

U.S. Aquaculture Production & Target Markets for Proposed Export Promotion Program



**National MBE
Aquaculture Program**

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*By the National MBE Aquaculture Program, administered by the Florida State
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**Florida State
Minority Supplier
Development Council**

About the National MBE Aquaculture Program at the FSMSDC

The National MBE Aquaculture Program by the Florida State Minority Supplier Development Council (FSMSDC) was funded in 2017 by the U.S. Department of Commerce to grow the number of firms taking part in opportunities in the nation's aquaculture industry. The program has engaged dozens of entrepreneurs in aquaculture to help them explore new production methods, evaluate new fish species, pursue business contracts, acquire technology, and secure growth financing.

The FSMSDC is the largest minority business development organization in Florida – a state that ranks 9th in the nation for exports (April 2019), and 9th for aquaculture production. The FSMSDC was founded in 1975 as one of 23 regional affiliates of the NMSDC (National Minority Supplier Development Council). Its mission is to link domestic and global buyers (corporate and government) with certified Minority Business Enterprises (MBEs) and Disadvantaged Business Enterprises (DBEs), in order to foster growth in their capacity, revenues and profits.

Since its founding, the FSMSDC's impact includes facilitating over \$30 billion in procurement and exports of products and services from MBEs and DBEs, including Black, Hispanic, Asian, and Native American-owned businesses, as well as woman-owned and veteran-owned firms. In addition to the National MBE Aquaculture Program, the FSMSDC has 20 years of experience in **business program administration for federal, state, and local government agencies**, including:

FDOT DBE Program: The FSMSDC is the administrator of the statewide Florida Department of Transportation (FDOT) Disadvantaged Business Enterprise (DBE) Specialized Development Program, which has helped DBEs win over \$400 million in FDOT contracts since 2013.

U.S. Department of Commerce MBDA Centers: The FSMSDC is operator of the MBDA Orlando and Miami Business Centers, helping small businesses increase their access to public and private sector contracting opportunities and financing, and facilitating joint ventures, teaming, mergers, acquisitions, and exports. Over the past three years, the Centers have helped minority firms with \$400 million in transactions, including \$20 million in export transactions.

Global Trade Training - The FSMSDC served as a lead agency for the International Trade Training Program, funded by Enterprise Florida International Expansion Project (Enterprise Florida is the state's economic development partnership). Over one year, the program provided trained 140 "new to export" and "new to market" companies.

The Council is headquartered in Miami, Florida, with an experienced team of 19 full-time staff who provide training and technical assistance via eight offices across the state. The National MBE Aquaculture Program also has team members in three states – Arizona, Louisiana, and Florida.

Members & Network

Nationally, FSMSDC's network includes over 12,000 MBEs certified by affiliates of the NMSDC, and 1,450 corporate and government members. In Florida, the FSMSDC network includes over 1,000 certified MBEs and 200 corporate and government members. Our certified MBEs range in size from micro businesses with 1 to 5 employees to the largest of MBEs, including – as one outlier example - the first minority-controlled Fortune 500 company (MasTec, at \$6 billion). Certified MBEs average \$10 million in annual sales and 35% of them are exporters. The FSMSDC provides training, technical assistance, and matchmaker services to over 1,500 small companies each year.

Why Focus on Aquaculture Exports

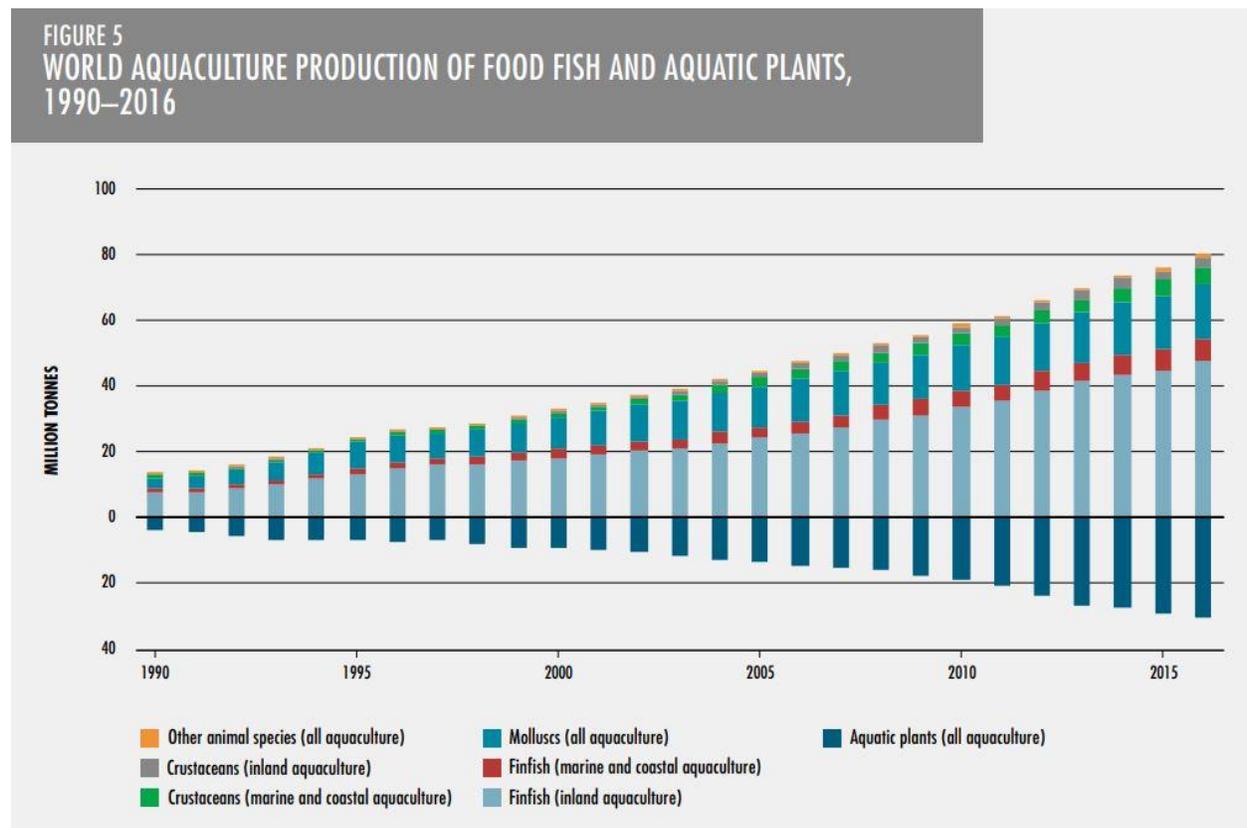
Interest in aquacultural production in the United States (for export and domestic consumption) is on the rise as restrictions on the wild harvest of many seafood species proliferate, and as national and regional leaders debate strategies to reverse large trade deficits in seafood and aquaculture.

The trend is also driven by global demand for and consumption of aquaculture products, which is increasing rapidly as public and private sector leaders worldwide weigh the sustainability of the planet’s food sources.

“Global aquaculture production (including aquatic plants) in 2016 was 110.2 million tons, with the first-sale value estimated at USD \$243.5 billion.” [2018 State of World Fisheries and Aquaculture Report]

Though the pace of growth has slowed since the year 2000, aquaculture continues to grow faster than other food production methods. In the 1980s and 1990s annual growth average 10.8% and 9.5%, respectively). Average annual growth stood at 5.8% from 2001 to 2016 and the market is expected to continue uninterrupted growth over the next two decades.

For these reasons, aquaculture production and export represent prime growth markets for the enterprises targeted by the National MBE Aquaculture Program.



SOURCE: 2018 State of World Fisheries and Aquaculture Report

U.S. Aquaculture Production

In the United States, aquaculture production has grown over the last five years measured by the U.S. Census of Agriculture (by 14.6%, from 2012 to 2017), while overall agricultural production shrank by 1.6%. There were roughly 6,266 aquaculture farms in the U.S. in 2017, whose production value reached \$1.78 billion that year.

Despite its growth, aquaculture is still a tiny share of all agricultural production in the United States, and its share has not grown over the past five years (.4% in 2012 and .5% in 2017).

This next table shows the growth in major aquaculture commodity groups in the United States, over a five-year span. Trout and Mollusks had the highest growth rates, followed by sport/game fish, crustaceans, and catfish.

Aquaculture Commodities	2012		2017		2012 to 2017	
	Farms	Value	Farms	Value	Growth \$	Growth %
Catfish	1,183	\$ 356,482,000	921	\$404,861,000	\$ 48,379,000	13.6%
Trout	1,041	\$ 210,207,000	947	\$286,330,000	\$ 76,123,000	36.2%
Other food fish	752	\$ 284,593,000	721	\$282,627,000	\$(1,966,000)	-0.7%
Baitfish	298	\$ 41,612,000	252	\$ 44,247,000	\$ 2,635,000	6.3%
Crustaceans	709	\$ 79,845,000	798	\$ 96,397,000	\$ 16,552,000	20.7%
Mollusks	908	\$ 267,962,000	1,175	\$354,274,000	\$ 86,312,000	32.2%
Ornamental fish	495	\$ 66,119,000	469	\$ 49,918,000	\$(16,201,000)	-24.5%
Sport/game fish	593	\$ 88,149,000	631	\$115,340,000	\$ 27,191,000	30.8%
Other products	514	\$ 157,406,000	352	\$144,592,000	\$(12,814,000)	-8.1%
Total Aquacul.	6,493	\$1,552,375,000	6,266	\$1,778,586,000	\$ 226,211,000	14.6%
All agriculture		\$394,644,481,000		\$388,522,695,000	\$(6,121,786,000)	-1.6%
Aquacul. Share of Agric.		0.4%		0.5%		

Space Within the Global Market & U.S. Exports

Worldwide data show that the U.S. is one of the smaller contributors to global aquaculture production. The latest global report shows that in 2016, the U.S. was responsible for a mere 0.55% of aquaculture production of food fish (444 million tons against the global total of 80,031 million tons). And according to forecasts, although the U.S. will grow its output to 495 million tons by 2030, the nation's share of global production will fall to .45%.

Experts forecast continued growth for U.S. aquaculture, through 2030, which is expected to offset declines in U.S. seafood production overall. Yet, the U.S. ranks at the bottom of the list, among the 24 nations reflected in the next table.

Though U.S. aquaculture will grow by 11.4% by the year 2030, this is the 4th lowest growth rate forecasted by the *State of World Fisheries and Aquaculture Report* in 2018.

	Fisheries & Aquaculture			Aquaculture			Aquaculture's % of Growth
	2016	2030	Growth %	2016	2030	Growth %	
China	66,808	79,134	18.4	49,244	64,572	31.1	124%
India	10,762	13,407	24.6	5,700	8,212	44.1	95%
Indonesia	11,492	15,158	31.9	4,950	8,253	66.7	90%
Japan	3,872	3,427	-11.5	677	745	10.1	
Philippines	2,821	3,229	14.4	796	1,085	36.3	71%
Rep. of Korea	1,894	1,831	-3.3	508	632	24.4	
Thailand	2,493	2,757	10.6	963	1,305	35.6	130%
Vietnam	6,410	8,087	26.1	3,625	5,085	40.3	87%
Egypt	1,706	2,657	55.7	1,371	2,302	68	98%
Morocco	1,448	1,712	18.2	1	2	33.3	0%
Nigeria	1,041	1,231	18.2	307	418	36.2	58%
South Africa	618	590	-4.5	5	6	1.9	
EU	6,463	7,025	8.7	1,292	1,664	28.8	66%
Norway	3,360	3,909	16.3	1,326	1,719	29.6	72%
Russian Fed.	4,932	5,244	6.3	173	291	67.9	38%
Canada	1,063	1,099	3.5	201	249	24.2	133%
U.S.	5,364	5,371	0.1	444	495	11.4	729%
Argentina	759	853	12.4	4	4	3.4	0%
Brazil	1,286	1,885	46.6	581	1,097	89	86%
Chile	2,535	2,665	44.6	1,035	1,309	26.4	211%
Mexico	1,732	1,993	15.1	221	316	42.6	36%
Peru	3,897	4,450	14.2	100	221	120.9	22%
Australia	269	289	7.3	97	151	55.7	270%
New Zealand	532	560	5.3	109	143	31	121%
World	170,941	200,955	17.6	80,031	109,391	36.7	98%

Impact on U.S. Ag Exports

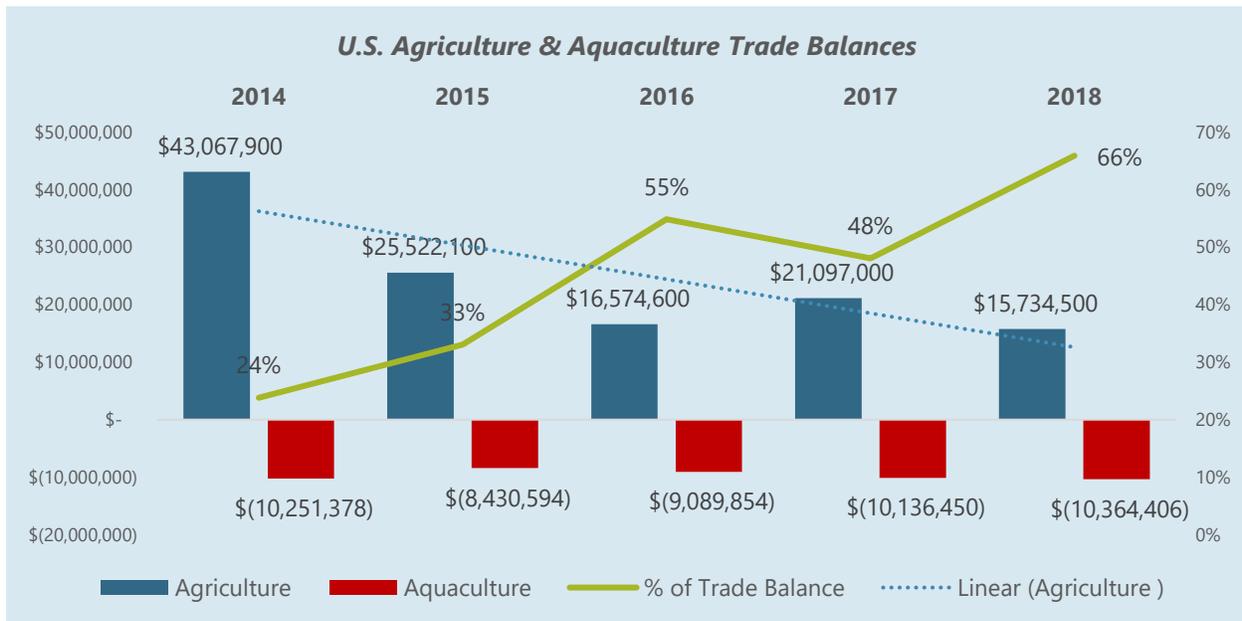
The U.S. has sustained a surplus in agricultural trade since 1960, which officials recognize as an important counterbalance to the persistent deficit in nonagricultural U.S. merchandise trade. But the U.S. **agricultural** surplus has eroded in recent years, and U.S. **aquaculture** continues to drag down the overall performance of agriculture exports.

Though aquaculture represents a tiny fraction of agriculture in the U.S. (and accounts for only about 1% of all agriculture exports by the U.S.), the aquaculture trade deficit has a powerful effect in dragging down the U.S. agriculture trade surplus.

The U.S. agriculture trade surplus shrank from \$43.1 billion in 2014 to \$15.7 billion in 2018. Over the same timeframe, U.S. aquaculture's trade deficit grew to \$10.4 billion (equal to roughly 66% of the agriculture surplus).

U.S. aquaculture saw its share of global fish exports shrink from 2006 to 2016, from 4.8% to 4.1%, while the U.S. remained the world's largest importer of fish and fish products in 2016, and the

globe’s second largest single market for fish and fish product consumption. The U.S., European Union and Japan combined accounted for 64% of world imports of fish and fish products in 2016.



Factors Driving Growth

Experts say U.S. production technologies and methods have evolved rapidly over the past decade, which is contributing to continued steady growth in U.S. aquaculture production.

Other important market developments include a) federal efforts to grow aquaculture production by the U.S.D.A. National Institute of Food & Aquaculture, the U.S. Department of Commerce, and other agencies), b) improvements in sustainability technologies and practices (e.g., the portion of stocks fished within biologically sustainable levels increased from 53% in 2005 to 74% in 2016 in the United States) c) growing aquaculture and seafood import volumes by emerging markets, c) and d) unprecedented coordination to support continued aquaculture expansion (by organizations such as Food and Agriculture Organization of the United Nations, FAO, the USDA, the EU, and many others).

Limiting Factors for Aquaculture

Reporting by the National Institute of Food and Agriculture (NIFA) notes that “The factors that limit aquaculture in the U.S. are complex and multifaceted. Applied research in genetics, disease, production systems, and economics is needed to develop science-based, practical solutions that will facilitate growth of the U.S. aquaculture industry.” NIFA’s Aquaculture Research Program is addressing the challenge with new research efforts that are designed to help reduce the U.S. trade deficit in seafood products and enhance the capacity of the U.S. aquaculture industry to contribute to domestic and global food security and economic growth.

In addition, U.S. aquaculture’s export community has not developed to a representative scope, compared with U.S. agriculture on the whole.

Target Markets Identified by the National MBE Aquaculture Program

According to the U.S. Cooperator Market Development Program Participant Directory, there are no current initiatives funded by the U.S.D.A. Market Access Program (MAP), Foreign Agriculture Service Agriculture Trade Program (ATP) or Foreign Market Development Program (FMD) that focus on *aquaculture exports from the Southeastern United States* which is the project's target area of domestic seafood and aquaculture producers.

Of the 470 programs listed in the Directory (as of June 11, 2019), only 10 programs (or 2%) focus on aquaculture or seafood, and one of the 10 has offices in one of the proposed project's six target markets.

The National MBE Aquaculture Program has helped dozens of aquaculture producers explore and implement approaches to growing production, which is of vital importance to establishing sustainable domestic and global food systems. **Yet there is still an urgent, unmet need to increase U.S. seafood and aquaculture exports, especially in light of the severe trade deficit in these commodities.**

The Program intends to expand its efforts with a formalized export development and promotion program. Regionally, the National MBE Aquaculture Program proposes to focus on Latin America, the Caribbean Basin and Africa. Within this terrain, the Program would concentrate on **six lower-middle and upper-middle-income countries that are among the top 35 export markets for U.S. fish products and/or among the top 35 supply countries for fish products and seafood** (see the list below). The six countries are Mexico, South Africa, Nigeria, Netherlands Antilles, Colombia, and Brazil.

Why These Markets

As it stands, high-income countries dominate the list of the top U.S. aquaculture export markets. Among the top 35 export markets for U.S. fish products, over two-thirds go to high-income country markets (70.4%), while one quarter goes to upper-middle-income countries (25.1%) and lower-middle-income countries claim just 4.2%. Not a single low-income country falls within the top 35 U.S. export markets for fish products.

2018 Exports	
High Income	\$3,778,100,000
Upper Middle Income	\$1,349,400,000
Lower Middle Income	\$226,300,000
Low Income	\$0

The National MBE Aquaculture Program will target countries classified *below* the World Bank threshold for high-income economies in 2019, prioritizing countries that already sustain seafood and aquaculture trade relations with the United States, which will enable the project team to build upon existing trade relationships and infrastructure. The Program will cultivate opportunities in four countries in Latin America: Mexico and Colombia (which rank #15 and #31 among U.S. export markets for fish and fish products), and Brazil (which ranks 23 among largest seafood

supply countries to the U.S.). In addition, the Program will target Nigeria (ranked #27) and Netherlands Antilles (ranked #29).

<i>Target Markets</i>	Rank in U.S. Exports	Income Class*	Aquaculture Exports in 2018	% Top 35 markets	% All markets
Mexico	15	UM	\$58,000,000	1.10%	1.10%
South Africa	26	UM	\$14,000,000	0.30%	0.30%
Nigeria	27	LM	\$13,500,000	0.30%	0.20%
Netherlands Antilles	29	NR	\$13,100,000	0.20%	0.20%
Colombia	31	UM	\$11,500,000	0.20%	0.20%
Brazil	23	UM	\$124,100,000	0.6%	0.6%

	Rank in U.S. Supply	Income Class*	Aquaculture Imports in 2018	% Top 35 markets	% All markets
Chile	4	H	\$1,979,800,000	9.4%	9.0%
Ecuador	8	UM	\$821,700,000	3.9%	3.7%
Mexico*	10	UM	\$635,500,000	3.0%	2.9%
Peru	14	UM	\$249,400,000	1.2%	1.1%
Argentina	15	H	\$245,300,000	1.2%	1.1%
Honduras	18	LM	\$157,300,000	0.7%	0.7%
Panama	25	H	\$95,300,000	0.5%	0.4%
Venezuela	26	UM	\$95,100,000	0.5%	0.4%
Nicaragua	28	LM	\$84,100,000	0.4%	0.4%
Colombia*	30	UM	\$76,900,000	0.4%	0.3%
Costa Rica	32	UM	\$76,400,000	0.4%	0.3%
Bahamas	35	H	\$57,000,000	0.3%	0.3%

**Income Class from World Bank 2019 (UM=Upper Middle Income; LM=Lower Middle Income; NR=Not Rated).*

Promoted Commodities

The Program will promote multiple seafood and aquaculture commodities, which include aquatic animals produced under controlled conditions for all or parts of their lifecycles. Aquaculture commodities comprise an estimated one-third of the global traded value of fish and fish products (\$143 billion in 2016, along with \$1.7 billion in trade of seaweeds and other aquatic plants, inedible fish by-products, and sponges and corals).

Aquaculture commodities include diverse species and product forms. According to the 2018 report on *State of World Fisheries and Aquaculture*, “High-value species such as shrimp, prawns, salmon, tuna, groundfish, flatfish, seabass and seabream are highly traded, in particular towards more prosperous markets. Low-value species such as small pelagics are also traded in large quantities, mainly exported to low-income consumers in developing countries.” The latest global reporting also notes that, in recent years, “emerging economies in developing regions have increasingly been importing species of higher value for domestic consumption.”

This research brief is one in a series created by the National MBE Aquaculture Program at the Florida State Minority Supplier Development Council; it was created to support the goals of the Toward Inclusive Aquaculture Project.