Chapter 8

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CHAPTER 8

The Philippines' Tuna Industry

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[1] Introduction

The Philippines is an archipelago of more than 7,100 islands with approximately 226,000 square kilometres of coastal waters and 1.93 million square kilometres of oceanic waters (World Bank, 2005). It is a fast-growing economy in the Association of Southeast Asian Nations (ASEAN) region, driven by services and a resurgent manufacturing sector. Table 1 shows comparative regional gross domestic product (GDP) growth rates in 2006–2015.

Fishing is a major industry in the Philippines, contributing 17.8% of the total gross value added of the agriculture, fishery, and forestry sector. It directly employs about 1.4 million workers of the country's 39.8 million employed workers,¹ and indirectly provides employment to around 30,000 individuals engaged in processing, preservation, and canning of fish, crustaceans, and molluscs.² As seventh amongst the top fish-producing countries in the world in 2013, the Philippines has vast marine resources that can significantly contribute to more inclusive growth if properly managed.

This chapter focuses on the tuna industry, a major component of the fishing industry in terms of output and employment. Reducing unnecessary regulatory burdens will boost its growth and productivity.

¹ October 2015 Labor Force Survey.

 $^{^2}$ 2012 Census of Philippine Business and Industry. This is 2.3% of total employment of all manufacturing establishments in the formal sector.

After this brief introduction, Section 2 provides an overview of the tuna fishing industry and a regulatory mapping. Section 3 discusses burdensome regulations and corrective measures to address them that were identified through informed regulatory conversations amongst stakeholders. The final section provides conclusions.

[2] Overview of the Tuna Fishing Industry

The Philippines is a top global producer of tuna. Of the 21 species of tuna in Philippine waters, six are caught in commercial quantity: yellowfin, skipjack, eastern little, frigate, big eye, and bullet. Tuna are caught in domestic and international fishing grounds through ring nets, purse seines, hand lines, and long lines by commercial fishing vessels categorised as:

- a. small scale, or fishing using passive³ or active⁴ gears and fishing vessels of 3.1 gross tonnes (GT) up to 20 GT in weight;
- b. medium scale, or fishing using active gears and vessels of 20.1 GT up to 150 GT in weight; and
- c. large scale, or fishing using active gears and vessels of more than 150 GT in weight.

Commercial fishing vessels cannot legally fish within 15 kilometres from the shoreline because this area is reserved for municipal fishing (Republic Act 8550 and the Local Government Code of 1991). Municipal fishing refers to fishing within municipal waters using fishing vessels of 3 GT or less. Fish caught are stored, traded, and graded in landing centres. There are 456 commercial fish landing centres across the country. About 42% of the total commercial fish catch is landed in eight centres managed by the Philippine Fisheries Development Authority, a government agency. The major tuna landing centre is the General Santos Fish Port Complex in Mindanao, an internationally

³ Hook and line, trap, and gill net set across the path of the fish, characterised by the absence of gear movements or pursuit of target species (Bureau of Fisheries and Aquatic Resources [BFAR] definition).

⁴ Trawl, purse seine, Danish seine, bag net, drift gill net, tuna long line, and devices characterised by gear movements or the pursuit of target species, towing, lifting and pushing the gears, dredging, pumping, and scaring the target species to impoundments (BFAR definition).

recognised and accredited port by the European Union (EU), Japan, and the United States (US). In 2015, 34% of the tuna catch was unloaded in this complex. Six tuna canneries operate in General Santos City while one cannery is in Zamboanga, both in Mindanao.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
East Asia										
China	12.7	14.2	9.6	9.2	10.6	9.5	7.8	7.7	7.3	6.9
Japan	1.7	2.2	-1	-5.5	4.7	-0.5	1.7	1.4	0	0.5
Mongolia	8.6	10.2	8.9	-1.3	6.4	17.3	12.3	11.6	7.9	2.3
Korea, Rep. of	5.2	5.5	2.8	0.7	6.5	3.7	2.3	2.9	3.3	2.6
Southeast Asia										
Brunei Darussalam	4.4	0.2	-1.9	-1.8	2.6	3.4	0.9	-1.8	-2.3	-0.5
Cambodia	10.8	10.2	6.7	0.1	6	7.1	7.3	7.5	7.1	7
Indonesia	5.5	6.3	6	4.6	6.2	6.2	6	5.6	5	4.8
Lao PDR	8.6	7.6	7.8	7.5	8.5	8	8	8.5	7.5	7
Malaysia	5.6	6.3	4.8	-1.5	7.4	5.3	5.5	4.7	6	5
Myanmar	13.1	12	10.3	10.6	9.6	5.6	7.3	8.4	8	7.3
Philippines	5.2	6.6	4.2	1.1	7.6	3.7	6.7	7.1	6.1	5.8
Singapore	8.9	9.1	1.8	-0.6	15.2	6.2	3.7	4.7	3.3	2
Thailand	5	5.4	1.7	-0.7	7.5	0.8	7.2	2.7	0.8	2.8
Viet Nam	7	7.1	5.7	5.4	6.4	6.2	5.2	5.4	6	6.7

Table 1: Comparative GDP Growth Rates,East and Southeast Asia (2006–2015)

GDP = gross domestic product; Lao PDR = Lao People's Democratic Republic. Source: World Bank.

2.1 Tuna Supply⁵

Figure 1 shows the supply of tuna from 2005 to 2014, mostly from local tuna production. Tuna imports were important contributors to total supply in 2009, 2013, and 2014. Local tuna production declined around 2011–2012 due to the limited ban (2 or 3 months) imposed by the Western and Central Pacific Fisheries Commission on tuna fishing that used fish-aggregating devices. Since 2000, the commission has seen an alarming depletion of tuna stocks due to overfishing, use of fish-aggregating devices,⁶ and possible impacts of climate

⁵ Tuna supply is composed of tuna caught by Philippine commercial and municipal fishing vessels and tuna imports.

⁶ Fish-aggregating devices, locally called *payaw*, are man-made structures (bamboo or steel pontoons) using bright lights to attract or lure pelagic fish species, notably tuna and round scad. They can harm the fish population because they also catch juvenile fish. To address this problem, BFAR issued FAO No. 244, series of 2012 (National Tuna Fish Aggregating Device Management Policy).

change. The limited ban on the use of such devices was later extended to a yearround ban. Purse seine fishing operations were also banned in two areas of the high seas in the Western and Central Pacific Ocean.



Figure 1: Supply of Tuna, 2005-2014

Source: Philippine Statistics Authority (2015).

Protectionist measures, particularly by Indonesia, in the tuna-rich Western and Central Pacific Ocean, also contributed to the decline in local tuna production. As conditions to access its fishing grounds, Indonesia requires Philippine fishing operators investing in processing and manufacturing to build their plants in Indonesia and to hire Indonesian crew to staff Philippine fishing vessels. In 2006, Indonesia terminated the bilateral fishing agreement signed with the Philippines in 2002, thus prompting Philippine fishing operators to look for other fishing grounds. Affected were 75 catcher vessels, 150 fish carriers, 20 long liners, 300 light boats, and 10 single purse seiners (Espejo, 2015). Regulation No. 56, released by the Indonesian Maritime Affairs and Fisheries Ministry in November 2014, imposed a moratorium on issuance of fishing licences from 3 November 2014 to 30 April 2015 to eliminate illegal, unreported, and unregulated fishing in Indonesian waters. The moratorium was extended to 31 October 2015 (MindaNews, 2015).

Skipjack tuna accounts for the largest portion (40%) of the country's tuna catch, followed by yellowfin tuna. These are mainly caught by commercial fishing vessels. Imported tuna accounts for about 7%–14% of the country's total tuna supply. In 2012, the Philippines imported 56,478 metric tonnes of

chilled or frozen tuna from Papua New Guinea (39% of the total tuna imports), Taiwan (28%), China (12%), Japan (9%), the Republic of Korea (8%), and other countries.

2.2 Demand for Tuna

In 2014, tuna was the Philippines' top fishery export in terms of volume (117,909 metric tonnes) and value (free on board value of US\$443 million). Tuna accounts for 37% of the total fishery exports of the country, followed by seaweed, shrimp and prawn, crab and crab meat, octopus, and others (Figure 2). The major export destinations of fresh, chilled, and frozen tuna are the United States; Japan; Indonesia; and members of the EU, including France, Germany, and the United Kingdom. For prepared and/or processed tuna, the major export markets are the United States, Germany, the United Kingdom, Japan, and The Netherlands.



Figure 2: Major Fishery Export Products, 2014

Sources: Philippine Statistics Authority; Bureau of Fisheries and Aquatic Resources, n.d.

At 4.35 kilogrammes of consumption per capita per year in 2014, tuna ranked the highest amongst fish products consumed locally (Table 2). It is an important source of protein for many households.

Fish Product	Consumption per Capita (kilogramme/year)
Tuna	4.35
Tilapia	3.06
Milkfish	2.62
Round scad	1.71
Shrimp and prawn	0.53
Crab	0.36
Oyster	0.23
Mussel	0.19

Table 2: Per Capita Fish Consumption, 2014

Source: Philippine Statistics Authority (2015)..

2.3 Regulatory Mapping

Figure 3 shows the tuna value chain and regulatory agencies.

Regulations cover local issuances and international certifications and standards imposed by regional agreements to ensure the sustainable use and management of marine resources from Philippine and international waters (BFAR, 2012). They ensure the use of legal and non-destructive fishing methods and the high quality of tuna for human consumption. The certifications include the Certificate of Hazard Analysis of Critical Control Points and the Certification of Good Manufacturing Practices and Sanitation Standard Operating Procedures. The Philippines follows the World Trade Organization rules on tariff and non-tariff barriers, fisheries subsidies, anti-dumping, sanitary and phytosanitary measures (SPS), and the catch and trade documentation system and policies of the EU and the United States (BFAR, 2012).



Figure 3: Tuna Value Chain and Regulatory Agencies

BFAR = Bureau of Fisheries and Aquatic Resources; BOC = Bureau of Customs; FAD = fish aggregating device; FDA = Food and Drug Administration; LGU = local government unit; MARINA = Maritime Industry Authority; PNG = Papua New Guinea.

Source: From Yamashita (2008) as revised by the authors and verified by BFAR, the Department of Trade and Industry-Export Marketing Bureau, and the Tuna Canning Association of the Philippines.

The Philippines abides by the Food and Agriculture Organization's Code of Conduct for Responsible Fisheries and the International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing (BFAR, 2012). The Philippines is a member of the Indian Ocean Tuna Commission, the International Commission for the Conservation of Atlantic Tunas, and the Western and Central Pacific Fisheries Commission, and is a cooperating non-member of the Commission for the Conservation of Southern Bluefin Tuna. Membership directs compliance with the conventions and conservation and management measures of these organisations.

2.3.1 Business Registration and Permit Requirements

The tuna industry follows the same business registration and permit requirements required by local governments of other industries. The difference may lie in the number of procedures and days needed to register the business and obtain a mayor's permit to operate. This depends on the quality of local governance. The process can be done more efficiently in municipalities or cities that have established 'one-stop shops' for the registration and permitting units or agencies of government.

The tuna industry also must register with national government agencies such as the Social Security System, the Philippine Health Insurance Corporation, the Bureau of Internal Revenue, and others. The quality of service delivery depends on the quality of their governance. These agencies are not uniformly efficient.

2.3.2 Production

Table 3 summarises regulations under the Fisheries Code, the Local Government Code, the Food Safety Act, and the Maritime Industry Authority (MARINA) on maritime vessels.⁷

2.3.3 Registration and Licencing of Commercial Vessels

Commercial fishing vessels, freezer and/or carrier vessels, and fishing boats must obtain a Certificate of Philippine Registry (CPR) and a Certificate of Ownership from MARINA before getting a licence from the Bureau of Fisheries and Aquatic Resources (BFAR). Commercial fishing vessels obtain their fishing vessel licences and fishing gear registrations and licences from BFAR (Fisheries Administrative Order No. 198 series of 2000).

⁷ Details are available from the authors upon request. For economy of space, the details of those regulations are not reported in this chapter

	Regulatory Instrument	Regulation	Description	Regulator	
Fish	Fishing vessels, freezer and carrier vessels, fishing boats				
1.	Certificate of Philippine Registry (CPR) and Certificate of Ownership (CO)	MC No. 2013-02	Rules that govern the registration and documentation of ships entitled to fly the Philippine flag	MARINA	
2.	Commercial Fishing Vessel/Gear Licence	FAO No. 198 s. 2000	Licence that allows a vessel to conduct fishing operations in Philippine waters	BFAR	
3.	Fishing Gear Registration	FAO No. 198 s. 2000	Fishing gear allowed in fishing operations in Philippine waters	BFAR	
4.	International Fishing Permit	FAO No. 198 s. 2000	International fishing permit and certificate of clearance that the fish caught by such registered vessels shall be considered as caught in Philippine waters and, therefore, not subject to all import duties and taxes, and only when the same are landed in duly designated fish landings and fish ports in the Philippines	BFAR	
5.	Fish Worker's Licence	FAO No. 198 s. 2000	Permit for fish worker or pearl diver	BFAR	
6.	Certificate of Eligibility	FAO No. 198 s. 2000	Certificate issued to a qualified commercial fishing vessel operator for tax and duty-exempt importation of fishing equipment and paraphernalia	BFAR	
7.	Clearance to Import Fishing Vessels	FAO No. 198 s. 2000	Approval needed prior to the importation of fishing vessels and the construction of new fishing vessels	BFAR	
8.	Certificate of Hazard Analysis of Critical Control Points (HACCP) Recognition/Accreditation	FAO No. 212 s. 2001	Guidelines on the implementation of the HACCP system	BFAR	
9.	Certificate of HACCP Approval, Certificate of Recognition for HACCP Implementation and Certificate of Inspection	FAO No. 212 s. 2001	Guidelines on the implementation of the HACCP system	BFAR	
Buy	ing stations and/or auction marke	ets, ice plants, colo	l storage		
1.	Certificate of HACCP Recognition/Accreditation	FAO No. 212 s. 2001	Guidelines on the implementation of the HACCP system	BFAR	
2.	Certificate of HACCP Approval, Certificate of Recognition for HACCP Implementation and Certificate of Inspection	FAO No. 212 s. 2001	Guidelines on the implementation of the HACCP system	BFAR	
3.	Cold Storage Warehouse Accreditation	AO No. 21 s. 2011 and AO No. 23 s. 2013	Mandatory Accreditation of Cold Storage Warehouse for Agricultural and Fisheries Products	DA	
Fish processing plants and importers of fresh/chilled fishery products					
1.	Licence to Operate	AO 2014-0029	To ensure food safety through the imposition of food quality standards aligned with the mandated issuances of regulatory agencies	FDA	
2.	Certificate of Product Registration (Medium- and High-Risk Food)	AO 2014-0029	To ensure food safety through the imposition of food quality standards aligned with the mandated issuances of regulatory agencies	FDA	
3.	Certificate of HACCP Recognition/Accreditation	FAO No. 212 s. 2001	Guidelines on the implementation of the HACCP system	BFAR	

Table 3: Regulations and Regulatory Instruments

	Regulatory Instrument	Regulation	Description	Regulator
4.	Certificate of HACCP Approval, Certificate of Recognition for HACCP Implementation and Certificate of Inspection	FAO No. 212 s. 2001	Guidelines on the implementation of the HACCP system	BFAR
5.	Sanitary and Phytosanitary (SPS) Clearance to Import Fresh/Frozen/Chilled Fishery Products (Old Clients)	FAO no. 195 s. 1999 and 195-1 s. 2003	Rules and regulations governing the importation of fresh, chilled, and/or frozen fish and fishery and/or aquatic products to ensure food safety on imported fish and fishery and/or aquatic products	BFAR
6.	SPS Clearance to Import Fresh/ Frozen/Chilled Fishery Products (New Applicants)	FAO no. 195 s. 1999 and 195-1 s. 2003	Rules and regulations governing the importation of fresh, chilled, and/or frozen fish and fishery and/or aquatic products to ensure food safety on imported fish and fishery and/or aquatic products	BFAR
7.	Inspection and Clearance of Imported/Incoming Fish and Fishery Products	FAO no. 195 s. 1999 and 195-1 s. 2003	Rules and regulations governing the importation of fresh, chilled, and/or frozen fish and fishery and/or aquatic products to ensure food safety on imported fish and fishery and/or aquatic products	BFAR
8.	Chemical and Microbiological Testing	FAO no. 213 s. 2001	Establishment and maintenance of BFAR's quality control laboratories and collection of fees and charges for examination services	BFAR
Exp	orters of fish and fishery product	s		
1.	SPS/HACCP for Accredited Exporters to International Markets	FAO no. 228 s. 2008	Rules and regulations governing the organisation and implementation of official controls on fishery and aquatic products intended for export to the EU market for human consumption	BFAR
2.	Export Permit for Fresh/Frozen/ Chilled Fishery Products (New Applicants)	FAO no. 210 s. 2001	Rules and regulations on the exportation of fresh, chilled, and/or frozen fish and fishery and/or aquatic products	BFAR
3.	Export Permit for Fresh/Frozen/ Chilled Fishery Products (Old Clients)	FAO no. 210 s. 2001	Rules and regulations on the exportation of fresh, chilled, and/or frozen fish and fishery and/or aquatic products	BFAR
4.	Export Commodity Clearance	FAO no. 210 s. 2001	Rules and regulation on the exportation of fresh, chilled, and/or frozen fish and fishery and/or aquatic products	BFAR
5.	Clearance for Outgoing Fish and Fishery Products	FAO no. 210 s. 2001	Rules and regulation on the exportation of fresh, chilled, and/or frozen fish and fichery and/or aguatic products	BFAR

AO = Administrative Order; BFAR = Bureau of Fisheries and Aquatic Resources; EU = European Union; FAD = fish aggregating device; FDA = Food and Drug Administration; FAO = Fisheries Administrative Order; HACCP = Hazard Analysis of Critical Control Points; MARINA = Maritime Industry Authority; SPS = sanitary and phytosanitary.

Source: Bureau of Fisheries and Aquatic Resources, 2016; Maritime Industry Authority; Food and Drug Administration, 2015.

MARINA Circular No. 2013-02 provides the revised rules for registration and documentation of ships operating in Philippine waters. MARINA regularly updates the Philippine registry and delists ships under the following circumstances:

- a. exportation of ship due to sale to foreign entity;
- b. expiration of CPR of bareboat chartered ship;

- c. ship breaking, scrapping, and decommissioning;
- d. total loss as stipulated in a marine protest and/or report;
- e. non-operation for gibr years for submarines, amphibians, and similar type of ships under the class of miscellaneous ships;
- f. revocation by MARINA of the ship's charter or lease contract for cause and after due process; and
- g. MARINA'S order, after due process, to delete from the Philippine Registry the registration of any ship found to have violated the government's rules and regulations.

MARINA and BFAR fishing vessels' use of environmentally safe fishing gear and apparatus. All information is updated regularly and submitted to the regional fisheries management organisations.

Commercial fishing vessels must secure from MARINA and BFAR the Fish Worker's Licence, Certificate of Eligibility, and Clearance to Import Fishing Vessels. They must obtain an international fishing permit, which allows the Philippines to monitor the compliance of domestic vessels fishing in other countries' waters to regulations imposed in those countries. Under the international fishing permit, fish caught by Philippine-flagged vessels in international waters are considered caught in Philippine waters.

2.3.4 Registration and Licencing of Municipal Vessels

The Local Government Code of 1991 and Executive Order No. 305 series of 2004 empower local governments to licence municipal fishing vessels and maintain a database on municipal fishing activities. The registration of small (municipal) fishing vessels is devolved to local governments. MARINA and BFAR maintain a database of all registered and licensed commercial and municipal fishing vessels.

In 2015, BFAR and the Fisheries Information Management Center established centralised web-based database management systems known as (i) BoatR or the Municipal Fishing Vessel and Gear Registration System, and (ii) FishR or the National Program for Municipal Fisherfolk Registry. BoatR assists local governments in database maintenance and monitoring the number of registered fishing boats and gear. FishR helps the municipal fishers to register in their municipalities. According to BFAR, as of February 2016, 1.65 million fishers have registered in FishR.

2.3.5 Certificate of Hazard Analysis of Critical Control Points (HACCP) Recognition and/or Accreditation

The BFAR issues a certificate of HACCP recognition and/or accreditation to freezer and/or carrier vessels and tuna-processing plants. A primary requirement for registration and HACCP recognition is the licence to operate, which is issued by FDA.

The next step is pre-assessment on-site inspection by BFAR head office and regional office inspectors (joint inspection team) in the presence of the applicant owner(s) of the vessels and/or tuna facilities. The BFAR head office in Manila sends the results of the evaluation to the applicant who has to submit to the BFAR regional office a corrective action plan for any deficiency found. Another on-site visit checks on the corrective action plan and asks applicants to explain their food safety programmes. These are assessed in light of the rules on good manufacturing practices, sanitation standard operating procedures, and HACCP. A final assessment report is later sent to the applicant. A positive report leads to registration.

An important issue concerns the time spent in securing registration and HACCP accreditation. According to BFAR's Citizen's Charter, processing takes approximately 20 working days, four hours, and 45 minutes. The reality could be different. The use of joint inspection teams and the availability of team members have implications for the efficiency of registration and accreditation.

After registration, a system audit of the fish-processing plant or vessel follows. This is the third on-site visit by the joint inspection team. A tuna-processing plant or vessel found to be compliant after the audit will be listed in the roster of HACCP-approved fish-processing plants or vessels. Otherwise, re-inspections will be done until the requirements are complied with.

Other BFAR regulations concern compliance with international agreements. Fisheries Administrative Order (FAO) No. 245-3 states the regulations and implementing guidelines on group tuna purse seine operations in High Seas Pocket Number 1 as a special management area. This complies with the conservation and management measures of the Western and Central Pacific Fisheries Commission to maintain maximum sustainable yield of big eye, yellowfin, and skipjack tuna.

2.3.6 Tuna Landing and Storage

Tuna landing sites, buying stations, auction markets, and ice plants and cold storage warehouses (CSW) require the HACCP recognition and/or accreditation certificate. Two basic requirements are the sanitary permit and the good manufacturing practices and sanitation standard operating procedures plan. The BFAR issues the certification of CSWs as a component of the HACCP system. However, in 2013, Department of Agriculture Administrative Order No. 23 created the Committee on CSW Accreditation composed of inspectors from the National Meat Inspection Services, the Bureau of Animal Industry, the Bureau of Plant Industry, and BFAR, collectively known as agriculture compliance officers, to audit and assess CSWs, so that BFAR no longer has to handle inspection by itself. The committee forwards its findings to the Department of Agriculture– Competent Authority–Cold Storage Warehouse Team for accreditation.

2.3.7 Tuna Processing

Tuna-processing plants must secure a licence from FDA to operate, and a BFAR certification covering good manufacturing practices, sanitation standard operating procedures plan, and the HACCP plan.

All fresh, chilled, fresh-frozen, and processed tuna must comply with the standards specified in Philippine National Standards-Bureau of Agriculture and Fisheries Standards covering (i) the cooling and/or chilling temperature throughout the handling process; (ii) essential composition and quality factors; (iii) standards for food additives and contaminants; (iv) proper hygiene and handling; (v) proper packaging and labelling; (vi) methods of sampling, examination, and analysis of products; (vii) definition of defective products; and (viii) the requirements for lot acceptance.

2.3.8 Distribution and Export

The final stage is marketing and distribution to local and international markets. The BFAR issues the clearance and permit to export fresh and canned tuna (FAO No. 210, series of 2001) processed in fish-processing establishments that are certified to be compliant with the sanitation standard operating procedures and HACCP system. Laboratory tests are mandated at any BFAR or BFARaccredited laboratory for the issuance of SPS and/or health certificates. The permits, SPS, and/or health certificates are filed on a per-shipment basis at least one week before the date of exportation, which should include an export declaration and packing list.

[3] Regulatory Issues, Key Agreements, and Recommendations

This section reports the regulatory issues identified through interviews and informed regulatory conversations amongst the industry stakeholders, key agreements, and recommendations to reduce regulatory burdens on the industry.

3.1 Business Registration and Permit

Securing a business registration and a mayor's permit is the critical first step for businesses. The main issue is the number of days and signatures required for the registration and permit, which differs across municipalities and cities. The average for a sample of cities is 18 steps in 33 days. Based on the *Doing Business in Philippines 2011 Report* by the World Bank and the International Finance Corporation (2010), General Santos City ranks first in number of steps, time, and cost of registration (Table 4).

Further streamlining of the registration process is possible. In 2015, Quezon City reduced the number of steps from 16 to six, and the days for registration from 34 to eight. It established a one-stop shop to house its business and permits licencing office and related national government agencies.

Rank	City	Steps (number)	Time (days)	Cost (% of income per capita)
1	General Santos	17	22	15.3
2	Davao	17	27	17
3	Taguig	16	28	23.2
4	Valenzuela	16	32	20.4
5	Lapu-Lapu	17	31	20
6	Zamboanga	20	28	16.9
7	Cebu	15	31	24.7
8	Marikina	16	29	24.3
9	Mandaluyong	19	28	21.7
10	Pasay	17	32	22.2
11	Caloocan	16	28	33.3
12	Quezon	16	36	21.4
13	Mandaue	18	35	19.9
14	Cagayan de Oro	17	32	27.8
15	Navotas	21	34	21
16	Malabon	20	32	26.7
17	Manila	15	38	30.3
18	Batangas	19	34	26.7
19	Parañaque	20	35	26
20	Makati	19	33	36
21	lloilo	20	56	22.3
22	Muntinlupa	20	36	26.9
23	Pasig	22	36	26.1
24	Las Piñas	21	35	34.7
25	San Juan	21	39	26.3
	Average	18	33	24.4

Table 4: Starting a Business, Ranking of Selected Philippine Cities

Note: The rankings for ease of starting a business are the average of the city rankings for procedures, time, cost, and paid-in minimum capital for starting a business.

Source: World Bank and International Finance Corporation, 2011..

In August 2016, the Department of the Interior and Local Government (DILG), the Department of Trade and Industry, and the Department of Information and Communication Technology issued Joint Memorandum Circular (JMC) No. 1, series of 2016, mandating uniformity of registration procedures, the use of one application form in print and electronic form, a maximum of three steps and two signatures (those of the mayor and treasurer or the business permit and licensing officer or their designated alternatives), and automated and online systems to expedite the process. The circular recommends the establishment of a business

one-stop shop. The Fire and Safety Inspection Certificate for low-risk businesses could be renewed every three years instead of annually.⁸

The fees and charges imposed at the lower level of government could be re-examined. A barangay⁹ clearance, a prerequisite for getting the mayor's permit, costs around ₱500 or about US\$10.53.¹⁰ The cost is not the issue but the transaction cost of going after the barangay captain's signature. The DILG has admitted that making it a requirement for the mayor's permit complicates local processes. The JMC No. 1, series of 2016, encourages the removal of barangay clearance as a prior requirement for the mayor's permit.

The General Santos City government has taken steps to streamline the registration and permit process. It has a dedicated staff in the business permit and licencing division and has also formed a team to visit sites to check on fire safety, health, and other issues. This has reduced the transaction costs of applicant firms.

The requirement to secure clearances from concerned national government agencies (e.g. FDA) before the processing of local business registration and permits is a challenge for firms. It is a question of the accessibility and efficiency of those national government agencies. Delays in securing national government clearances lead to high transaction costs of applicant firms. Key informants pointed to the problem of accessing FDA, particularly the Philippine Shippers' Bureau.

Local governments must professionalise their business permit and licensing division staff and provide them with security of tenure. Understaffing is a serious issue. In the General Santos City government, some members of the business permit and licencing division staff are contractual or hired through job orders, and could be replaced by an incoming new administration after local elections.

⁸ http://www.dilg.gov.ph/PDF_File/issuances/joint_circulars/dilg-joincircular-2016815_81d0d76d7e.pdf

⁹ The smallest political unit. Cities and municipalities are composed of barangays.

¹⁰ Exchange rate at ₱47.49 = US\$1.

Region	MARINA	BFAR
National Capital Region	Manila	Quezon City
Cordillera Administrative Region	-	Baguio City
Ilocos (Region I)	San Fernando City, La Union	San Fernando City, La Union
Cagayan Valley (Region II)	San Fernando City, La Union	Tuguegarao City, Cagayan
Central Luzon (Region III)	-	San Fernando City, Pampanga
CALABARZON (Region IV-A)	Batangas City, Batangas	Quezon City
MIMAROPA (Region IV-B)	Batangas City, Batangas	Calapan City, Oriental Mindoro
Bicol Region (Region V)	Legazpi City, Albay	Bula, Camarines Sur
Western Visayas (Region VI)	lloilo City, lloilo	lloilo City, lloilo
Central Visayas (Region VII)	Cebu City, Cebu	Cebu City, Cebu
Eastern Visayas (Region VIII)	Tacloban City, Leyte	Tacloban City, Leyte
Zamboanga Peninsula (Region IX)	Zamboanga City	Zamboanga City
Northern Mindanao (Region X)	Cagayan de Oro	Cagayan de Oro City
Davao Region (Region XI)	Davao City	Davao City
Soccsksargen (Region XII)	General Santos City	Koronadal City
Caraga (Region XIII)	Surigao City	Surigao City
Autonomous Region in Muslim Mindanao (ARMM)	-	Cotabato City

Table 5: MARINA and BFAR Regional Offices

BFAR = Bureau of Fisheries and Aquatic Resources, MARINA = Maritime Industry Authority. Sources: Bureau of Fisheries and Aquatic Resources Regional Offices, Maritime Industry Authority.

The key agreements and recommendations agreed on during the informed regulatory conversations are the following:

- for local governments to provide clear guidelines on the procedure and schedule of fees for registration and permits, including barangay and *purok*¹¹ clearances and fees;
- for local governments to use automated processes, and information and communications technology to expedite the registration and permit process, and to monitor and update local databases of establishment;
- for local governments to implement JMC No. 1 requiring the release of business permits and licences within two days, the use of a simplified application form, and other measures to streamline the registration and permit process;
- for national and local governments to review barangay clearances as a requirement for acquiring business permits, and to clarify the role and extent of supervision of DILG over local governments; and

¹¹ Unit or area of a barangay



Figure 4: Map of BFAR and MARINA Central and Regional Offices

BFAR = Bureau of Fisheries and Aquatic Resources, MARINA = Maritime Industry Authority. Sources: Raw data from the Bureau of Fisheries and Aquatic Resources and the Maritime Industry Authority websites..

Regional Location of Office	BFAR	MARINA	BFAR and MARINA located in the same city
Philippines	16	11	8
NCR	2/F ICC Bldg., NIA Complex, Edsa, Diliman Quezon City		
CAR	BPI Complex Guisad, Baguio City		
I-Ilocos Region	Union Galva Steel Compound, Poro, San Fernando City, La Union	3/F Tan Bldg., Quezon Avenue, Sevilla Center, San Fernando City, La Union	\checkmark
II - Cagayan Valley	Carig, Tuguegarao, Cagayan		
III - Central Luzon	Diosdado Macapagal Gov't Center, Maimpis City		
IVA – CALABARZON	Regional Office for Region IV-A is located in NCR	Telof Compound, Telecom Road, Capitol Site,	
IVB – MIMAROPA	3/F Concepcion, Bldg., JP Rizal St. San Vicente, Calapan City, Mindoro Oriental	Kumintang Ibaba, Batangas City	

Regional Location of Office	BFAR	MARINA	BFAR and MARINA located in the same city
V - Bicol Region	San Agustin, Pili, Camarines Sur	2/F RDC Primeland Inc. Bldg, Block 3 Lot 6 Landco Business Park, Capantawan, Legaspi City	
VI - Western Visayas	H. Del Pilar St., Molo, Iloilo City	4/F Arguelles Bldg. 402 E. Lopez St., Jaro, Iloilo City	\checkmark
VII - Central Visayas	Arellano Blvd., Pier Area, Cebu City	2/F, Qimonda I.T. Center, Don Sergio Osmeña Avenue, North Reclamation Area, Cebu City	\checkmark
VIII - Eastern Visayas	3/Flr Tri-Star Bldg., Avenida Veteranos, Tacloban City	2/F Uytingkoc Bldg. Senator Enage St., Tacloban City	\checkmark
IX - Zamboanga Peninsula	R.T Lim Kawa-Kawa, Zamboanga City	N.S. Valderoza Street, Zamboanga City	\checkmark
X - Northern Mindanao	Macabalan, Cagayan De Oro City	2/F SE JO Lim Bldg Gemilina St., Carmen, Cagayan de Oro	\checkmark
XI - Davao Region	BFAR Compound, Ramon Magsaysay Ave., Davao City	2/F Davao Ching Printers Inc., Bldg. cor. Lakandula and Dacudao Ave. Agdao, Davao City	\checkmark
XII - SOCCSKSARGEN	-	No. 8 Kadulasan St., Dadiangas East, General Santos City	
XIII - CARAGA	Borromeo St., Surigao City, Motorpool Compound, Surigao City	Port Area, Surigao City	\checkmark
Autonomous Region in Muslim Mindanao	DAF-ARMM ORG Complex, Cotabato City	-	

 for DILG, in partnership with the National Competitiveness Council, to coordinate in further streamlining business registration and permit processes.

3.2 Registration and Licencing of Commercial Fishing Vessels

MARINA handles the registration of all vessels while BFAR issues the commercial fishing licences. Fees correspond to the size of the vessel. Compliance with registration and licencing requirements could be difficult because some regional offices of MARINA and BFAR are in different local governments. For example, the MARINA regional office in Region XII is in General Santos City while the BFAR office is in Koronadal City (Table 5 and Figure 4). BFAR will address this issue by establishing a satellite office in General Santos City fish port complex.

MARINA, BFAR, the National Telecommunications Commission, and the Philippine Coast Guard have established a joint mobile registration and licencing of commercial fishing vessels to expedite registration and licencing. However, this ad-hoc arrangement can be revoked at any time. An inadequate number of trained field inspectors in MARINA and BFAR leads to delays in registration and issuance of licences. Another issue is the proper scheduling of site visits by a limited number of staff.

The key agreements and recommendations include the following:

- for local governments to provide clear guidelines on the procedure and schedule of fees for vessel licensing, including barangay and purok clearances and fees;
- for BFAR, MARINA, the National Telecommunications Commission, and the Coast Guard to continue with joint mobile registration;
- for BFAR and MARINA to establish one-stop shops in General Santos City fish port complex; and
- for BFAR and MARINA to establish online registration and licencing process and coordinate schedule of site visits.

3.3 Municipal Fishing Vessels Registration and Licence

Local governments do not have a uniform process for issuing licences (Table 6). In General Santos City, the process of acquiring a municipal fishing vessel licence is similar to that described in Table 6. Fishers in General Santos City neither register nor apply for a licence because their earnings are insufficient to cover the cost of registration and licencing. The municipal fishing vessel licence is renewed annually. Ordinary fishers have no incentives to register and obtain a licence because they cannot see the benefit of registration. The absence of effective monitoring is another reason for non-registration.

A barangay clearance is a requirement for registration. However, in addition to a barangay clearance, some puroks in General Santos City require a purok clearance. Fees vary across barangays and puroks. Although fees are minimal and may be waived sometimes, they can add up, burdening small fishers who want to register and licence their boats.

The key agreements and recommendations are the following:

• for local governments to provide clear guidelines on the procedure and schedule of fees for vessel licencing, including barangay and purok clearances and fees;

Selected Municipalities of Panay Island				
Polopina, Concepcion	Pinamuk-an, New Washington	Culasi, Roxas City		
 Submission of barangay clearance and community tax certificate to the Municipal Agriculture Office (MAO) 	1. Submission of barangay clearance and community tax certificate to MAO	 Submission to the City Agricultural Office of barangay clearance, community tax certificate, 5"x7" colour photo of fishing boat, Philippine National Police maritime clearance (proof that ownership is legal), deed of sale (proof that boat was bought), builders' certificate, affidavit of ownership. 		
2. MAO to conduct ocular survey and measurement	2. Fishers will measure their respective boats and submit the measurement to MAO	2. The City Agricultural Office to conduct measurement		
3. Payment of fees to the Municipal Treasurer's Office	3. Payment of fees to the Municipal Treasurer's Office	3. Payment of fees to the City Treasurer's Office		
4. Mayor issues licence and/or permit upon recommendation from MAO	4. Mayor issues licence and/or permit upon recommendation from MAO	 Mayor issues licence and/or permit upon recommendation from the City Agricultural Office 		
5. MAO issues vessel number	5. MAO issues vessel number	5. The City Agricultural Office issues vessel number		

Table 6: Municipal Fishing Vessel Licence Process

Source: Napata, et al., 2014.

- for BFAR to update and strengthen BoatR and FishR databases;
- for local governments, BFAR, MARINA, and FDA to launch an information and awareness campaign on the importance of registration and licence to operate; and
- for local governments to conduct joint mobile registration with BFAR and MARINA to facilitate registration.

3.4 Licence to Operate

Exporters and fish-processing plants must secure a licence to operate from FDA, a requirement for HACCP certification. The FDA shifted to online applications in 2013. An online processing system makes sense because there are only four FDA offices to service thousands of food and beverage establishments, including fish-processing plants and tuna canneries:¹² (i) the FDA central office in Muntinlupa City, Metro Manila; (ii) the FDA satellite laboratory in Mandaue City, Cebu, Visayas; (iii) the FDA satellite laboratory in Tagum City, Davao del Norte, Mindanao; and (iv) the Department of Health Region XI: Food and Drug Section, Davao City, Mindanao.¹³

¹² FDA website, http://www.fda.gov.ph/location-map

¹³ Additional offices may have been created since 2012.



Figure 5: Food and Drug Administration (FDA) Offices and Food and Beverage Manufacturing Firms, 2012

Lightest to darkest shade indicates lowest to highest number of manufacturing or processing firms.

Sources: Raw data from 2012 Census on Philippine Business and Industry, Philippine Statistics Authority, and Food and Drug Authority

Region Industry Description	Number of Establishments	Location of FDA Offices in the Philippines	
Food and beverage manufacturing			
Philippines	12,190		
National Capital Region	2,168		
Cordillera Administrative Region	104		
I-Ilocos Region	666		
II - Cagayan Valley	238	FDA Central Office Muntinlupa	
III - Central Luzon	1,331	City, Metro Manila, Luzon	
IVA – CALABARZON	1,596		
IVB – MIMAROPA	236		
V - Bicol Region	428		
VI - Western Visayas	869		
VII - Central Visayas	1,563	FDA Satellite Laboratory, Mandaue	
VIII - Eastern Visayas	494		
IX - Zamboanga Peninsula	392		
X - Northern Mindanao	702		
XI - Davao Region	677	City, Davao del Norte, Mindanao;	
XII – SOCCSKSARGEN	409	Department of Health Region XI:	
XIII – CARAGA	267	Mindanao	
Autonomous Region in Muslim Mindanao	50		

Figure 5 shows the location of FDA offices vis-à-vis food and beverage manufacturing firms listed by the 2012 Census on Philippine Business and Industry. Metro Manila, the darkest-shaded region, had the most number of food-manufacturing firms, with 2,168 (18% of the total number), followed by CALABARZON,¹⁴ Central Visayas, Central Luzon, Western Visayas, and other regions. The lightest-shaded region, the Autonomous Region of Muslim Mindanao, had the least number of food manufacturing firms, with only 50.

However, industry sources allege that the online application process is not user friendly, especially for small operators. Applicants cannot verify online the status of their applications lodged with FDA, and queries are either ignored or given unsatisfactory replies. Exporters and fish-processing plant operators must visit either the FDA central or satellite office to inquire about their applications or renewal of LTOs, which could have been avoided because there is supposed to be an online process.¹⁵

It is not just the inefficient online system that exporters and fish-processing plant operators have to endure. They claim that delays in site visits by FDA inspectors and bureaucratic inefficiency stymie the licencing process. They complain about the huge transaction cost resulting from an inefficient bureaucracy.

The LTO by FDA and the HACCP certification by BFAR both require inspection of tuna-processing plants. The BFAR and FDA inspectors visit the tunaprocessing plants at different times and conduct the same activities every time (Table 7). Industry sources say that BFAR conducts a more comprehensive inspection than FDA because of the detailed and rigorous requirements for HACCP certification. They also report that local government sanitary inspectors do not actually conduct inspections, yet the plant owners are required to pay the inspection fees. Sanitary inspection and approval are requirements before a mayor's permit to operate is issued.

¹⁴ CALABARZON is composed of five provinces: Cavite, Laguna, Batangas, Rizal, and Quezon.

¹⁵ FDA refused a request for interview to validate various allegations against it.

Table 7: Document Inspection Checklist, Bureau of Fisheries and Aquatic Resources and Food and Drug Administration

Inspection List

	BFAR		FDA
I. G a a.b. c. d. d. e. f. g. b. c. d. d. e. f. g. h. HI. H a. b. c. d. d. e. f. f. g. f. f. f. f. f. f. f. f. f. f. f. f. f.	BFAR Plant premises Equipment Personnel training Sanitation and pest control Cleaning procedures Product recall system Records anitation Standard Operating Procedures Safety of water and ice Condition of cleanliness of food contact surfaces Prevention of cross-contamination Maintenance of hand-washing and toilet facilities Protection of food and food contact surfaces from adulteration Proper labelling, storage, and use of toxic substances Adverse employee health conditions Exclusion of pests and animals from the plant ACCP Programme Endorsement letter signed and dated by company officials LTO Plant lay-out Company profile Organisational structure/composition/ qualifications/ experience/training of HACCP team Product description	1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	FDA Organisational chart indicating qualification of key personnel in production and quality control List of products and brands to be manufactured and/or repacked List of quality-control facilities and equipment (if any) Flowchart of manufacturing process, with emphasis on identification of critical control points Detailed description of manufacturing process Quality control procedures and sanitation standard operating procedures enforced in the plant: a. Working area b. Equipment C. Personnel d. Pets control programme Certification with current laboratory analysis (from FDA-recognised laboratories) a. Source water For plant within Metro Manila: photocopy of recent MWSS or Maynilad water bill and/or satisfactory results of potability test performed by either the Department of Health laboratory or laboratories of water supplier or laboratories accredited by the Department of Health per A.O. 26-A s. 1994 b. Finished product's compliance with standards c. Packaging certification of suitability for food use Name and address of suppliers of raw materials and packaging materials HACCP programme
f. g. i. j. k.	Product description Process-flow diagram Narrative of the process flow Hazard-analysis worksheet HACCP plan Date of submission and signature in the HACCP plan		

AO = Administrative Order; BFAR = Bureau of Fisheries and Aquatic Resources; FDA = Food and Drug Authority, HACCP = Hazard Analysis of Critical Control Points; LTO = licence to operate; MWSS = Metropolitan Waterworks and Sewerage System.

Sources: Bureau of Fisheries and Aquatic Resources – Pre-Evaluation Checklist for HACCP Programs, Food and Drug Authority – Requirements for License to Operate (LTO) Opening/Initial

The key agreements and recommendations are the following:

- for FDA to improve the online system for LTO applications by making it user friendly and efficient;
- for FDA to negotiate with the Department of Budget and Management on a sufficient budget for the right number of offices and field inspectors; and
- for FDA to deputise BFAR to conduct on-site inspections for purposes of the licence to operate and HACCP accreditation and/or certification, in view of BFAR's more extensive field presence and capacity.

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3.5 Certificate of Product Registration

After evaluation and approval of submitted registration requirements, FDA issues a CPR for specific food products. It is valid for two to five years for initial registration, and five years for renewals. Industry sources complain about a laborious and costly process and the lack of enforcement of CPRs. All types of food products are required to have a CPR number but some companies register only major products. Because of the cost involved in getting CPR, some companies do not secure CPRs for minor products. There is little incentive to fully comply because FDA does not make regular inspections. This is a question of effective registration, inspection, and monitoring. The CPR is an important instrument for safety and traceability of food products.

The key agreements and recommendations are the following:

- for FDA to improve online system for product registration, and conduct regular inspection and monitoring;
- for FDA to enforce more effectively the CPR requirement; and
- for FDA to negotiate with the Department of Budget and Management for a sufficient budget for the right number of offices and field inspectors.

3.6 Qualified Persons in Industry Regulatory Affairs

Memorandum Circular No. 5, series of 1991, issued by the Bureau of Food and Drug (the forerunner of FDA) requires companies to designate a liaison officer for official transactions with the bureau. At present, FDA requires liaison officers and regulatory affairs officers of private companies to attend its training and accreditation seminars for Qualified Persons in Industry Regulatory Affairs (QPIRA). Only QPIRAs have the authority to transact business with FDA. They are trained to submit the correct and complete documents to ensure quick evaluation and approval of requests.

Industry sources complain that FDA released the circular on training for QPIRA without adequate consultation with the industry. Current complaints, especially from smaller firms, are about the cost and venue of the training. According to the FDA website, the training fee is \$\P6,000\$ (US\$119.05) per person and it covers

training materials, meals, ID card, certificate of completion, posting of QPIRA on the website, and use of training equipment and facilities. It does not include transportation and lodging expenses of participants.

The key agreement and recommendation is for FDA to conduct training and accreditation seminars in accessible locations, and not just in Metro Manila, Cebu, or Davao.

3.7 HACCP Certification and/or Accreditation, BFAR Signatories

Two documents of importance to exporters are the HACCP certification and the export commodity clearance issued for fresh and/or frozen tuna exports. An importing country will reject tuna export products without the HACCP certification and the export commodity clearance. Aside from monetary loss, the exporting firm suffers from potential delisting by the importing country.

Issuance of the HACCP certification and the export commodity clearance requires BFAR to inspect the tuna-processing plants. The EU has recognised BFAR as a competent authority for HACCP certification by virtue of EC 95/190. The BFAR head office inspectors have been trained under the EU–Trade Related Technical Assistance for many years based on EU guidelines. The EC–Food and Veterinary Office audits the BFAR food safety control system every two years. The BFAR head office fish inspection unit is the only inspection body that has been accredited by the International Organization for Standardization, i.e. ISO 17020:2012.

The BFAR fields an inspection team composed of head office and regional office inspectors. Joint inspection might not be efficient because of problems with scheduling and the lack of team members. However, it is a necessity because the regional offices are not yet ISO certified and accredited.

The availability of the BFAR signatories is another critical issue. Industry sources claim that the signatories are sometimes unavailable due to training or official business. A solution proposed by BFAR is to maintain offices at airports and seaports to make signatories more accessible, but this might not be feasible because of budgetary constraints.

The key agreement and recommendation is for the BFAR head office to facilitate the ISO certification and accreditation, and train regional office staff to make them qualified HACCP certifiers.

[4] Conclusion and Way Forward

The case study of the tuna industry validates the importance of reviewing the existing stock of regulations with a view to revoke or change those found to be burdensome. This will reduce the cost of doing business and help render firms competitive.

In the tuna industry, there is scope for a re-examination of various regulations imposed on the industry, better enforcement of appropriate regulations, training and accreditation of food inspectors, better communication and consultation between regulators and regulated entities, and better synergy and coordination amongst government agencies and local governments.

The study shows the usefulness of value chains as a framework for identifying regulators and regulations that affect each stage of the chain. Informed regulatory conversations could also be a practical mechanism to engage stakeholders in analysing an industry and arriving at solutions to regulatory problems.

REFERENCES

Bureau of Agricultural Statistics (2012), Profile of Commercial Fish Landing Center. Quezon City, Philippines: Philippine Statistics Authority.
Bureau of Fisheries and Aquatic Resources (2016), Citizen's Charter. Quezon City, Philippines. https://www.bfar.da.gov.ph/2016/CITIZEN/ CitizenCharter.pdf (accessed 31 August 2016).
Bureau of Fisheries and Aquatic Resources (2012), National Tuna Management

Plan of the Philippines. Manila: Department of Agriculture.

- Bureau of Fisheries and Aquatic Resources (n.d.), 'Philippine Fisheries Profile 2014', Quezon City, Philippines: BFAR. https://www.bfar.da.gov.ph/ files/img/photos/2014FisheriesProfile(Finalcopy).pdf (accessed 21 August 2016).
- Espejo, E. (2015), 'Philippines Tuna Catch up Sharply in 2014; Highest in 12 years', Asian Correspondent. https://asiancorrespondent. com/2015/01/philippines-tuna-catch-up-sharply-in-2014/ (accessed 22 February 2016).
- Food and Drug Administration (2015), FDA Citizen's Charter. Muntinlupa City, Philippines. http://www.fda.gov.ph/citizen-charter-2015/227365-fdacitizen-s-charter (accessed 31 August 2016).
- MindaNews (2015), 'DA to Start Talks with Indonesia on New Fisheries Pact', http://www.mindanews.com/top-stories/2015/09/07/da-to-starttalks-with-indonesia-on-new-fisheries-pact/ (accessed 22 February 2016).
- Napata, R., L. Espectato, and G. Serofia (2014), 'Descriptive Study of the Fisheries Registration and Licensing System in Selected Municipalities of Panay Island, Philippines', Journal of Environmental Science and Management, 17(2), pp. 69–77.
- Philippine Fisheries Development Authority (2015), Corporate-Wide Historical (2010–2015) Volume of Fish Unloading. http://www.pfda.da.gov.ph/ images/PDF/Stat/historical/2015/unloadings.pdf (accessed 12 March 2016)
- Philippine Statistics Authority (2016), 'National Accounts of the Philippines, as of August 2016', Quezon City, Philippines: PSA.
- Philippine Statistics Authority (2015), 'Supply Utilization Accounts (SUA) of Selected Agricultural Commodities 2012–2014', Quezon City, Philippines: Philippine Statistics Authority. https://psa.gov.ph/sites/ default/files/sua_12-14.pdf (accessed 12 August 2016).
- Philippine Statistics Authority (2015), 'CountrySTAT Philippines Fishery: Supply Utilization Accounts', http://countrystat.psa.gov.ph/?cont=10&pageid=1&ma=1 70FCSUA (accessed 18 August 2017)
- World Bank (2005), 'Philippine Coastal & Marine Resources: An Introduction', in 2005 Philippine Economic Monitor. Washington, DC: World Bank. http://siteresources.worldbank.org/INTPHILIPPINES/Resources/ PEM05-ch1.pdf. (accessed 28 July 2016).

- World Bank and the International Finance Corporation (2010), *Doing Business in the Philippines 2011*. Washington, DC: World Bank and the International Finance Corporation.
- Yamashita, H. (2008), 'The Value Chain for Philippine Tuna Commodity: Recent Developments and Future Directions', Achieving a Sustainable Future: Managing Aquaculture, Fishing, Trade and Development. Corvallis, Oregon, US: International Institute of Fisheries Economics & Trade.