

MAKING AQUACULTURE ACCOUNTABLE THROUGH THIRD-PARTY CERTIFICATION AND CONSUMER PROTECTION LAW IN THE UNITED STATES AND CHINA

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INTRODUCTION

Worldwide consumption of fish has reached an all-time high¹ at over eighteen kilograms per person per year.² At the same time, aquaculture—farmed seafood—accounts for over 40% of the global supply of seafood.³ Most farmed fish comes from Asia, with China leading the world at over 41 million tons of farmed seafood per year.⁴

There are two main systems of aquaculture. So-called “open-net” aquaculture involves a free flow of ocean water through enclosures, providing a constant supply of water to the fish but also polluting the body of water with antibiotics, feed, waste, and even escaped fish, which may be non-native species or, more recently, genetically engineered fish.⁵ Freshwater aquaculture, in ponds or recirculating systems, similarly results in periodic discharge of effluent amongst the fish “crop.”⁶ Additionally, the nutritional qualities of farmed fish may differ from their wild-caught

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† This Article was researched and written under the auspices of the Joint Research Project of the U.S.-China Partnership for Environmental Law. Special thanks to Associate Professor Hu Jing of the China University of Political Science and Law and Professor Hillary Hoffmann of Vermont Law School for their guidance and support.

1. Garrett Wheeler, *A Feasible Alternative: The Legal Implications of Aquaculture in the United States and the Promise of Sustainable Urban Aquaculture Systems*, 6 GOLDEN GATE U. ENVTL. L.J. 295, 295 (2013).

2. FOOD & AGRIC. ORG. OF THE UNITED NATIONS, THE STATE OF WORLD FISHERIES AND AQUACULTURE 3 (2012) [hereinafter FAO, STATE OF WORLD FISHERIES], available at <http://www.fao.org/docrep/016/i2727e/i2727e.pdf>.

3. FOOD & AGRIC. ORG. OF THE UNITED NATIONS, THE STATE OF WORLD FISHERIES AND AQUACULTURE: OPPORTUNITIES AND CHALLENGES 19 (2014), available at <http://www.fao.org/3/d1eaa9a1-5a71-4e42-86c0-f2111f07de16/i3720e.pdf>.

4. *Id.* at 20.

5. See Kristen L. Johns, Note, *Farm Fishing Holes: Gaps in Federal Regulation of Offshore Aquaculture*, 86 S. CAL. L. REV. 681, 694–96 (2013) (describing how aquaculture can create biological pollution through escaped fish and nutrient loading (eutrophication)); Jansen Anderman-Hahn, Note, *Net Pens with Adaptive Management: How to Manage the Expansion of Aquaculture Using the Clean Water Act*, 30 VT. L. REV. 1007, 1012 (2006).

6. See Thomas R. Head, III, *Fishy Business—Regulating Aquaculture Operations in the United States*, 18 NAT. RES. & ENV'T 21, 21–22 (2003) (explaining the discharge frequency between the differing types of aquaculture facilities).

counterparts.⁷ Like concentrated animal feeding operations, aquaculture facilities in the United States may be regulated as point sources of water pollution under the Clean Water Act (CWA) when they qualify as “concentrated aquatic animal production facilit[ies].”⁸ The FDA also regulates the fish that are sold for human consumption, but less than 2% of imported fish are inspected, presumably due to limited resources.⁹

Consumers in the United States have become increasingly aware of the deleterious effects of aquaculture on the environment. Yet, they face a difficult choice in their local supermarkets,¹⁰ since the world’s supply of ocean fish has diminished substantially due to overfishing.¹¹ The availability of more convenient genetic testing has also revealed widespread mislabeling of fish. In the United States, farmed fish are sometimes labeled as wild-caught, and species are substituted with alarming frequency.¹²

7. See Jeffery A. Foran et al., *Quantitative Analysis of the Benefits and Risks of Consuming Farmed and Wild Salmon*, 135 J. NUTR. 2639, 2639 (2005) (reporting that farmed-raised Atlantic salmon have more concentrations of a certain chemical than Pacific salmon); *but see* Ronald W. Hardy, *Farmed Fish & Omega-3 Fatty Acids*, AQUACULTURE MAG. 1 (March/April 2003) (arguing that while the ratio of Omega-3 to overall fat may differ, the amount of beneficial Omega-3 fatty acids in a serving of certain species of farmed fish is comparable to that in a serving of wild-caught fish).

8. See 40 C.F.R. § 122.24 (a), (b) (1988) (stating that “concentrated aquatic animal production facilit[ies]” require permits and defining what a concentrated aquatic animal facility is).

9. See U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-11-286, SEAFOOD SAFETY: FDA NEEDS TO IMPROVE OVERSIGHT OF IMPORTED SEAFOOD AND BETTER LEVERAGE LIMITED RESOURCES 1, 2, 21 (2011) (noting that in 2009 the FDA tested for drug residues in about 1% of all imported seafood products).

10. See generally FOOD & WATER WATCH, DE-CODING SEAFOOD ECO-LABELS: WHY WE NEED PUBLIC STANDARDS (Nov. 2010), available at http://documents.foodandwaterwatch.org/doc/De_Coding_Eco_labels.pdf (discussing the need for straightforward guidance on seafood amongst consumers and retailers).

11. Rosamond L. Naylor et al., *Effects of Aquaculture on World Fish Supplies*, ISSUES IN ECOLOGY, Winter 2001, at 1, 2, available at <http://www.esa.org/esa/wp-content/uploads/2013/03/issue8.pdf>.

12. Brian Clark Howard, *New Oceana Study Finds 33% of Seafood Mislabeled*, NAT’L GEOGRAPHIC (Feb. 21, 2013), <http://newswatch.nationalgeographic.com/2013/02/21/new-oceana-study-finds-33-of-seafood-mislabeled>; Kera Abraham, *Something Fishy: Seafood fraud disguises farmed salmon as wild, tilapia as snapper and sole as sand dabs. What’s on your plate – and how did it get there?*, MONTEREY CNTY. WEEKLY (May 16, 2013, 10:37 AM), http://www.montereycountyweekly.com/news/cover/seafood-fraud-disguises-farmed-salmon-as-wild-tilapia-as-snapper/article_253f7b39-8656-5ca6-8786-661db547fe7e.html; Elisabeth Rosenthal, *Tests Say Mislabeled Fish Is a Widespread Problem*, N.Y. TIMES (Dec. 11, 2012), <http://www.nytimes.com/2012/12/11/science/earth/tests-call-mislabeled-fish-a-widespread-problem-in-new-york.html>; *Mystery Fish: The Label Said Red Snapper, The Lab Said Baloney*, CONSUMER REPORTS MAG. (Dec. 2011), <http://www.consumerreports.org/cro/magazine-archive/2011/december/food/fake-fish/overview/index.htm>; see John Schwartz, *Fish Tale Has DNA Hook: Students Find Bad Label*, N.Y. TIMES (Aug. 21, 2008), <http://www.nytimes.com/2008/08/22/science/22fish.html> (asserting a scandal unfolded after two high school students performed a simple, yet previously unavailable genetic test on fish sold in New York City).

Because the United States Department of Agriculture (USDA) has not officially regulated the “organic” label for fish and seafood—i.e., it has not promulgated rules that specify when fish and seafood may be labeled “organic”—aquaculture products in the United States may only be labeled “organic” under European or other standards.¹³ A number of third-party seafood certifiers have emerged with a dizzying array of standards for “eco-fish” or “sustainable” seafood.¹⁴ U.S. and Chinese consumers are willing to pay higher prices for “sustainable” fish and seafood.¹⁵

Part I of this Article describes the current state of aquaculture and the laws regulating aquaculture in the United States and China. Part II describes the existing frameworks that regulate aquaculture under U.S. and Chinese law. Part III provides background on consumer protection laws related to the marketing of “green” or environmentally friendly products. Part IV discusses the concept of third-party certification for “sustainability” and describes ways of assessing the differences between various standards. Part V offers recommendations so that private certification could result in more transparent supply chains, reduce seafood fraud, and drive innovation and implementation of aquaculture practices that are less damaging to the environment. Part V concludes that with more specific FTC guidelines for marketing claims related to eco-seafood, consumer demand for “sustainable” seafood could result in less greenwashing¹⁶ and motivate improvements in aquaculture practices in both the United States and China.¹⁷ Analogous consumer protection standards in China, combined with the work of watchdog NGOs, could lead to high impact improvements to aquaculture systems.

13. FOOD & WATER WATCH, FACT SHEET: EUROPEAN ORGANIC AQUACULTURE CERTIFICATION 1 (2009), available at <http://documents.foodandwaterwatch.org/doc/euorganics.pdf>.

14. See, e.g., MONTEREY BAY AQUARIUM SEAFOOD WATCH, ECO-CERTIFICATION BENCHMARKING PROJECT 2 (2013), available at <http://www.seafoodwatch.org/-/m/sfw/pdf/eco-certifications/reports/mba-seafoodwatch-benchmarking-faqs.pdf> (discussing certification procedures for “sustainable seafood options”).

15. See NANCY VALLEJO ET. AL., UNITED NATIONS ENV’T L PROGRAMME, THE ROLE OF SUPPLY CHAINS IN ADDRESSING THE GLOBAL SEAFOOD CRISIS 29 (Philip Lyndon ed., 2009), available at <http://www.unep.ch/etb/publications/Fish%20Supply%20Chains/UNEP%20fish%20supply%20chains%20report.pdf> (describing changes between US and Chinese preference for sustainable fish).

16. See Eric L. Lane, *Consumer Protection in the Eco-Mark Era: A Preliminary Survey and Assessment of Anti-Greenwashing Activity and Eco-Mark Enforcement*, 9 J. MARSHALL REV. INTELL. PROP. L. 742, 742 (2010) (defining greenwashing as “making false or misleading claims regarding environmentally friendly products, services or practices”).

17. Michael Tlusty, *Environmental Improvement of Seafood Through Certification and Ecolabelling: Theory and Analysis*, 13 FISH & FISHERIES 1, 12 (2012) (introducing evidence that third-party certifications especially multiple certifications with increasingly higher thresholds to achieve, can help drive actual improvement of the environmental impacts of aquaculture).

I. AQUACULTURE: AN ECOLOGICALLY DESTRUCTIVE WAY OF
MEETING THE DEMANDS OF A FISH-HUNGRY WORLD

The typical American consumer eats roughly fifteen pounds of fish and seafood per year, of which over 90% is imported.¹⁸ The Chinese consumer eats over sixty-eight pounds (thirty-one kilograms) of fish and seafood per year.¹⁹ The amount of farmed fish has increased, both in the United States and worldwide, especially since 2000,²⁰ and about half of the imported seafood comes from aquaculture operations.²¹ China is the world's largest producer of farmed fish and the source of most farmed fish consumed in the United States, and about half of the farmed fish imported into the United States comes from China.²² The growth of aquaculture is staggering: In 1980, aquaculture provided 9% of the world's fish for human consumption, whereas in 2010, it provided 47%.²³ While the increased consumption of farmed fish could reduce pressure on the world's depleted wild fisheries, aquaculture has also been associated with serious food safety concerns, and the public in both the United States and China has become increasingly aware of the negative environmental effects of aquaculture. This is especially alarming because the growth of aquacultural production is accelerating such that over 60% of the world's supply of food fish will come from aquaculture by 2030.²⁴

Food safety issues associated with aquaculture include the contamination of fish and seafood with pharmaceuticals, chemicals, and industrial pollutants. For instance, in May 2012 an ABC World News

18. *U.S. Seafood Landings Reach 14-year High in 2011*, NOAA (Oct. 5, 2012), http://www.noaanews.noaa.gov/stories2012/20120919_fisheries2011report.html; see also *Basic Question about Aquaculture*, NOAA, http://www.nmfs.noaa.gov/aquaculture/faqs/faq_aq_101.html (last visited Nov. 17, 2014) (stating Americans eat approximately 15.8 pounds of fish and shellfish per person per year).

19. FOOD & AGRIC. ORG. OF THE UNITED NATIONS, *WORLD REVIEW OF FISHERIES AND AQUACULTURE* (2012), available at <http://www.fao.org/docrep/016/i2727e/i2727e01.pdf>.

20. FAO, *STATE OF WORLD FISHERIES*, *supra* note 2, at 86.

21. *U.S. Seafood Landings Reach 14-year High in 2011*, *supra* note 18.

22. See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-11-286, *SEAFOOD SAFETY: FDA NEEDS TO IMPROVE OVERSIGHT OF IMPORTED SEAFOOD & BETTER LEVERAGE LIMITED RESOURCES* 1, 5-6 (2011).

23. FAO, *STATE OF WORLD FISHERIES*, *supra* note 2, at 26.

24. See *Two thirds of fish to come from aquaculture by 2030*, *WORLD FISHING & AQUACULTURE* (Feb. 11, 2014), <http://www.worldfishing.net/news101/industry-news/two-thirds-of-fish-to-come-from-aquaculture-by-2030> (stating that a report "by the World Bank, FAO and the International Food Policy Research Institute (IFRI) predicts that 62% of food fish will come from aquaculture by 2030"); WORLD BANK, *FISH TO 2030: PROSPECTS FOR FISHERIES AND AQUACULTURE* (Dec. 2013), available at <http://www.fao.org/3/a-i3640e.pdf> (stating aquaculture will supply over 60% of the fish intended for human consumption by 2030).

investigation tested farmed shrimp from U.S. grocery stores and found that 10% contained nitrofurazone in concentrations nearly thirty times greater than FDA standards would allow.²⁵ The FDA has banned the use of nitrofurazone, an antimicrobial used in concentrated aquaculture facilities, because it is carcinogenic.²⁶ In China, there have been several incidents where farmed fish were recalled due to contamination, and Chinese consumers recognized the risks connected to consumption of farmed seafood.²⁷

In addition to the heightened food-safety risks associated with farmed fish and seafood, aquaculture's opponents highlight environmental concerns, including escape, habitat impacts, and water pollution.²⁸ Because it is impossible to prevent a small percentage of fish from escaping their enclosures in marine aquaculture facilities, in some cases a non-native species—or a genetically modified variation—could affect the local ecosystem.²⁹ Water pollution from aquaculture is primarily caused by the discharge of nutrients from the facilities,³⁰ such as nitrogenous compounds that contribute to eutrophication.³¹ In addition to nutrient waste, aquaculture facilities release chemicals and therapeutants.³² Depending on the specific type of facility and species of fish or seafood, a fish farm may utilize various antimicrobials, pigments, and disinfectants.³³ Studies have shown that aquaculture is a major source of pollution in China.³⁴

Because there is so much variation among aquacultural methods, it would be erroneous to conclude that the “farmed” versus “wild caught” distinction provides sufficient information for consumers who seek to make ecologically conscientious decisions in the supermarket. Aquaculture

25. Helena Bottemiller, *ABC Finds Illegal Antibiotics in Imported Shrimp*, FOOD SAFETY NEWS (May 21, 2012), <http://www.foodsafetynews.com/2012/05/abc-finds-illegal-antibiotics-in-imported-shrimp/#.UKTCTz9GeRM>.

26. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-11-286, *supra* note 22, at 10.

27. *See, e.g., Shandong Bans Sales of Contaminated Turbot*, XINHUA NEWS AGENCY (Nov. 20, 2006), <http://www.china.org.cn/english/health/189526.htm> (describing a province-wide ban of turbot after regulators discovered excessive chemicals, noting that various products have been banned).

28. *Top 10 Problems*, FOOD & WATER WATCH, <http://www.foodandwaterwatch.org/fish/fish-farming/offshore/problems> (last visited Nov. 16, 2014).

29. *Id.*; *see also* U.S. Pub. Interest Research Grp. v. Atl. Salmon of Maine, LLC., 215 F. Supp. 2d 239, 247 (D. Me. 2002) (holding that escaped non-native species constitute pollutants under the Clean Water Act).

30. Ling Cao et al., *Environmental Impact of Aquaculture and Countermeasures to Aquaculture Pollution in China*, 14 ENV'T'L SCI. POLLUTION RES. 452, 453, 455 (2007).

31. *Id.*

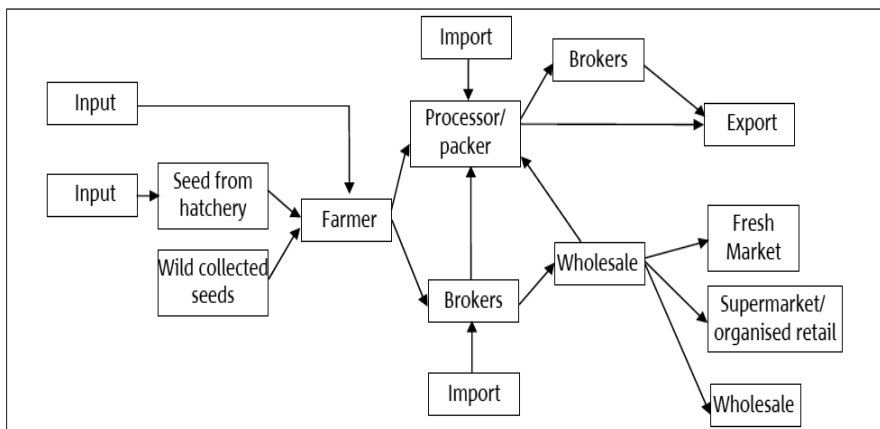
32. *Id.* at 454.

33. *Id.*

34. *Id.* at 461.

operations are either: (1) “open-net” systems, which are largely located in bays, mouths of rivers, or at sea; or (2) freshwater systems that are located inland.³⁵ Inland systems include structures such as manmade ponds, flow-through systems, and recirculating systems.³⁶ Within each of these systems, practices may vary widely, and while some systems resemble concentrated animal feeding operations, others feature designs that minimize negative impacts on the environment while maximizing productivity by integrating fish, shellfish, and plants.³⁷ In China there are over 140 varieties of farmed fish and seafood,³⁸ and aquacultural methods vary drastically by species, even within a given species.³⁹ For example, consumers cannot easily distinguish tilapia sourced from a simple fill-and-drain pond system from tilapia grown in a more elaborate and effective system designed to clean the water.⁴⁰ Furthermore, as the diagram that follows illustrates, the supply chains are diverse and complex.⁴¹

Diagram 1: Aquaculture Supply Chains⁴²



35. *Id.* at 454.

36. *See* Head, *supra* note 6, at 21 (describing the major types of aquacultural systems).

37. *See* Wheeler, *supra* note 1, at 297 (describing recirculating “aquaponic” systems).

38. NETHERLANDS BUS. SUPPORT OFFICE, AN OVERVIEW OF CHINA’S AQUACULTURE 1, 6 (2010), available at http://china.nlambassade.org/binaries/content/assets/postenweb/c/china/zaken-doen-in-china/import/kansen_en_sectoren/agrofood/rapporten_over_agro_food/an-overview-of-chinas-aquaculture.

39. Anonymous Source, Beijing, China (Dec. 2013).

40. *Id.*

41. *See* NETHERLANDS BUS. SUPPORT OFFICE, *supra* note 38, at 8 (describing China’s aquatic supply chain).

42. *Id.*

By the time a single shipping container of farmed seafood arrives in the United States, it contains products from over 200 different sources, which are currently not traceable.⁴³

II. REGULATION OF AQUACULTURE AND SEAFOOD IN THE UNITED STATES AND CHINA

In the United States, a variety of agencies and bodies of law regulate aquaculture and farmed fish and seafood. The EPA regulates aquaculture under the CWA.⁴⁴ Regulations promulgated under the CWA require permits for “concentrated aquatic animal production facilit[ies],” which the EPA identifies on a case-by-case basis, based on “(i) The location and quality of the receiving waters of the United States; (ii) The holding, feeding, and production capacities of the facility; (iii) The quantity and nature of the pollutants reaching waters of the United States; and (iv) Other relevant factors.”⁴⁵ These regulations generally exclude facilities raising cold-water fish (i.e., salmon and trout) that produce fewer than 20,000 pounds of fish or input fewer than 5,000 pounds of feed, and facilities raising warm-water fish (i.e., catfish) that produce fewer than 100,000 pounds of fish per year.⁴⁶ The majority of fish farming operations in the United States are not of a scale requiring permitting under the CWA.⁴⁷

The FDA regulates food safety, including the safety of fish and seafood, under the Food, Drug, and Cosmetic Act.⁴⁸ The FDA’s primary methods of regulating the safety of imported seafood include inspections of imported seafood⁴⁹ as well as on-the-ground inspections conducted in

43. Conversation with Scientists at New England Aquarium Conservation Department (Nov. 2012).

44. Wheeler, *supra* note 1, at 303; see Clean Water Act, 33 U.S.C. § 1342 (2012) (requiring a ND PES permit for discharge into navigable waters from concentrated animal feeding operations).

45. 40 C.F.R. § 122.24(c) (1988).

46. 40 C.F.R. app. C § 122.24.

47. *Effluent Guidelines—Aquatic Animal Production Industry*, EPA (Mar. 6, 2012), <http://water.epa.gov/scitech/wastetech/guide/aquaculture/fs-final.cfm>; U. S. DEP’T OF AGRIC., CENSUS OF AQUACULTURE 1 (2006), available at <http://www.agcensus.usda.gov/Publications/2002/Aquaculture/AQUACEN.pdf>.

48. 21 U.S.C. §§ 301–399f (2012); see Laurie J. Beyranevand, *Milking It: Reconsidering the FDA’s Refusal to Require Labeling of Dairy Products Produced from RBST Treated Cows in Light of International Dairy Foods Association v. Boggs*, 23 FORDHAM ENVTL. L. REV. 102, 111–15 (2012) (summarizing a concise history of the FDA’s authority to regulate food safety).

49. See U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-11-286, *supra* note 22 (concluding that the FDA’s food safety management program is limited in that its primary duty is to conduct inspections of foreign seafood processors and importers each year).

China.⁵⁰ The Government Accountability Office (GAO) has issued a report that outlines the FDA's actions in regulating imported seafood, and concludes that the inspections are not sufficient.⁵¹ The GAO report states that "FDA's sampling program is limited in scope, is not effectively implemented, and does not fully use the capabilities of FDA's laboratories."⁵² The FDA claims that "the equipment and personnel the agency dedicates to its sampling program are sufficient,"⁵³ yet the FDA inspects only about 1.5% of seafood imports from China.⁵⁴ In contrast, Canada collected samples to test for drug residues in 5% of its imported seafood, and Japan manages to sample 11% of its seafood imports.⁵⁵ Whatever the reason for the FDA's failure to adequately regulate imported seafood—including farmed seafood that has a higher risk of industrial and pharmaceutical contamination—seafood imported to the United States from China remains largely uninspected.

In addition to the existing regulations, several U.S. agencies have announced intentions to regulate aquaculture. The National Oceanic and Atmospheric Administration (NOAA) intends to regulate ocean-based aquaculture and has published draft policies,⁵⁶ and the USDA is considering organic standards for farmed fish and seafood.⁵⁷ At this time, the proposed standards for organic farmed fish remain controversial for a variety of reasons.⁵⁸ In marine aquaculture, open-net systems allow farmed fish to consume wild prey as well as feed, and the feed contains fish meal that derives from wild fish as well; neither food source would qualify as organic.⁵⁹

In China, as in the United States, a variety of laws and government ministries regulate aquaculture and its products. Generally, Chinese law appears to regulate aquaculture more broadly by requiring permits for all

50. *See id.* (noting that in the last six years the FDA inspected only 1.5% of the seafood processing facilities located in China).

51. *Id.* at 27–28.

52. *Id.* at 12.

53. *Id.* at 21.

54. *See id.* at 1 (noting the FDA inspects only 1.5% of Chinese seafood processing facilities).

55. *Id.* at 23.

56. *Commerce, NOAA Release Draft National Aquaculture Policies, Invite Public Comment*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Feb. 9, 2011), http://www.noanews.noaa.gov/stories2011/20110209_aquaculture.html.

57. *Organic Seafood: Fact or Fiction*, FOOD & WATER WATCH, <http://www.foodandwaterwatch.org/common-resources/fish/seafood/labeling/organic-seafood-fact-or-fiction> (last visited Nov. 17, 2014).

58. *Id.*

59. *Id.*

aquaculture operations, but in fact, many facilities, particularly highly polluting pond systems, operate without permits.⁶⁰ In China, a variety of laws regulate aquaculture including: the Fisheries Law of the People's Republic of China, the Marine Environment Protection Law of the People's Republic of China, the Law of the People's Republic of China on Agricultural Product Quality Safety, and the Food Safety Law of the People's Republic of China.

The Standing Committee of the People's Congress enacted the Fisheries Law of the People's Republic of China in 1986 and amended it in 2000.⁶¹ The Fisheries Law was "enacted for the purpose of enhancing the protection, increase, development and rational utilization of fishery resources, developing artificial cultivation, ensuring fishery workers' lawful rights and interests and boosting fishery production, so as to meet the need of socialist construction and the people's needs."⁶² The law applies to all aquaculture conducted "in the inland waters, tidal flats, territorial waters and exclusive economic zones of the People's Republic of China and in all other sea areas under the jurisdiction of the People's Republic of China."⁶³ Thus, the Fisheries Law applies to inland aquaculture as well as marine aquaculture. "The administrative department for fisheries under the State Council" regulates fisheries throughout China, and "[t]he administrative departments for fisheries under the local people's governments at or above the county level are in charge of fisheries affairs in their respective administrative areas."⁶⁴

Chapter II of the Fisheries Law deals specifically with aquaculture. The Fisheries Law declares that the State encourages aquaculture units to "make full use of water areas and tidal flats that are united to aquacultural department."⁶⁵ The State makes a unified plan that designates areas used for aquaculture.⁶⁶

The National Verification Commission for Pedigree and Fine Varieties of Aquatic Species must verify any new variety of fish or shellfish, which

60. Anonymous Source, China (Dec. 22, 2013).

61. See Fisheries Law of the People's Republic of China (promulgated by the President of the People's Republic of China, Jan. 20, 1986, effective Jan. 20, 1986) [hereinafter *Fisheries Law*], available at http://www.china.org.cn/china/LegislationsForm2001-2010/2011-02/14/content_21917138.htm (last visited Nov. 20, 2014) (stating that the law was amended once in 2000 and then in 2004).

62. *Id.* ch. I, art. 1.

63. *Id.* ch. I, art. 2.

64. *Id.* ch. I, art. 6.

65. *Id.* ch. II, art. 10.

66. *Id.* ch. II, art. 11.

must then also be approved by the administrative department for fisheries under the State Council.⁶⁷ Safety standards govern the approval of genetically engineered fish or shellfish.⁶⁸

Articles 19 and 20 refer generally to environmental standards for aquaculture. The Fisheries Law prohibits “[n]oxious and harmful bait and feed” in aquaculture, and the law charges aquacultural workers with “protect[ing] the ecological environment of the waters by scientifically defining the density of aquaculture, and through rational feeding and rational application of fertilizer and use of medicines,” and prohibits contaminating the waters.⁶⁹ Article 36 states that “[p]eople’s governments at all levels shall take measures to protect and improve the ecological environment of fishery waters and prevent pollution.”⁷⁰

The Fisheries Law also provides for penalties for those who violate it. Operation of unpermitted aquacultural facilities can result in injunctions or fines.⁷¹ The Fisheries Law points to other laws for enforcement against fishery pollution or ecological damage to fishery waters.⁷²

In 1982, the Standing Committee of the People’s Congress adopted the Marine Environment Protection Law of the People’s Republic of China, and revised the law in 1999.⁷³ The administrative department in charge of environment protection under the State Council regulates the marine environment, which includes oversight of “marine pollution damages caused by land-based pollutants and coastal construction projects.”⁷⁴

National and local marine environment quality standards shall be one of the important foundations in working out national and local water pollutant discharge standards. In the key sea areas where the State has established and put into practice the system to control the total pollution load for sea disposal, the determination of water pollutant discharge standards shall also

67. *Id.* ch. II, art. 16.

68. *Id.* ch. II, art. 17.

69. *Id.* ch. II., arts. 19–20.

70. *Id.* ch. IV, art. 36.

71. *Id.* ch. V, art. 40.

72. *Id.* ch. V, art. 47.

73. Marine Environment Protection Law of the People’s Republic of China (promulgated by Order No. 26 of the President of the People’s Republic of China, Dec. 25, 1999, effective Dec. 25, 1999) [hereinafter *MEPL*], available at <http://www.cecc.gov/resources/legal-provisions/marine-environmental-protection-law-of-the-peoples-republic-of-china> (last visited Nov. 17, 2014).

74. *Id.* ch. I, art. 5.

take the control standards of the standards to control the total load of key pollutants for sea disposal as an important basis.⁷⁵

“All units and individuals practicing direct discharge of pollutants into the sea shall, in accordance with the State regulations, pay pollutant discharge fees.”⁷⁶ This would apply to marine aquaculture and may also apply to land-based, or river delta-based aquaculture that drains into the sea.

The Marine Environment Protection Law states that “[t]he introduction of marine biological species shall [be] subject to scientific assessment [so as] to avoid damages to marine ecosystems.”⁷⁷ However, the law does not specify which authority is responsible for the scientific assessment, or whether the assessment can exclude a given species based on the results. Article 28 encourages fishery development as a means of improving the marine ecology.⁷⁸ The article refers to aquaculture:

Environmental impact assessment shall be conducted in the new construction, reconstruction and extension of mariculture. Mariculture. [sic] shall determine breeding density in a scientific way, rationally feeding and apply manure and accurately use medicines, so as to prevent pollution to the marine environment.⁷⁹

The Marine Environment Protection Law also establishes liability for damage to marine ecosystems:

For damages to marine ecosystems, marine fishery resources and marine protected areas which cause heavy losses to the State, the department invested with power by the provisions of this law to conduct marine environment supervision and administration shall, on behalf of the State, put forward compensation demand to those held responsible for the damages.⁸⁰

The law specifies that:

75. *Id.* ch. II, art. 10.

76. *Id.* ch. II, art. 11.

77. *Id.* ch. III, art. 25.

78. *Id.* ch. III, art. 28.

79. *Id.*

80. *Id.* ch. IX, art. 90.

“[P]ollution damage to the marine environment” means any direct or indirect introduction of substances or energy into the marine environment which results in deleterious effects such as harm to marine living resources, hazards to human health, hindrance to fishing and other legitimate operations at sea, impairment of the useful quality of sea water and degradation of environment quality.⁸¹

The Law of the People’s Republic of China on Agricultural Product Quality Safety, adopted in 2006, regulates “primary products sourced from agriculture, that is to say, the plants, animals, microorganisms and their products, which are obtained from agricultural activities,”⁸² and thus applies to fish and seafood grown in aquaculture. Under this law, the “quality of an agricultural product [must] meet[] the requirements for ensuring human health and safety.”⁸³ The law also provides that “[t]he administrative department of agriculture of the State Council shall set up an agricultural product quality safety risk evaluation experts’ committee consisting of experts in relevant areas, in order to analyze the risk and evaluate the potential harms which might affect the agricultural product quality safety.”⁸⁴ “When formulating the agricultural product quality safety criteria, the relevant departments shall take into full consideration the results of agricultural product quality safety risk evaluation, and give audience to the opinions of producers, sellers and consumers of agricultural products, in order to guarantee the consumption safety.”⁸⁵

Articles 17–19 are of particular interest for aquaculture because they prohibit production of agricultural edible products in “areas where the poisonous and harmful substances are in excess of the prescribed standards.”⁸⁶ “[W]aste water, waste gas, solid wastes or other poisonous and harmful substances” may not be discharged into areas of agricultural production.⁸⁷ And finally, “chemical products [such] as chemical fertilizers, pesticides, veterinary drugs and agricultural films, shall be used in a reasonable way by producers of agricultural products, to prevent such

81. *Id.* ch. X, art. 95.

82. Law of the People’s Republic of China on Agricultural Product Quality Safety, ch. I, art. 2, (promulgated by Standing Comm. Nat’l People’s Cong., Apr. 29, 2006, effective Nov. 1, 2006) [hereinafter APQS], available at <http://www.asianlii.org/cn/legis/cen/laws/lotprocoapqs706/> (last visited Nov. 17, 2014).

83. *Id.*

84. *Id.* ch. I, art. 6.

85. *Id.* ch. II, art. 12.

86. *Id.* ch. III, art. 17.

87. *Id.* ch. III, art. 18.

chemical products from polluting the producing areas of agricultural products.”⁸⁸

The law establishes a licensing system for “pesticides, veterinary drugs, feeds and feed additives, fertilizers, and veterinary devices, which might affect the agricultural product quality safety,” and producers are subject to inspection by “[t]he administrative department of agriculture of the State Council and the administrative department of agriculture of the people’s government of each province, autonomous region, or municipality directly under the Central Government.”⁸⁹

Despite the appearance of regulation by multiple government departments, aquaculture facilities in China, especially inland pond systems, which are widespread throughout the country, operate largely without permits.⁹⁰ These small scale operations are notorious for using frequently polluted water.⁹¹ The farmers utilize the simplest fill-and-drain style pond systems, which involve large amounts of feed and pharmaceutical inputs.⁹² Once brokers purchase the fish, it is practically impossible to trace it back to its source.⁹³ The National Engineering Research Center for Freshwater Fisheries and Beijing Fisheries Research Institute strive to provide farmers with models for more efficient and less environmentally destructive systems, but cost remains a barrier to its implementation.

III. CONSUMER PROTECTION LAW AND “GREEN” MARKETING CLAIMS

U.S. consumer protection law—along with corresponding unfair competition law—has directly engaged in unfair and deceptive practices in “green” and sustainable product marketing, whereas Chinese law addresses consumer protection and unfair competition more generally. In the U.S. federal and state governments, as well as in the private sector, consumers and competitors may take action against unfair or deceptive marketing practices. Chinese consumer protection and unfair competition law offers fewer options for enforcement and thus fewer reasons for compliance.

In the United States, if a store, restaurant, distributor, or other marketer chooses to sell farmed fish or seafood as some sort of eco-seafood—

88. *Id.* ch. III, art. 19.

89. *Id.* ch. IV, art. 21.

90. Anonymous Source, China (Dec. 23, 2013).

91. *Id.*

92. *Id.*

93. *Id.*

claiming that the production methods were in some way “greener” or more “environmentally friendly” than other forms of aquaculture—consumer protection laws at the federal and state levels would regulate their labels. The FTC occupies the outermost level of consumer protection.⁹⁴ In recent decades, the FTC has increasingly paid attention to the manner in which “green” marketing claims can deceive consumers. In recent years, the FTC has also taken action to enforce fair and honest marketing of seafood.⁹⁵

Under the Federal Trade Commission Act, the FTC has authority to regulate “[u]nfair methods of competition in or affecting commerce, and unfair or deceptive acts or practices in or affecting commerce.”⁹⁶ Because “[a]dvertising deception is evaluated from the perspective of the reasonable prospective purchaser, that is, a reasonable consumer in the audience targeted by the advertisement,”⁹⁷ marketers must take care to ensure not only that their express claims are true, but also that the implied claims are not deceptive to reasonable consumers.

In 1992, the FTC published the “Guides for the Use of Environmental Marketing Claims” (Green Guides)⁹⁸ because of the increasing use of environmental claims in product marketing. The FTC has revised the Green Guides in 1996, 1998,⁹⁹ and 2012.¹⁰⁰ The Green Guides are not a strict set of rules, but they give marketers a sense of the kinds of claims that the FTC will generally consider deceptive under 15 U.S.C. § 45. Because the FTC defines deception in terms of deviance from the attitudes of reasonable consumers, the Green Guides show marketers what reasonable consumers

94. Press Release, Fed. Trade Comm’n, FTC Submits Comment on “Certified Sustainable Seafood Label” (May 31, 2013), available at <http://www.ftc.gov/news-events/press-releases/2013/05/ftc-submits-comment-certified-sustainable-seafood-label>.

95. See Letter from Mary Koelbel Engle, Assoc. Dir., FTC, to Phillip Allen, Esq., Div. Counsel, Long John Silver’s/A&W Rest. (June 23, 2009) (on file at 2009 WL 2053600) (describing an investigation where the FTC successfully urged Long John Silver’s to cease using the term “lobster” to describe a product derived from a separate species of shellfish that a reasonable consumer would not believe was a lobster).

96. 15 U.S.C. § 45(a)(1) (2006).

97. *FTC v. Wash. Data Res. Inc.*, 856 F. Supp. 2d 1247, 1272 (M.D. Fla. 2012) (citing *Kalwajtys v. FTC*, 237 F.2d 654, 656 (7th Cir. 1956)); *Aronberg v. FTC*, 132 F.2d 165, 167 (7th Cir. 1942)), *aff’d sub nom. FTC v. Wash. Data Res., Inc.*, 704 F.3d 1323 (11th Cir. 2013).

98. 16 C.F.R. §§ 260.1–260.17 (2014).

99. See David Gibson, *Awash in Green: A Critical Perspective on Environmental Advertising*, 22 TUL. ENVTL. L.J. 423, 429 (2009) (citing 61 Fed. Reg. 53,311 (Oct. 11, 1996)) (explaining the updated Green Guides); 63 Fed. Reg. 24,240 (May 1, 1998) (providing guides for the use of environmental marketing claims).

100. Press Release, Fed. Trade Comm’n, FTC Issues Revised “Green Guides” (Oct. 1, 2012), available at <http://www.ftc.gov/news-events/press-releases/2012/10/ftc-issues-revised-green-guides>.

believe about typical “green” claims.¹⁰¹ In other words, the Green Guides are “not independently enforceable,” but rather they show what the FTC could prosecute as deceptive when a marketer makes a claim that is likely to be deceptive in the eyes of “reasonable consumers.”¹⁰²

The Green Guides “apply to environmental claims in labeling, advertising, promotional materials, and all other forms of marketing in any medium, whether asserted directly or by implication, through words, symbols, logos, depictions, product brand names, or any other means.”¹⁰³ Thus, the FTC can prosecute not only direct claims of a product’s environmental attributes, but also claims that a reasonable consumer could consider to be implied by the marketer. Generally speaking, the FTC requires that marketing claims be substantiated and qualified. If the claims are comparative, then they should state the basis for comparison.¹⁰⁴ Labels should not use seals or certifications that the public cannot easily understand.¹⁰⁵ The Green Guides reiterate these general FTC principles in terms of environmental marketing and also address specific claims such as “recyclable” and “compostable.”¹⁰⁶

The most relevant sections of the Green Guides for environmental claims made by fish and seafood marketers are §§ 260.4, 260.9, and 260.6. Section 260.4 deals with claims of general environmental benefit.¹⁰⁷ Such general claims, if unqualified, are “likely [to] convey that the product, package, or service has specific and far-reaching environmental benefits and may convey that the item or service has no negative environmental impact.”¹⁰⁸ Since it is difficult, if not impossible, to substantiate a general environmental claim, the Green Guides put marketers on notice that such claims are usually deceptive when unqualified.¹⁰⁹ The Guides give

101. FTC, GREEN GUIDES: STATEMENT OF BASIS AND PURPOSE 1 (2012), available at <http://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-issues-revised-green-guides/greenguidesstatement.pdf>.

102. *Id.* at 1, 7, 10, 24.

103. 16 C.F.R. § 260.1(c).

104. J. Thomas Rosch, Comm’r, FTC, Responsible Green Marketing, Address at the American Conference Institute’s Regulatory Summit for Advertisers and Marketers 6–7 (June 18, 2008), available at http://www.ftc.gov/sites/default/files/documents/public_statements/responsible-green-marketing/080618greenmarketing.pdf.

105. *Id.* at 8.

106. *See* 16 C.F.R. §§ 260.4 (outlining the general environmental benefit claims guidelines), 260.7 (outlining specific guidelines for compostable claims), 260.12 (discussing recyclable claims).

107. 16 C.F.R. § 260.4; *see* Jason J. Czarneski, Andrew Homan & Meghan Jeans, *Greenwashing and Self-Declared Seafood Ecolabels*, 28 TUL. ENVTL L.J. (forthcoming Dec. 2014) (emphasizing the applicability of the Green Guides to seafood eco-claims).

108. 16 C.F.R. § 260.4(b).

109. *Id.*

examples and indicate that even brand names can imply claims of general environmental benefit.¹¹⁰ Thus, “Eco-Smart Farmed Trout,” if unqualified, would raise a red flag as an implied claim of general environmental benefit, and because it would be difficult to substantiate, the FTC would likely deem it deceptive.

The Green Guides also assert that “[i]t is deceptive to misrepresent, directly or by implication, that a product, package, or service is free of, or does not contain or use, a substance,” and that “[s]uch claims should be clearly and prominently qualified to the extent necessary to avoid deception.”¹¹¹ The FTC permits “free-of” claims when the substance in question is present in the product as a “trace amount,” as long as the amount does not exceed the amount that “would be found as an acknowledged trace contaminant or background level.”¹¹² Here, the Green Guides acknowledge that “trace contaminant” and “background level” do not have precise meanings. Rather, “[w]hat constitutes a trace amount or background level depends on the substance at issue, and requires a case-by-case analysis.”¹¹³ In the context of certifying sustainably farmed seafood, the FTC’s guidelines for “free-of” claims would potentially apply to claims that the seafood is free of contaminants such as nitrofurazone or heavy metals.

Finally, the latest revision of the Green Guides includes focused treatment of certifications and seals of approval, an area where green marketers have increasingly confused or deceived consumers.¹¹⁴ First, “[i]t is deceptive to misrepresent, directly or by implication, that a product, package, or service has been endorsed or certified by an independent third party.”¹¹⁵ Second, a certification or seal may constitute an endorsement and should therefore meet the FTC’s specific guidelines for endorsement.¹¹⁶ The FTC requires, for instance, that material connections between the endorser and seller must be “clearly and conspicuously disclose[d].”¹¹⁷ Next, the Green Guides specify that marketers of certified products must possess “substantiation for all claims reasonably communicated by the

110. *Id.* § 260.4(d).

111. *Id.* § 260.9(a).

112. *Id.* § 260.9(c).

113. *Id.* § 260.9(c) n.47.

114. Elizabeth Wasserman, *7 Sins of Greenwashing (And 5 Ways to Keep It Out of Your Life)*, ECOWATCH (Apr. 23, 2014, 12:59 PM), <http://ecowatch.com/2014/04/23/7-sins-of-greenwashing>.

115. 16 C.F.R. § 260.6(a).

116. *Id.* § 260.6(b); *see also id.* § 255.0 (stating the purpose and definitions of endorsements).

117. 16 C.F.R. § 255.5.

certification.”¹¹⁸ If a product package or advertisement does not reveal the basis for the certification or seal, an environmental certification or seal will likely convey a general environmental claim and will therefore be deceptive under § 260.4.¹¹⁹ Thus, marketers should include clear and prominent qualifications to limit the potential deceptive or false implied meanings of certification and seals.¹²⁰ The FTC has confirmed that Marine Stewardship Council and other certifiers should ensure that their seals comply with the Green Guides standards.¹²¹

The Green Guides have proven to be important beyond the obvious application in FTC enforcement actions. In *Koh v. S.C. Johnson & Son, Inc.*, consumers filed a class action under various California unfair competition and false advertising laws, alleging that S.C. Johnson fraudulently deceived consumers when it sold its Windex products with a “Greenlist” seal of approval.¹²² “Greenlist,” as it turns out, is not a third-party certifier as reasonable consumers would infer, but rather, a creation of the marketer.¹²³ The district court accepted the conclusions of the Green Guides when it determined that the claims could survive summary judgment, holding that the seal was likely to deceive reasonable consumers.¹²⁴ Ultimately, S.C. Johnson settled the dispute for an undisclosed amount and agreed to change the Greenlist label.¹²⁵ The case demonstrates that civil litigants may use the Green Guides as evidence in state consumer protection and unfair competition suits.

Additionally, competitors may bring suit in the National Advertising Division (NAD) of the Better Business Bureau.¹²⁶ The NAD operates a kind of non-binding arbitration. When litigants fail to comply with the conditions of NAD decisions, it reports the unfair or deceptive practice to

118. *Id.* § 260.6(c).

119. *Id.* § 260.6(d).

120. *Id.* § 260.6(e).

121. Letter from Donald S. Clark, Sec’y of the FTC, to the Marine Stewardship Council Program Improvements Manager (May 30, 2013), available at http://www.ftc.gov/sites/default/files/documents/advocacy_documents/federal-trade-commission-letter-marine-stewardship-council-concerning-considering-consumer/130531mscletter.pdf.

122. *Koh v. S.C. Johnson & Son, Inc.*, No: C-09-00927 RMW, 2010 WL 94265, at *1 (N.D. Cal. Jan. 6, 2010).

123. *Id.* at *2–*3.

124. *Id.* at *2.

125. Rachel Slajda, *SC Johnson Settles ‘Greenwashing’ Suits Over Windex*, LAW360 (July 8, 2011, 6:42 PM), <http://www.law360.com/articles/256772/sc-johnson-settles-greenwashing-suits-over-windex>.

126. See generally *National Advertising Division*, COUNCIL OF BETTER BUS. BUREAUS, <http://www.bbb.org/council/the-national-partner-program/national-advertising-review-services/national-advertising-division> (last visited Nov. 19, 2014) (providing a basic overview of NAD).

the FTC.¹²⁷ NAD decisions refer to the Green Guides and apply the “reasonable consumer” standard.¹²⁸

The Lanham Act allows for a civil cause of action where:

(1) Any person who, on or in connection with any goods or services, or any container for goods, uses in commerce any word, term, name, symbol, or device, or any combination thereof, or any false designation of origin, false or misleading description of fact, or false or misleading representation of fact, which—

(A) is likely to cause confusion, or to cause mistake, or to deceive as to the affiliation, connection, or association of such person with another person, or as to the origin, sponsorship, or approval of his or her goods, services, or commercial activities by another person, or

(B) in commercial advertising or promotion, misrepresents the nature, characteristics, qualities, or geographic origin of his or her or another person’s goods, services, or commercial activities,

shall be liable in a civil action by any person who believes that he or she is or is likely to be damaged by such act.¹²⁹

Because the Green Guides provide substantiated examples of false and misleading environmental claims, plaintiffs in Lanham Act actions may employ the data and conclusions of the Green Guides as evidence against defendants whose green marketing claims match the false claims exemplified in the Guides or whose claims do not comply with the guidelines in some way.

In addition to federal consumer protection laws, marketers making green claims or using first or third party seals of approval or certifications must also ensure that they do not violate state consumer protection laws. Because federal consumer protection laws do not preempt state regulations,

127. See Czarnezki, Homan & Jeans, *supra* note 107; see e.g., *NAD Refers Allen Harim Foods to FTC Following Compliance Review of ‘Humanely Raised’ Ad Claim*, ADVER. SELF-REGULATORY COUNCIL (Nov. 13, 2013), <http://www.ascreviews.org/2013/11/nad-refers-allen-harim-foods-to-ftc-following-compliance-review-of-humanely-raised-ad-claim> (explaining that the NAD referred a producer’s claim that chickens were “humanely raised” to the FTC after the producer failed to make good-faith efforts to stop that claim).

128. See Czarnezki, Homan & Jeans, *supra* note 107.

129. 15 U.S.C. § 1125 (2012).

more than half of the states have a “mini-F.T.C.” law.¹³⁰ Some states have incorporated the Green Guides into their consumer protection and anti-unfair competition laws, which amplifies the legal power of the Green Guides.¹³¹ In California, false environmental claims are unlawful and punishable by fine.¹³² In addition to prosecution by the state attorney general, private citizens may also sue violators under a variety of state laws, including common law fraud.¹³³ Any nationally implemented certification label or seal of approval that makes express or implied claims about the sustainability of farmed seafood would therefore need to comply with state law in addition to the federal standards outlined above.

China’s civil law system provides for consumer protection law generally but does not offer specific guidance for green marketing claims. The Law of the People’s Republic of China on Protection of the Rights and Interests of the Consumers provides that “[c]onsumers shall enjoy the right to obtain true information of the commodities they purchase and use or the services they receive.”¹³⁴ Depending on the circumstances, this includes the right to know the origin of production of the commodity. The law further provides that “operators shall provide consumers with authentic information concerning their commodities or services, and may not make any false and misleading propaganda.”¹³⁵ Of interest for green product labeling in general and “green” farmed fish specifically is where the operators use advertisements, product descriptions, sample products, or other means to indicate the quality status of the commodities or services. The law requires that the operators guarantee that the actual quality of the commodities or services they provide shall comply with the indicated quality.¹³⁶

Until recently, enforcement of these standards rested with government authority, which the law required to take heed of consumers’ complaints.¹³⁷ Under the Consumer Protection Law, actions enforceable by fines and

130. HOWARD J. ALPERIN & ROLAND F. CHASE, 1 CONSUMER LAW SALES PRACTICES AND CREDIT REGULATION § 106 n.4 (2012).

131. See Czarnecki, Homan & Jeans, *supra* note 107 (citing *FTC’S ‘GREEN GUIDES’: Businesses, Beware*, NAT’L L.J. (May 12, 2008)).

132. CAL. PUB. RES. CODE § 35617 (West 2012) (discussing voluntary claims of sustainable seafood for seafood caught in California waters).

133. Czarnecki, Homan & Jeans, *supra* note 107.

134. Law of the People’s Republic of China on Protection of the Rights and Interests of the Consumers, ch. II art. 8 (promulgated by the President of the People’s Republic of China on Oct. 31, 1993, effective Jan. 1, 1994) [hereinafter *PRIC*], available at http://www.china.org.cn/china/LegislationsForm2001-2010/2011-02/14/content_21917139.htm (last visited Nov. 19, 2014).

135. *Id.* ch. III, art. 19.

136. *Id.* ch. III, art. 22.

137. *Id.* ch. IV, art. 28–30.

suspended operation include adulterating a commodity, “forging the origin of commodities, forging or counterfeiting the names and addresses of other factories, and forging or counterfeiting the authentication marks of famous-and-excellent-product marks,” and “making false and misleading propaganda about their commodities or services.”¹³⁸ Unfortunately, the rules under the Consumer Protection Law made it difficult for citizens to seek redress for contaminated products or falsely certified products.

Consumer protection law in China took a leap forward when the Standing Committee of the National People’s Congress approved amendments to the Law of the People’s Republic of China on the Protection of Consumer Rights and Interests in October 2013.¹³⁹ Consumer organizations under the previous version of the law could assist consumers in resolving disputes and could publicize information about violations of consumers’ rights. Under the amended law, the China Consumers’ Association, a social organization, may file lawsuits in the people’s courts.¹⁴⁰ This change in the law, which went into effect on March 15, 2014, will likely give rise to the first class-action lawsuits under consumer protection law in China.¹⁴¹

Although recently strengthened, China’s consumer protection laws do not provide enough traction for civil suits and government enforcement to have a tangible effect on transparent and non-deceptive claims about eco-seafood. Because of the multi-level, decentralized enforcement of consumer protection law in the United States through state and federal regulators as well as potential civil causes of action, consumers may act as quasi-regulators, resulting in economic benefits for producers who voluntarily comply with higher standards and truthfully label their products as such. Unfortunately, for consumer forces to positively affect the conditions on the ground in aquaculture, consumers need better tools and transparency to understand the differences among available third-party standards.

138. *Id.* ch. VII, art. 50.

139. *Amendments to Consumer Protections Law Allows for Public Interest Lawsuits With Limitations*, CONG. EXEC. COMM’N ON CHINA (Jan. 14, 2014), <http://www.cecc.gov/publications/commission-analysis/amendments-to-consumer-protection-law-allows-for-public-interest>.

140. *Id.*; *PRIC*, ch. VII, art. 47.

141. *China’s Revised Consumer Rights Protection Law “Raises the Bar” for both “Bricks and Mortar” Retailers and Online Retailers*, KING & WOOD MALLESONS (Dec. 2013), <http://www.kingandwood.com/article.aspx?id=china-bulletin-2013-12-03&language=en>.

IV. COMPARING MULTIPLE STANDARDS FOR ORGANIC OR THIRD-PARTY CERTIFICATION

No single standard exists for determining which farmed fish and seafood are “green.” In China, aquacultural production may be certified as organic under multiple standards,¹⁴² while in the United States, there is no organic standard for aquaculture.¹⁴³ The result is that in China and the United States, consumers face a dizzying array of labels and certifications when choosing farmed eco-seafood.¹⁴⁴ Perhaps adding to the confusion, the terms “organic” and “green” are sometimes used interchangeably in the context of Chinese agriculture.¹⁴⁵ Standards include Global GAP, Global Aquaculture Alliance, WWF/ASC, and FAO.¹⁴⁶ Because of the variety of certification programs and the variation in standards, it is necessary to develop a method of comparison: Which standards are preferable, and why?

Marine biologist Michael Tlusty and colleagues at the New England Aquarium have proposed a method of comparing certification standards that involves rethinking the concept of “sustainability.”¹⁴⁷ Tlusty underscores the difference between claiming that certain species of seafood or fisheries are “sustainable” and emphasizing the process of improving the sustainability of seafood.¹⁴⁸ While a claim of being “sustainable” is static, leading the marketer and its customers to believe they have reached an end point, claims of sustainability as a process lead to continual improvement and innovation.¹⁴⁹ Because of the vast number of species and production methods, there are a large number of variables determining overall

142. See Biao Xie et al., *Organic Aquaculture in China: A Review from a Global Perspective*, 414–415 *AQUACULTURE* 243, 243 (2013) (arguing that development of organic aquaculture in China is negatively affected by multiple certification standards).

143. See *Organic Aquaculture*, ALT. FARMING SYS. INFO. CTR., <https://afsic.nal.usda.gov/aquaculture-and-soilless-farming/aquaculture/organic-aquaculture> (last modified Nov. 14, 2014) (explaining that standards for organic aquaculture are under review).

144. Chenglin Liu, *Is “USDA Organic” A Seal of Deceit?: The Pitfalls of USDA Certified Organics Produced in the United States, China and Beyond*, 47 *STAN. J. INT’L L.* 333, 361 (2011); FOOD & WATER WATCH, FACT SHEET: SEAFOOD BUYING GUIDE 2 (2008), available at <http://documents.foodandwaterwatch.org/doc/SeafoodBuyingGuide2.pdf>.

145. See Liu, *supra* note 144, at 360–61 (offering a history of organic labeling in China and describing how “Green Food” in China, translated as “organic,” actually allowed for practices that would be expressly forbidden in organic agriculture).

146. See *Aquaculture*, GLOBAL TRUST, <http://www.gtcert.com/aquaculture> (last visited Nov. 14, 2014) (listing certifications that Global Trust can provide).

147. Michael Tlusty et al., *Refocusing Seafood Sustainability as a Journey Using the Law of the Minimum*, 4 *SUSTAINABILITY* 2038–39 (2012), available at <http://www.mdpi.com/2071-1050/4/9/2038>.

148. *Id.* at 2040.

149. *Id.*

sustainability of seafood.¹⁵⁰ A broad determination of the sustainability of a given type of seafood would include “environmental, social, and economic assessments of the production method,” as well as assessments of processing, distribution, packaging, sales, and consumption.¹⁵¹

Following this distinction between the static term “sustainable seafood” and the dynamic concept of “seafood sustainability,” Tlusty proposes a way to assess the differences among various certifiers’ definitions of seafood sustainability. He argues that “[a]ny operational definition of sustainability can be categorized by two factors, the scale and scope.”¹⁵² “Scale” relates to how many factors are assessed in determining sustainability, ranging from narrow definitions of sustainability (e.g., line-caught tuna) to broad definitions (e.g., ecosystem based management).¹⁵³ “Scope” refers to the level of demand set by the standard, ranging from undemanding to the most demanding level, where zero ecological impact occurs.¹⁵⁴ When considering both scale and scope, standards can be viewed as falling in a range from the narrowest scope with the lowest scale (static, “sustainable” claims) to the highest scale and broadest scope. The path from narrow scope and low scale to broad scope and high scale is “[s]ustainability as a journey.”¹⁵⁵ Only the latter leads to continuous improvement and innovation toward the greatest decrease in negative ecological impact.

150. *Id.* at 2041.

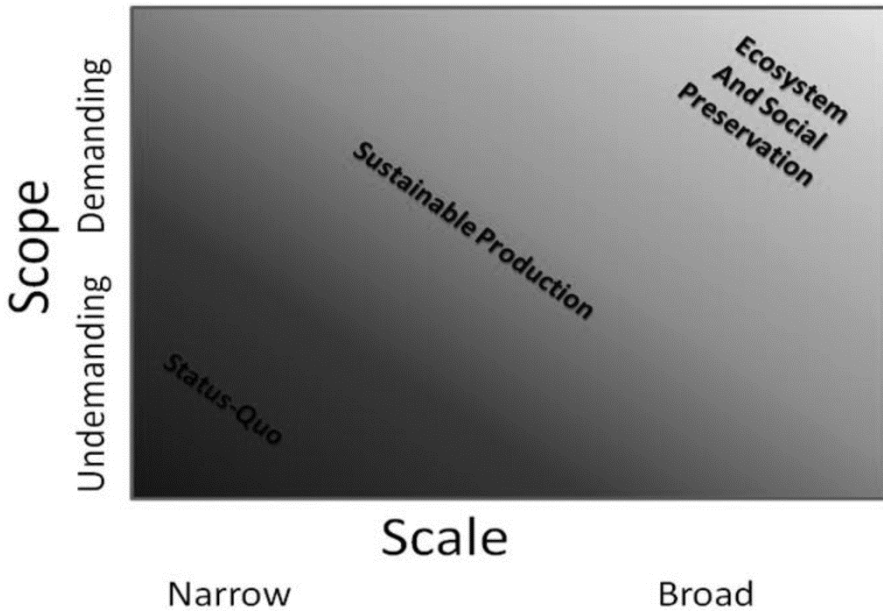
151. *Id.*

152. *Id.* at 2042.

153. *Id.*

154. *Id.*

155. *Id.* at 2042–43.

Diagram 2: Assessing Definitions of Seafood Sustainability¹⁵⁶

Although there may be advantages to approaching sustainability from multiple perspectives, Tlusty cautions that multiple, competing claims on seafood labels may have a confusing effect in the marketplace.¹⁵⁷ The consumer “may equate all products that make a sustainability claim as equal,” and since the consumer believes the products are similar, “economic theory suggests . . . a lack of differentiation will occur.”¹⁵⁸ “The gravest consequence,” argues Tlusty, is that a claim that a seafood “is sustainable” will imply to many consumers or producers that no further improvement toward greater sustainability is necessary.¹⁵⁹ Once a certifier applies broad scope and high scale standards to a given type of seafood production, it must also reveal the metrics that it uses to assess each factor and clearly identify the weight of the factors.¹⁶⁰

The Monterey Aquarium’s “Seafood Watch” advises consumers which varieties of wild-caught seafood are “better” choices and has expanded into the arena of comparing the sustainability of farmed fish and seafood. Since 1999, the Seafood Watch program has served consumers in the United

156. *Id.* at 2043.

157. *Id.*

158. *Id.*

159. *Id.*

160. *Id.* at 2046.

States as an easily understood guide to making choices related to the sustainability of seafood. The guide has historically classified seafood according to species and geographic location of a fishery as either: green (“best choice”), yellow (“good alternative”), or red (“avoid”).¹⁶¹ Seafood Watch’s standards for aquaculture are broad scope and high scale standards. When assessing aquacultural production, Seafood Watch considers: effluent; habitat; chemical use; feed; escapes and introduced species (i.e., non-native to location), disease, pathogen, and parasite interaction; source of stock; and predator and wildlife mortalities.¹⁶² While Seafood Watch is not itself a certification program, it has applied its criteria to ten eco-certification programs for farmed seafood to determine which could be considered equivalent to its yellow (“good alternative”) standard.

Not surprisingly, Seafood Watch found that specific certifiers held specific species to higher standards. For instance, only ASC certified farmed catfish were equivalent to Seafood Watch’s yellow standard, while farmed mussels certified by ASC, Naturland, Friend of the Sea, Canada Organic, and BAP were all equivalent to the yellow standard.¹⁶³ Seafood Watch has also published information so that consumers—and producers—can better understand its methods of comparison.¹⁶⁴

By highlighting “sustainability” in relative terms rather than as a finalized achievement of “sustainable” seafood, and by applying broad scope, high scale standards, certifiers can influence consumers and producers to strive for aquacultural production with ever decreasing negative ecological impacts. Seafood Watch serves as an example of how an NGO can act as a quasi-certifier of third-party certifiers, introducing clarity for consumer decisions.

CONCLUDING RECOMMENDATIONS

Consumer choices can create pressures that lead to improvement of aquacultural practices that would reduce the deleterious ecological impacts

161. *Start Your Sustainable Seafood Search*, MONTEREY BAY AQUARIUM SEAFOOD WATCH, <http://www.seafoodwatch.org> (last visited Nov. 20, 2014).

162. MONTEREY BAY AQUARIUM SEAFOOD WATCH, SEAFOOD WATCH CRITERIA FOR AQUACULTURE 2, <http://www.seafoodwatch.org/-/m/sfw/pdf/criteria/mba-seafoodwatch-aquaculture-criteria-methodology.pdf> (last visited Nov. 20, 2014).

163. See *Eco-Certification*, MONTEREY BAY AQUARIUM SEAFOOD WATCH, <http://www.seafoodwatch.org/seafood-recommendations/eco-certification> (last visited Nov. 20, 2014) (providing more information and links regarding certification standards for these species).

164. MONTEREY BAY AQUARIUM SEAFOOD WATCH, ECO-CERTIFICATION BENCHMARKING PROJECT, *supra* note 14, at 3.

and food safety risks that currently characterize the production of farmed seafood in China. A combination of changes in the United States and China could strengthen the role of consumer choice in increasing the sustainability of aquaculture.

In the United States, the FDA could enhance its enforcement activities to reduce seafood fraud generally. Because of the high instance of seafood fraud, consumers cannot have confidence that labels accurately indicate the source and species of seafood in the marketplace. Through the use of new technology for rapid genetic testing and supply chain monitoring, FDA enforcement could lead to greater consumer confidence, which in turn could contribute to higher prices for seafood that can legitimately come from more sustainable sources.¹⁶⁵

Additionally, the FTC should issue specific guidelines that apply to green marketing claims typically made on seafood in the U.S. market. The effect of increased liability under the multi-tiered enforcement of consumer protection law in the United States could drive improvements to supply chain accountability all the way back to the sources of farmed seafood in China. Since key sellers of eco-labeled seafood such as Whole Foods and other large chains would be motivated to follow through with improvements that attain higher standards than the regulators either require or are able to enforce.

In China, broader consumer protection, with increased levels of enforcement, could improve compliance with existing minimal standards as well as drive demand for higher standards of third-party certifiers. While recent revisions to Chinese consumer protection law allow for limited citizen suits, allowing more watchdog NGOs to initiate citizen suits could lead to higher levels of compliance.

Finally, the implementation of benchmarking studies like the one conducted by Seafood Watch could encourage third-party certifiers, and perhaps large supermarket chains that have their own “first party” standards, to develop more broad scope, high scale standards that drive improvement in the areas that need it most. Such benchmarking studies introduce greater clarity for consumers comparing certifications and seals of approval in the marketplace and ultimately, more transparency in the supply chain and sourcing of ecologically farmed seafood.

165. See Alfredo Parreño-Marchante et al., *Advanced Traceability System in Aquaculture Supply Chain*, 122 J. OF FOOD ENG'G. 99, 99 (2014) (stating that food traceability increases consumer confidence).

