



Danish Aqua Culture



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Danmark 2001.

Fish farming in Denmark



Started in 1896

- Developed slowly until around 1960
- Many farms established in period of 1960 – 1975
- Sea farming (salt water) develops during 1980'ies

Production p.a. ca.:

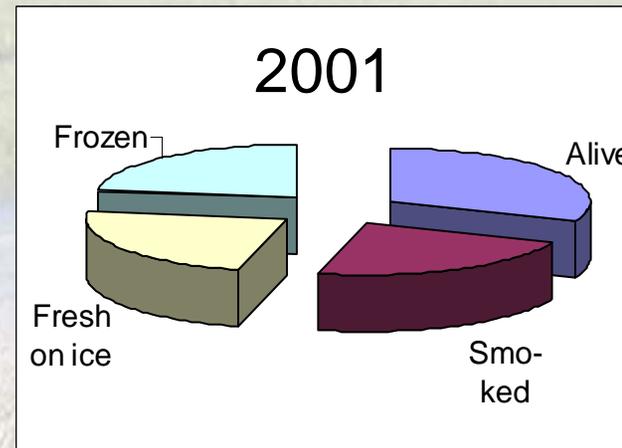
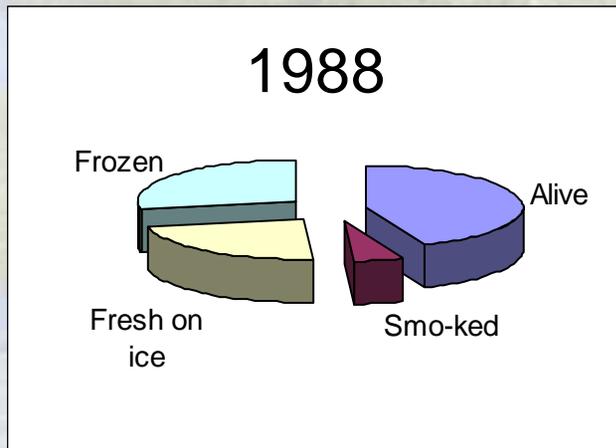
| | |
|----------------|-----------------|
| - Trout in FW | 31,500 tons |
| - Trout in SW | 10,000 tons |
| - Eel | 2,000 tons |
| - <u>Other</u> | <u>500 tons</u> |
| | 44,000 tons |



Fishfarming in Denmark

Trout in freshwater

- since 1894
- 200 farms (125 owners)
- production ca. 31,500 tons per year



Source: Hevico A/S

Fishfarming in Denmark

Trout in seawater

- since 1956
- 17 farms (6 owners)
- production 10,000 tons per year (average 600 ts)
- sets out 800-1000 grams fish in April
- all female
- harvests +3000 grams fish in Sept. – Dec.
- export for Germany – France – Japan
 - 10 – 12% roe





Fishfarming in Denmark

Eels

- started in the 80'ties
- 8 farms
- production 1900 tons per year
- export for the Netherlands – Germany

Turbot

- "fingerlings" for export

Pike Perch

- Test production



Regulations – fresh water farms



Discharge measured as rise over the farm (fw) (analyses paid by farmer)

Limitations on discharge of:

- BOD₅ 1 mg/l
- Suspended solids 3 mg/l
- Total phosphorous 0.05 mg/l
- Ammonium nitrogen 0.4 mg/l
- Total nitrogen 0.6 mg/l
- Oxygen saturation in waste water >/= 60% rel.

Purification system

- Generally at settlement systems

Model farms – type III



Regulations – sea farms



Discharge measured as rise over the farm (sw)

Limitations on discharge of:

- Quota for phosphorous
- Quota for nitrogen

Calculated as:

$$\begin{array}{r} + \quad \text{Added via feed} \\ - \quad \underline{\text{Removed with the fish}} \\ = \quad \text{Discharge} \end{array}$$

- Limitation on feed (feed quota)

Goals for 2015:

- Increased volume (tons per year)
 - Fresh water 60,000
 - Sea water 40,000
 - Other species 10,000
 - Eel 5,000
- Investments corresponding to 3% of turn over p.a.
- Refinement percent >80%
- Be in “Top 5” of fish consumption in Denmark
- Solve the “mystery” of eels and produce eel-fry

