

Present & Future status of Mediterranean fry production

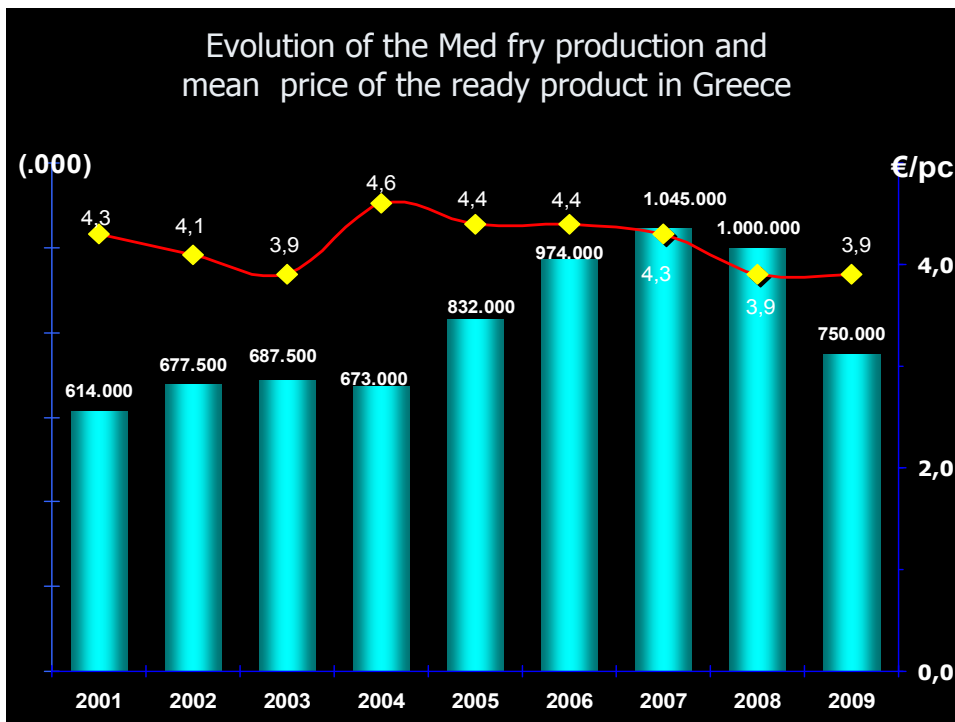
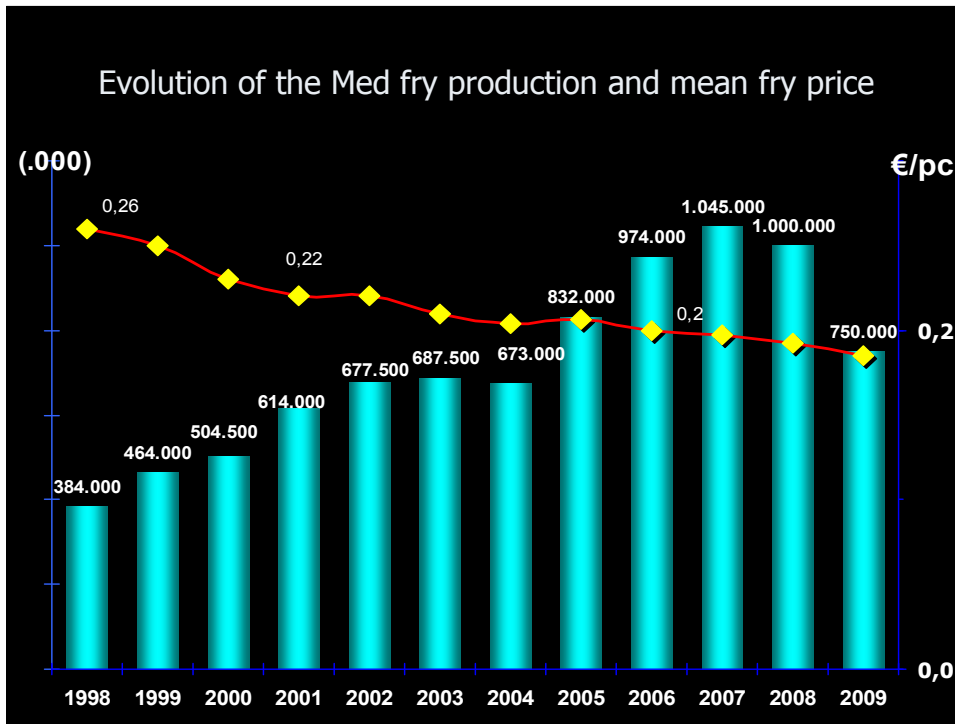
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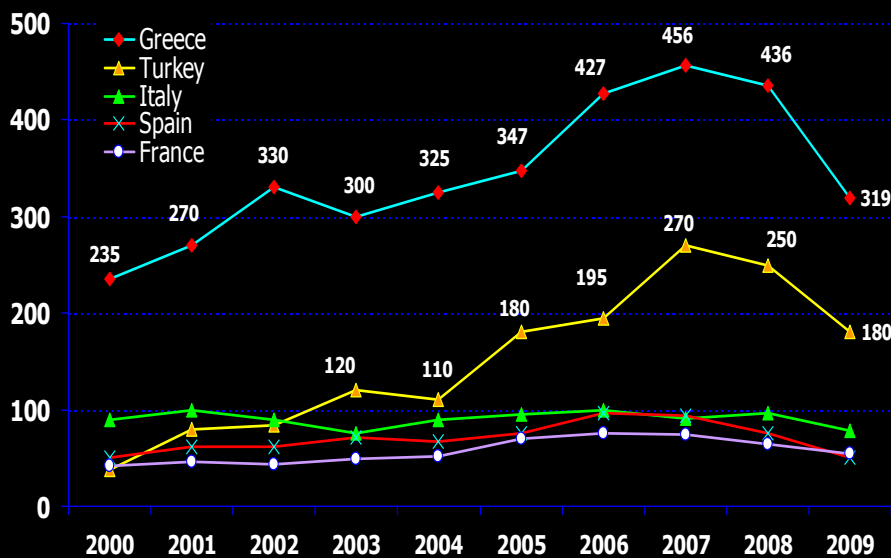


Development of the Hatcheries : The key piece of the puzzle

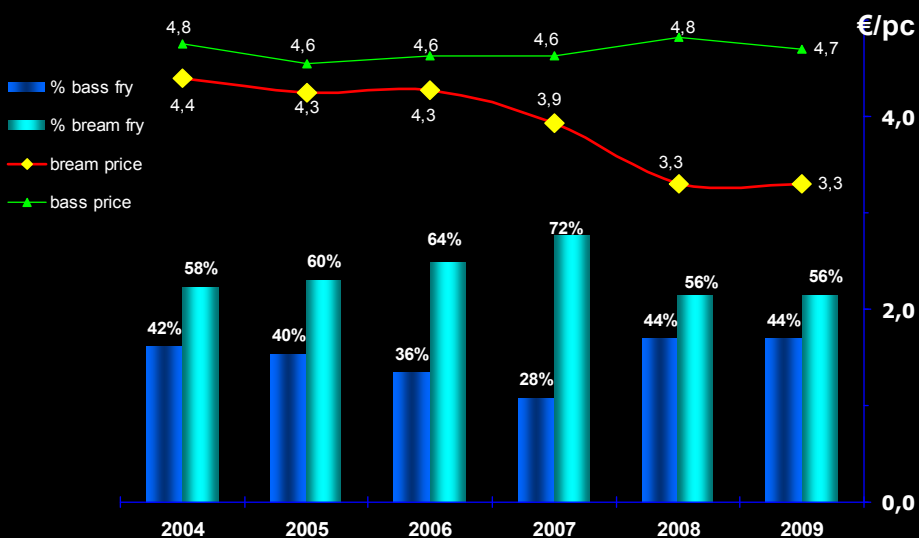
- Ensures fry **availability** regarding not only quantity but also species, timing and batches size
- Promotes fry **quality stability** and therefore predictable on growing results
- Reduces the **fry cost** in vertical intergraded operations (gain of appx 30-35 cents/kg of ready product)
- Offers high **profit margin** from sales (appx 10 cents/fry)
- Contributes to the reduction of the **on growing cost** through the improved fry performance (reduced production cycle, FCR, mortality and losses)
- Increases the possibility of producing **new species**

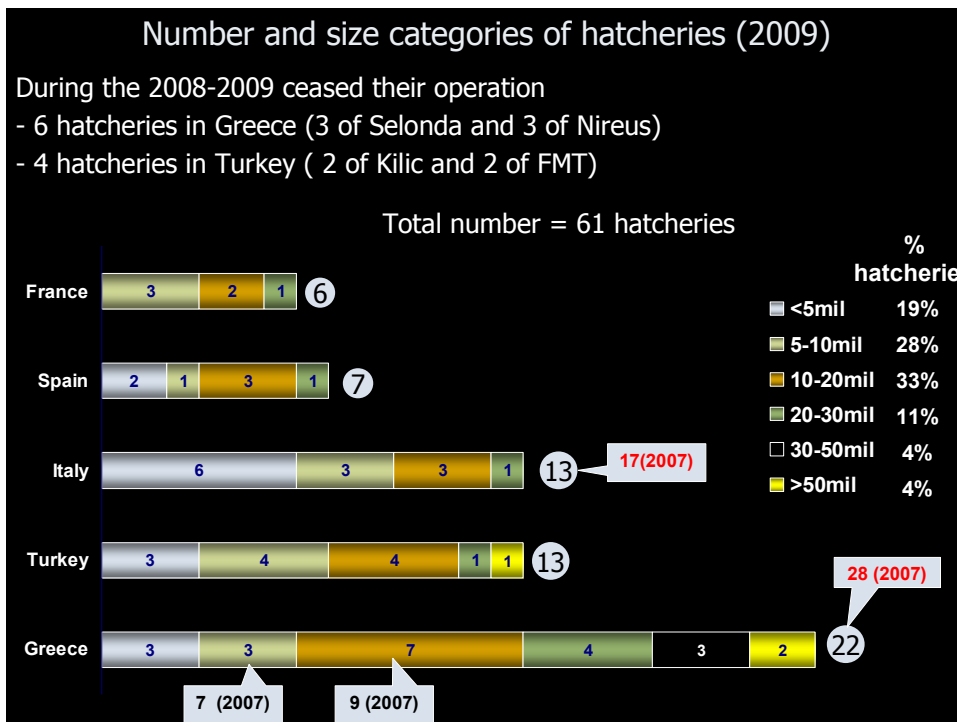
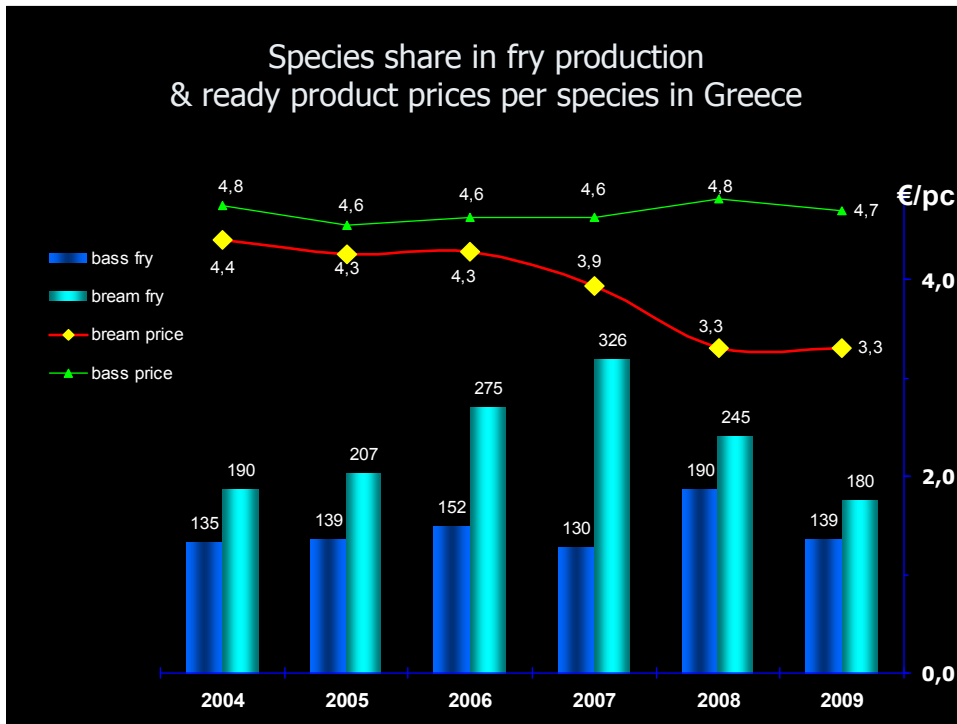


Bass & Bream Fry Production of the key countries (mil)



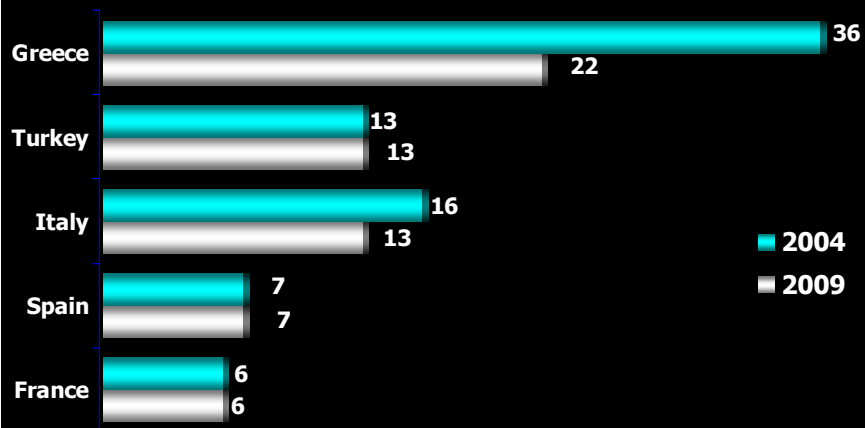
Species share in fry production & ready product prices per species in Greece





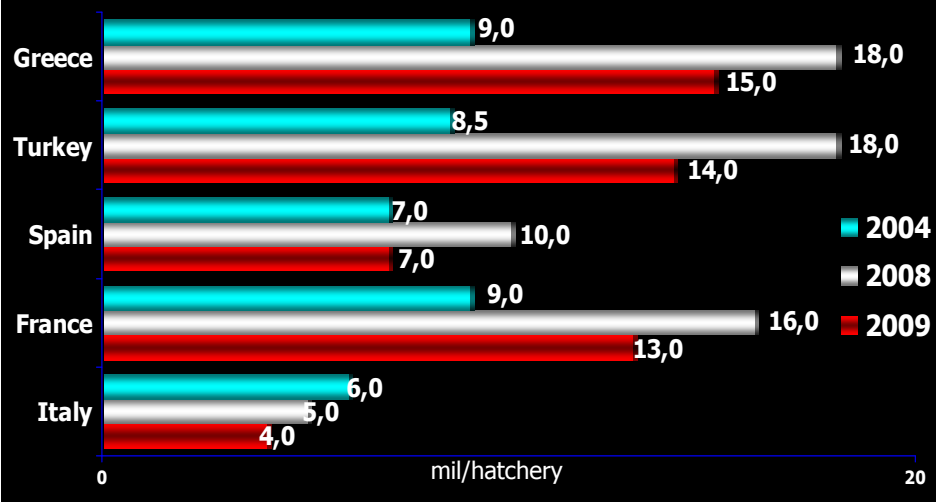
Number of hatcheries (2004 vs 2009)

In 5 years the total number of hatcheries has gradually decreased by 24% (from 78 in 2004 to 61 hatcheries in 2009)



Mean production per hatchery

While the total number of hatcheries has decreased by 24 % from 2004 to 2009, the production has increased from 670 mil in 2004 to 1 bil in 2008 (49%) and subsequently to 750 mil in 2009





Trend for less hatcheries



Consolidation of the sector

BUT

The majority of the hatcheries operate below their capacity



Decreased fry demand



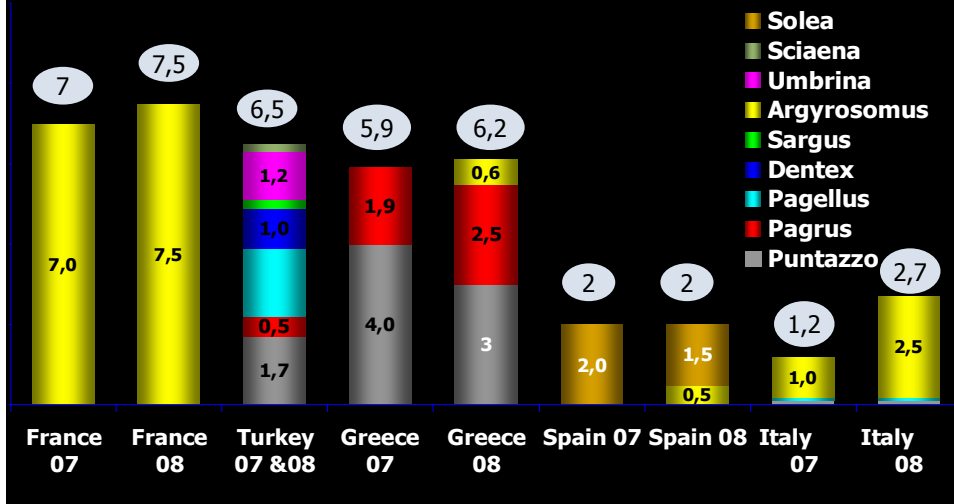
Consolidation in Greece

- Out of the 22 Greek hatcheries, 8 (36%) belong to the two major Greek groups
- These 8 hatcheries are expected to produce in 2009, around 200 mil fry which represents the 62% of the total expected Greek production (325 mil fry)
- Apart from these 8 hatcheries, another 3 big scale hatcheries belonging to 3 groups are expected to produce 28% of the total Greek production
- **Therefore, in Greece 5 groups with 11 hatcheries are expected to produce in 2009, 90% of the total production**

New species production 2008 (εκ.)

9 species

Production = 32 mil. (3% of the total production)



Research needs

- Genetic selection targeting bass and bream improved performance, disease and stress resistance
- All factors affecting the deformity
- Development of vaccines for main pathogens occurring in the on growing (Noda virus, myxobacteria etc)
- Improved larval feeds to limit live food use and to promote larval robustness
- All aspects related to the recirculation systems (water chemistry, specifically tailored feeds etc)
- New species, reproduction, nutrition and general performance in the on growing



Future - Conclusions

- Potential further decrease of the number of operating hatcheries through the consequences of the crisis and consolidation of the sector
- Third parties sales are expected to shrink with vertical integration to play the major role
- Use of large nursery units to support higher MW at sale and timing of availability and absorption during the crisis
- Improvement of quality through research projects, breeding programs and production techniques
- Increased production of new species



Thank you



Fry Production medium term targets

- Cost per fry 6-8 euro cents
- Final survival > 60%
- Productivity around 1 mil fry per person
- Deformity rate 0-3% at weaned fry
- Production sustainability
- Production timing according to on growing stocking needs
- MW > 2,5 g at sale
- Uniform large bathes (>600.000 fry)
- Stable market price (> 20 euro cents)
- Increasing new species production
- Improving fry performance – Breeding programs
- No primary pathological incidences in the hatcheries
- Highly qualified technicians