External Environment

The economics of the Tilapia industry

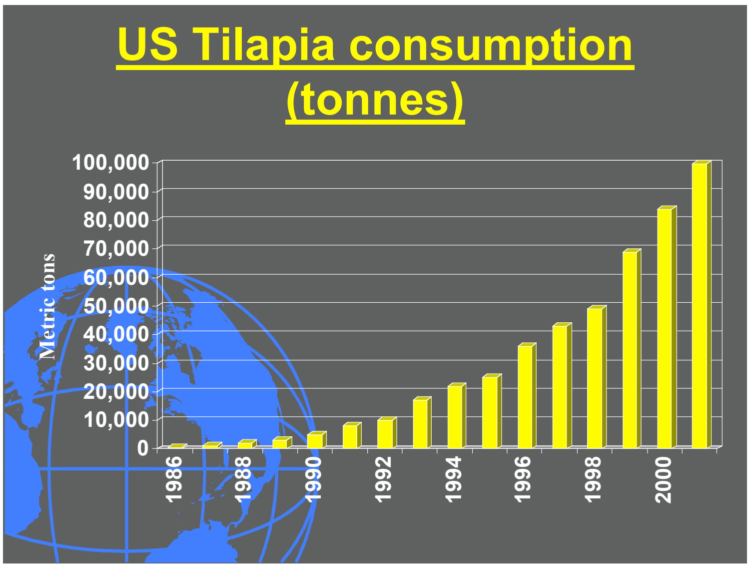
Aquaculture has grown to an industry producing more than 30 million tons per annum, which represents more than 30% of the world's total seafood production. Aquaculture has realised an increase of 40% over the last two decades, while the market share of capture fisheries has stagnated. Profit realisation is substantial, as the world will continue with an ever-increasing demand for food supply against the background of the competition facing a continuous decline in sustainable natural resources.

Market analysis

In attempting to understand the potential for a viable commercial export market for Tilapia; we will define the market attractiveness and competitive position in order to formulate a strategic position from which to develop the marketing plan.

Global overview

In the past 20 years, research has been undertaken in the field of Tilapia farming to such an extent that Tilapia farming has become commercially viable and is becoming popular in many countries within Europe and the Americas. Traditional Tilapia consumption has been in Asia, where Tilapia has been consumed for over 2 000 years, and also in Africa. Tilapia aquaculture now ranks as the second most cultivated fish in the world. This development is resulting in farmed Tilapia becoming a significant substitute for traditional whitefish species. Global production of Tilapia exceeded one



million tons in 1999.
In 2001, the US alone consumed 100,000 tons of Tilapia of which 40,500 tons were imported. Demand growth in the US is estimated to average 20% per annum and is in the initial high growth phase.

In Europe, Tilapia is still in the Introduction phase, and competes with traditional white fish species. It is anticipated that the demand in the EU will also increase significantly over the next decade as many European countries consume significant quantities of seafood.

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Competing products

Production of Tilapia is dominated by the *O. Niloticus* species, which constitutes 75% of world Tilapia supply. In the USA - Tilapia is not marketed according to species or origin and the TMI (Tilapia Marketing Institute) is an example of how general awareness for Tilapia is created, through a generic marketing campaign. In Europe, Tilapia competes with cod, hake, Nile perch and more recently, farmed sea bass. Sea Bass, which is currently farmed in Greece, is sold relatively cheaply into the market. Tilapia is a protein source and could therefore be substituted by poultry, pork, beef, mutton, and other seafood.

Technological changes

Constant innovation around production methods will ensure cost efficiency in production, thus making Tilapia aquaculture more viable e.g. sex reversal technology allows for the production of bigger male fillets at the same production rates. Better production control techniques also allow for consistent high quality products.

Scope of the competitive arena and market segmentation

The majority of farmed Tilapia is produced for local consumption; therefore we will focus on countries that import Tilapia. Existing suppliers from SE Asia (Thailand, Indonesia, China, Taiwan) and the Americas (Columbia, Mexico, Jamaica, Ecuador, Costa Rica) are expected to grow their output in response to increased world demand. SE Asia exports whole frozen Tilapia mainly to the Californian west coast. The US east coast has shown greater consumer awareness of Tilapia and mainly imports fresh fillets from the Americas. Both Asia and the Americas supply Tilapia to the EU. Note that export supply originates mainly from tropical countries as the favorable temperatures allow for cheaper production of Tilapia.

Currently the market is segmented along consumer categories for whole live fish, whole frozen fish, whole fresh fish, fresh fillets, frozen fillets and to a lesser extent the value added variations, which include smoked Tilapia and Sashimi grade Tilapia.

Traditional Tilapia consumers (Asians & Africans) prefer whole fish. Live fish is produced locally, while frozen fish is imported. These traditional markets in the US and EU are supplied by SE Asia. The new, high growth demand in the US does not arise from these traditional consumers and the preferred form of Tilapia is a fillet. The EU on the other hand mainly prefers fresh whole Tilapia as this provides the retailer greater scope of marketing opportunities.

Regulation

Certification of seafood products is becoming more important, and Tilapia producers will have to keep the possible tightening of environmental legislation in mind, as this might restrict production methods e.g. only closed water systems may be permitted in the future. Furthermore, past experience has shown that the EU might impose further trade restrictions, which would severely impact the export market.

The YY chromosome technology that Aquastel has mastered, is not a generic modification at all, but has been achieved through breeding refinement, and is therefore not a problem to the US nor the EU in terms of regulations. It is important that it be understood that the YY chromosome technology is not GM.

Industry profitability

The existing Tilapia market exhibits high growth potential, and low prices have further stimulated demand. Tilapia prices have, however, remained constant for the last decade. This means that Tilapia producers will be faced with constant challenges to ensure cheaper methods of production.

Due to this price inelasticity, Tilapia will require a pull strategy.

Average prices for the Tilapia are listed below for wholesale ($/kg):

Market	Wholesale
Whole Fish	
Live	2.20 – 3.75
Fresh (iced)	2.40 – 3.80
Frozen whole (gutted)	2.00 – 3.50
Fillets	
Frozen	5.80 – 6.50
Fresh	6.60 – 7.30

Source: www.fishfarming.com