Development of New Products and Markets for the Global Tilapia Trade

Kevin Fitzsimmons, Ph.D.

President, World Aquaculture Society

Visiting Fulbright Scholar, Asian Institute of Technology
Professor, University of Arizona
PI – Aquaculture CRSP
Sec./Tres., American Tilapia Association

Sept. 14, 2004

Introduction

- Rapid increases in production
- Explosion in tilapia trade
- Markets and new products



Tilapia production

- Currently second in volume to carps
- Prediction: Tilapia will become most important aquaculture crop in this century
- Widest demand, no religious/cultural concerns, few environmental concerns
- More genetic potential
- Greatest variety of production systems



Tilapia-shrimp polyculture Farms



Intensive Raceway Systems



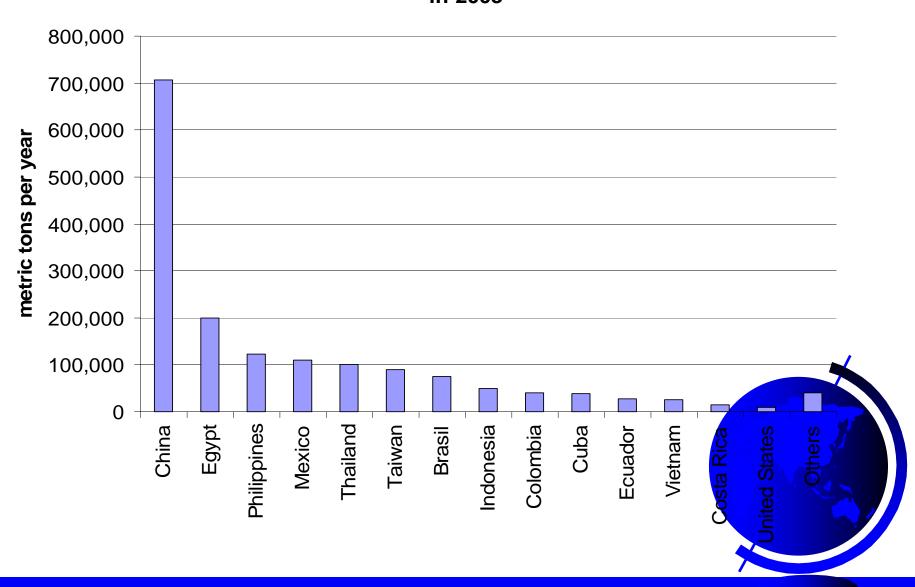




High quality products



World Tilapia Production of 1,648,477 mt in 2003



Global Tilapia Sales (farmgate)

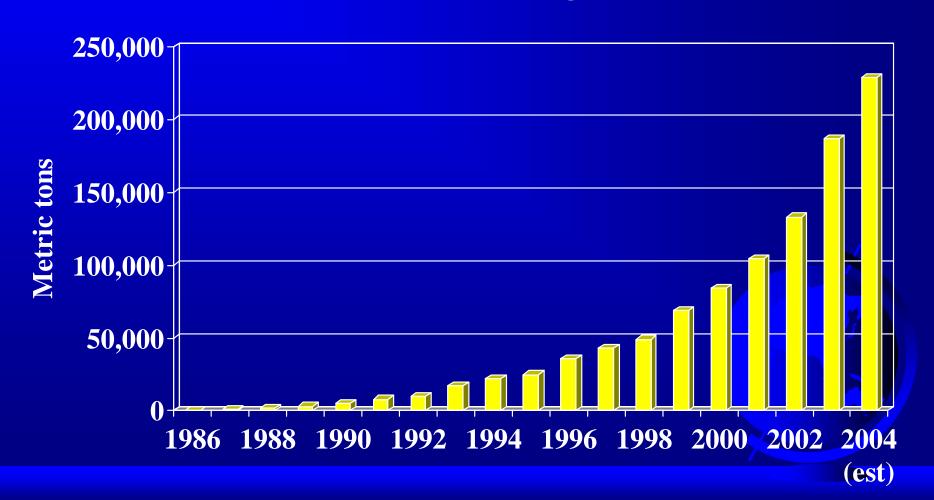
- For year 2000
- US \$ 1,706,538,200

(FAO Fisheries Circular No. 886)

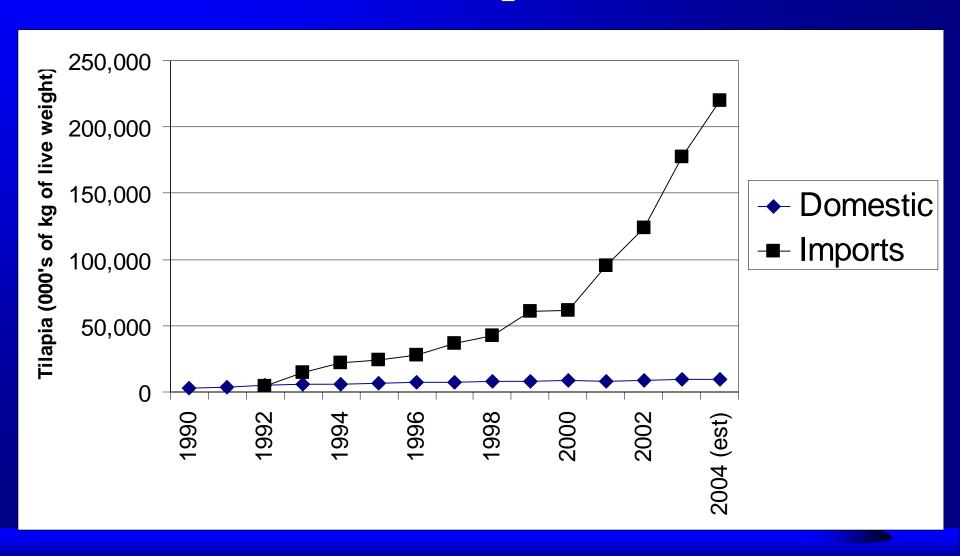
~2003 sales >\$ 2,500,000,000

=2010 sales > \$5,000,000,000

US Tilapia consumption (187,000 mt of live weight - 2003) (229,000 mt of live weight – 2004 est)

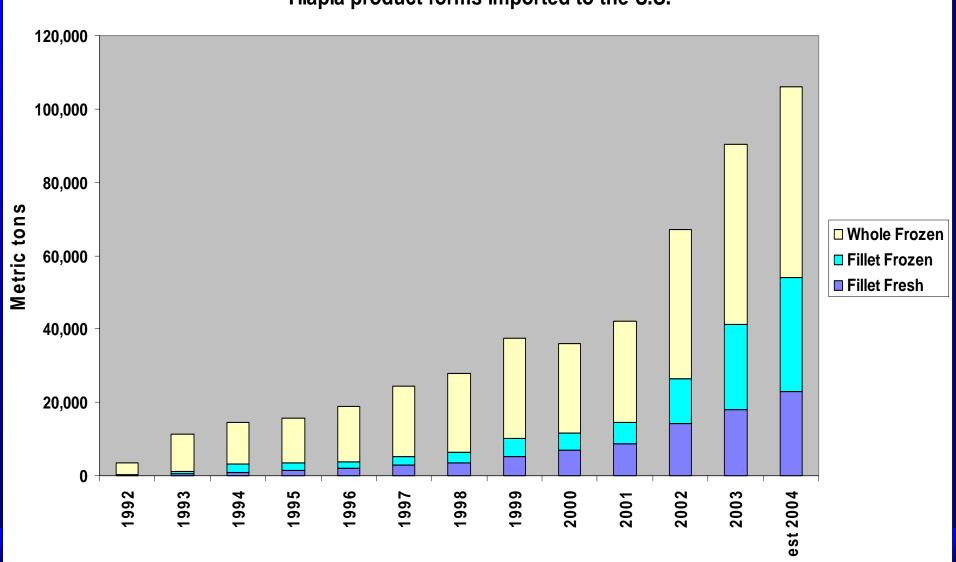


US Consumption of tilapia from domestic and imported sources

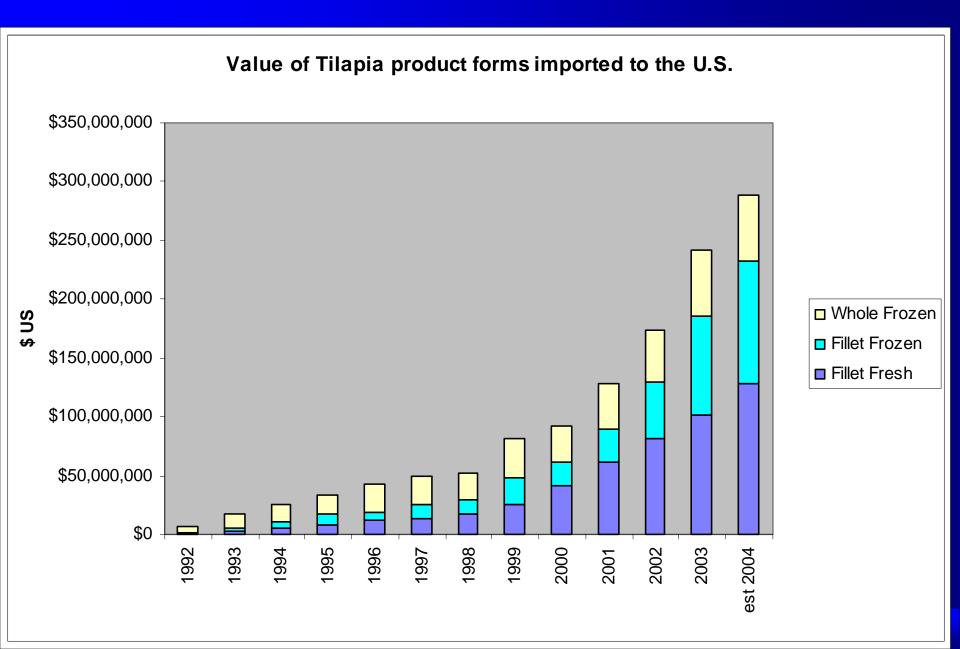


23,000 mt fresh fillets, 31,000 mt frozen fillets, 52,000 mt whole frozen (est. 2004)





\$174,215,165 (2002) \$241,205,610 (2003) \$287,000,000 (2004)



US Sales of tilapia

- Timports in 2003 were \$241,205,610
- US production of \$30,000,000 at farm
- ~2003 sales were over \$271,000,000

- ~2004 Imports \$287,000,000
- © 2004 Total US tilapia sales \$317,000,000

Top Ten Seafoods (U.S.) per capita (lbs)

2000		2001		2002	
Tuna	3.5	Shrimp	3.4	Shrimp	3.7
Shrimp	3.2	Tuna	2.9	Tuna	3.1
Pollock	1.6	Salmon	2.0	Salmon	2.0
Salmon	1.5	Pollock	1.2	Pollock	1.1
Catfish	1.1	Catfish	1.1	Catfish	1.1
Cod	8.0	Cod	0.6	Cod	0.66
Clams	0.5	Clams	0.5	Crabs	0.57
Crabs	0.4	Crabs	0.4	Clams	0.54
Flatfish	0.4	Flatfish	0.4	Tilapia	0.40
Scallops	0.3	Tilapia	0.35	Flatfish	0.32
Tilapia	0.28				

How did tilapia get so popular, so fast?





Tilapia widely popular around the world and beyond.

- Common names: Tilapia, chambo, boulti, lou fei, pla nil, St. Peters fish, mojara, freshwater and/or red snapper
- "Used in many cuisine, hundreds of recipes, often replaces over-fished local species
- Eggs hatched and fry reared on International Space Station

Consumer evolution in US and EU

- Ethnic buyers (Asian and Latino;
- Asian and African)
- Up-scale restaurants
- Casual dining
- Club stores
- Local groceries



Consumption patterns in producing countries

- © Consumption by growers
- Local markets
- Live tanks in restaurants
- Sell to large urban markets
- High quality product into up-scale domestic markets
- Restaurants and groceries
- **Exports**

Additional processing and quality assurance steps

- Depuration stage
- Bleeding step
- Deep skinning
- Additional trimming
- Ozone dips
- Improved packaging
- Faster delivery



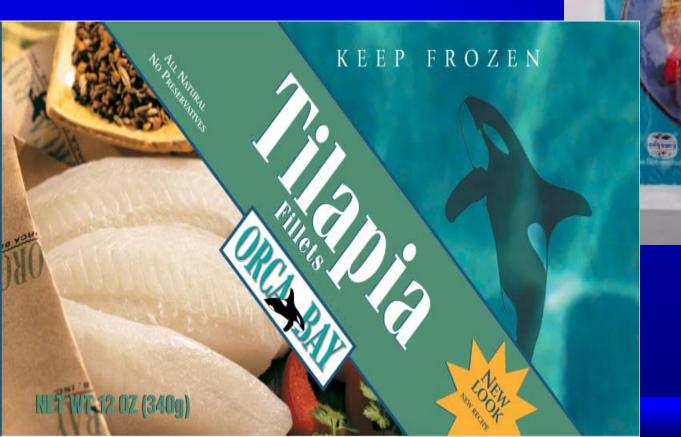
Carbon monoxide debate

- CO used to preserve fillets
- Maintains "fresh appearance"
- Still under review as treatment
- May improve shelf life, reduce bacteria
- May have to report as treated with a preservative

Individual bags for frozen fillets



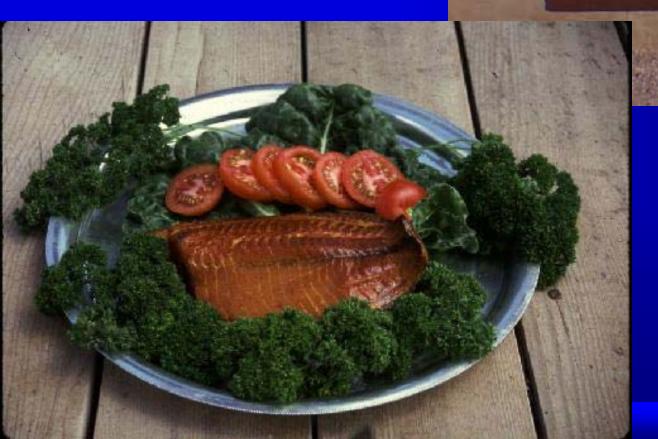
IQF Fillets





New product forms

Smoked tilapia



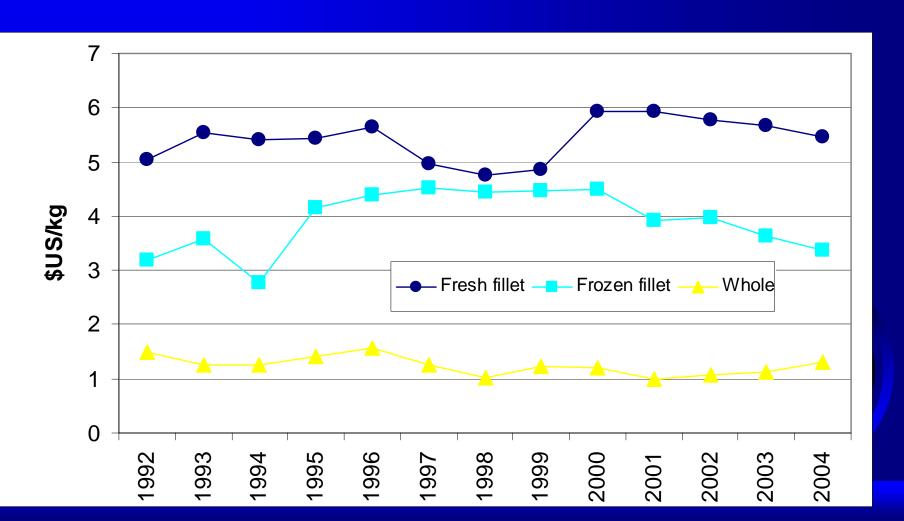


Advertising



Current Global Market Trends

Prices have been constant for several years and will remain stable, will not increase with inflation



Current Global Market Trends

- Increase in demand for all forms of tilapia
- Demand increase will be greatest for fresh fillets



Industry by-products

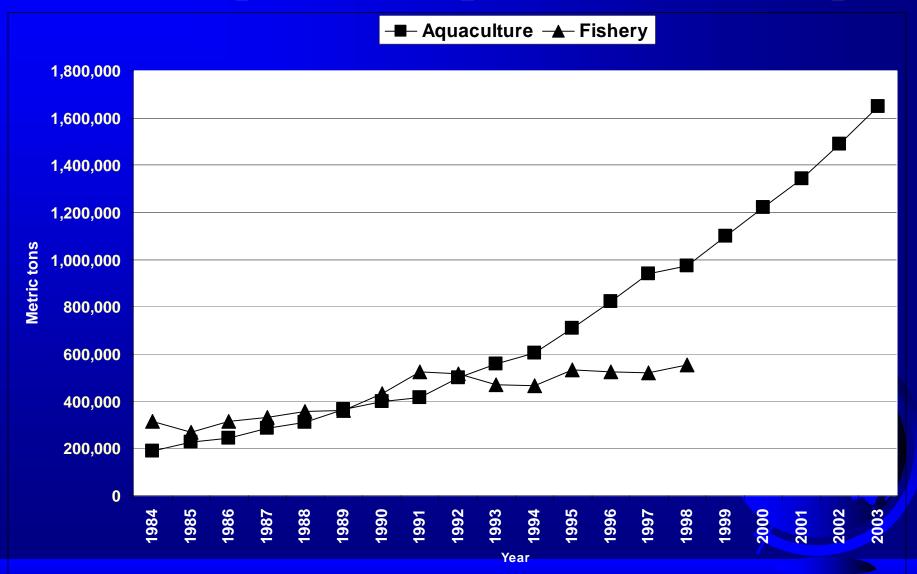
- Leather goods from skin will become a significant contributor to profitability
- Pharmaceuticals from skins
- Formed fish products
- Fertilizer
- Fish meal



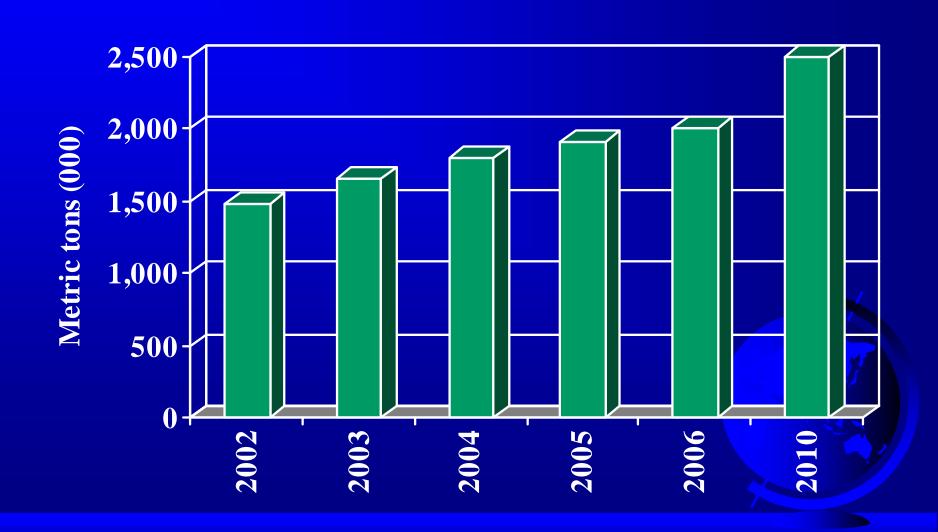
Flowers made from Tilapia scales



Global aquaculture production of tilapia



Future global tilapia production



Tilapia – Worth going to jail?

- PLACETAS, Cuba, September 1
- Police arrested a young man who was selling tilapia fillets out of his bicycle in Placetas Sunday morning and local residents loudly protested the lost possibility of buying the fish.
- The policeman making the arrest saw the man at an intersection and ordered him to walk to the police station while he followed in his car.
- Residents watching the parade protested loudly. One woman brought her hands to her head and said: "Now, what am I going to feed my children and my mother? We are the ones that get stuck, because they (meaning the government) don't sell fish through the rationing system."
- A young woman said: "Now they'll confiscate the tilapia and keep it for themselves."

Funding for this research was provided by the

Aquaculture Collaborative Research Support Program



The Aquaculture CRSP is funded in part by United States Agency for International Development (USAID) Grant No. LAG-G-00-96-90015-00 and by participating institutions.