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Sustainable Aquaculture for a Secure Future

Title: Prospect and Potential for Global Production

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Abstract: During the 1990s, tilapia products became an important commodity in the international seafood trade. Tilapia farming has grown from an industry based on fish introduced around the world by development agencies to feed the rural poor to highly domesticated livestock production with sales now exceeding $2 billion a year. The description of the tilapia as the aquatic chicken becomes more appropriate every day. As in the case of chicken farming, tilapia farming can be successful on any scale, from subsistence farmers with a few essentially feral fish in a pond to multinational corporations rearing highly domesticated fish with farms and processing plants in several countries. Tilapia have been domesticated more quickly and to a greater extent than any other group of fish. They surpasses salmonids in economic importance in 2004 and may eventually equal the carps.

World production of farmed tilapia exceeded 2,002,087 metric tons (mt) in 2004 (Figure 2.1), with China the major producer and consumer. The mainland provinces' production in 2003 was 897,300 mt, and Taiwan produced another 90,000 mt. Other Asian countries produced 440,000 mt. The United States is the world's major importer of tilapia. Its 2005 imports were 126,00 mt, with a value of $374 million, divided between frozen whole fish, frozen fillets, and fresh fillets. These products represent a live weight of 281,000 mt. Adding the 2005 domestic production of 9,000 mt sets the U.S. consumption of live weight fish at 290,000 mt or 638 million pounds. Tilapia have already become one of the most important farm-raised fish and have an increasing role in the international seafood trade.

Humans living where tilapia are native have consumed the fish for centuries. Many common names are found for the fish across Africa, Asia, and the Middle East. In the 1930s, scientists realized the potential of the fish as a food source, efficiently transforming plant materials to fish biomass. Missionaries and others interested in improving the welfare of the rural poor determined that tilapia could be stocked into ponds and lakes as an additional food source.

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Tilapia could grow with minimal inputs and still make a high-quality contribution to the diet of poor farmers. Subsequently, tilapia were stocked into countries across the tropics and subtropics, often into reservoirs behind newly constructed dams. Tilapia are adept pioneer fish, efficiently utilizing available resources and capitalizing on new and altered ecosystems. Usually, the native fish fauna had not had time to respond to the new lacustrine environment, and officials felt that they were 'improving' the fish community. With hindsight, it appears that tilapia have acted alongside other environmental changes to contribute to declines in native fish fauna (Pullin et al. 1997).

This abstract was excerpted from the original paper which was in, C. Lim and C.D. Webster (Editors). Tilapia: Biology, Culture, and Nutrition. Food Products Press, Binghamton, pp. 51–72.

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