

# WRAC fact sheet

## WESTERN REGIONAL AQUACULTURE CENTER

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### Characterization of Aquaculture in the Western U.S.

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#### TILAPIA FARMING

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Photo: Tiapia.

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Tilapia are one of the most important aquaculture foodfish raised across the world and were the third-largest finfish sector in 2020 (FAO, 2022). In the U.S., tilapia have become a popular seafood choice, ranking fourth in per capita seafood consumption in 2021 after shrimp, salmon, and tuna (Mutter, 2022). The majority of tilapia consumed in the U.S., however, are imported from farms in Asia and Latin America. Despite its popularity, sales of imported tilapia have declined by

48% since peaking in 2014 (Figure 1).

Tilapia have been farmed in the U.S. for more than 50 years (Engle 1997 a, b), and were the third-largest foodfish production sector in the U.S. in 2018 (USDA-NASS, 2019). More than half of U.S. states (56%) have tilapia farms, and important clusters have developed in California, North Carolina, Idaho, and Florida (Engle et al., 2023). National sales of tilapia, however, peaked in 2013 as did the total number of farms, with sales declining by 7%

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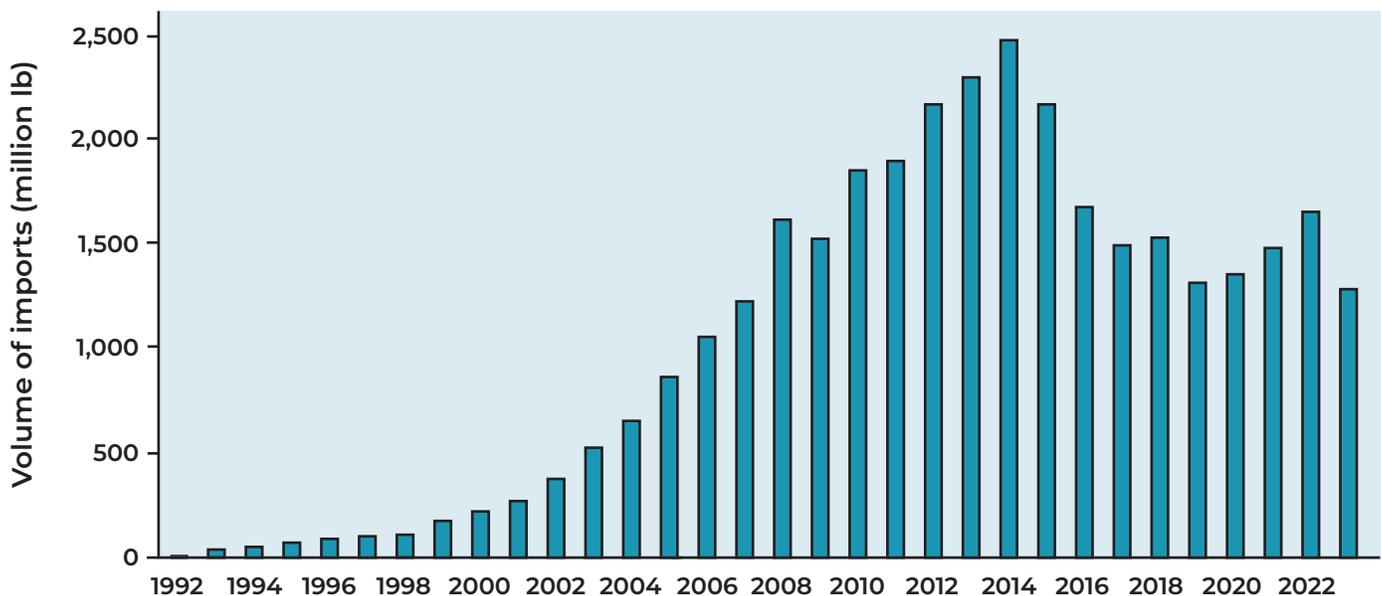


Figure 1. Volume (million lb) of imported tilapia into the U.S., 1992 to 2023. Source: NOAA Fisheries Trade Database



invested in holding tanks, filters, and aquaria to hold and display live fish so that patrons can choose specific fish for purchase. Many live fish markets include an area where staff will clean and cut the fish as desired by patrons. The emphasis on live sales requires that farms ensure that their fish arrive at the markets in good condition for subsequent sale to customers. Some tilapia farms have invested in trucks and specialized hauling tanks with oxygen systems to transport their fish to various markets. Other farms sell tilapia to specialized livehauling companies who transport and sell live fish to markets and to some restaurants.

Tilapia farmers have successfully created and supported supply chains to provide farm-raised tilapia to consumers. A recent supply chain analysis identified 28 distinct tilapia supply chains in the Western Region that are summarized in the generalized supply chain map in Figure 5. The demand for specialized fish feeds and equipment (i.e., livehauling tanks and trucks to deliver live fish to markets) led to

development of new businesses to supply these inputs to tilapia and other fish farms. Tilapia farmers purchase supplies from additional upstream supply chain partners that include utility companies that provide electricity and communications services, fuel companies, banks, insurance providers, and many others. Many tilapia farms produce their own seedstock, but others purchase tilapia fingerlings from other farms or specialized hatcheries in the region. The supply chains developed by tilapia farmers have created and sustained jobs on farms and in the businesses that are supported by tilapia farmers throughout the supply chain.

Tilapia farmers in the Western Region have developed successful businesses to supply most of their tilapia live to fish markets. Contrary to national trends, tilapia sales in the Western Region grew from 1998 to 2018, although some degree of contraction of tilapia production has been reported in more recent years (Engle et al., 2023). Market sales of live fish have been reported to be growing, but at a relatively

slow rate (Myers et al., 2009; Puduri et al., 2010). Nevertheless, the U.S. market for tilapia and other fish species is dominated by imported fillets. Most U.S. seafood consumers substitute readily among different fish species when purchasing fillets, often based on comparative prices. Substantial expansion of tilapia production in the Western Region and elsewhere in the U.S. likely will depend on whether advances in processing technologies can be adapted to efficiently process U.S. farm-raised tilapia to be competitive in the much larger but very competitive seafood fillet market.

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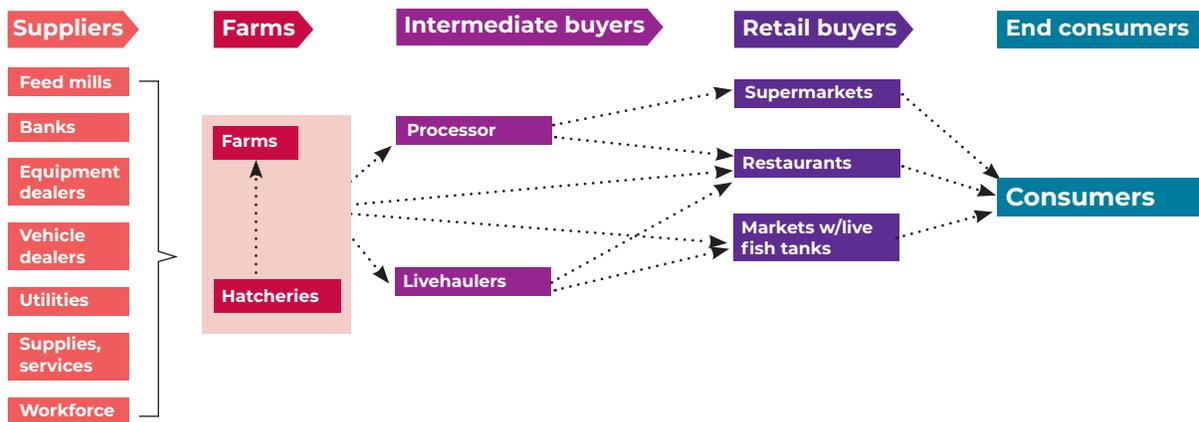


Figure 5. Generalized tilapia supply chain map for the Western Region.

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Photo: Keri Rouse

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