



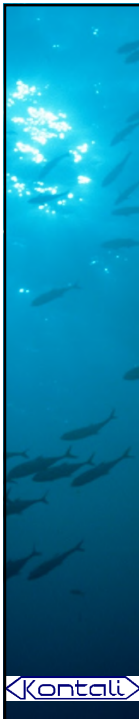
# Competitiveness of Codfarming?

Presentation  
By Lars Liabø

**Kontali analyse**

3 rd. Nordic Cod Farming Conference  
Grand Hotel, Reykjavik  
October 1. 2008

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## **Kontali COD supply and demand monitoring system**

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## Growth and harvest simulation model farmed COD Norway

### Main input data:

- number of juveniles released
- estimated loss rate per month, number and average weight
- tonnes of feed used
- monthly feed conversion rate
- quantity harvested per month, number of fish and harvest weight

Model calibration 3 times a year; collection of stock data from the farms



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## Feed sale for Cod

	2003	2004	2005	2006	2007	2008E	07/08
January	600	800	900	1 200	1 700	1 400	-18 %
February	400	600	900	1 200	1 100	1 300	18 %
March	200	500	600	600	1 000	1 400	40 %
April	300	800	600	1 500	1 700	1 800	6 %
May	900	1 300	2 100	2 600	2 200	2 400	9 %
June	1 100	1 800	2 400	2 400	2 400	3 200	33 %
July	1 300	1 600	1 600	3 200	2 400	4 300	79 %
August	1 100	1 600	3 000	2 100	2 800	3 800	36 %
<b>Total</b>	<b>5 900</b>	<b>9 000</b>	<b>12 100</b>	<b>14 800</b>	<b>15 300</b>	<b>19 600</b>	<b>28 %</b>
September	1 600	1 300	2 600	1 600	2 700		
October	1 400	1 600	2 100	2 200	2 600		
November	1 000	1 800	2 100	1 500	2 200		
December	800	900	1 900	2 000	1 000		
<b>Year total</b>	<b>10 800</b>	<b>14 600</b>	<b>20 700</b>	<b>22 100</b>	<b>23 900</b>		

Source: Fishfeed Producers Organisation (FPF), import statistics, Industry contacts.



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## Vaccines

Norwegian Sale of vaccines, marine species, in 1.000 doses.  
Includes both injectable and dip vaccines

	2003	2004	2005	2006	2007	2008	Ch. 07/08
January	745	150	335	1 730	75	870	1060 %
February	515	330	1 620	1 895	1 430	2 090	46 %
March	960	220	2 140	2 090	2 340	2 425	4 %
April	75	1 280	1 795	1 380	1 610	990	-39 %
May	285	1 160	2 030	2 010	490	2 140	337 %
June	0	640	2 490	2 740	1 920	6 800	254 %
July	0	2 580	1 800	1 350	1 670	2 600	56 %
August	60	1 265	470	2 350	1 515	2 800	85 %
Total	2 640	7 625	12 680	15 545	11 050	20 715	87 %
September	340	630	1 880	720	2 095		
October	1 070	650	520	1 785	1 660		
November	290	2 495	2 805	595	1 515		
December	0	1 365	0	100	480		
Year total	4 340	12 765	17 885	18 745	16 800		

Source: Intervet - Pharmaq 23.09.2008



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## Norway; Biomasse—estimat Farmed Cod

Tonnes live weight



Estimated stock per 31.08.2008				Estimated stock per 31.08.2007					
05G	60	à	3,86	200	04G	0	à	-	
06G	3 466	à	2,85	9 900	05G	1 746	à	2,88	5 000
07G	8 729	à	1,35	11 800	06G	6 909	à	1,36	9 400
08G	12 022	à	0,28	3 400	07G	6 613	à	0,27	1 800
Total	24 277		1,04	25 300	Total	15 269		1,06	16 200
Converted gutted weight, head off				17 000	Converted gutted weight, head off				10 900



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## Norway; Estimated harvest quantity farmed Cod

Tonnes round weight

	2004	2005	2006	2007	2008	Change 07/08
January	300	800	1 200	1 300	1 400	8 %
February	200	700	500	300	700	133 %
March	300	200	800	200	400	100 %
April	100	300	300	600	400	-33 %
May	100	100	400	300	500	67 %
June	100	200	600	800	800	0 %
July	100	300	700	900	1 200	33 %
August	100	400	1 000	1 100	1 300	18 %
<b>Total</b>	<b>1 300</b>	<b>3 000</b>	<b>5 500</b>	<b>5 500</b>	<b>6 700</b>	<b>22 %</b>
September	300	1 000	1 200	1 400		
October	500	1 100	1 300	1 700		
November	500	1 000	1 700	1 500		
December	600	1 300	1 400	1 400		
<b>Year total</b>	<b>3 200</b>	<b>7 400</b>	<b>11 100</b>	<b>11 500</b>		

Source: SSB.



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## Marked model for fresh COD to EU

### Main input data:

- export of fresh wild cod from Iceland, Norway, Faero Isl
- export of fresh farmed cod from Iceland, Norway, Faero Isl
- export of farmed cod from Norway and Iceland
- wild cod fishery EU

Year to date estimates and prognosis 1 to 2 years ahead



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## Estimated total Supply of Fresh Cod to EU

*Tonnes round weight*

Month	2002	2003	2004	2005	2006	2007	2008	Volume 07/08	
Jan	19 200	20 000	18 400	19 000	19 600	14 000	14 900	900	6 %
Feb	18 200	18 800	18 600	12 200	19 200	18 000	14 800	-3 200	-18 %
Mar	21 400	19 600	21 500	17 700	18 700	21 600	17 100	-4 500	-21 %
Apr	22 100	18 600	16 700	19 200	17 800	16 100	17 200	1 100	7 %
May	20 100	15 500	18 400	13 900	18 700	18 800	15 600	-3 200	-17 %
Jun	13 500	12 000	13 700	12 400	15 500	13 500	12 500	-1 000	-7 %
Jul	14 000	10 900	9 600	9 800	8 800	8 800	6 300	-2 500	-28 %
Aug	13 500	12 300	11 900	11 100	10 500	9 400	8 000	-1 400	-15 %
Sep	17 300	16 600	11 800	14 300	12 000	10 000			
Oct	17 400	14 900	13 700	16 300	12 600	13 200			
Nov	16 100	16 400	14 500	18 400	15 100	14 300			
Dec	15 900	15 300	17 000	18 400	15 000	11 100			
<b>Total</b>	<b>208 700</b>	<b>190 900</b>	<b>185 800</b>	<b>182 700</b>	<b>183 500</b>	<b>168 800</b>	<b>106 400</b>		

Estimated total supply of fresh cod to EU, categorised by countries.

*Tonnes round weight*

	August		Change	January - August		Change
	2008	2007		2008	2007	
EU	3 700	4 100	-10 %	106 700	57 700	85 %
Norway	2 300	2 200	5 %	22 200	27 300	-19 %
Iceland	1 500	2 200	-32 %	16 700	16 500	1 %
Faroe Islands	200	400	-50 %	1 700	1 700	0 %
Others	300	500	-40 %	1 600	3 000	-47 %
<b>Total</b>	<b>8 000</b>	<b>9 400</b>	<b>-15 %</b>	<b>148 900</b>	<b>106 300</b>	<b>40 %</b>



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## Competitiveness

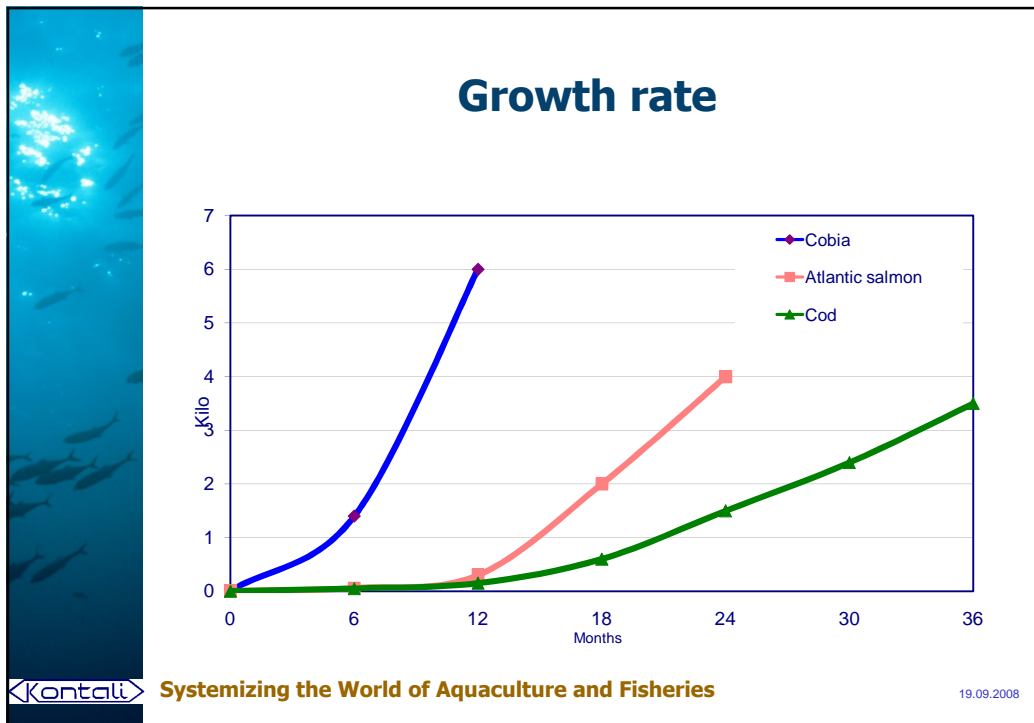
**Competitiveness** is a comparative concept of the ability and performance of a firm, sub-sector or country to sell and supply goods and/or services in a given market.

Source: Wikipedia



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### Competitiveness of farmed COD

- **Market price**
  - market image
  - price level wild cod
  - price level other fish products
  - price level other food products
- **Cost of production**
  - cost per juvenile
  - growth rate
  - loss rate
  - feed cost, feed conversion rate
  - other operating cost


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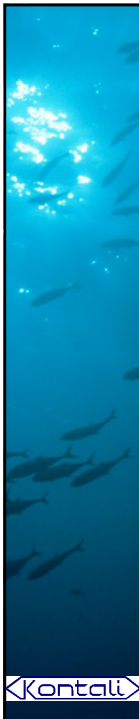


## Market image Cod vs Salmon

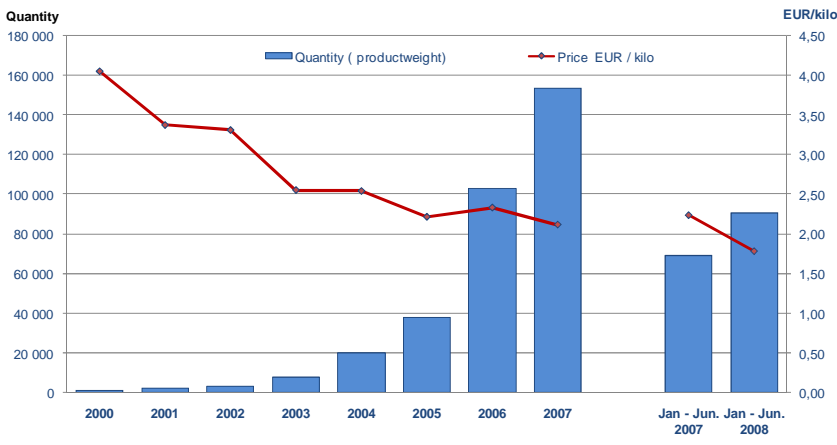
**- 1972, the start of salmon farming:**

Fresh wild salmon market price **NOK 300/kg**  
(Converted to 2008 NOK)


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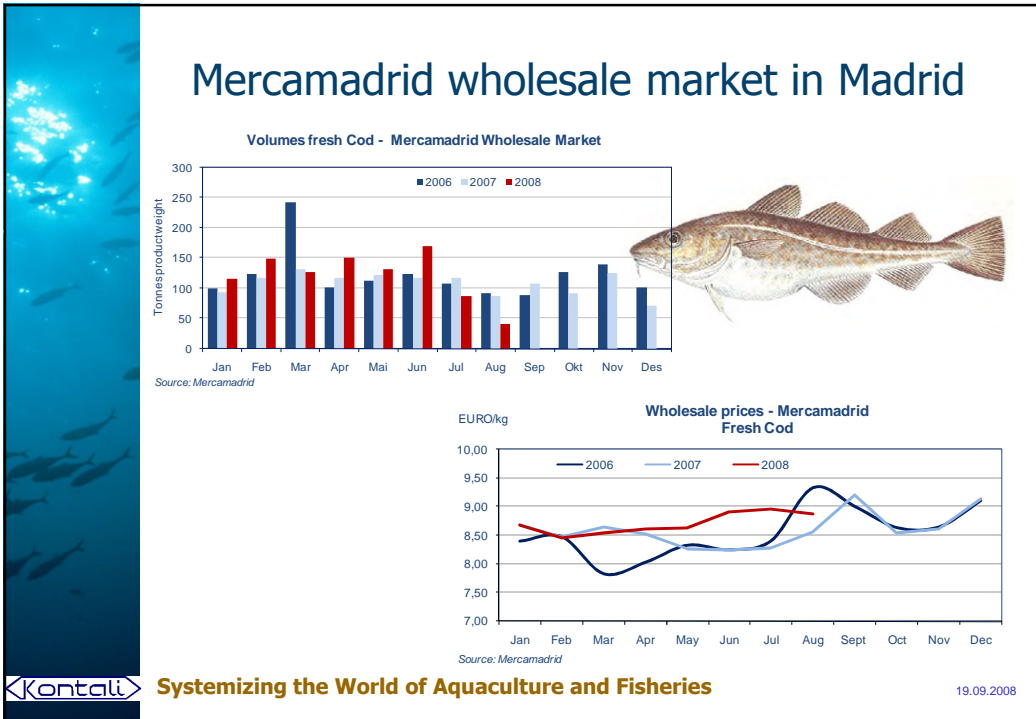
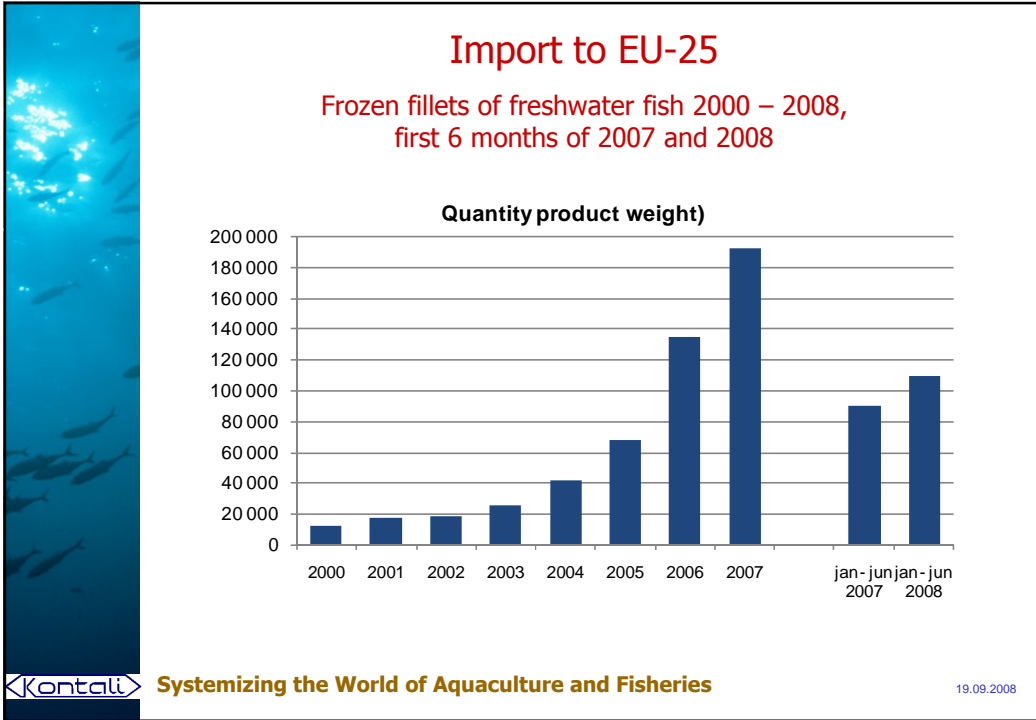
## Eu Import from Vietnam Pangasius, frozen fillet



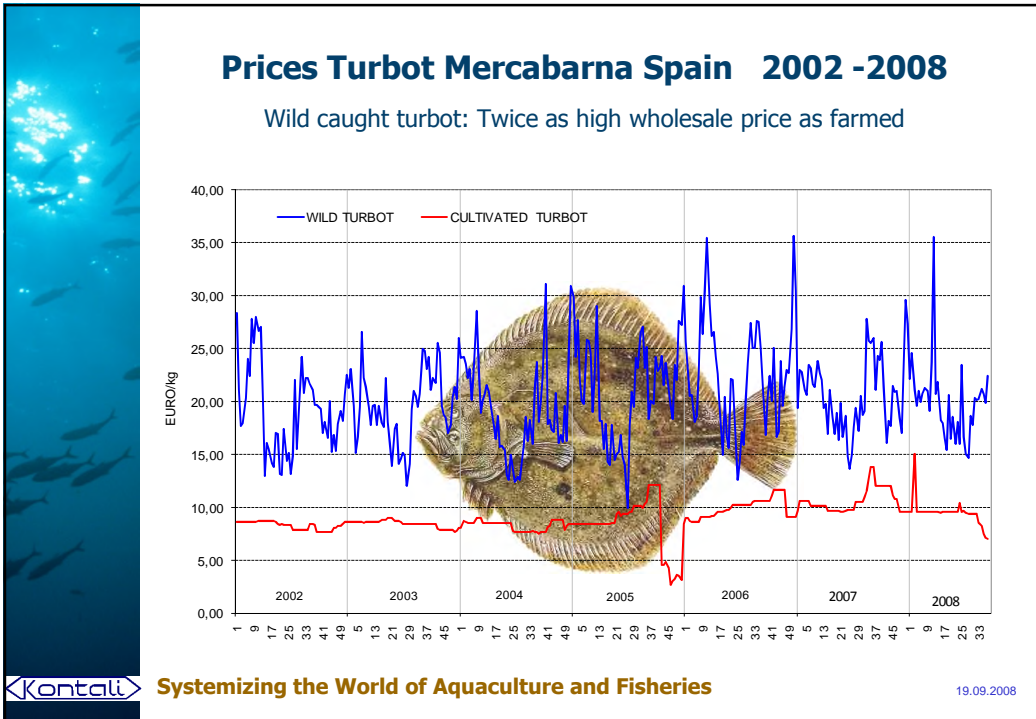
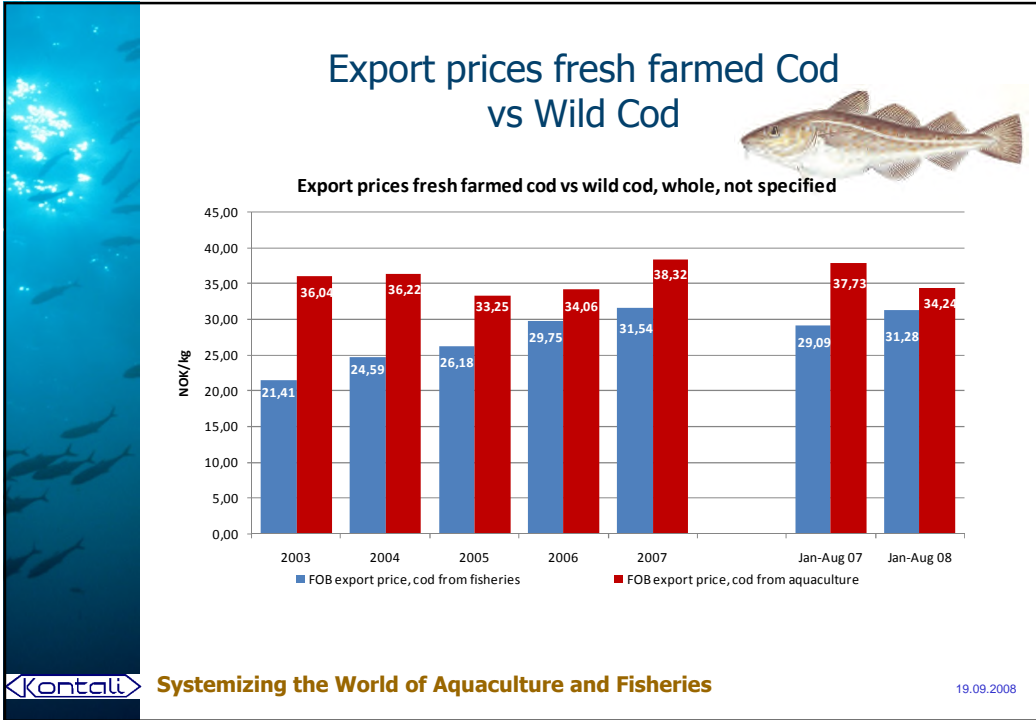
Year	Quantity (productweight)	Price EUR / kilo
2000	~2,000	~4.00
2001	~5,000	~3.50
2002	~8,000	~3.40
2003	~10,000	~2.80
2004	~20,000	~2.70
2005	~40,000	~2.40
2006	~105,000	~2.50
2007	~155,000	~2.20
Jan - Jun. 2007	~70,000	~2.30
Jan - Jun. 2008	~90,000	~1.80

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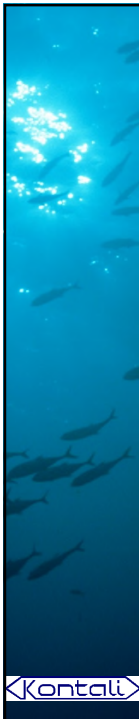




## **Cost of production**



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## **Cost of fishing (Norway)**


**NOK 10 – 15/kg round wight**  
**NOK 15 – 20/kg gutted head off**



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## Cost of Production – Farmed Cod; Norway

Not for the best in class, but the average !?  
(Estimate 2007)



		NOK
Live weight	Juvenile (Price of fry NOK 12,- x Yield per fry 1,5)	8,00
	Feed (Feed price NOK 7,50 x EFCR live weight 1,6)	12,00
		<b>20,00</b>
	Wages, Operating exp., Finance etc.	5,00
	<b>Estimated Cost - live ex. cage</b>	<b>25,00</b>
	Wellboat, Harvest, Packing	4,00
	<b>Estimated Cost - Harvested, packed - Before weight-conversion</b>	<b>29,00</b>
	Guttet, head on (80 %)      Guttet, head off (67 %)	
Productweight	NOK	36,25      43,30
Average export pris 2007	NOK	38,32
Estimate sales cost	NOK	2,00
Net price to farmer	NOK	0,07

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## Cod farming – How to succeed

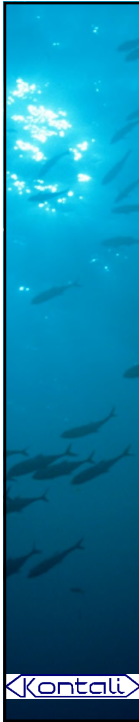
1 EUR = 8 NOK

**Cost of production ex. Cage <EUR 1,87    NOK 15,00**

Example:

Fob exportprice, gutted head off	EUR	3,75	NOK	30,00
Sales, export costs	"	0,25	"	2,00
Price to the farmers	"	3,50	"	28,00
Profit	"	0,37	"	3,00
Wellboat, gutting, packing	"	0,37	"	3,00
Max cost ex. Cage	EUR	2,75	NOK	22,00
Yield (67%)			33%	
<b>Max cost ex. Cage</b>	<b>EUR</b>	<b>1,87</b>	<b>NOK</b>	<b>15,00</b>

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**Conclusions:**

- **Before the target of NOK 15/kg is reached, cod farming will continue to be a risky business.**



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