



Market Potential for Farmed Atlantic Salmon - Focus on the Global Village and Market

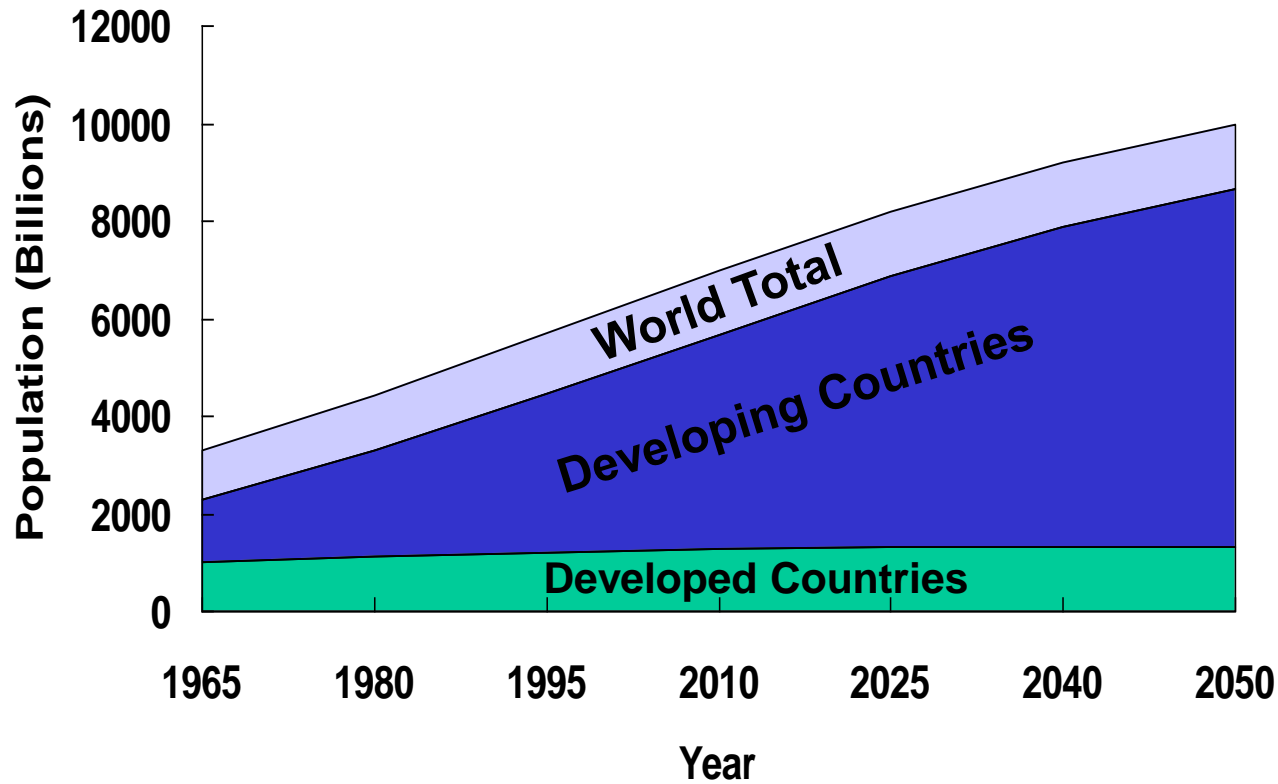
**Phil Thomas
Chairman, SSPO**

Market Context

- We live in a world:
 - where the speed of change is a constant challenge;
 - where sharp economic, technological and social shifts have become the norm;
 - where global interconnectivity in communications, markets and societal trends are the expected;
 - where understanding underlying change is a key business consideration.
- So what forces are shaping the market for foods in the medium-term and longer-term?



Demographics: Global Population is Increasing



Depending on assumptions about affluence, diet composition and Food waste these figures imply an increase in total food production of 50-70% of current production & consumption.



But Population Increase is Not Uniform Between Regions

Region	Estimated Population Growth (Million) 2050 v 1995
Asia	1985
Sub-Saharan Africa	1193
Latin America & Caribbean	328
China	295
North Africa	125
North America	91
Oceania	17
Europe	-89



Food Consumption per Head Will Increase (kcal/capita/day)

Countries	1964-66	1997-99	2030 (Est)
World	2358	2803	3050
Industrialised	2947	3380	3500
Transition	3222	2906	3180
Developing	2054	2681	2980
Sub-Saharan Africa*	2058	2195	2540

FAO estimate that more than 1 billion people in the World are undernourished because they lack access to food **but** WHO estimates that 1.6 billion adults in the World are overweight and 0.4 billion are obese, and the number is increasing.



Meat and Milk Consumption per Head Will Increase (g/capita/day)

Countries	Meat			Dairy		
	64-66	97-99	2030 (Est)	64-66	97-99	2030 (Est)
World	66	100	124	202	214	245
Industrialised	168	242	274	508	581	605
Transition	116	127	166	429	436	490
Developing	28	70	100	77	122	180
Sub-Saharan Africa*	28	26	37	78	80	93

As consumers become more affluent they eat more calories and more protein foods relative to calories until the ratio of protein calories: total calories is typically *ca* 28-30%.



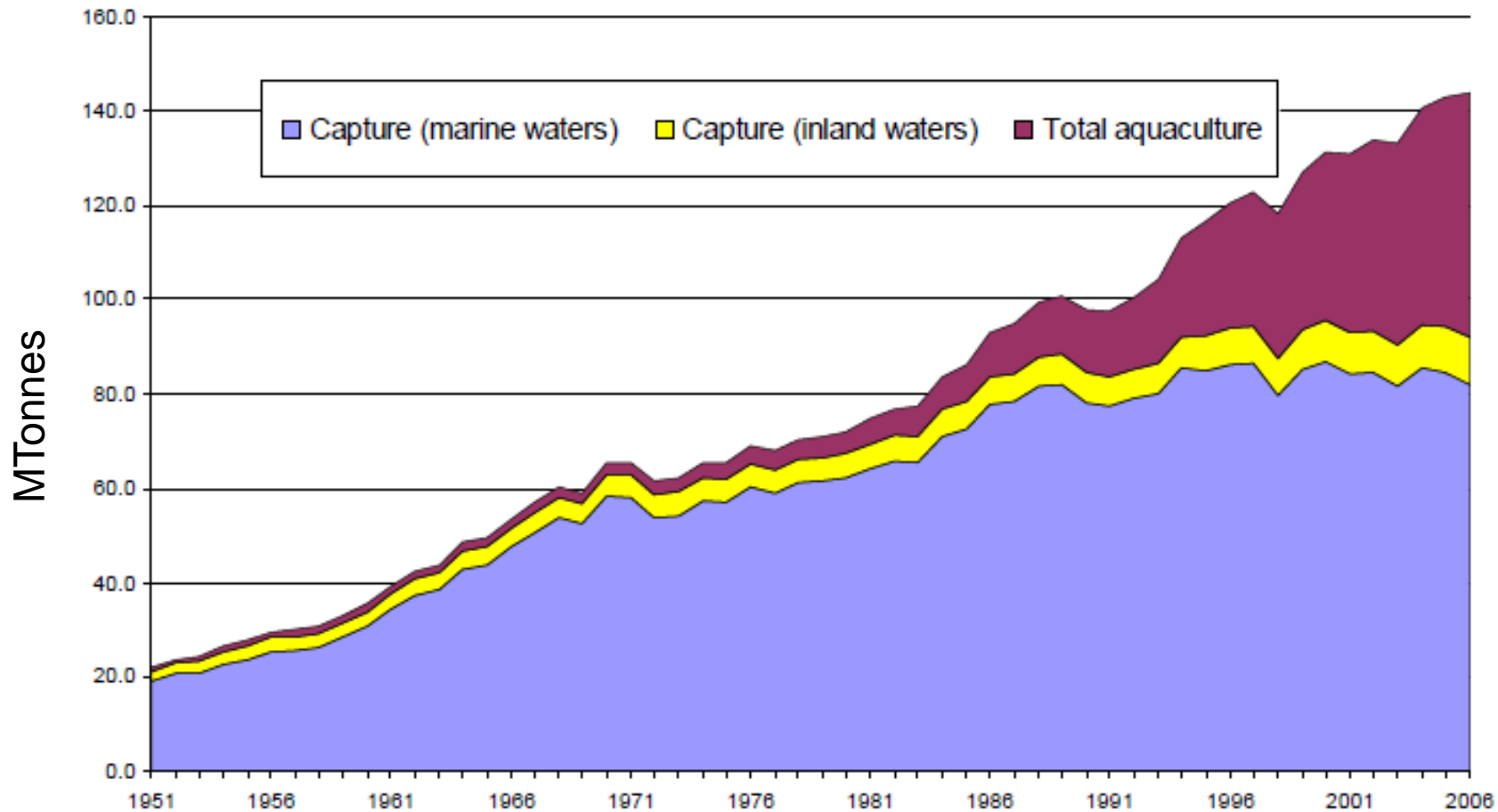
What Will Happen to Fish?

- Total fish production and consumption will increase.
- Sea-caught fisheries will be conservation-managed to seek to maintain present levels of production; some development of markets for 'unexploited species'.
- Aquaculture production will continue its ongoing trend to provide a larger proportion of total fish production.
- Total fish consumption per head will increase.
- Major regional differences in fish consumption will continue to exist but consumption pattern could shift with increasing affluence and wider consumer choice.



Fisheries and Aquaculture Production 1951-2006

(After Ababouch, 2008)



World Aquaculture Production

Country	Percentage of World Production (%)
China	66.6
Asia - China	22.8
Europe	3.3
South America	2.7
North America	1.3
Africa	1.2

World production = 51.6 Billion tonnes

Carp = 40%; Tilapia and Misc Fresh Water = 14%

Atlantic Salmon = 2.5%



Fish Consumption in Selected Areas of (kg/h/y).

Area (Data 1996-98)	Low Value	High value	Shellfish	Total
World	7.5	4.4	3.8	15.7
Japan	8.3	33.1	21.2	62.6
China	15.8	1.5	9.2	26.5
EU(15)	1.9	15.4	6.3	23.6
USA	0.1	13.3	6.3	19.7
Eastern Europe	0.4	9.9	0.3	10.6
Latin America	5.3	1.7	0.9	7.8
Sub-Saharan Africa	5.9	0.6	0.1	6.7
India	3.6	0.9	0.2	4.7

Norway (2008): consumption 46.6 kg/y. Globally FAO 2020-projection of 17.1 kg/h/d probably already achieved.



FAO 2020 Projection Study (2002)



What Will Affect Salmon Markets Globally and Locally?

Three main groups of factors:

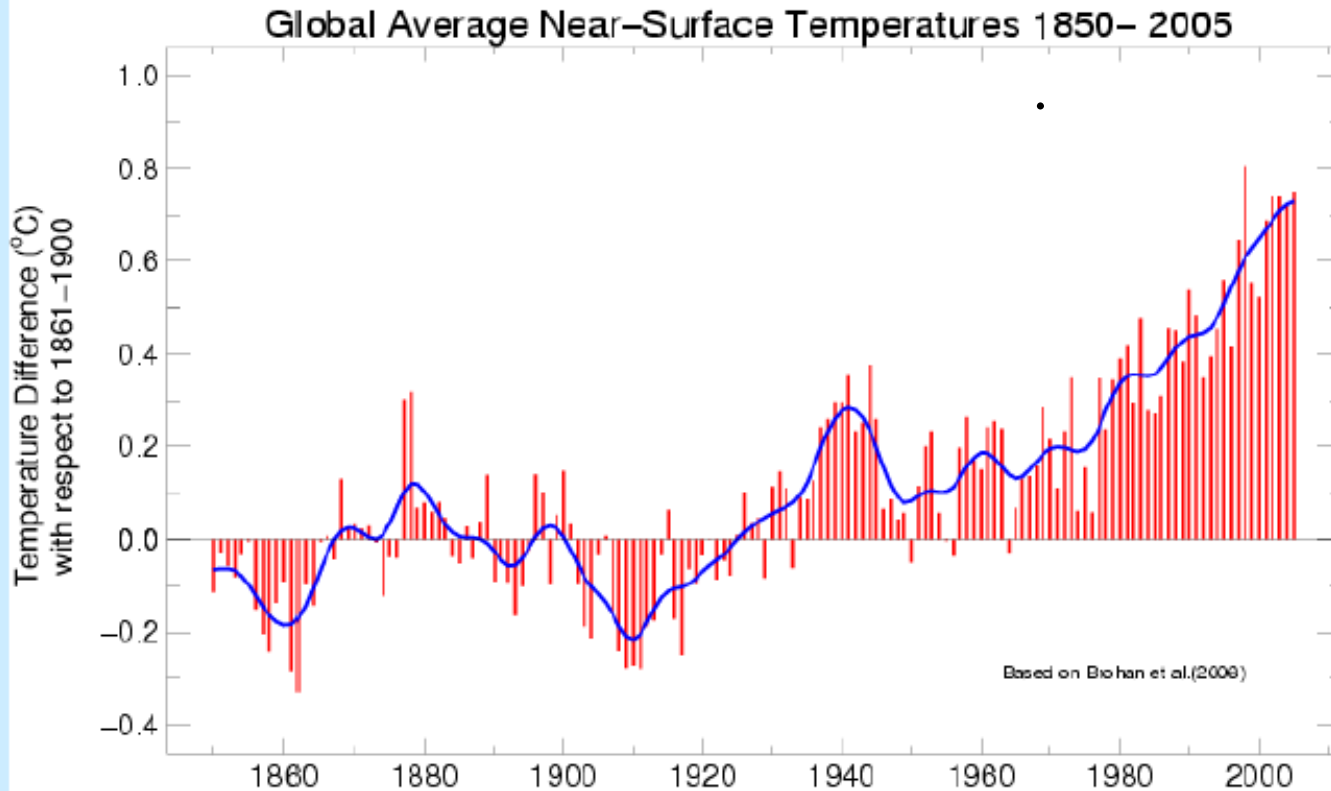
- Global political-economic conditions affecting global and regional policies and market conditions.
- Consumer trends and related shifts in demand.
- Availability of salmon products and competitiveness against alternatives foods.

Regional and local consumer trends are conditioned by global influences but regional markets still differ.

Consumer trends in the developed industrialised countries impact wider as global prosperity increases.



Global Issue: Climate Change



Met Office

Hadley Centre for Climate Prediction and Research and CRU, University of East Anglia

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GHG Production by Farmed Species

Species	GHG (Kg Carbon Dioxide Equiv/kg)	
	Smith & Gill (2008)	Skretting (2009)
Lamb	17.4	-
Beef	13.0	14.0
Pork	6.3	4.4
Chicken	4.6	1.8
Salmon	-	2.0

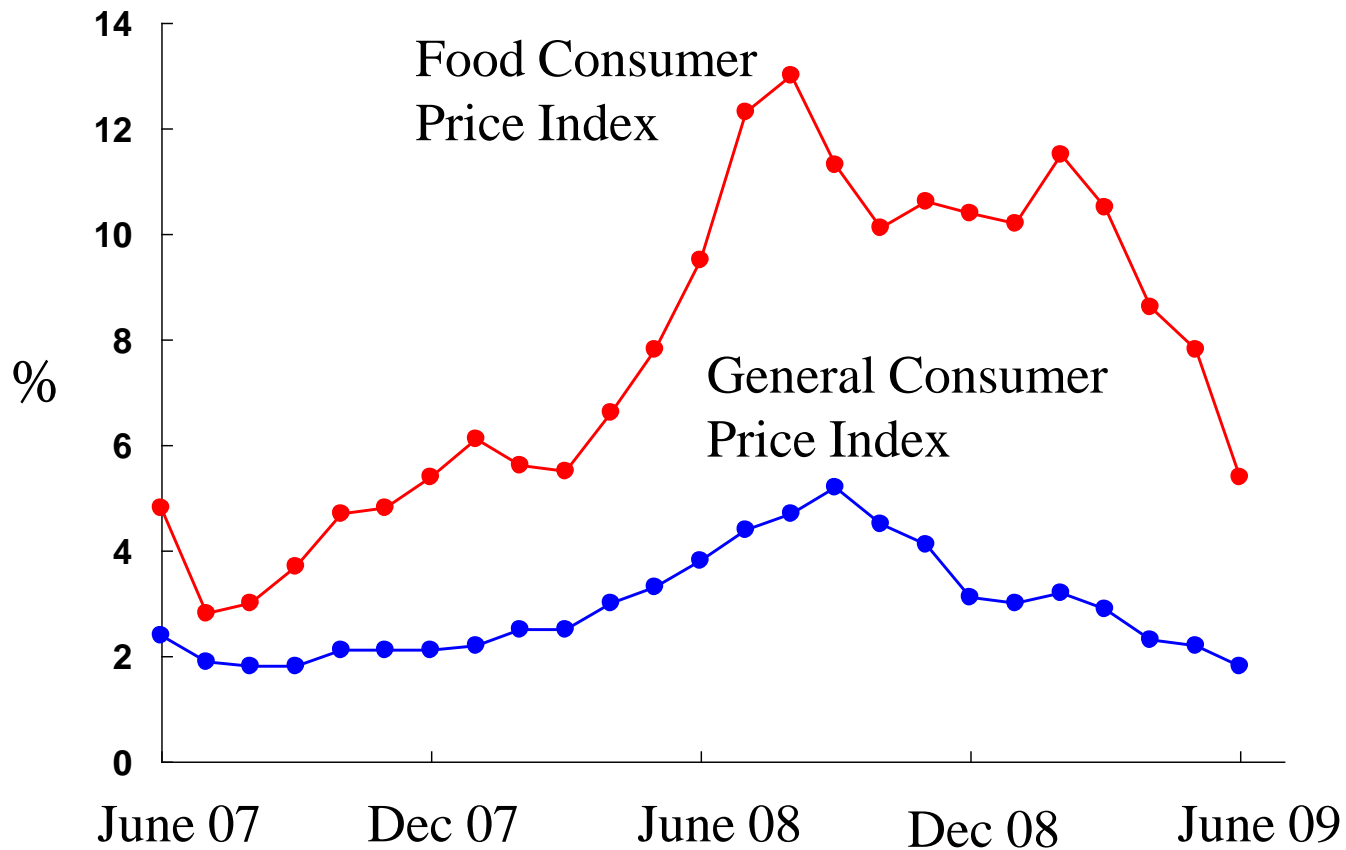


Climate Change Impacts on Policy

- Climate change mitigation and adaptation are now major regional influences on food and energy policies.
- Food and energy policies are inextricably linked; 'Reduce Waste' is the new mantra.
- Temperature increases and changes in weather pattern are unavoidable: land use patterns will change.
- By 2050 water shortage will affect 40% of World's population.
- Food security and energy security are now high priorities on the global agendas.



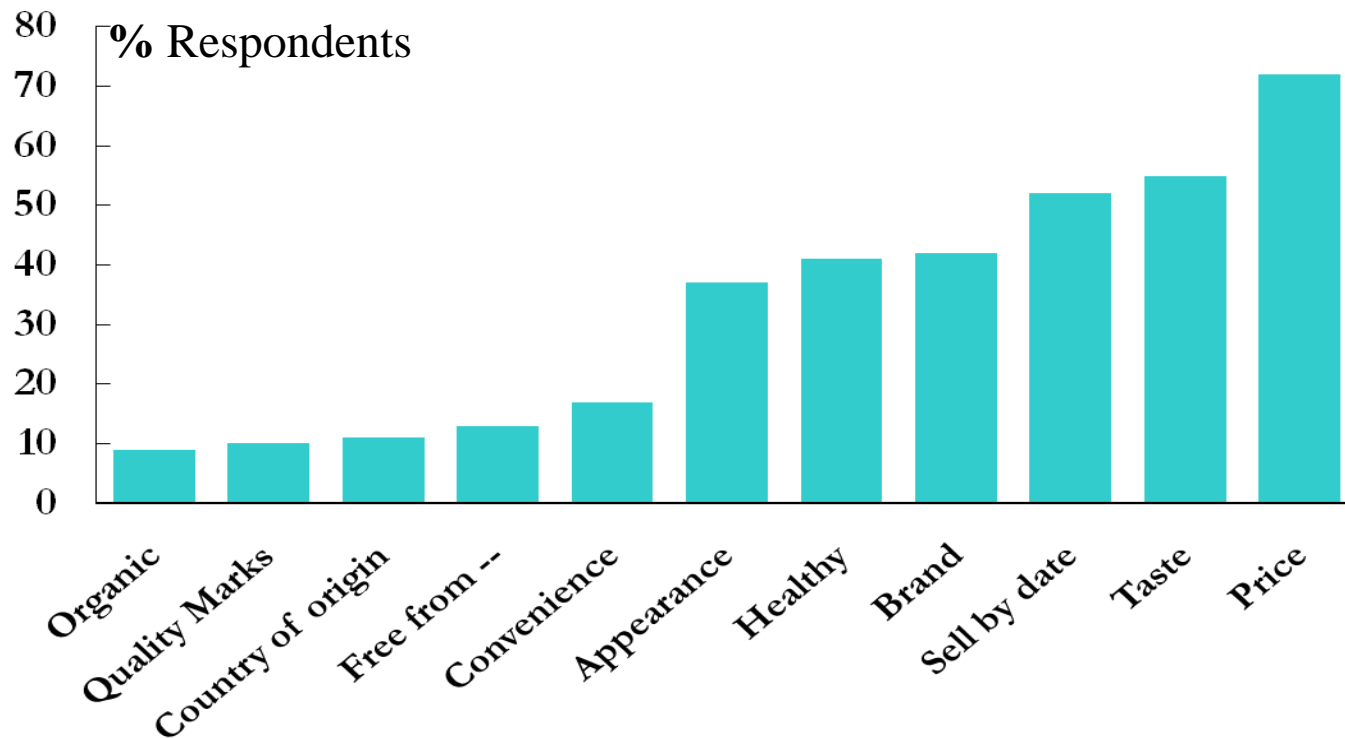
Food Price Changes in UK 2007-2009



Over whole period food prices have increased by a total of 17.3% compared with June 2007.



Consumer Trends: Drivers of Purchases



‘Price’ is a proxy for consumer-perceived value for money.
‘Healthy’ is proxy for ‘health-giving’, which is an increasing consumer concern.
‘Brand’ is often a consumer proxy for other considerations.



Salmon as a Healthy Food

- Fish is an excellent source of nutrients.
- Increased consumption of omega 3 rich fish has been linked with reductions in cardiovascular disease, strokes and some cancers, and positive effects on the immune system and on mitigating arthritis.
- UK Food Standards Agency Advice:
'We should be eating at least two portions of fish a week including one of oily fish. But most people aren't eating enough fish. Fish and shellfish are rich in protein and minerals, and oily fish is rich in omega 3 fatty acids.'



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20p



Guilty: Evil husband who strangled his 'gentle' doctor wife



OMEGA 3 IS SECRET OF LONG LIFE

Everyone should take it daily, say scientists



EATING oily fish can help ensure a long life as it slashes the risk of heart failure by a third, scientists have discovered.

As a result, they say the fatty acid found in fish oil, omega 3, should now be taken daily by everyone in Britain.

Oily fish has long been known to help those with existing heart problems, but just 500mg a day - the equivalent of two three-ounce portions a week - could also cut the risk for healthy people.

By Dana Gloger

gest killer and scientists at the Ochsner Medical Center in New Orleans looked back at 30 years of research.

They say people with existing heart problems should take "at least 800 to 1,000mg" of omega 3 each day - the amount found in three to four 3oz portions of oily fish a week.

Half that amount of fish would provide enough omega 3 for healthy people - the equivalent of one supplement capsule.

Although the substance is considered an "essential fatty acid", omega 3 is not produced naturally by the body, and therefore it can only be obtained through diet or

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UK Omega 3 rich fish	Consumption g/head/wk	Production (x1000t/yr)
Current	63	194
FSA Advice	140	431
Difference	77	237

There is debate about whether national healthy eating targets need to be reflected in policy food supply policy.



'Brand' and Related Factors

'Brand' often embodies:

- Production method e.g. system quality assured systems, organic production, eco-production etc
- Animal health and welfare assurance.
- Ethical assurance schemes e.g. fair trade.
- Environmental protection e.g. environmental sustainability, biodiversity or wildlife policies.
- Country of origin - but must supported by credible production assurance schemes.



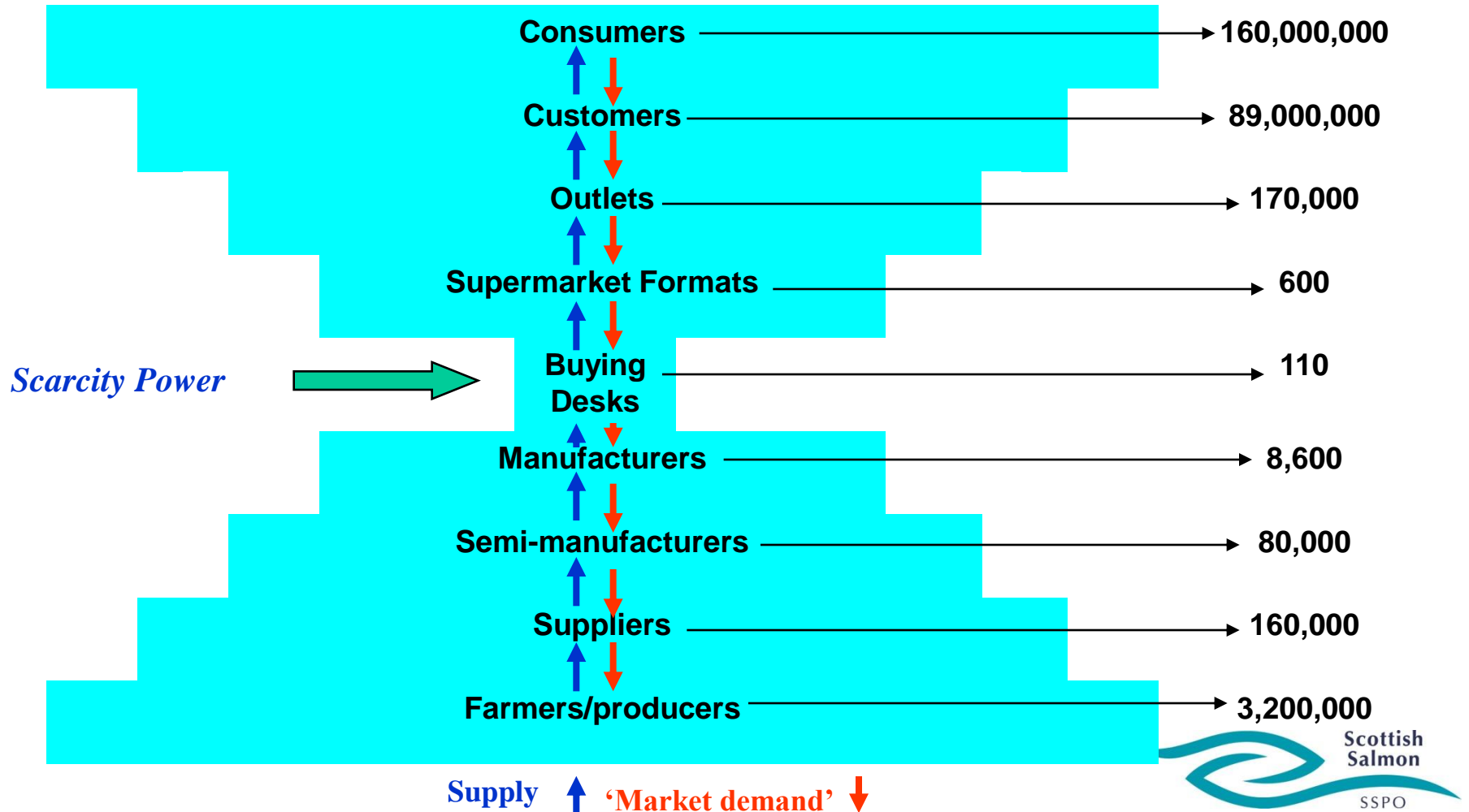
Country of Origin Branding?



Gestures are not sufficient. Modern consumers are very savvy!



Retail Buyers Also Seek Marketing Benefits and Control the Retail Chain in Europe



After: Grievink 2003

Scottish Aquaculture A Fresh Start

A Consultation on a
Renewed Strategic Framework
for Scottish Aquaculture



The Scottish
Government

**Communication is Key:
National communication;
Industry communication;
Company communication.**

Sustainability Report 2008

A CODE OF GOOD PRACTICE FOR
SCOTTISH FINFISH AQUACULTURE



marine harvest
excellence in seafood



Take Away Messages

- The World faces major challenges in feeding a growing population in the face of global environmental change.
- Food supply must increase but sustainably in resource and energy use. This is influencing policies in Europe.
- Global fish consumption in total and per capita will continue to increase.
- Farmed salmon production has scope to expand – but within the constraints of sustainability.



Take Away Messages

- Salmon competes successfully with other protein sources, but regional markets have their own characteristics.
- Demand for salmon will exceed the global availability and probably production potential.
- The industry challenge is to expand supply whilst increasing added value, rather eroding of price
- Main global challenge is to resolve perceived or real sustainability issues and communicate the outcomes to consumers.



The End



Comparative Competitive Performance of Protein Foods (UK)

Protein Source	Percentage (%) Increase in Annual Consumer Spend 2008 v 2000
Fresh Beef	31.2
Fresh Lamb	50.8
Fresh Pork	30.2
Fresh Poultry	26.7
Fresh Fish	64.1



TNS World panel – Oct 2008

