



# Outlook – Aqua Fishfeed Markets

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## Graintec 25th Anniversary

Hindsgavl Castle, September 1st - 2010



# Agenda

- A global aquaculture overview – History & status - figures
- Focus on: America, Europe & Asia
- Sector focus: *Salmon & Trout*  
*Seabass & Seabream*
- Aquaculture outlook -> 2015
- Implications for Aquafeed

# The World of Seafood

## Total Seafood Resources (09E)

146 mill tonnes

### Fisheries – 91 mill tonnes

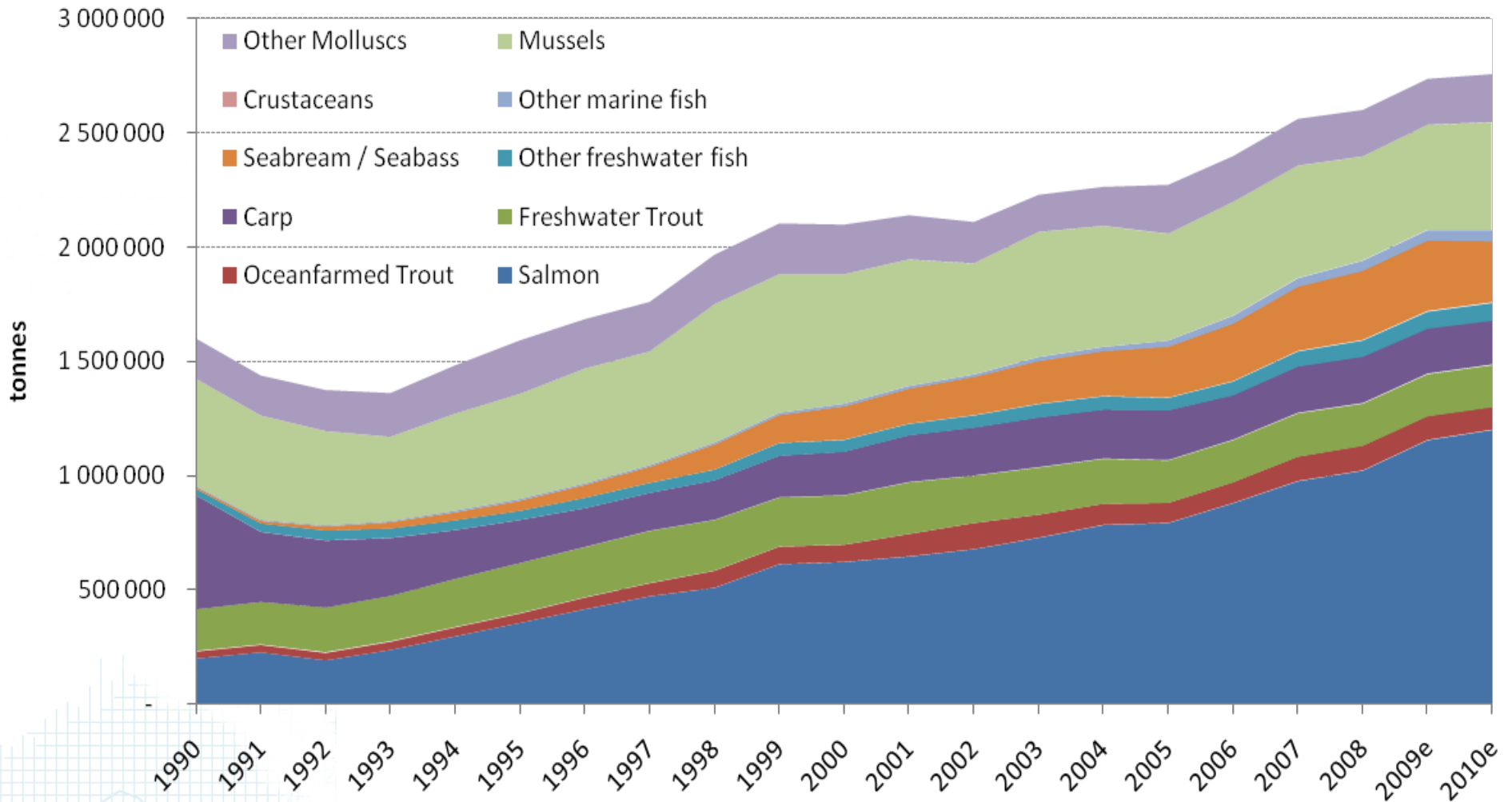
|                  |           |
|------------------|-----------|
| Pelagic species  | 36,0 mill |
| Groundfish       | 20,0 mill |
| Oth. marine fish | 9,0 mill  |
| Freshwater fish  | 10,0 mill |
| Molluscs/Squid   | 7,5 mill  |
| Crustac./Shrimp  | 6,0 mill  |
| Salmonids        | 1,1 mill  |
| Other            | 1,4 mill  |

### Aquaculture – 54 mill tonnes

|                   |           |
|-------------------|-----------|
| Carp              | 21,0 mill |
| Tilapia           | 3,0 mill  |
| Catfishes         | 2,5 mill  |
| Oth. Freshw. Fish | 8,6 mill  |
| Molluscs          | 13,0 mill |
| Crustac./Shrimp   | 5,8 mill  |
| Salmonids         | 2,2 mill  |
| Demersal marine   | 1,3 mill  |

Source: Kontali Analyse / FAO

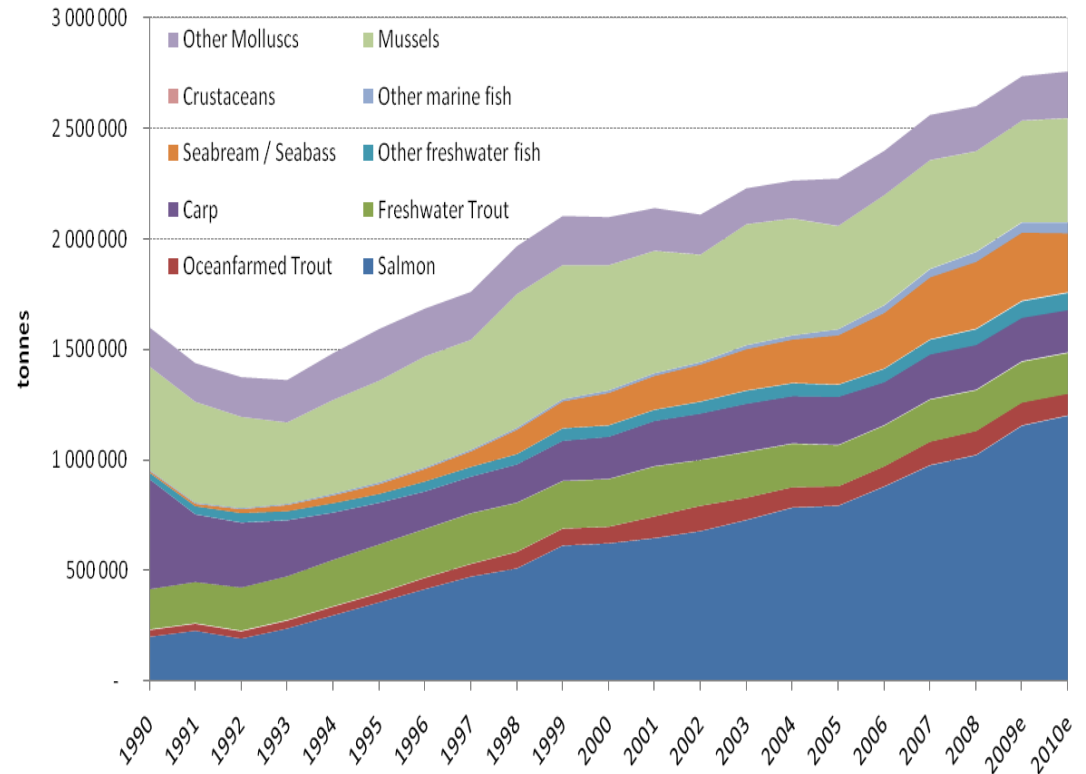
# EUROPE – Aquaculture



Source: Kontali Analyse / FAO

# EUROPE – Aquaculture

- **Oceanfarmed Salmonids :**  
Nearly 50 % of European Aquaculture
- **Seabass/Seabream:** Strongest growth
- **Mussels:** A considerable share still, but diminishing role
- **All freshwater species (Carp, trout):** continuously declining
- **Europe:** Reduced importance as producing region  
*From 12 % -> 5 % over 20 years*

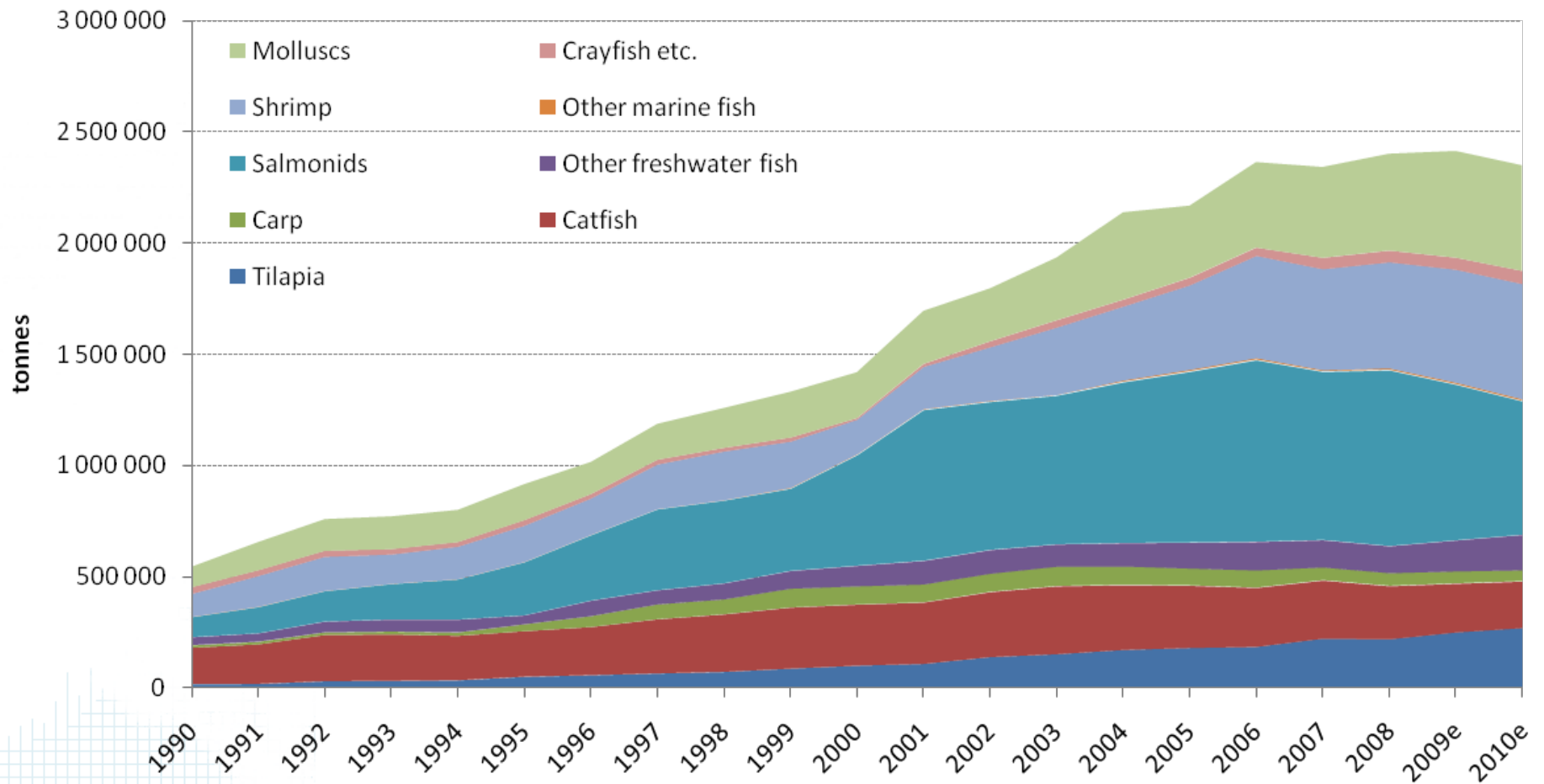


- **Approx. 2,7 mill tonnes est. in 2010 - (5 % of global)**

Annual growth rate last 5 years: 3,8 %

Annual growth rate last 20 years: 2,7 %

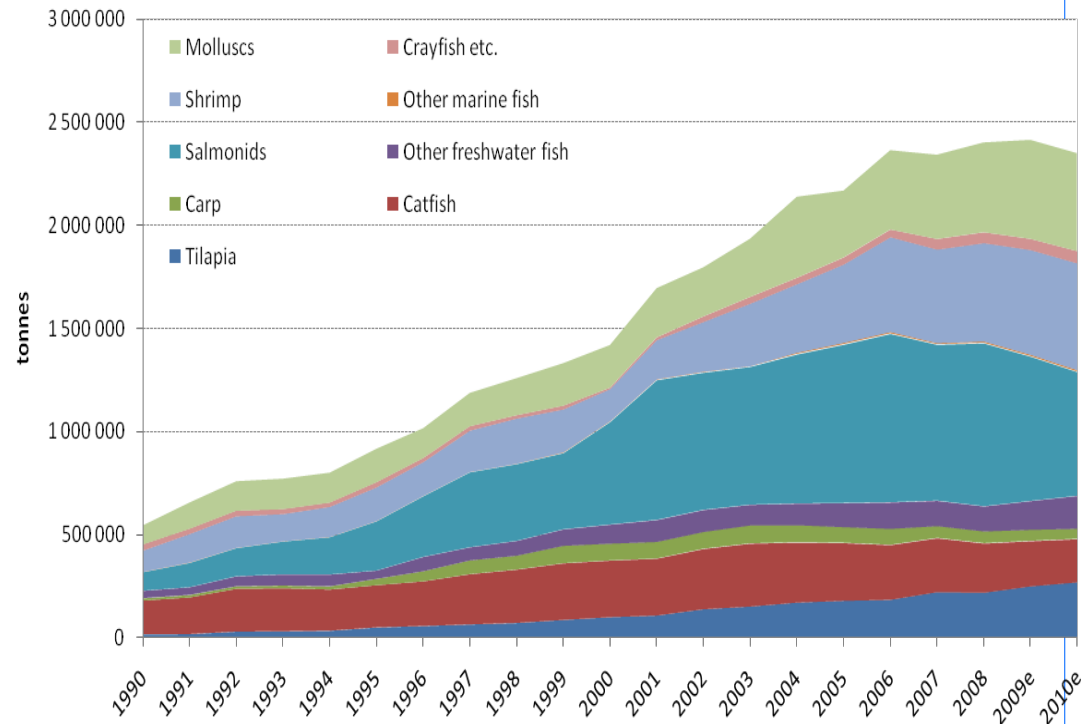
# AMERICAS - Aquaculture



Source: Kontali Analyse / FAO

# AMERICAS - Aquaculture

- **Strong growth during the 90'ies on Salmonids in Chile.** Stagnating since then
- **Warmwater Shrimp (vannamei):** Important in Latin America
- **Molluscs:** Dominated by Chilean mussels and US oysters
- **US Catfish:** Continued decrease over the past 6-7 years. Competition from imports
- **Tilapia, catfish and other freshwater fish:** Strongest growth during the last 4-5 years

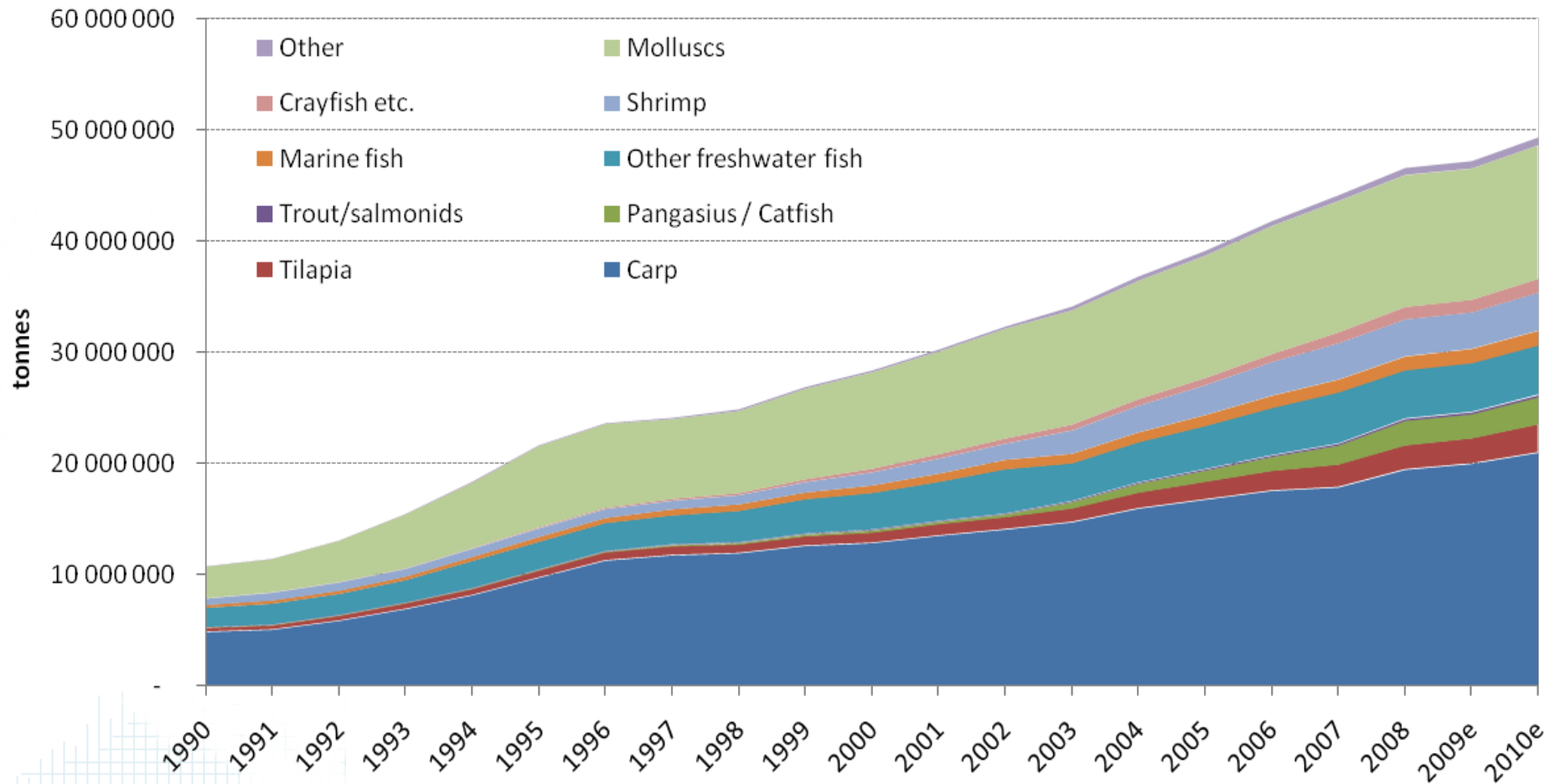


- **Approx. 2,35 mill tonnes est. in 2010 - (4,5 % of global)**

*Annual growth rate last 5 years:* 1,6 %

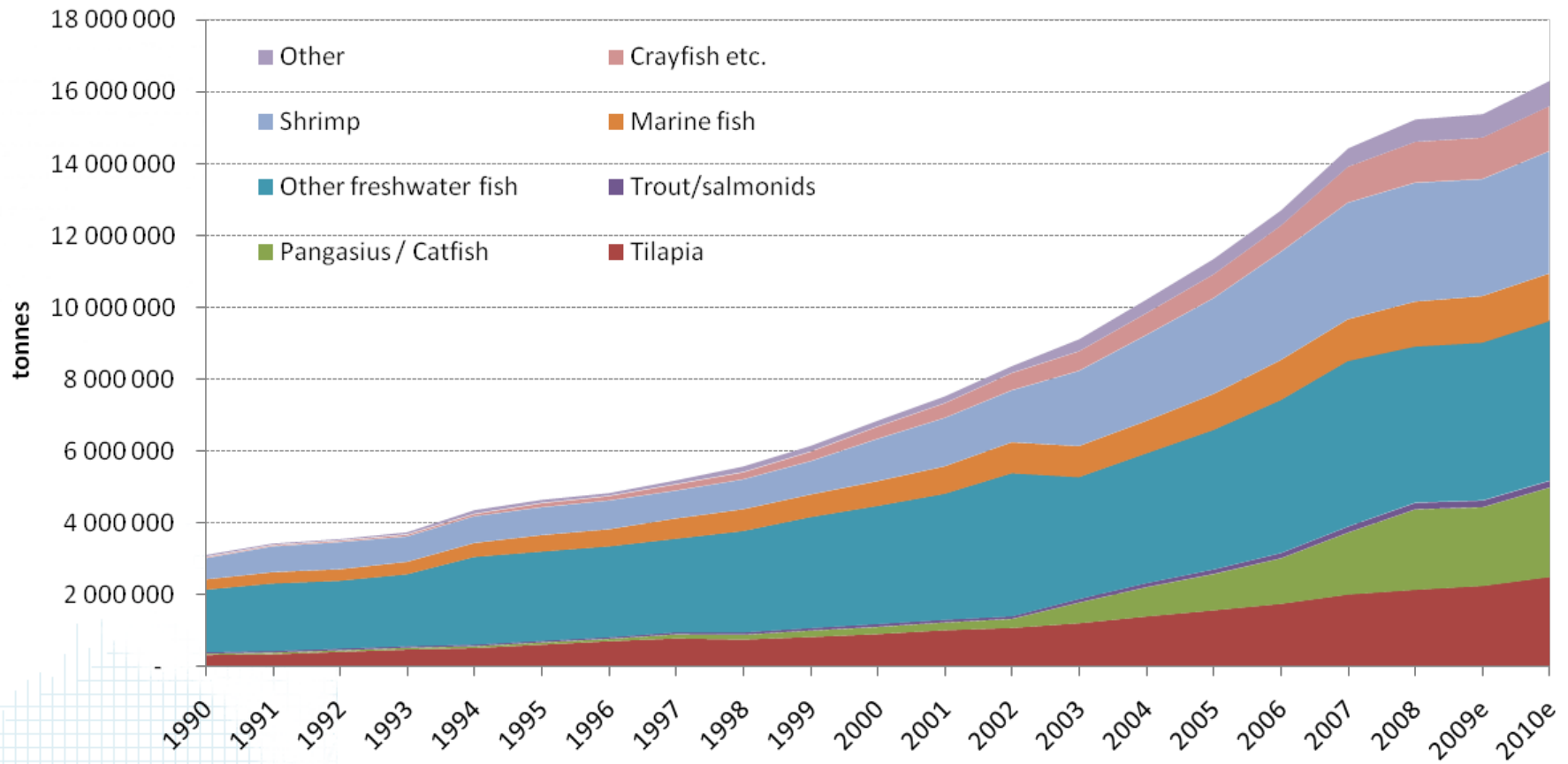
*Annual growth rate last 20 years:* 7,6 %

# ASIA - Aquaculture



Source: Kontali Analyse / FAO

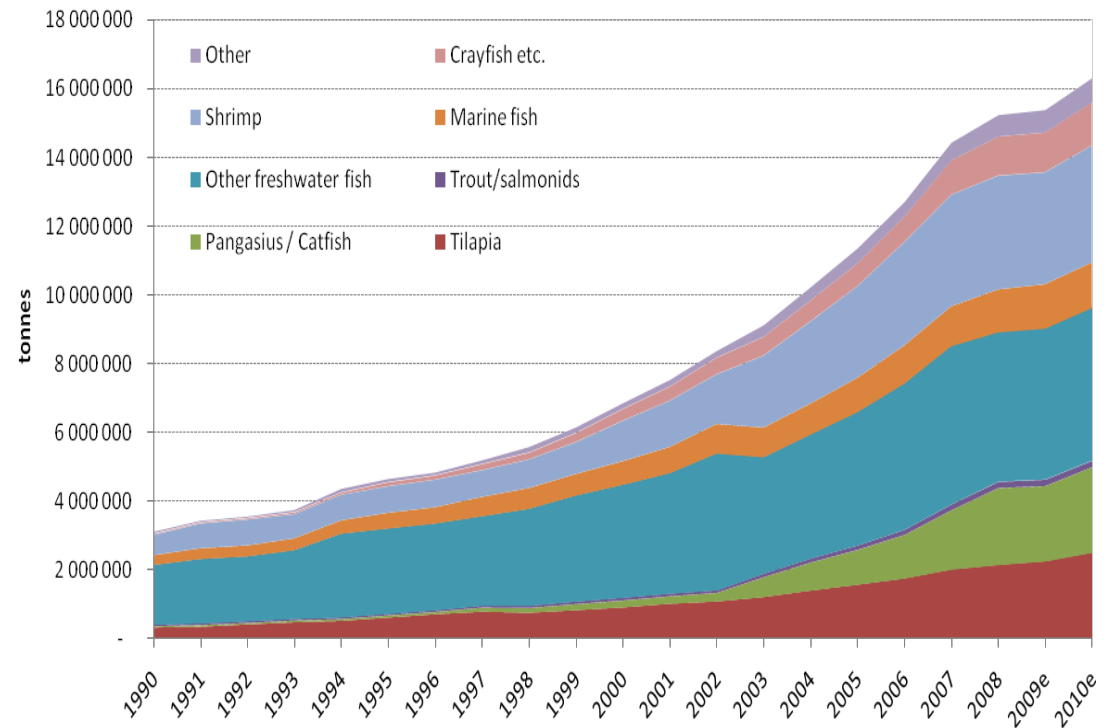
# ASIA – Aquaculture (Ex. Carp/Molluscs)



Source: Kontali Analyse / FAO

# ASIA - Aquaculture

- **Carp & freshwater fish for "domestic" markets:** 50 % of total Asian aquaculture
- **Molluscs:** 12-13 million tonnes, of which more than 95 % from marine farming
- **Warmwater Shrimp:** Steadily increasing with "Whiteleg" taking over for "Tiger"
- **Tilapia, and later Pangasius/Catfishes:** taking the leading role as commercial export products – along with shrimp
- **Marine finfish:** Lowest growth-rate, but still representing 1,3 million tonnes, with a large variety of species



- **Approx. 49 mill tonnes est. in 2010 - (+90 % of global)**

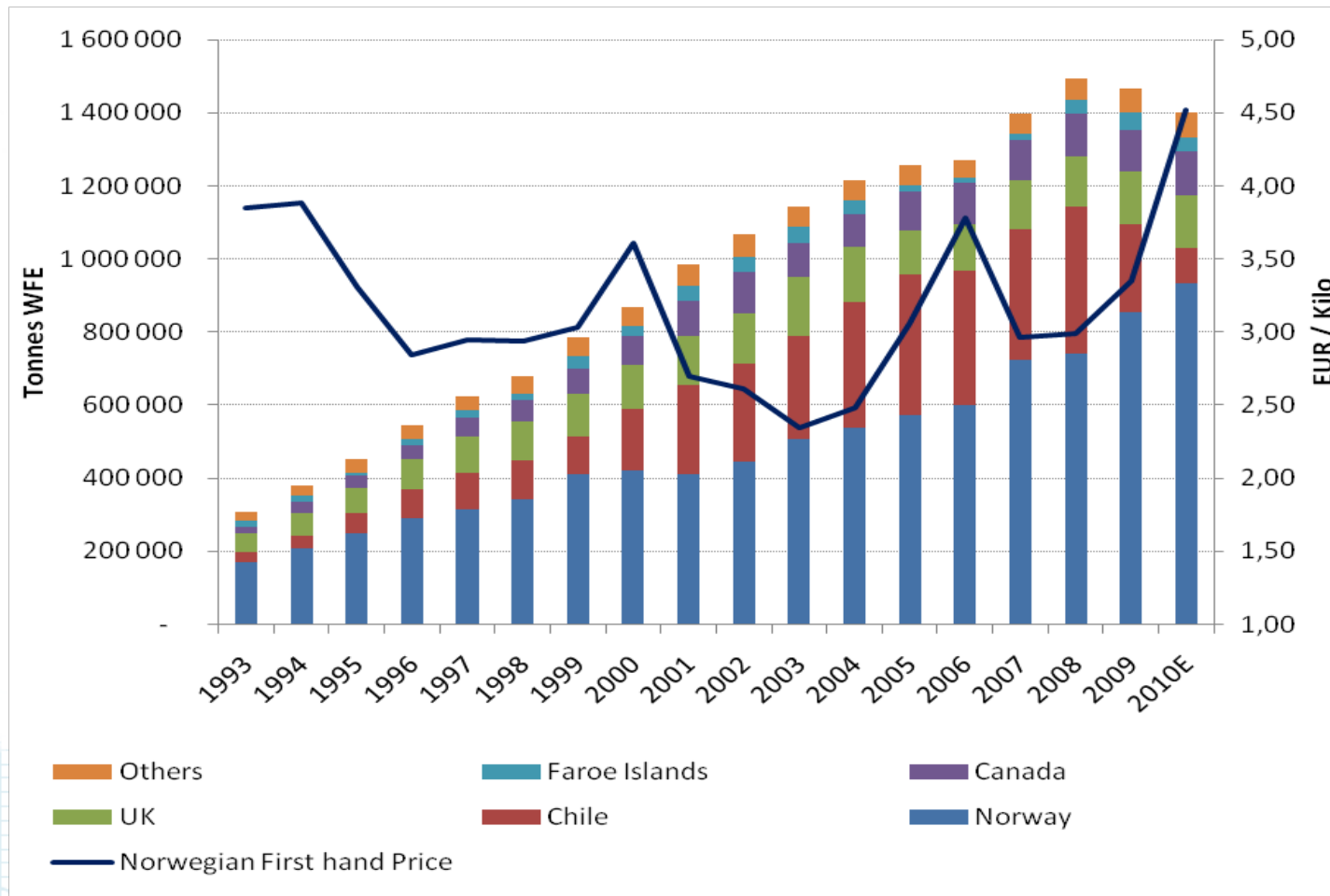
*Annual growth rate last 5 years:* 4,7 %

*Annual growth rate last 20 years:* 8,0 %

# Salmon & Trout

# Atlantic Salmon

## A history of growth – and stagnation



Source: Kontali Analyse / FHL & NOS

# Feed Markets - Salmonids

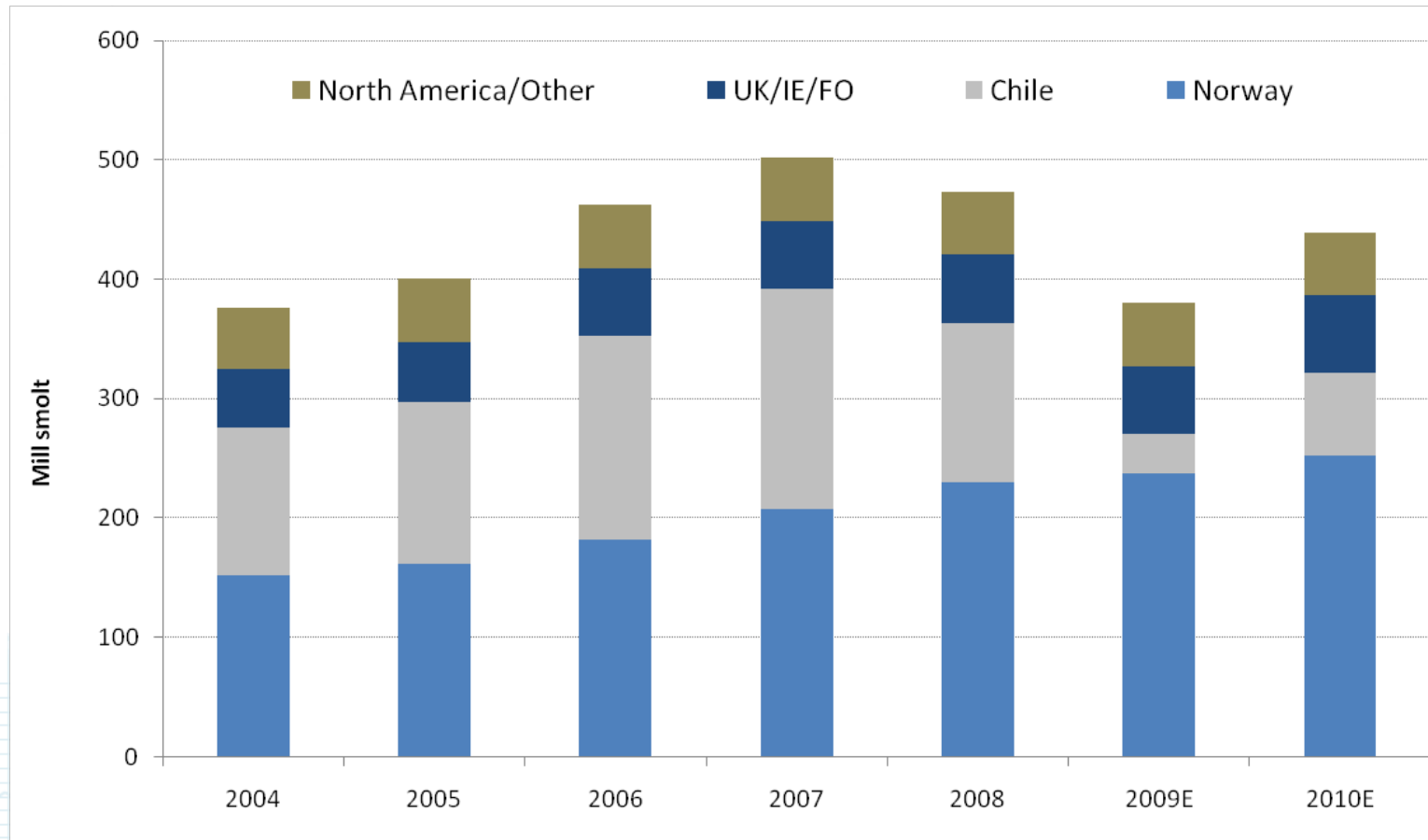
|               | 2005E        | 2006E        | Change      | 2007E        | Change      | 2008E        | Change      | 2009E        | Change       | 2010E        | Change     |
|---------------|--------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|--------------|--------------|------------|
| Norway        | 880          | 957          | 9 %         | 1 109        | 16 %        | 1 164        | 5 %         | 1 331        | 14 %         | 1 358        | 2 %        |
| Chile         | 902          | 1 060        | 18 %        | 1 148        | 8 %         | 1 051        | -8 %        | 564          | -46 %        | 642          | 14 %       |
| UK            | 210          | 202          | -4 %        | 221          | 9 %         | 210          | -5 %        | 210          | 0 %          | 211          | 0 %        |
| North America | 209          | 202          | -3 %        | 211          | 4 %         | 212          | 0 %         | 217          | 2 %          | 217          | 0 %        |
| Faroe Islands | 17           | 29           | 70 %        | 45           | 58 %        | 63           | 40 %        | 64           | 1 %          | 61           | -5 %       |
| Finland       | 20           | 21           | 8 %         | 17           | -18 %       | 18           | 4 %         | 18           | 0 %          | 21           | 17 %       |
| Ireland       | 20           | 24           | 17 %        | 20           | -15 %       | 20           | -3 %        | 24           | 23 %         | 22           | -9 %       |
| Japan         | 18           | 15           | -17 %       | 14           | -5 %        | 14           | -3 %        | 15           | 9 %          | 15           | 0 %        |
| France        | 14           | 14           | 0 %         | 14           | 0 %         | 14           | 0 %         | 14           | 0 %          | 14           | 0 %        |
| Australia     | 27           | 29           | 8 %         | 39           | 36 %        | 42           | 7 %         | 52           | 23 %         | 51           | -2 %       |
| Denmark       | 9            | 11           | 17 %        | 11           | 0 %         | 11           | 7 %         | 14           | 20 %         | 14           | 0 %        |
| Sweden        | 9            | 9            | 0 %         | 9            | 0 %         | 7            | -25 %       | 7            | 0 %          | 8            | 11 %       |
| New Zealand   | 14           | 13           | -6 %        | 15           | 13 %        | 15           | -2 %        | 18           | 26 %         | 21           | 15 %       |
| Iceland       | 10           | 6            | -38 %       | 2            | -63 %       | 2            | -33 %       | 1            | -50 %        | 0            | -100 %     |
| Others        | 20           | 23           | 15 %        | 26           | 13 %        | 26           | 1 %         | 30           | 14 %         | 30           | 0 %        |
| <b>Total</b>  | <b>2 370</b> | <b>2 600</b> | <b>10 %</b> | <b>2 890</b> | <b>11 %</b> | <b>2 867</b> | <b>-1 %</b> | <b>2 578</b> | <b>-10 %</b> | <b>2 684</b> | <b>4 %</b> |

Source: Kontali Analyse & Feed Companies



# Smolt Release – Atlantic Salmon

## Increasing supply is in the pipeline

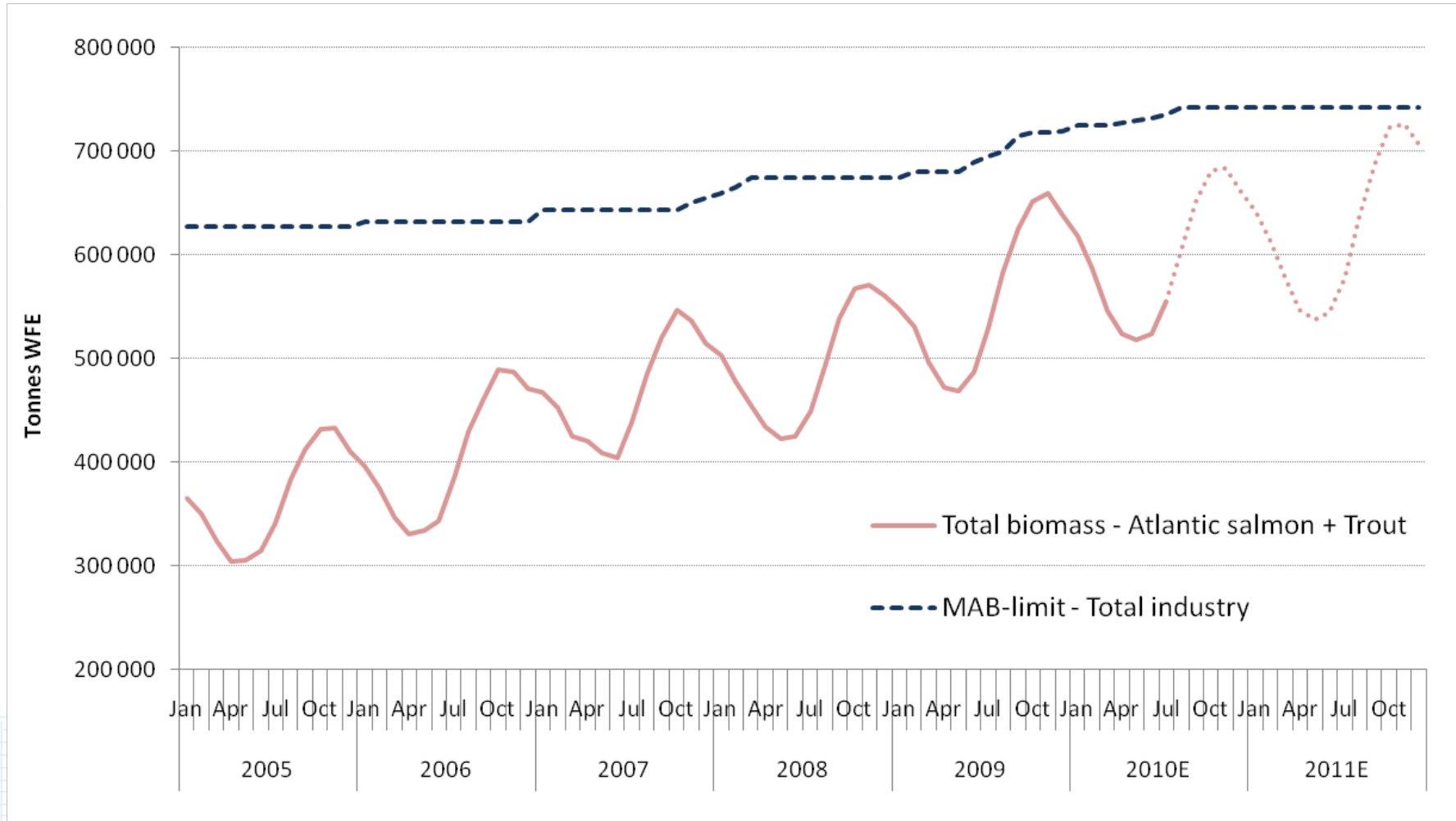


Source: Kontali Analyse



# Growth Potential - Atlantic Salmon Norway

## Governmental regulations – Soon to become the bottleneck...?



Source: Kontali Analyse





# Seabass & Seabream

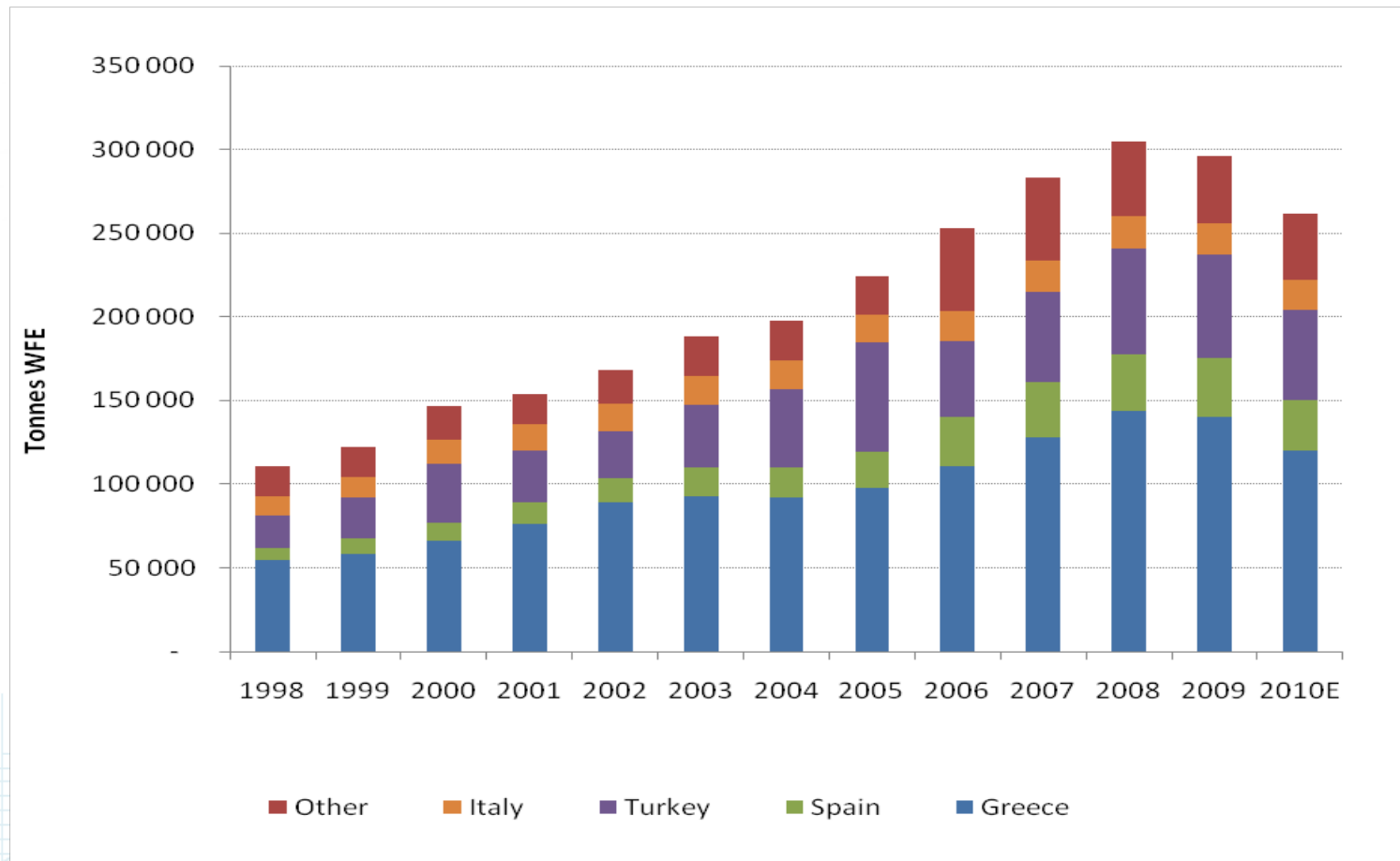
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# Mediterranean Seabass & Seabream

## A similar story – growth & stagnation



Source: Kontali Analyse

# Feed Markets – Seabass & Seabream

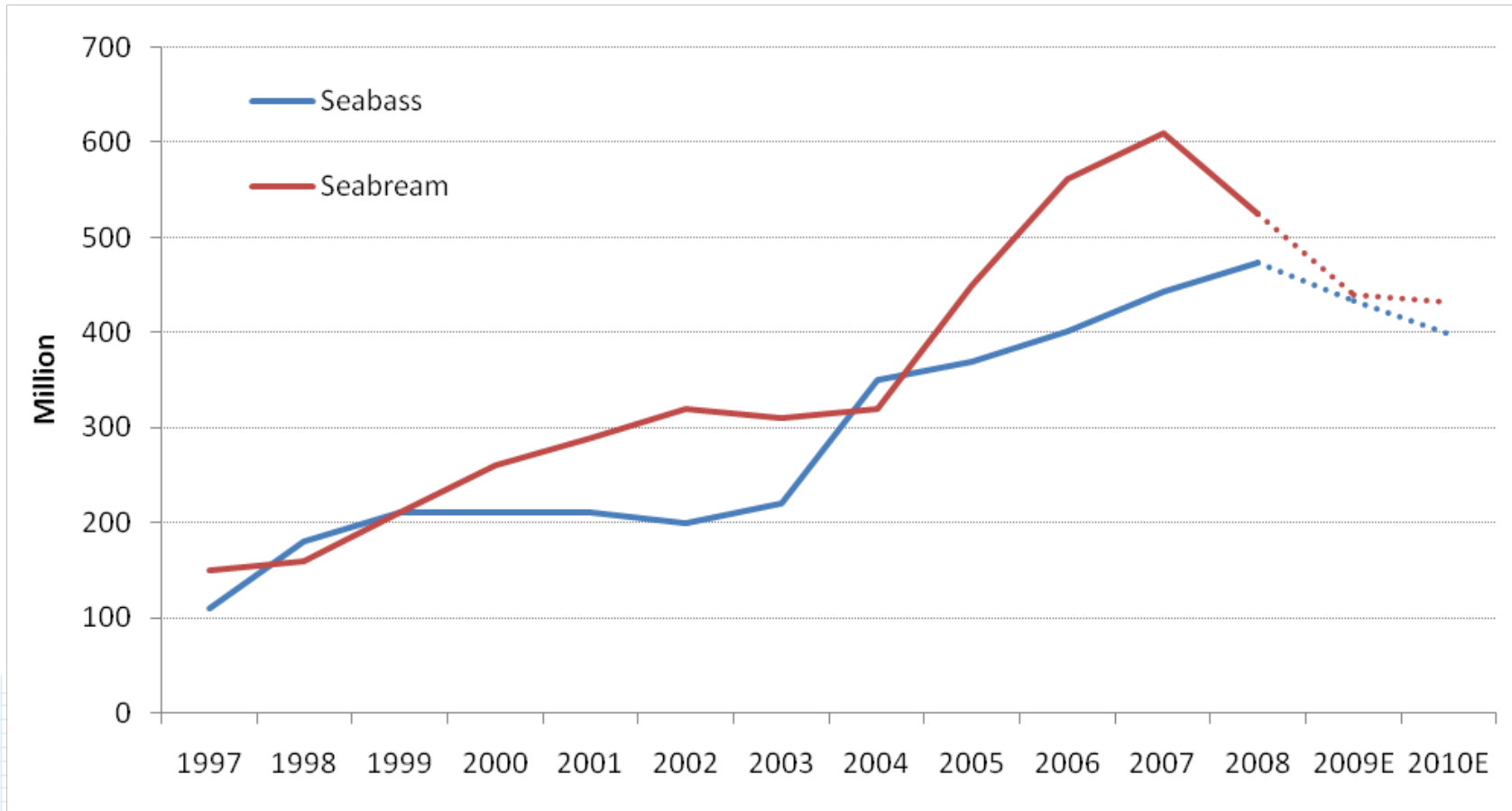
|              | 2005E      | 2006E      | Chg.        | 2007E      | Chg.        | 2008E      | Chg.       | 2009E      | Chg.        | 2010E      | Chg.        |
|--------------|------------|------------|-------------|------------|-------------|------------|------------|------------|-------------|------------|-------------|
| Greece       | 200        | 239        | 19 %        | 309        | 29 %        | 296        | -4 %       | 263        | -11 %       | 255        | -3 %        |
| Turkey       | 100        | 129        | 28 %        | 141        | 9 %         | 156        | 11 %       | 135        | -13 %       | 140        | 3 %         |
| Spain        | 54         | 75         | 40 %        | 76         | 1 %         | 90         | 19 %       | 91         | 2 %         | 72         | -21 %       |
| Italy        | 29         | 33         | 14 %        | 35         | 5 %         | 33         | -5 %       | 33         | 0 %         | 32         | -3 %        |
| Other        | 34         | 37         | 9 %         | 36         | -2 %        | 37         | 2 %        | 34         | -8 %        | 34         | -1 %        |
| <b>Total</b> | <b>418</b> | <b>513</b> | <b>23 %</b> | <b>596</b> | <b>16 %</b> | <b>613</b> | <b>3 %</b> | <b>557</b> | <b>-9 %</b> | <b>533</b> | <b>-4 %</b> |

Source: Kontali Analyse & Feed Companies



# Juvenile Production – Seabass & Seabream

## Shift towards growth – Yet to come



Source: Kontali Analyse, Industry Contacts, FEAP



# General Outlooks

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# Aquaculture growth 2010 – 2015

## Where ?

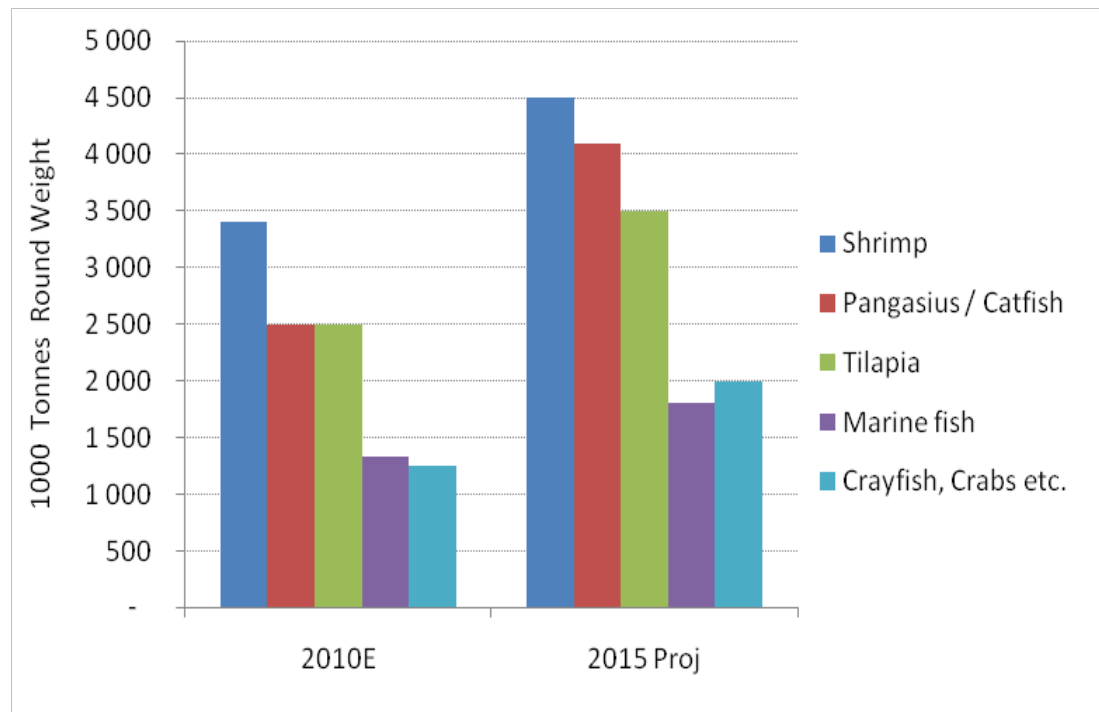
- **Asia** is still expected to show the strongest growth – China, Vietnam, Thailand, etc. Increased focus on **export markets**, products/species with commercial attributes, for global markets
- **Latin America** – Re-building of **salmon industry in Chile**, while freshwater/brackishwater regions in **Central and South America** have a huge potential for tilapia, catfishes and local fast-growing finfish species.
- Within **Europe**, growth is primarily expected to come on salmonids in **Norway** and in the **North Sea-bassin**, while there is a more marginal growth potential in the mediterranean region on Seabass/Seabream, and on newer marine finfish species.

# Aquaculture growth 2010 – 2015

## Species ?

- **Asian Aquaculture total**  
From **49 mill** to **60 mill** tonnes in 5 years?  
Increase of 10-11 mill tonnes ?  
CAGR – 4,0 %
- Lower growth on Carp & Molluscs
- Commercial winner-species still:
  - *Tilapia*
  - *Pangasius – Catfish*
  - *Warmwater Shrimp (Vannamei)*
- **Herbivorous & omnivorous** – dominating the categories where growth is expected

ASIA – Selected species/categories

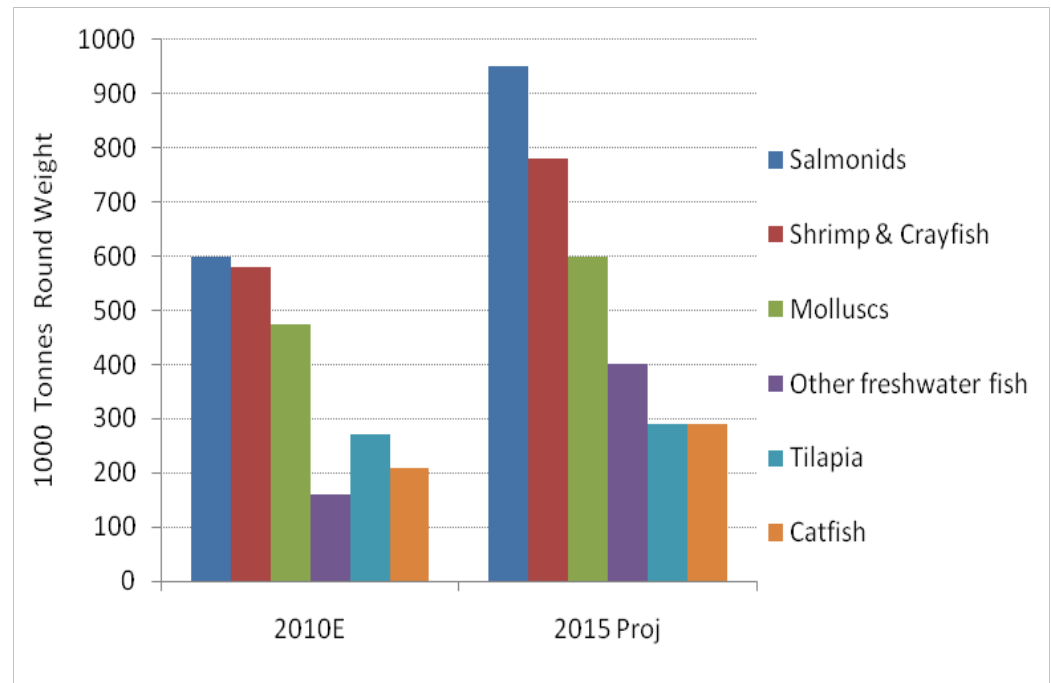


# Aquaculture growth 2010 – 2015

## Species?

- **Oceanfarmed Salmonids**  
Chile expected to be back on track by 2015  
Limited growth-possibilities – North America
- **Freshwater species** - Tilapia, catfish, pacu  
Still huge potential in Latin America
- **Warmwater Shrimp & Crayfish**  
Continued growth in southern Central America
- **Molluscs** – only moderate growth expected
- **American Aquaculture total**  
From 2,4 to 3,4 mill tonnes (CAGR – 7,5 %)

AMERICAS – Selected species/categories

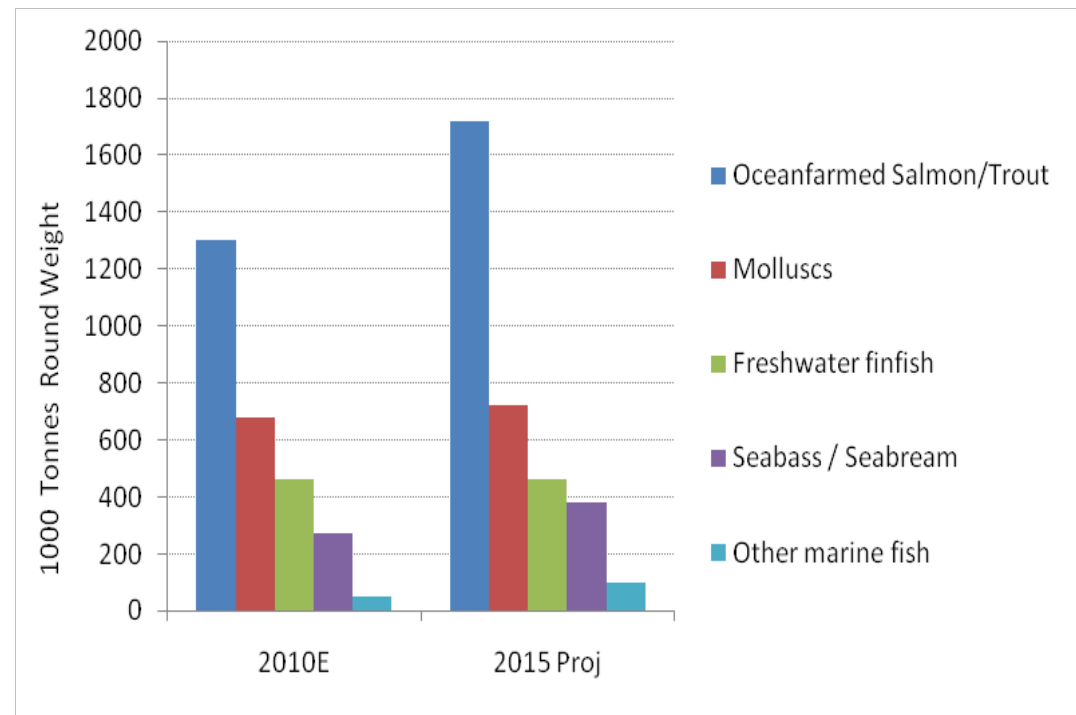


# Aquaculture growth 2010 – 2015

## Species ?

- **Oceanfarmed Salmonids**  
Will still be the European winner
- **No growth expected for freshwater fish**  
Reduced mkt. participation from Carp & Trout
- **Seabass & Seabream**  
Growth expected – Only last part of period
- **Potential for other Marine Fish**  
..though from a very low base..  
Species for High-end markets  
Turbot, Meagre, Sole, Halibut, Cod?...
- **Offshore** aquaculture – Site technology
- **European aquaculture total**  
From 2,7–3,3 mill tonnes (CAGR – 4,0 %)

EUROPE – Selected species/categories



# Consumer & Retail Trends ?

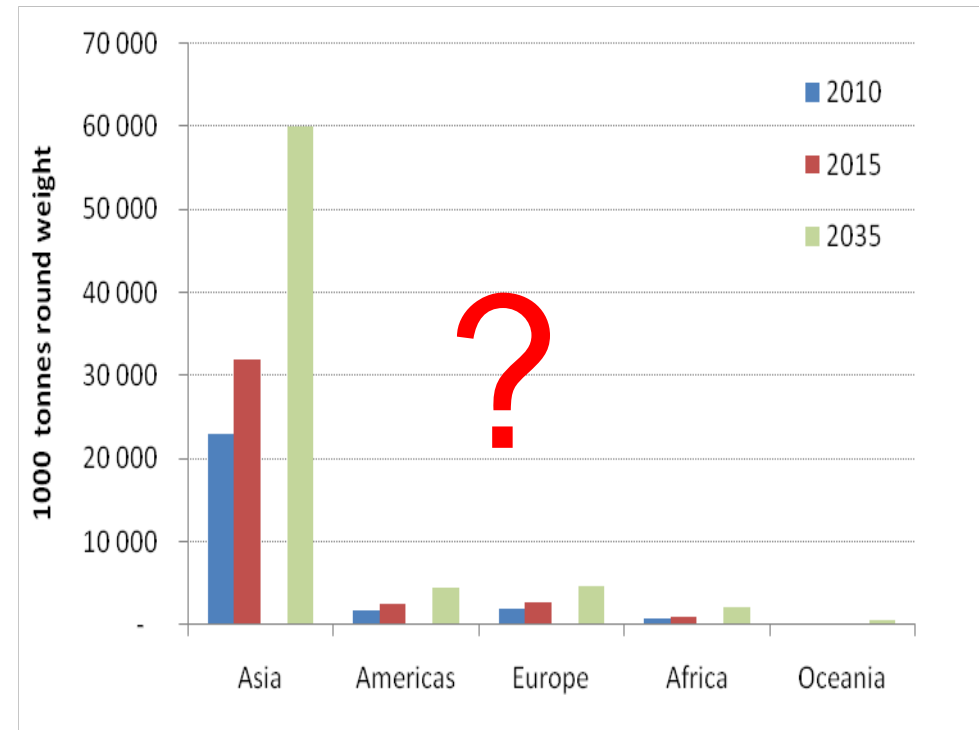
- Continued focus and demands on sustainability – in all aspects.
  - *From the consumer ?*
  - *Increasing number of stakeholders acting on behalf of consumer*
- Growing importance of "New Economies" - Increased globalisation
  - *Target seafood markets – No longer only EU, US and Japan*
  - *More aquaculture products → a more diversified global trade*
- The positive nutritional and health benefits of seafood – Still a driving force
  - *With increasing share of herbivorous fish – Need to adjust message?*
  - *Competitiveness: Low cost + Low price – Still a winning recipe*

# Implications for Aqua feed Markets

- **Aquafeed ingredients**
  - *Vegetable protein sources – continue to replace marine ingredients*
  - *Increased focus on use of by-products*
  - *Raw material prices - High levels to be expected*
  - *Cost efficiency vs. Digestive / Nutritional efficiency*
- **Sustainability issues – Certification schemes**
- **Asian aquafeed industry - Consolidation & Re-structuring**
- **Still huge growth opportunities – Particularly in Asian markets**
- **Africa – Currently underdeveloped – but large potential on longer term**

# What about 2035 ?

- **Agri Vision 2009 + Nutreco booklet 2010**  
Can we feed 9 billion people in 2050 in a sustainable way?
- The challenge:  
**Doubling food production by 2050 !?**
- **Aquaculture can & will contribute !**



- Even with **half the annual growth-rate** seen during the last 25 years:

**Feed-taking species in aquaculture -> 70 million tonnes in 2035**

**-> 90-95 million tonnes of aqua feed (3x today)**

# Thank you!

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