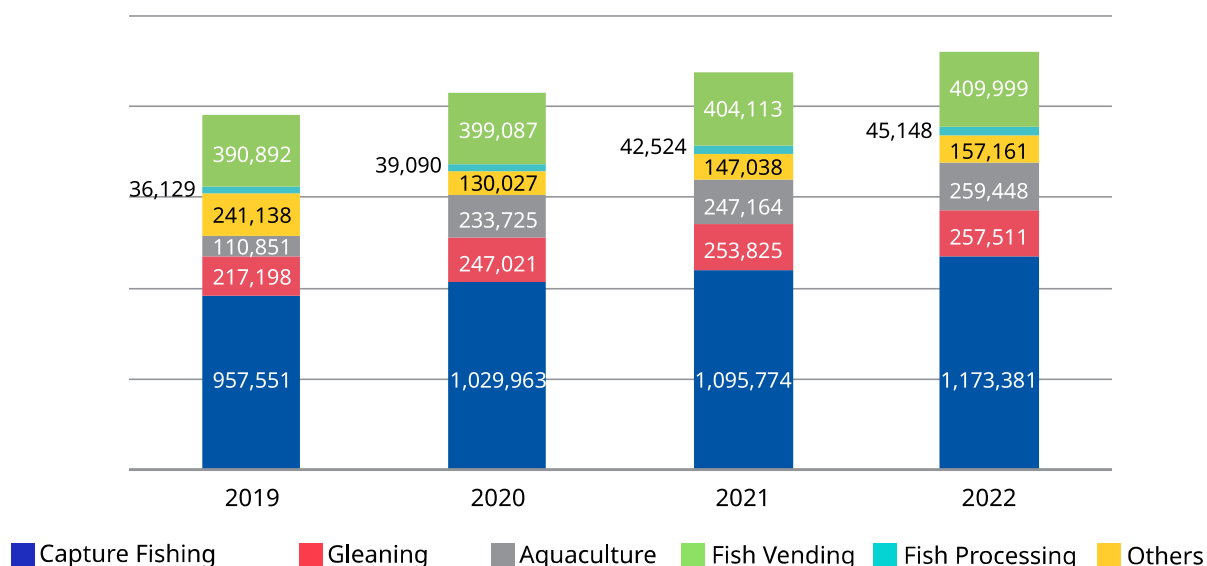
► **Figure 11. Export Value ('000 USD) of Shrimp and Seaweed in the Philippines Total Fisheries Export 2019-2022**



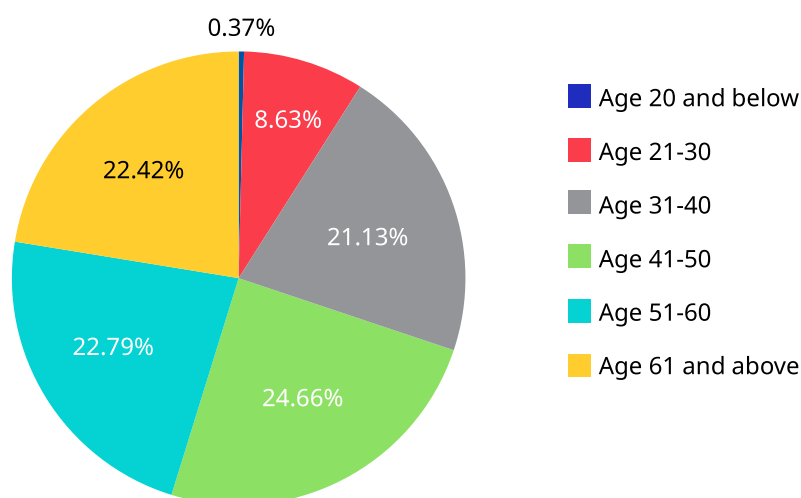
2.3.4. The aquaculture labour force

The total number of Registered Fisherfolk engaged in Fishing Activities from 2019 to 2022 is shown in Figure 12, taken from BFAR's Philippine Fisheries Profile 2019-2022, which is based on the BFAR Fish-R database. In the aquaculture sector, the number of fisherfolk almost doubled from 2019 to 2020, and steadily increased until 2022. Of the total fisheries, the percentage of fisherfolk in the aquaculture sector moderately increased from 2019 to 2022, garnering a percentage of 6.0 per cent in 2019 to 11 per cent in 2020-2022. Fish Processing also experienced an increase from 2019 to 2022, with a steady share of 2.0 per cent in all the years out of the total fisheries. Workers in the sector are generally older, with 69.87 per cent of registered fisherfolk in 2022 being aged 41 and older. Only 9.0 per cent of registered fisherfolk are young (aged 30 and below) (Figure 13).

► **Figure 12. Philippines Number of Registered Fisherfolk engaged in Fishing Activities 2019-2022 (BFAR 2020-2023)**

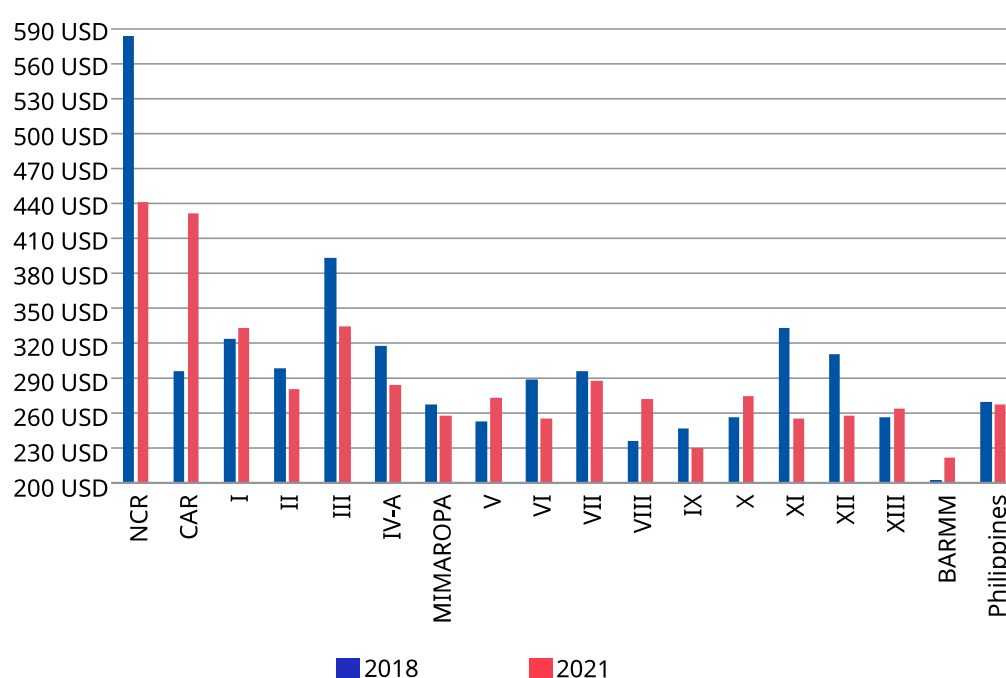


► **Figure 13. Distribution of Fisherfolk by Age Bracket, 2022 (BFAR 2023)**



The Philippine average monthly income for those engaged in the fisheries sector is PhP 15,707.38 (268.82 USD⁵) in 2018 and PhP 15,617.50 (267.29 USD) in 2021, and the corresponding incomes per region is illustrated in Figure 14. The incomes reported here cover the whole fisheries sector (capture fishing, gleaning, aquaculture, fish vending, fish processing, and other related industries). Majority of the regions experienced a decline in the average monthly income from 2018 to 2021, at about 3-24 per cent lower. While some experienced an increase, such as CAR, Region I, V, VIII, X, XIII, and BARMM. The highest reported incomes are for NCR, while the lowest is for BARMM. It is worth noting that commercial fishing operators are mostly concentrated in the NCR (BFAR 2022), and that the minimum wage rates vary per region, with NCR having the highest rates (DOLE NWPC 2023).

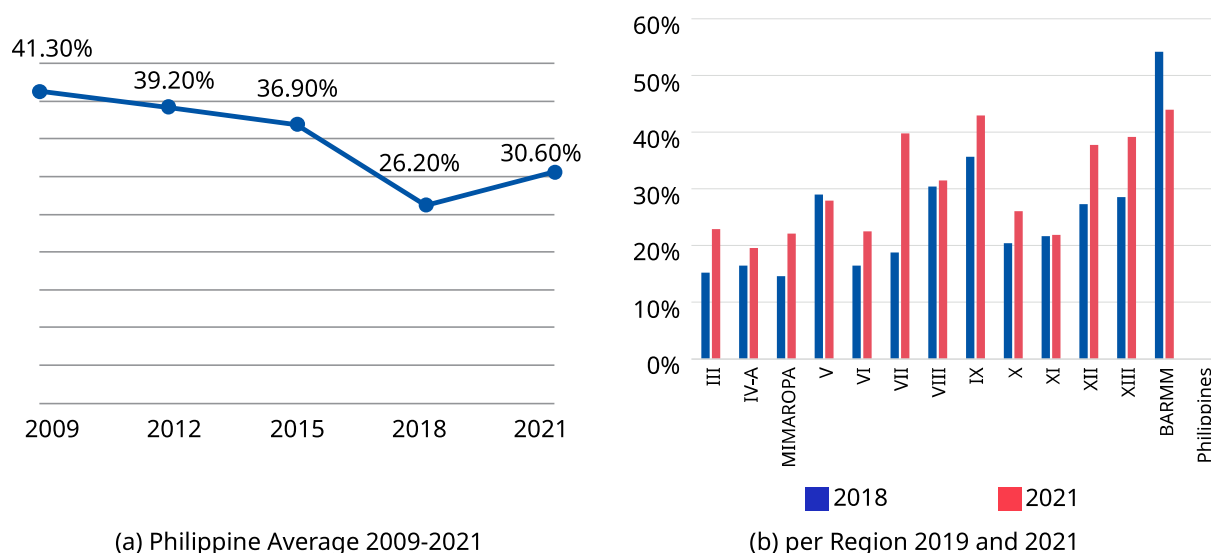
► **Figure 14. Average Monthly Family Income (in USD) per Region whose Family Head is engaged in the Fisheries Sector 2018 and 2021 (BFAR 2021; 2022)**



The rate of Philippine poverty incidence among fisherfolk has continuously declined from 2009 to 2018 (Figure 15a). However, the rate increased in 2021 relative to 2018. The highest recorded poverty incidence is in BARMM, followed by Region IX, for both 2018 and 2021 (Figure 15b). Almost all regions experienced an increased rate of poverty incidence in 2021 from 2018 except Region V and BARMM. The fisherfolk remained the poorest, or a close second next to farmers, among the basic sectors in the Philippines for all the years 2009-2021 (BFAR 2022).

5 Conversion used (as of July 22, 2024): 1 USD = PhP 58.43 based on XE.com

► **Figure 15. Rate of Poverty Incidence among fisherfolk (a) Philippine Average 2009-2021 and (b) per Region in 2019 and 2021**



The Department of Trade and Industry (DTI) registered about 200,000 fisherfolk households or approximately one million individuals as being dependent on seaweed culture as an alternative source of livelihood. Apart from this, there are about 170,950 related jobs supported by the seaweed sector (BFAR 2022).

Seaweed farming is typically a family-based business, with all members of the family assisting on the business in various capacities. Seaweed farming has been the backbone of the source of living for thousands of people in the marginal sector of Western Mindanao (Region IX), with around 35,000 farmers supplying livelihood for over 175,000 people (Ramirez et. Al. 2020). Zamboanga Peninsula and Basilan Province's seacoast is a seaweed-producing area of 30 municipalities and four cities that culture *K. cottonii* and *K. spinosum*. The seaweed farmers' responsibility is to manage the entire production process, from sourcing and preparing planting materials to production monitoring and post-harvest labour (Ramirez et al. 2020).

Women (and children) perform 60 per cent of all farming duties, while men do the planting, cleaning of farm areas, and harvesting tasks. Similarly, women and men play distinct roles in the seaweed value chain. Women have duties in the production stage, such as pre-planting or cutting and tying seaweed planting materials, and are typically home-based, with hired women paid a fixed rate based on agreed quantity of work output. They are also active in post-harvest chores such as removing non-seaweed debris and helping to dry the seaweed. On the other hand, locals think it is a man's obligation to perform physical labour such as transporting linked rope lines filled with planting supplies to growing places, harvesting mature plants, and using boats. They also transport and market dried and packaged seaweed to consumers. In addition, they also differ in work hours as women slightly work fewer hours than men during production stage (Ramirez et al. 2020). Women get paid for their jobs, except for employment at the production stage. Paying for seaweed goods sold by the husband farmer benefits the entire family, with the wife regarded as a contributor and beneficiary of the income (Ramirez et al. 2020). On challenges, farmer's poor farming practices, high seaweed disease incidence, water contamination, product adulteration, and unfair trading practices contributed to low productivity that led to other traders deducting 5.0 per cent of the total volume transacted as a shrinkage allowance for low-quality seaweed (Ramirez et al. 2020).

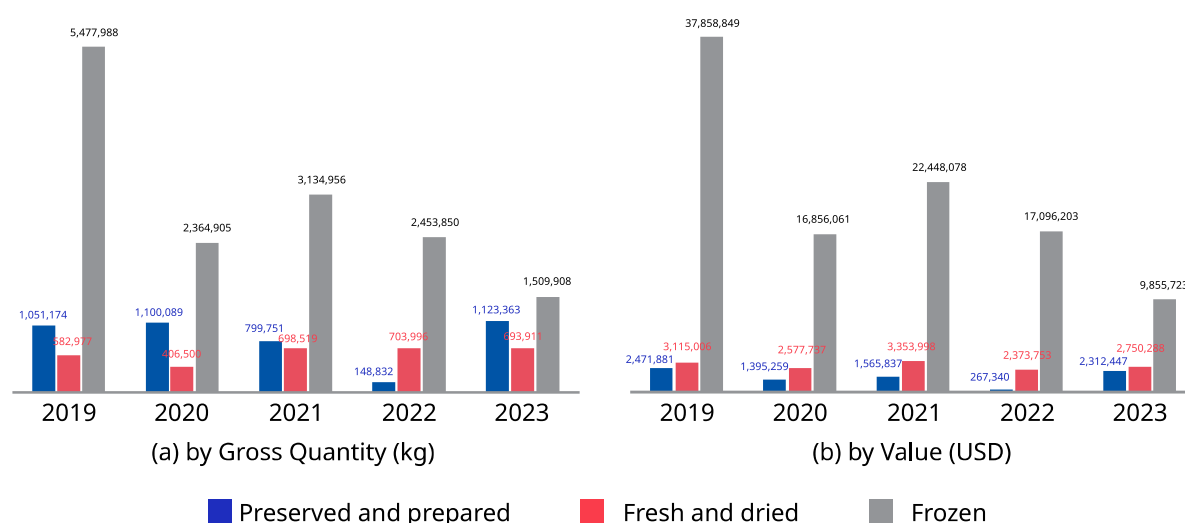
Other statistical data on labour include the Philippine Statistic Authority's (PSA) [Labor Force Survey](#), with decent work at the heart of it, as part of the country's efforts in implementing the Decent Work Agenda labour and employment planning and development. Its publication, the [Decent Work Statistics](#), include data on years 1995-2018 and includes the fisheries as one of the specific sectors in some of their data (PSA 2019).

2.4. Aquaculture exports from the Philippines

2.4.1. Shrimp exports

As one of the Philippines' main exports, shrimp is vital to the country's export landscape. The figures in this section, based on the most recent data from DTI (2024a), provide useful insights into the trends of shrimp exports from 2019 to 2023. DTI categorizes shrimp exports as either frozen, fresh and dried, and preserved and prepared shrimp. Of the three shrimp export categories, frozen shrimp has the largest export quantity by gross weight (Figure 16a) and consequently the highest export value (Figure 16b). Trends in export value are related to that of gross quantity.

► **Figure 16. Philippines National Shrimp Export 2019-2023 by (a) Gross Quantity (kg) and (b) Export Value (USD) (DTI 2024a)**



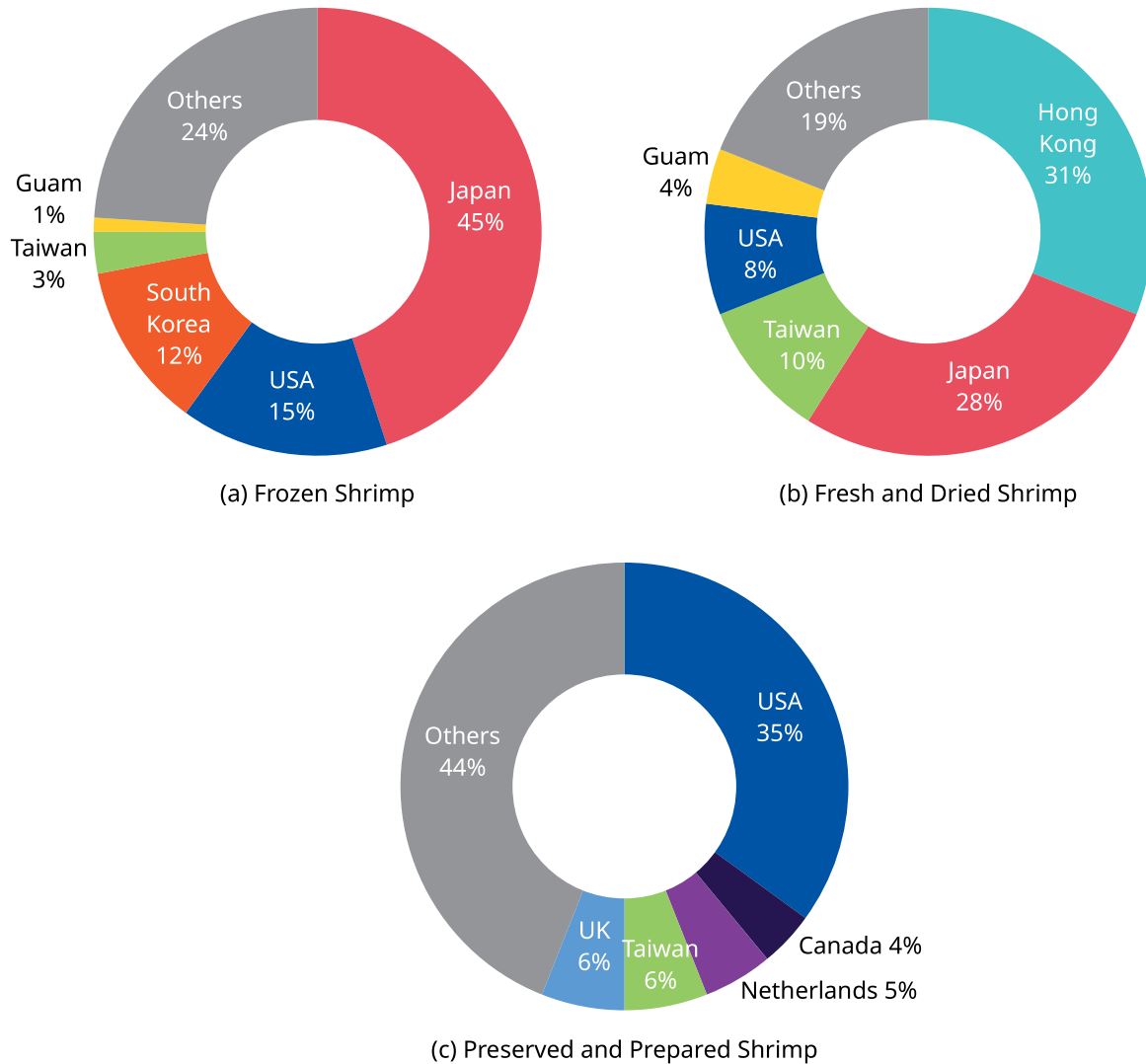
In terms of export value, values for 2023 are lower compared to 2019 for all shrimp categories, with frozen shrimp experiencing the most decline, by almost 30 per cent (Figure 17). The export value for fresh and dried shrimp fluctuated between 2.58 and 3.53 million USD. Preserved and prepared shrimp has experienced a drastic decline in export value in 2022 (by about 90 per cent) but has recovered in 2023.

► **Figure 17. Philippines National Export Value Trend 2019-2023 for (a) Frozen Shrimp, (b) Fresh Shrimp and (c) Preserved and Prepared Shrimp (DTI 2024a)**



Looking into the top Philippine export markets of shrimp in terms of total export value for 2019-2023 (Figure 18), Japan is among the top five for both frozen shrimp (as #1) and fresh and dried shrimp (#2). Hong Kong is the Philippines' top market for fresh and dried shrimp. Meanwhile, the United States is among the top five in all three categories, being the top market for preserved and prepared shrimp. Top export markets for frozen shrimp and fresh and dried shrimp are mostly Asian countries like Japan, Hong Kong, South Korea, and Taiwan, while preserved and prepared shrimp are exported to the United States and EU.

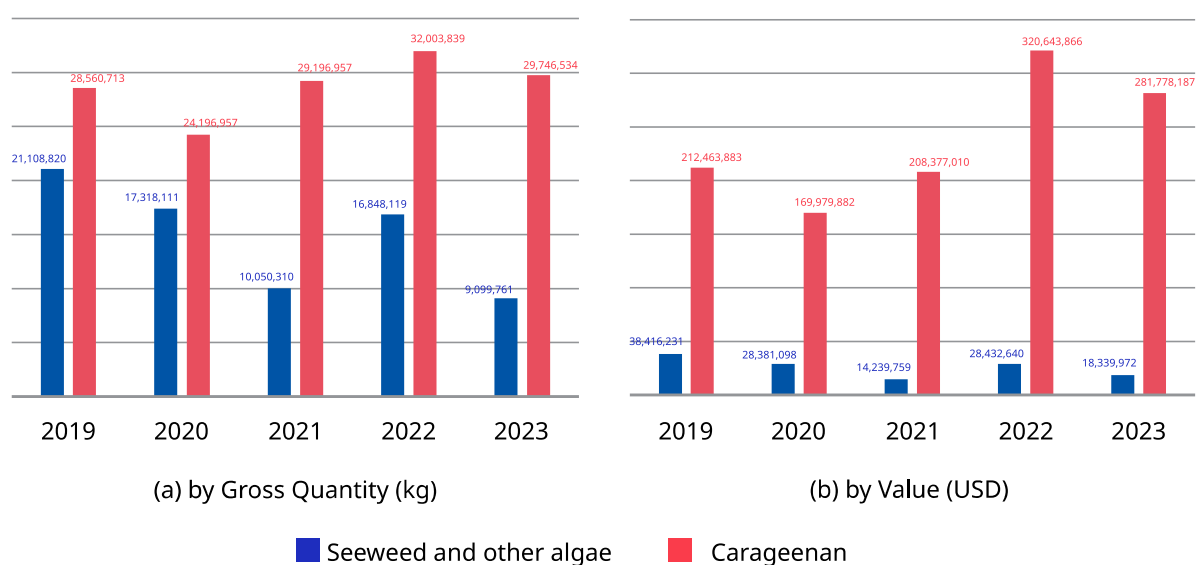
► **Figure 18. Top 5 Philippines Export Markets 2019-2023 for (a) Frozen Shrimp, (b) Fresh and Dried Shrimp, and (c) Prepared and Preserved Shrimp (DTI 2024a),**



2.4.2. Seaweed exports

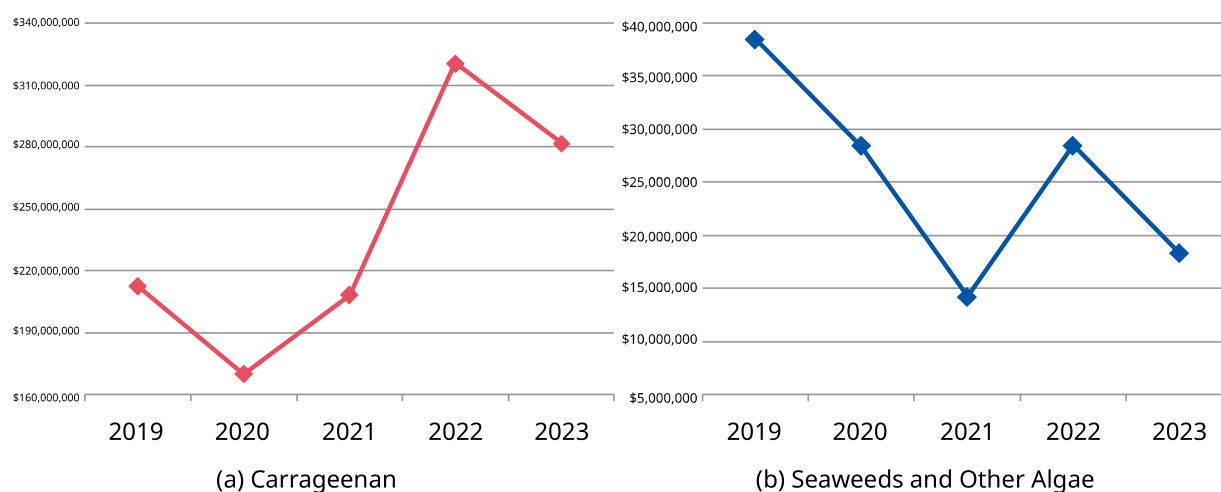
DTI categorized seaweed export into two categories: carrageenan, and seaweeds and other algae. In terms of both export gross quantity and value, carrageenan dominates the export market for seaweed (Figure 19). It also has a higher price per kg compared to seaweeds and other algae. The export value for carrageenan peaked in 2022, being about 50 per cent higher compared to its 2019 value.

► **Figure 19. Philippines National Seaweed Export 2019-2023 by (a) Gross Quantity (kg) and (b) Export Value (USD) (DTI 2024a)**



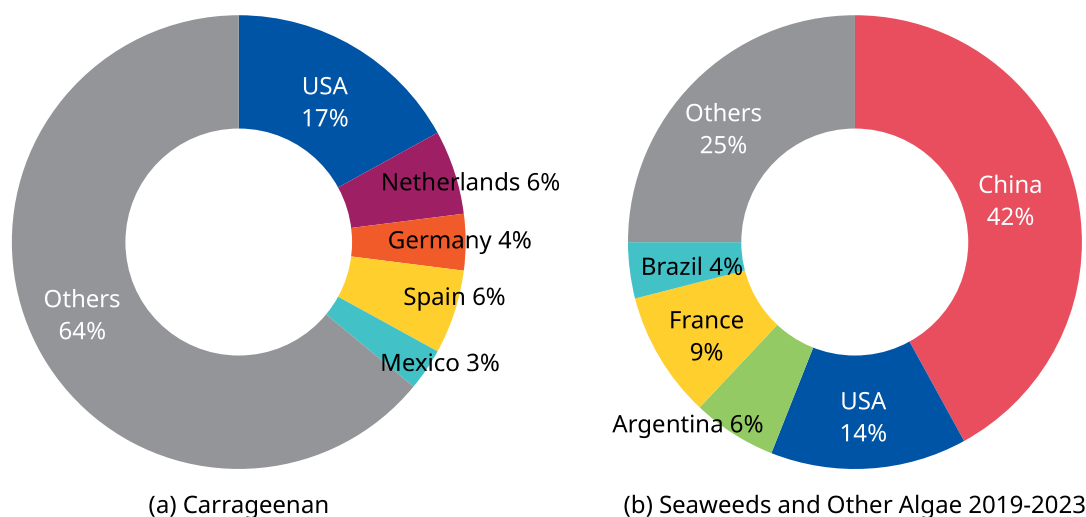
The export value for carrageenan has increased relative to 2019, peaking in 2022 being almost 94 per cent higher (Figure 20). For seaweeds and other algae, the trend is opposite, where the export value has decreased from 2019, having the largest decline in 2021 by almost 62 per cent.

► **Figure 20. Philippines National Export Value Trend 2019-2023 for (a) Carrageenan and (b) Seaweeds and Other Algae (DTI 2024a)**



The Philippine seaweed export market, as shown in Figure 21, is dominated by the US and EU in terms of total export value for 2019-2023, with the US being the top market for carrageenan and second for seaweeds and other algae. China stood as the highest export market for seaweeds and other algae. Chinese processors import raw dried seaweed from the Philippines and other countries for processing into carrageenan (BFAR 2022).

► **Figure 21. Top 5 Philippines Export Markets 2019-2023 for (a) Carrageenan and (b) Seaweeds and Other Algae (DTI 2024a)**



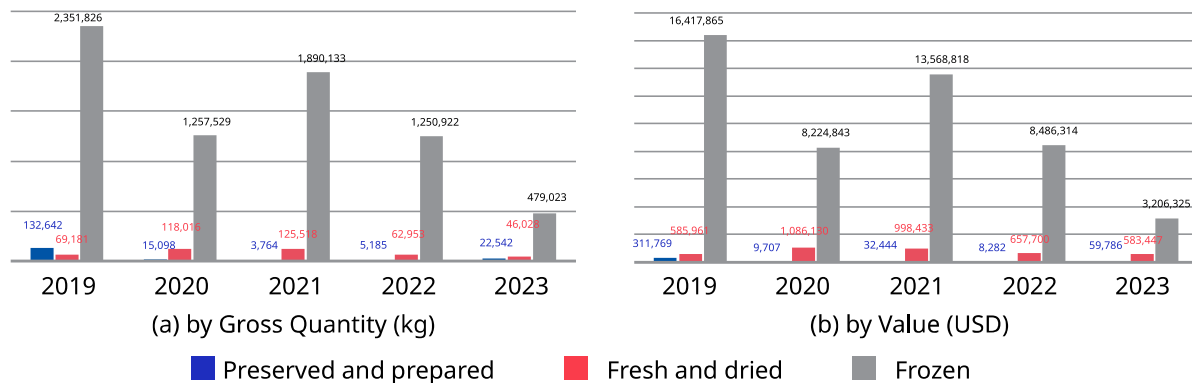
2.4.3. Aquaculture exports to Japan

Japan is one of the leading export destinations for Philippine aquaculture products, including shrimp and seaweed. More broadly, Japan is a major global consumer of aquaculture-derived seafood, and its multinational food corporations play a significant role in international seafood supply chains. Recognizing this, the RISSC project and this research are specifically designed to enhance supply chain resilience within ASEAN and Japan. However, as the Philippines also exports aquaculture products to other key markets like North America and Europe, the results of this research have wider relevance and applicability beyond Japan.

Data on the Philippine shrimp and seaweed export to Japan for 2019 to 2023, as provided by DTI (2024), are illustrated in Figures 22-25.

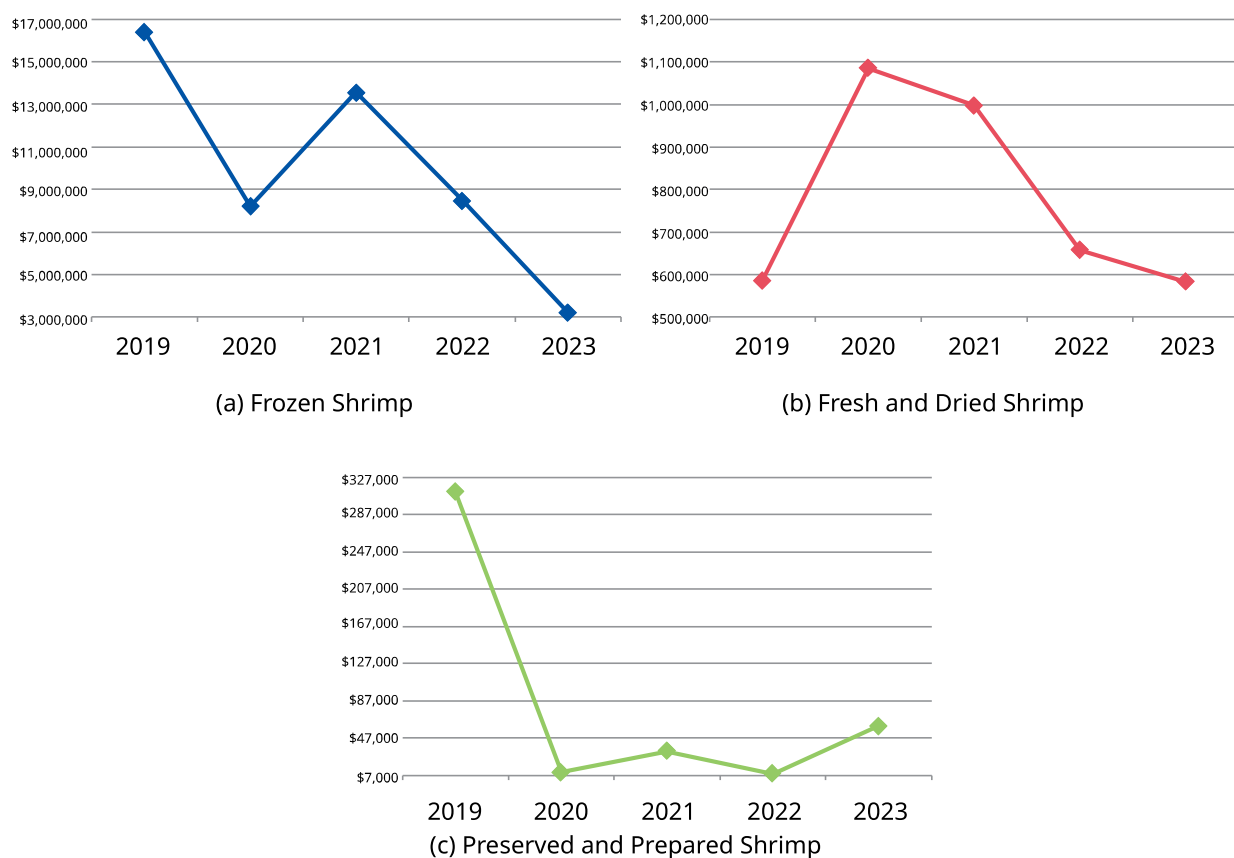
The Philippine's frozen shrimp exports to Japan decreased by half in 2020 and continues to decline relative to 2019, reaching a decline of about 80 per cent in 2023 (Figure 22). The same decline is observed for preserved and prepared shrimp, reaching a minimum in 2022 (97 per cent lower than 2019 in terms of export value). For fresh and dried shrimp, the export value almost doubled in 2020 and 2021 from 2019, but closely reverted to its 2019 value for 2022 and 2023. This decline in shrimp exports is attributed to a drop in production caused by disease outbreaks, particularly due to the White Spot Syndrome Virus, which has led to high shrimp mortality and substantial economic losses. Other factors include low production yield, high broodstock costs for *P. vannamei* and *P. monodon* (PCAARRD 2023).

► **Figure 22. Philippines Shrimp Export to Japan 2019-2023 by (a) Gross Quantity (kg) and (b) Value (USD) (DTI 2024a)**



From a high of 16.4 million USD in 2019 to a low of 3.2 million USD in 2023, frozen shrimp export to Japan has experienced a linear decline especially in the years 2021 to 2023 based on Figure 23a. The same trend is realized for frozen shrimp when compared to that of the national trend (Figure 17a). The export value of preserved and prepared shrimp also experienced a heavy decline since 2019 without experiencing any significant recovery, from about 312,000 USD in 2019 to about 60,000 USD in 2023 (Figure 23c). Among the three shrimp categories, only the fresh and dried shrimp experienced a peak relative to 2019, which occurred in 2020 at 8.2 million USD (Figure 23b).

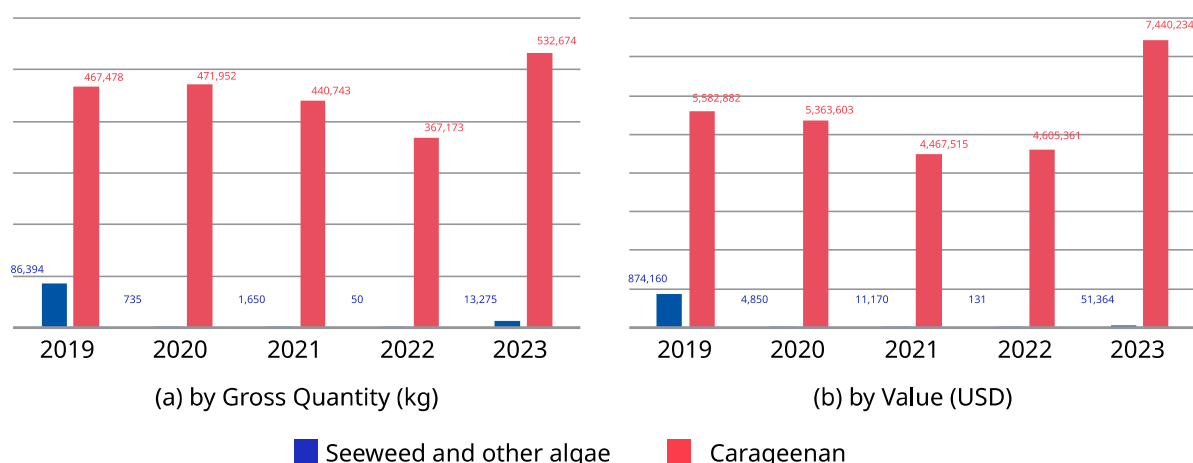
► **Figure 23. Philippines Export to Japan Value Trend 2019-2023 for (a) Frozen Shrimp, (b) Fresh Shrimp and (c) Preserved and Prepared Shrimp (DTI 2024a)**



These declines in shrimp exports to Japan are in line with the decline in total shrimp exports (Figure 16).

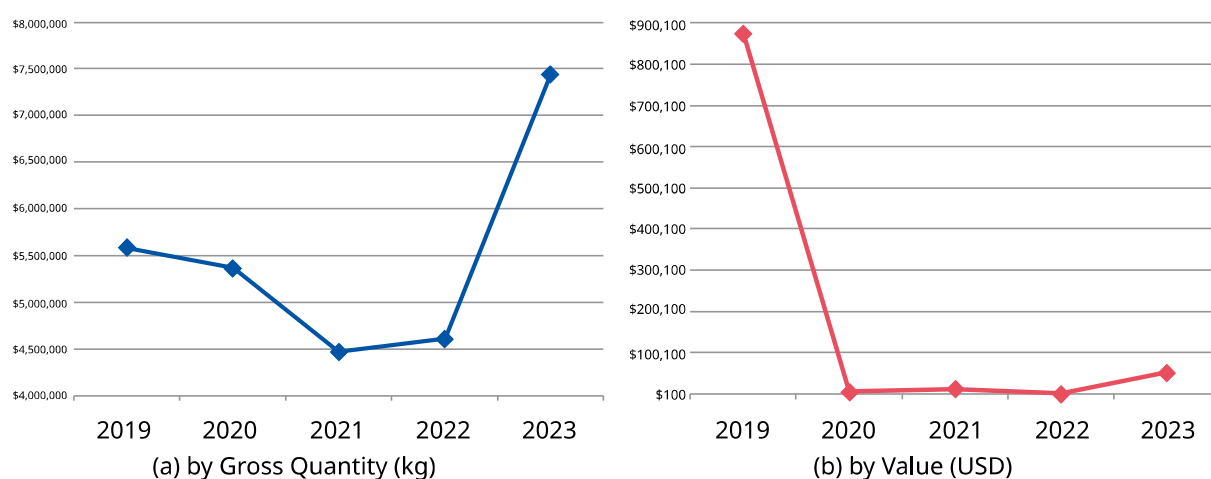
Looking into the Philippine seaweed export to Japan in Figure 24, carrageenan remains the most exported product, with export value being significantly larger compared to seaweeds and other algae for 2019 to 2023. The export quantity of seaweeds and other algae reached a low of 50 kg (131 USD in value) in 2022, while that of the carrageenan fluctuates moderately.

► **Figure 24. Philippines Seaweed Export to Japan 2019-2023 by (a) Gross Quantity (kg) and (b) Value (USD) (DTI 2024a)**

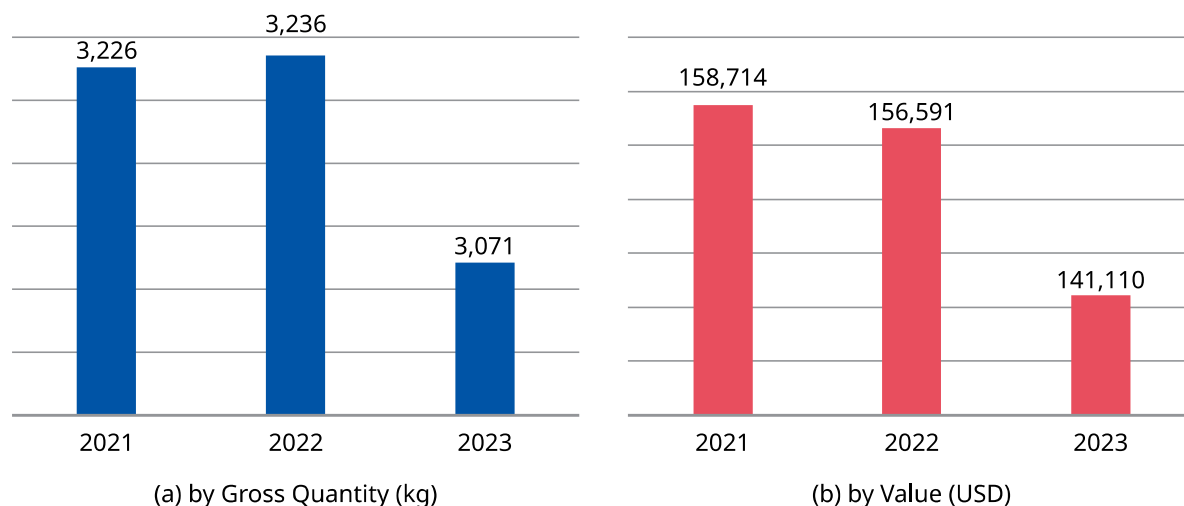


Philippine carrageenan export value declined in 2020 to 2022 from 2019, but sharply increased in 2023 (Figure 25). This trend is not the same with the national export value of carrageenan. Nevertheless, both exports to Japan and the national export value was higher in 2023 compared to 2019. For seaweeds and other algae, the export value to Japan sharply declined in 2020 to 2023 from 2019.

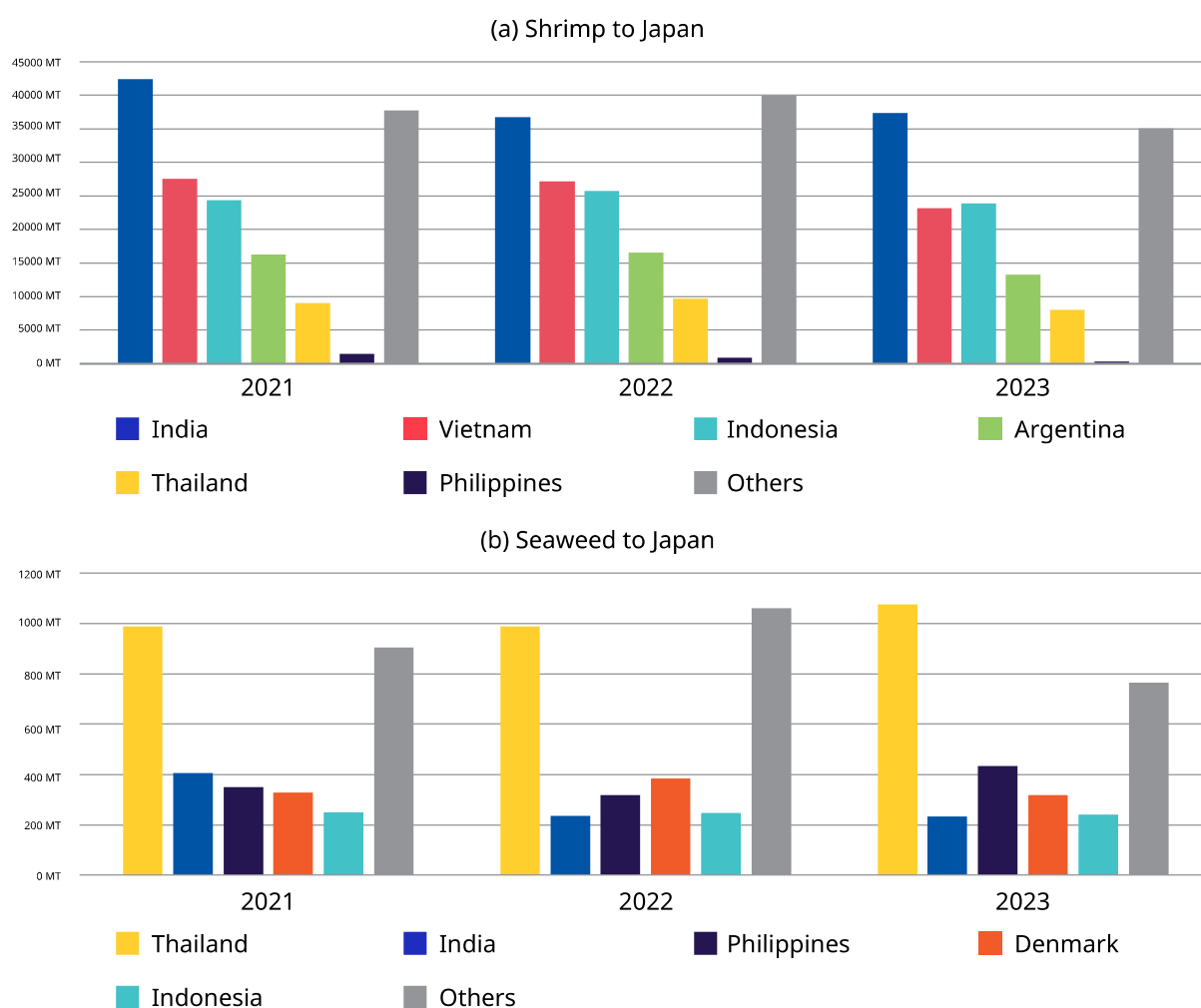
► **Figure 25. Philippines Export to Japan Value Trend 2019-2023 for (a) Carrageenan and (b) Seaweeds and Other Algae (DTI 2024a)**



► **Figure 26. Japan's total importation (in MT) of (a) shrimp and (b) seaweed for 2021-2023 (Ministry of Trade Japan, 2024).**



► **Figure 27. Japan's top sources of imported (a) shrimp and (b) seaweed for 2021-2023 (Ministry of Trade Japan, 2024).**



2.4.4. Corporate responsibility initiatives in the seafood industry

In response to growing pressure from consumers, investors, and regulators, the global seafood industry has prioritized responsible practices and human rights. Companies have adopted international standards, such as the UN Guiding Principles on Business and Human Rights, integrating them into supplier guidelines, codes of conduct, and risk assessments. While fisheries have faced scrutiny, aquaculture also requires attention. As its role in seafood production expands, efforts to promote decent work in farming and processing must grow accordingly. Most major seafood companies now promote policies on ethical sourcing, supplier training, transparency, and compliance. Many also operate mechanisms for reporting abuses, conducting risk assessments, and engaging with stakeholders. Yet gaps remain between policy and practice. Companies need to make more efforts to disclose corporate information in more detail on the scope, frequency, and outcomes of supplier audits and due diligence efforts. Transparency around human rights performance—including audit findings and subsequent corrective actions—is still limited across the industry, including multinationals from multiple jurisdictions. Such gaps undermine the industry's overall commitment to responsible business and will be the obstacle to the achievement of decent work for those engaged aquaculture and seafood production, especially in key production bases like the Philippines. The challenges in the aquaculture sector are widely relevant to overseas companies importing from the country. Therefore, greater efforts to promote human rights in the industry are essential, as stakeholder expectations for businesses continue to rise.

2.5. About this research

2.5.1. Methodology

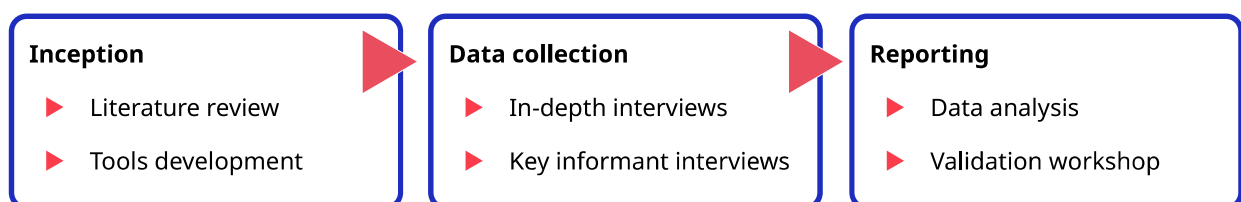
Key research questions

The research aimed to answer the following key questions:

1. What is the status of the Philippine shrimp and seaweed aquaculture industry, focusing on exports?
 - a. Composition of the aquaculture sector
 - b. Supply chain structure
 - c. Employment statistics in the sector, types of employment
2. Are decent work and responsible business conduct present in the shrimp and seaweed aquaculture sector?
 - a. Perspectives of workers
 - b. Perspectives of employers
 - c. Perspectives of other parties (e.g., government, buyers, etc.)
3. What are the practical, stakeholder-specific actions that can be done to advance decent work and responsible business conduct in aquaculture?
 - a. Perspectives of workers
 - b. Perspectives of employers
 - c. Perspectives of other parties (e.g., government, buyers, etc.)

2.5.2. Research design

► **Figure 28. Research design**



Inception stage

i. Literature review

The desktop literature review summarized published literature on the value chain of the Philippine and seaweed and shrimp industries. It reviewed relevant published documents and reports to gain a comprehensive overview of the state of aquaculture on a national scale and how the Philippine seaweed and shrimp aquaculture industries fare in decent work and responsible business practices.

The literature review drew from various sources, including grey literature and technical reports from authoritative bodies such as BFAR and FAO. The study also referred to academic publications from reputable sources, as well as media resources for further insights and trends.

To triangulate the field data with official statistics, the Research Team requested access to the PSA's Labour Force Survey (LFS), which provides information on employment, unemployment, and underemployment per region and section groups based on the Philippine Standard Industry Classification (PSCI). However, PSA could not provide reliable employment statistics for the shrimp and seaweed aquaculture industry due to the limitations on the samples captured for this industry.

ii. Research tools

The Research Team developed the research tools based on information gathered from the literature review. The in-depth interview (IDI) and key informant interview (KII) questionnaires underwent a rigorous review process, soliciting input from ILO, the Decent Work Adviser, and local research partners. Questionnaires were prepared for the following groups:

- Workers
- Employers
- Worker associations
- Industry/employer associations
- Local government units
- BFAR
- DOLE
- DTI

Each questionnaire was generally divided into thirteen sections that correspond to ILO's decent work indicators and responsible business and human rights, along with additional sections for demographic information and insights on anticipated challenges and trends within the sector (See Annex). For offices and associations, the questions were also tailored to the specific mandate of each group. The questions posed to employers mirror those for the workers, ensuring comprehensive data collection and analysis.

Furthermore, rather than having a separate gender section, a gender perspective was embedded throughout all the sections. For example, rather than directly inquiring about the presence of a gender wage gap or gender roles, questions in the Working Conditions and Wages sections examine the typical tasks performed by men and women in the sector, as well as the corresponding wages. These sections also investigated whether men and women can access the same benefits (e.g., paternity/maternity leave). Similarly, the gender perspective is incorporated within the Occupational Safety and Health (OSH) section, prompting respondents to identify occupational hazards that may disproportionately affect either men or women.

Ethical considerations were also considered, especially regarding questions related to child labour. Questions were limited to what age the worker interviewee started working and whether they or other workers know of

children working in their companies. Probing questions and granular questions involving labour law compliance were omitted to maintain focus on the study's primary objectives and to avoid making interviewees feel defensive or targeted.

Ethical considerations were also addressed through the informed consent form at the beginning of each questionnaire. The informed consent form provided comprehensive and transparent information about the research to participants prior to seeking their consent. It ensured that participants provide their consent voluntarily, free from any coercion, and emphasizes their right to withdraw at any point. The form also guaranteed the anonymity and confidentiality of participants.

The worker questionnaire and informed consent forms were translated from English into the local languages by the research team and local partners.

Data collection stage

This research adopted the Philippine aquaculture supply chain defined by the Philippine Shrimp Industry Roadmap (BFAR 2022b) and Philippine Seaweed Industry Roadmap (BFAR 2022a). The study aimed to enhance the supply chain maps by incorporating the export segments, such as companies involved in both exporting and receiving final products in the destination market.

Study areas are Pampanga, Cebu, and Zamboanga City. Pampanga and Zamboanga City were chosen based on PSA data on production volumes for shrimp (Pampanga) and seaweed (Zamboanga City). Cebu was chosen as several shrimp processing and seaweed processing companies are in the province.

i. IDI and KII training

Field enumerators were trained to ensure understanding of the interview questions, a standardized approach to data collection, and manageability of the data collected.

ii. In-depth interview (IDI) results

IDIs were conducted onsite in three (3) provinces: Pampanga, Cebu, and Zamboanga, where the shrimp and seaweed aquaculture industries are significantly developed. IDIs were recorded with the participant's consent and transcribed into the local language and English. They were manually encoded to identify emerging themes and relationships directly from the participants' experiences.

The total sampling size was rationalized according to available resources. Best effort was made to include female interviewees.

Worker interviews were focused on the farming, processing, and exporting links in the shrimp and seaweed value chain. Workers in the input provision and trading segment were not included in the study.

► **Table 10. Worker Interviews conducted**

Workers	Location	Target # of respondents	Actual # of respondents	Notes
Shrimp farm workers	Sasmuan, Pampanga	12	25	From minimum 8 extensive shrimp farms; exact number unknown due to daily workers working for multiple farms
	Cebu	0	8*	From two intensive shrimp farms
Shrimp processing workers	Cebu	12	4	From one shrimp processing company
Seaweed farmers	Zamboanga City	50	50	Considered self-employed
Seaweed processing workers	Cebu	12	12	From two seaweed processing companies
	Zamboanga City	12	12	From one seaweed processing company

*Eight (8) shrimp farm workers were interviewed in lieu of shrimp processing workers, as shrimp processing worker respondents could not be secured.

Best efforts were made to interview workers away from their employers and/or outside of their workplace. If conducted within the workplace, best effort was made to interview the worker while the employer was not present. Best effort was also made to ensure that the interviewed workers were employed by different establishments to capture a broader range of experiences and perspectives, as well as to enhance the generalizability of the findings.

Shrimp farm workers in Sasmuan, Pampanga were interviewed in the barangay hall or at the farms. Municipal representatives invited shrimp farm workers to go to the barangay hall and participate in the interviews. The municipal representatives also identified shrimp farms where onsite workers could be interviewed.

Shrimp farm workers in Cebu were interviewed onsite, within the workplace. Both farms selected the interview participants. One farm expressly forbade the interview of workers and instead provided supervisors for interview and disallowed recording the interviews. The other farm selected the workers and allowed recording, but two workers requested that the interview not be recorded.

Shrimp processing workers in Cebu were approached for interviews both independently outside their workplace and through the employers. However, all workers approached outside the processing plants declined to be interviewed. The interviews included in this study are from workers who were selected by their employer to participate in the interviews. These interviews were conducted inside the workplace and during working hours.

Seaweed farmers and processing workers in Zamboanga City were approached for interviews, primarily at their residences during their rest hours. Prior to the interviews, barangay representatives, farmer association representatives, and the farmers themselves were informed about the study, and a focus group discussion was held following an introductory meeting. For processing workers, introductions were facilitated through a barangay official in the area where a processing plant is located, as employers did not participate or facilitate access to their workers.

Seaweed processing workers in Cebu were approached for interviews both independently outside their workplace and through their employers. Some workers were selected by their employers to participate in the interviews, which were conducted in the workplace and during working hours. However, the employer itself declined to participate. Other processing workers were referrals from a retired worker and were interviewed in their residences. Efforts to reach additional workers through a former labour union organizer were unsuccessful.

iii. Key informant interview (KII) results

Employer interviews were focused on the farming, processing, exporting, and importing links in the shrimp and seaweed value chain. Employers in the input provision and trading segment were not included in the study.

► **Table 11. Employer Interviews conducted**

Stakeholder name	Location	# of respondents approached	Actual # of respondents	Notes
Extensive shrimp farm owners	Sasmuan, Pampanga	6	6	Extensive shrimp farm
Intensive shrimp farm employers	Cebu	2	0	Intensive shrimp farm
Shrimp processing and exporting companies	Cebu and Zamboanga	6	0	
Seaweed processing and exporting companies	Cebu and Zamboanga	12	0	

Extensive shrimp farm owners in Sasmuan, Pampanga were identified by the Municipal Agricultural Office (MAO) and invited to participate in the study. They were interviewed onsite at the shrimp farm or in their homes.

Intensive shrimp farm companies were identified through data provided by DTI and Cebu partners. All of the companies were contacted via email and/or in-person visits but either declined or did not respond to requests to be interviewed for the study. There are no intensive shrimp farms in Sasmuan, Pampanga.

Shrimp processing companies were identified through data provided by DTI and Cebu partners. All of the companies were contacted via email and/or in-person visits but either declined or did not respond to requests to be interviewed for the study.

Seaweed processing companies who produce carrageenan were identified through data provided by DTI and Cebu and Zamboanga City partners. All of the companies were contacted via email and/or in-person visits but either declined or did not respond to requests to be interviewed for the study.

► **Table 12. Association interviews conducted**

Stakeholder type	Stakeholder name	Location	# of respondents
Workers' association	Alliance of Workers in the Informal Economy/Sector (ALLWIES)	Metro Manila (online)	1
	Pambansang Lakas ng Kilusang Mamamalakaya ng Pilipinas (Pamalakaya)	Metro Manila (online)	1
	Fish Workers' Solidarity, an affiliate of Sentro ng mga Nagkakaisa at Progresibong Manggagawa (Sentro)	Metro Manila (online)	1
	Federation of Free Workers (FFW)	Metro Manila	1
Employers' association	Sasmuan Shrimp Farm Owners Association* *association is no longer functioning	Sasmuan, Pampanga	1
	Employers Confederation of the Philippines-Zamboanga, Basilan, Sulu, Tawi-Tawi (ECOP-ZAMBASULTA)	Zamboanga City (online)	1

The Sasmuan Shrimp Farm Owners Association was identified by the MAO and interviewed at the barangay hall. Other associations were introduced to the project by ILO through an introductory meeting and subsequently interviewed. Additional associations were invited but did not confirm their participation in the study.

► **Table 13. Government interviews conducted**

Stakeholder type	Stakeholder name	Location	# of respondents
LGU	Municipal Agricultural Office / Office of the City Agriculturist	Sasmuan, Pampanga	1
		Zamboanga City (online)	1
	Municipal Environment and Natural Resources Office / Municipal Planning and Development Office	Sasmuan, Pampanga	1
	Barangay Captain	Sasmuan, Pampanga	1
Government agency	DOLE - Bureau of Working Conditions (BWC)	Metro Manila (online)	2
	DOLE - Bureau of Local Employment (BLE)	Metro Manila	5
	DOLE - Occupational Safety and Health Centre (OSHC)	Metro Manila	1
	DA - Bureau of Fisheries and Aquatic Resources (BFAR) – National	Metro Manila (online)	1
	DA - BFAR – Fisheries Planning and Economics Division (FPED)	Metro Manila	1
	DA - BFAR – Enhanced Philippine Seaweed Development Programme (EPSDP)	Metro Manila	1
	DA - BFAR – Region IX	Zamboanga City (online)	2
	DTI - Export Management Bureau	Metro Manila	3
	DTI - Region VII	Cebu City (online)	2
	DTI - Region IX	Zamboanga City (online)	5

These government entities were targeted due to their mandate regarding aquaculture, labour conditions, and/or the export of aquaculture products to other countries.

► **Table 14. Importer Interviews conducted**

Stakeholder name	Location	# of respondents approached	Actual # of respondents
Overseas importers of Philippine shrimp and seaweed (carrageenan)	Metro Manila (online)	5	0

International importers (companies) of Philippine shrimp and carrageenan were identified through DTI, and whilst best efforts were made to solicit their participation, including contacting through public channels, company point persons in the Philippines, through DTI, DA and ILO offices, none were able or willing to participate in the survey.

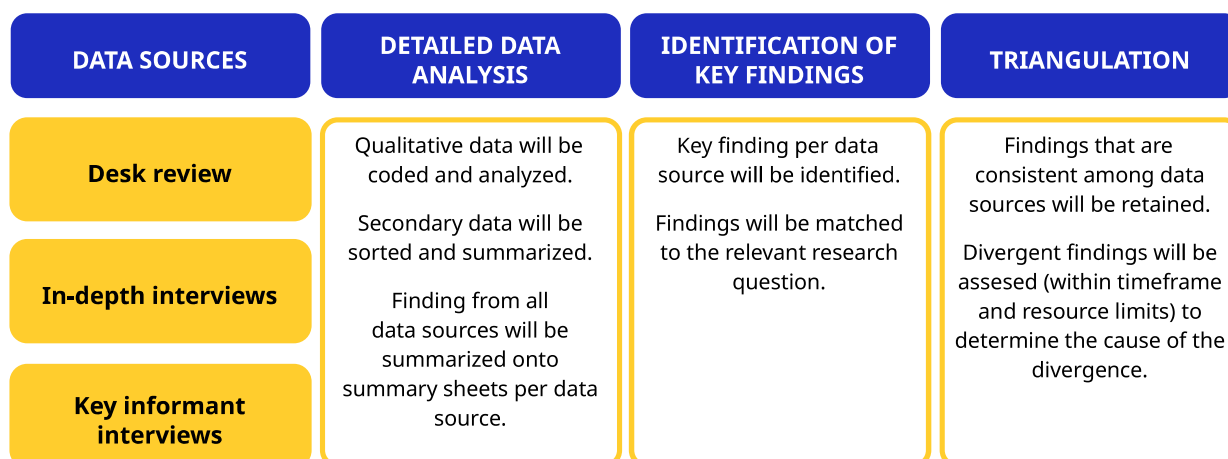
Reporting

i. Data analysis and triangulation

The study used multilevel analysis, as the industry stakeholders are nested and different data sources apply for each level. Triangulation allowed the research team to compare the findings from the different levels and sources. If the results coincide and/or reinforce each other, then there is greater confidence in the overall results. If the results diverge, then additional analysis will be performed (to the level feasible within the timeframe and budget) to determine the cause of the divergent findings.

The qualitative interviews will be analysed to reveal an overall view of the perspectives and views held by the interviewees.

► **Figure 29. Diagram of multilevel analysis**



ii. Validation workshop

Onsite validation workshops will be organized in Luzon, Visayas, and Mindanao. The workshop will be attended by representatives of relevant industry stakeholders and facilitated by ILO and the research team. Key activities during the workshop will include:

- Presentation of key research findings and draft recommendations
- Discussion of the research findings and draft recommendations among the stakeholder group (small-group discussion)
- Presentation of each stakeholder group's analysis of the findings and recommendations on challenges and responses that need to be prioritized
- Plenary discussion and validation of the stakeholder groups' analysis and recommendations

The research team will incorporate the workshop results into the final research report.

