

SIA - Salmon Farming

June 2018



Bergen. Leroy Seafood Salmon Site 03.2018

Salmon is a fantastic product



Source: Marine Harvest



Healthy, Omega-3, vitamins

Convenient, sushi, smoked

Good taste, digestible

Very efficient and competitive (I)



Protein Retention	31 %	21 %	18 %	15 %
Energy Retention	23 %	10 %	14 %	27 %
Edible Yield	68 %	46 %	52 %	41 %
Feed Conversion Ratio (FCR)	1.1	2.2	3.0	4-10
Edible Meat pr 100 kg fed	61 kg	21 kg	17 kg	4-10 kg

Lowest Feed Conversion Ratio



Carbon Footprint

2.9 kg

2.7 kg

5.9 kg

30 kg

kg CO₂/kg edible meat

Water Consumption

2,000 litre (1)

4,300 litre

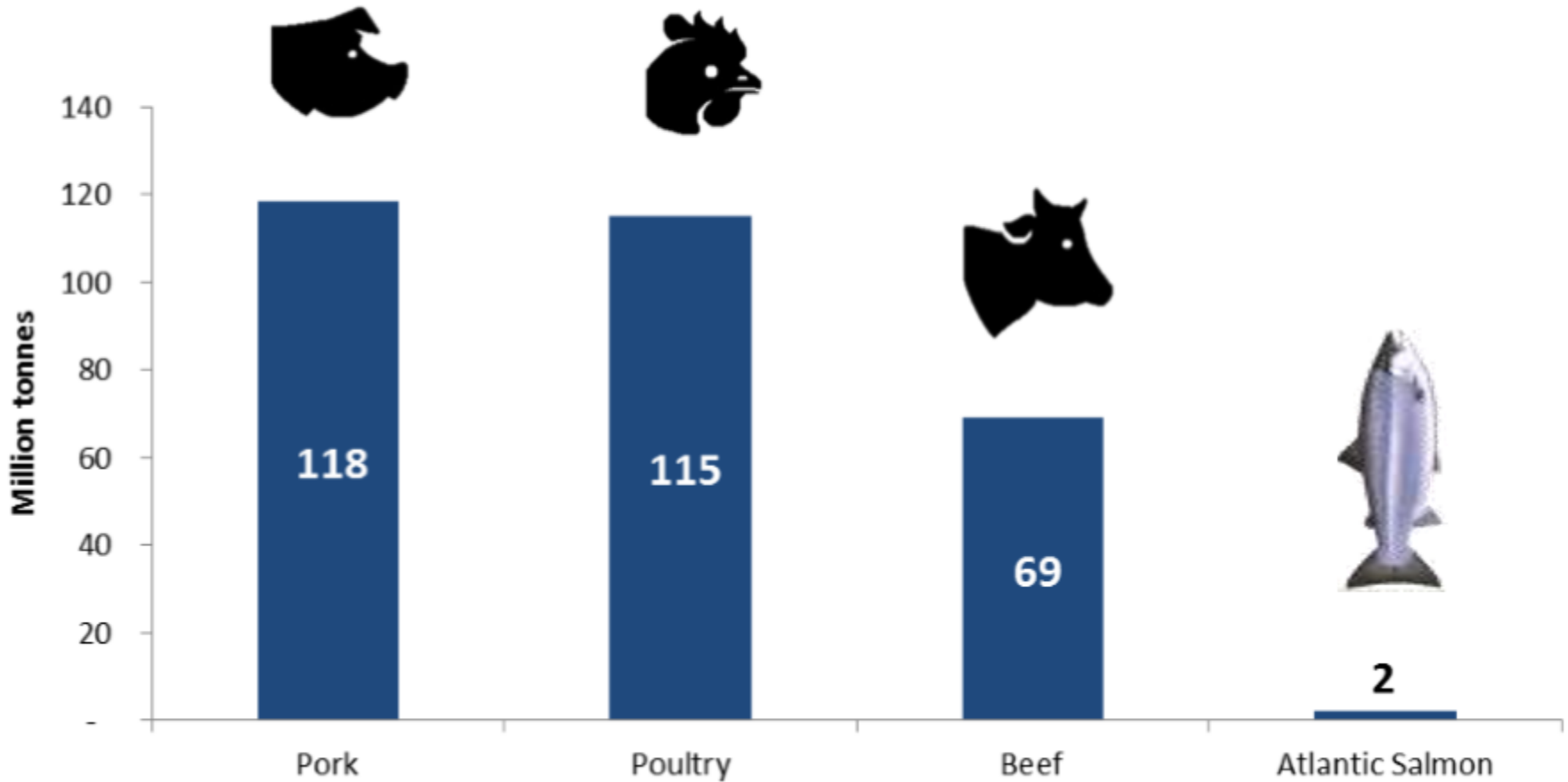
6,000 litre

15,400 litre

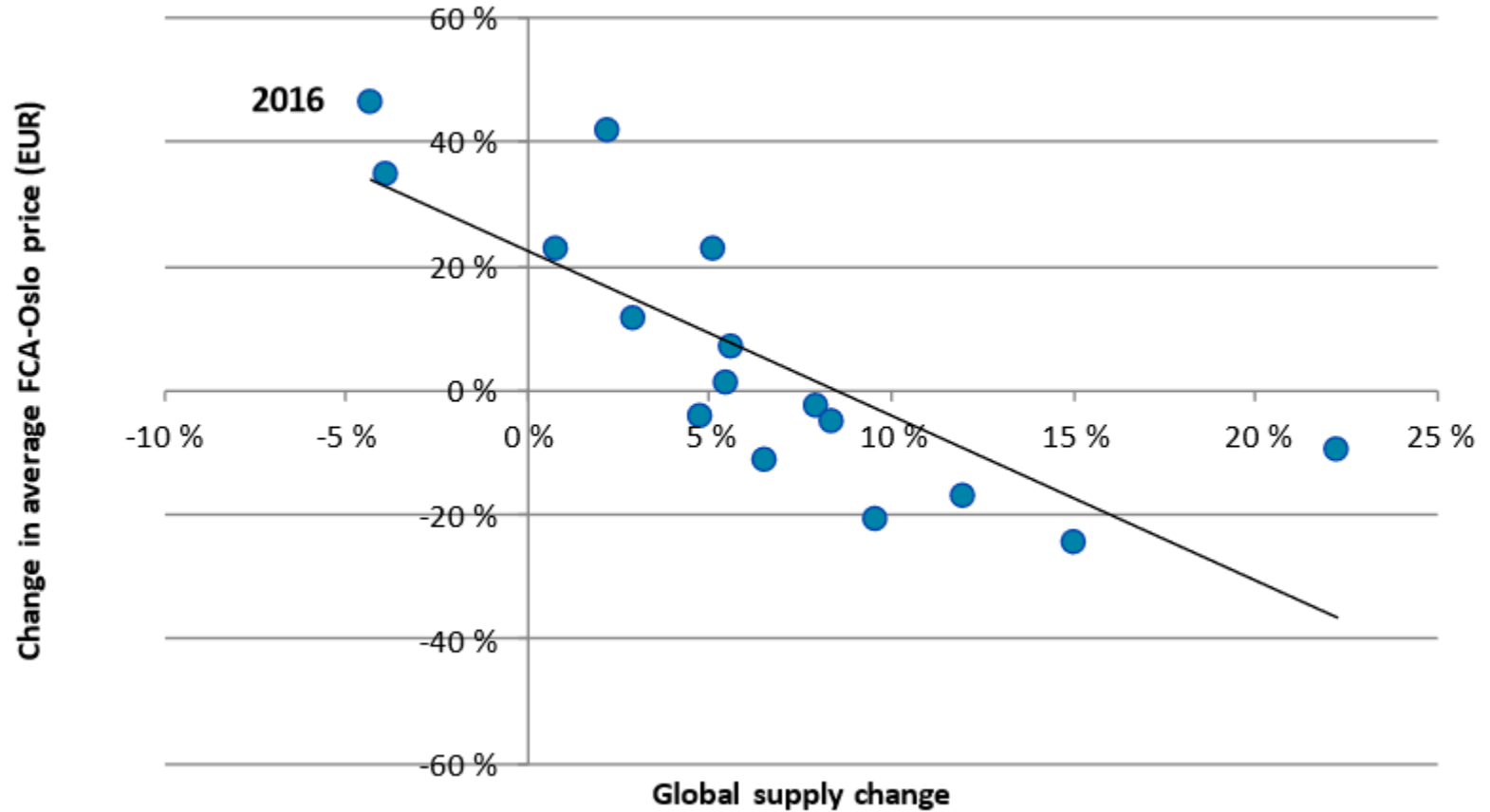
litre/kg edible meat

Low use of water and carbon footprint

We are talking about a tiny market



Global production (weight equivalent) million tns 2016



- Price neutral demand growth at historically 6-8%
- Europe is the most developed market / Penetration in Emerging Markets still very low

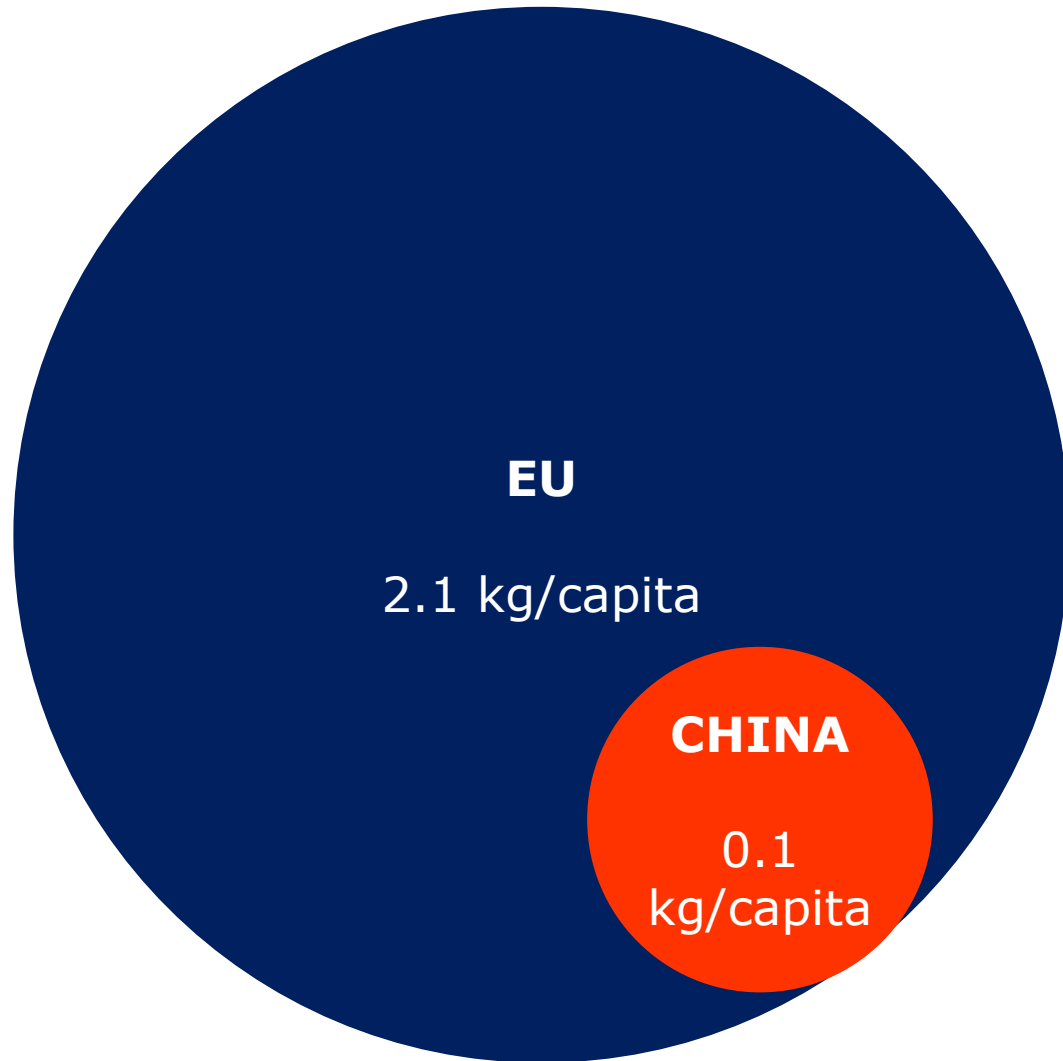
Global volume by market

Markets	Estimated volumes		Compared to Q1 2017		Est. volumes Q4 2017	12 month comparison		
	Q1 2018	Q1 2017	Volume	%		LTM	PTM	%
EU	217 600	204 200	13 400	↑ 6.6%	268 200	933 100	924 500	0.9%
Russia	21 300	14 100	7 200	↑ 51.1%	23 200	75 500	65 000	16.2%
Other Europe	20 300	18 100	2 200	↑ 12.2%	24 500	81 700	73 800	10.7%
Total Europe	259 200	236 400	22 800	↑ 9.6%	315 900	1 090 300	1 063 300	2.5%
USA	109 900	100 200	9 700	↑ 9.7%	103 000	406 200	375 300	8.2%
Brazil	24 500	20 400	4 100	↑ 20.1%	21 800	84 100	76 500	9.9%
Other Americas	28 600	24 700	3 900	↑ 15.8%	31 800	113 200	104 900	7.9%
Total Americas	163 000	145 300	17 700	↑ 12.2%	156 600	603 500	556 700	8.4%
China / Hong Kong	23 800	17 300	6 500	↑ 37.6%	27 300	92 500	76 500	20.9%
Japan	12 600	14 000	-1 400	↓ -10.0%	15 900	56 300	57 800	-2.6%
South Korea / Taiwan	14 300	10 300	4 000	↑ 38.8%	12 100	49 500	39 200	26.3%
Other Asia	20 400	20 400	0	→ 0.0%	21 400	83 500	67 400	23.9%
Total Asia	71 100	62 000	9 100	↑ 14.7%	76 700	281 800	240 900	17.0%
All other markets	28 500	27 900	600	↑ 2.2%	29 900	108 800	104 900	3.7%
Total	521 800	471 600	50 200	↑ 10.6%	579 100	2 084 400	1 965 800	6.0%

Source: Marine Harvest Q118

- Salmon consumption per capita is highest in Europe
- The US is catching up
- But Emerging Markets are a massive source of future demand

Salmon consumption per capita in EU and China



Farmed salmon is mainly produced in Norway and Chile, accounting for 75% of the total... the rest in the UK, Faroe Islands, North America, New Zealand and Tasmania

**Natural
Conditions**

Sea Water, protected location, fjords
Sea currents
Defined temperature (8-14 degrees Celsius)

**Industrial
Conditions**

Concentrated industry
Sanitary regulation
Logistics



Only few geographical locations are suitable: only Norway and Chile with size

Salmon farming needs protected fjords



- Total biomass in the sea, sea conditions, number of players
- A number of illnesses: sea-lice, infections, pancreas disease, anemia, algae bloom....
- Chile had 2 large crisis in the past decade. Norway also learnt before
- Strict sanitary controls are needed



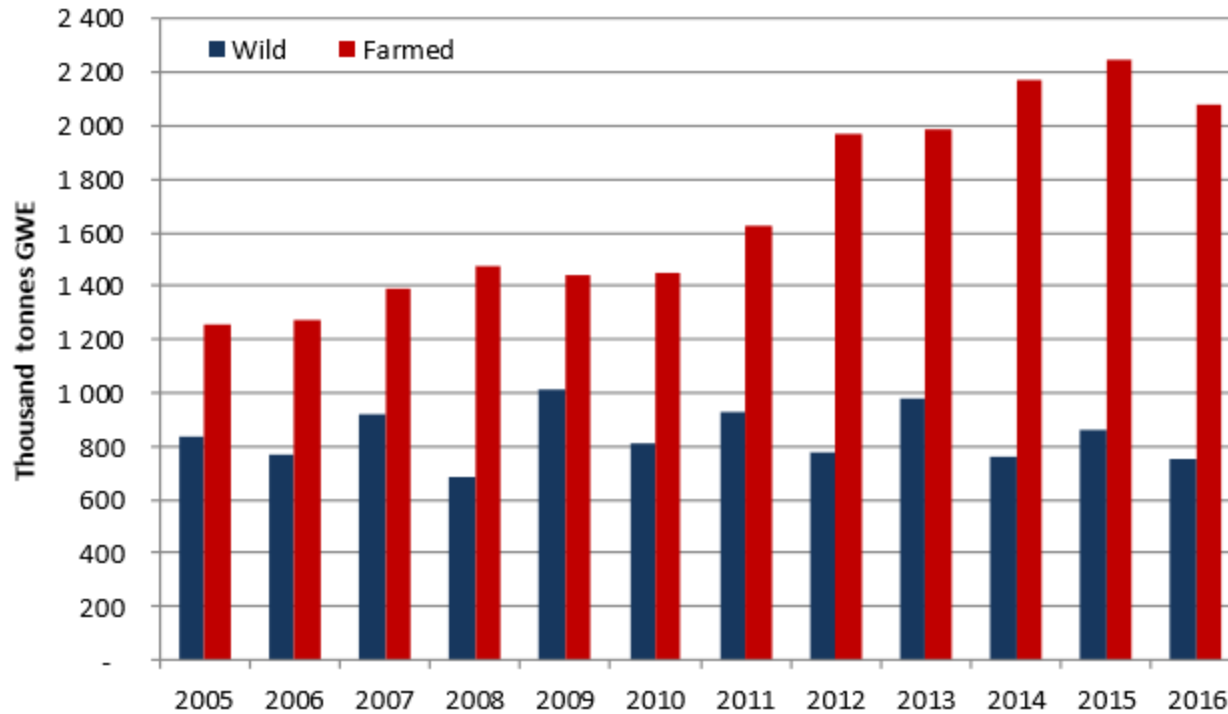
Sea-lice is a real issue for the industry

Norway has one of the most restrictive sanitary conditions in the world of salmon farming

- Maximum allowed biomass
- License system
- Traffic light growth model

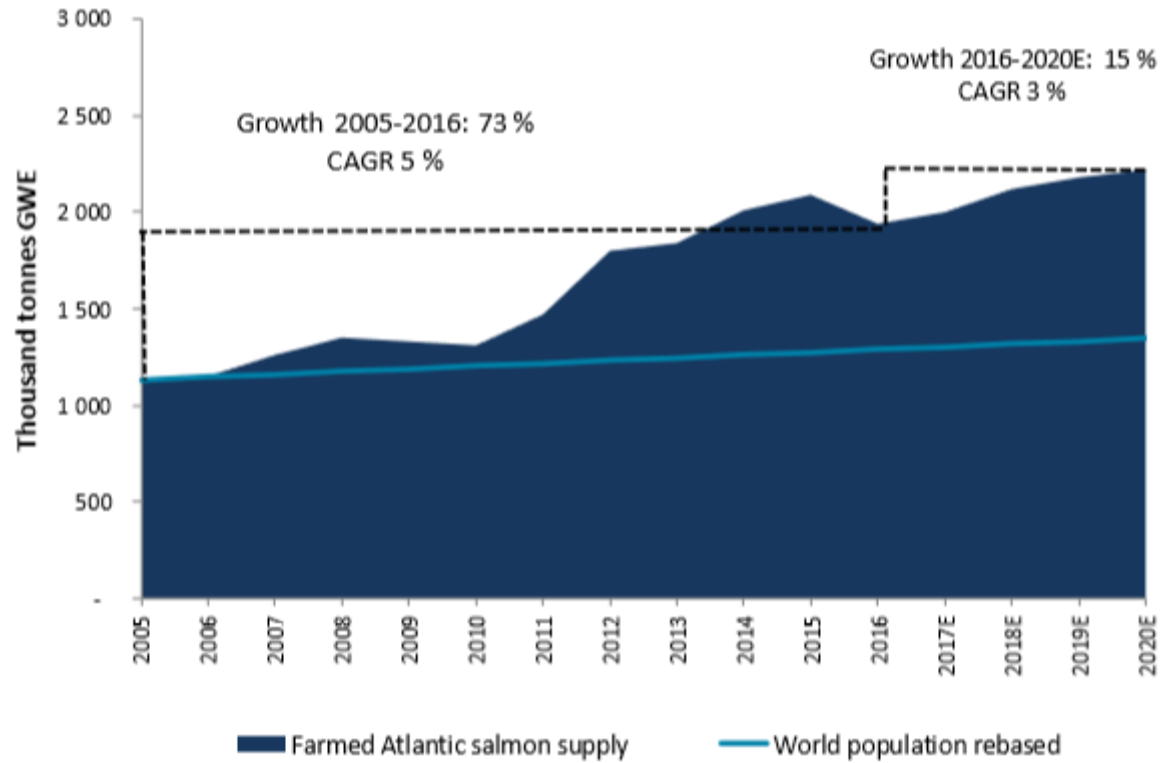
Chile developed a new model in 2017

Limited supply: wild & farmed salmon



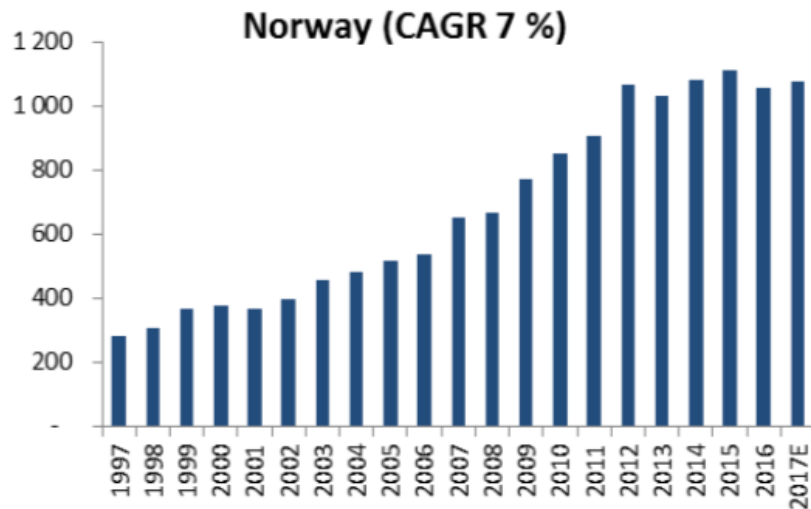
Farmed salmon has been the solution. Until 2012

2018-2020 limited supply growth



Supply Growth: CAGR(e) of 3% next few years

Norway & Chile close to full capacity



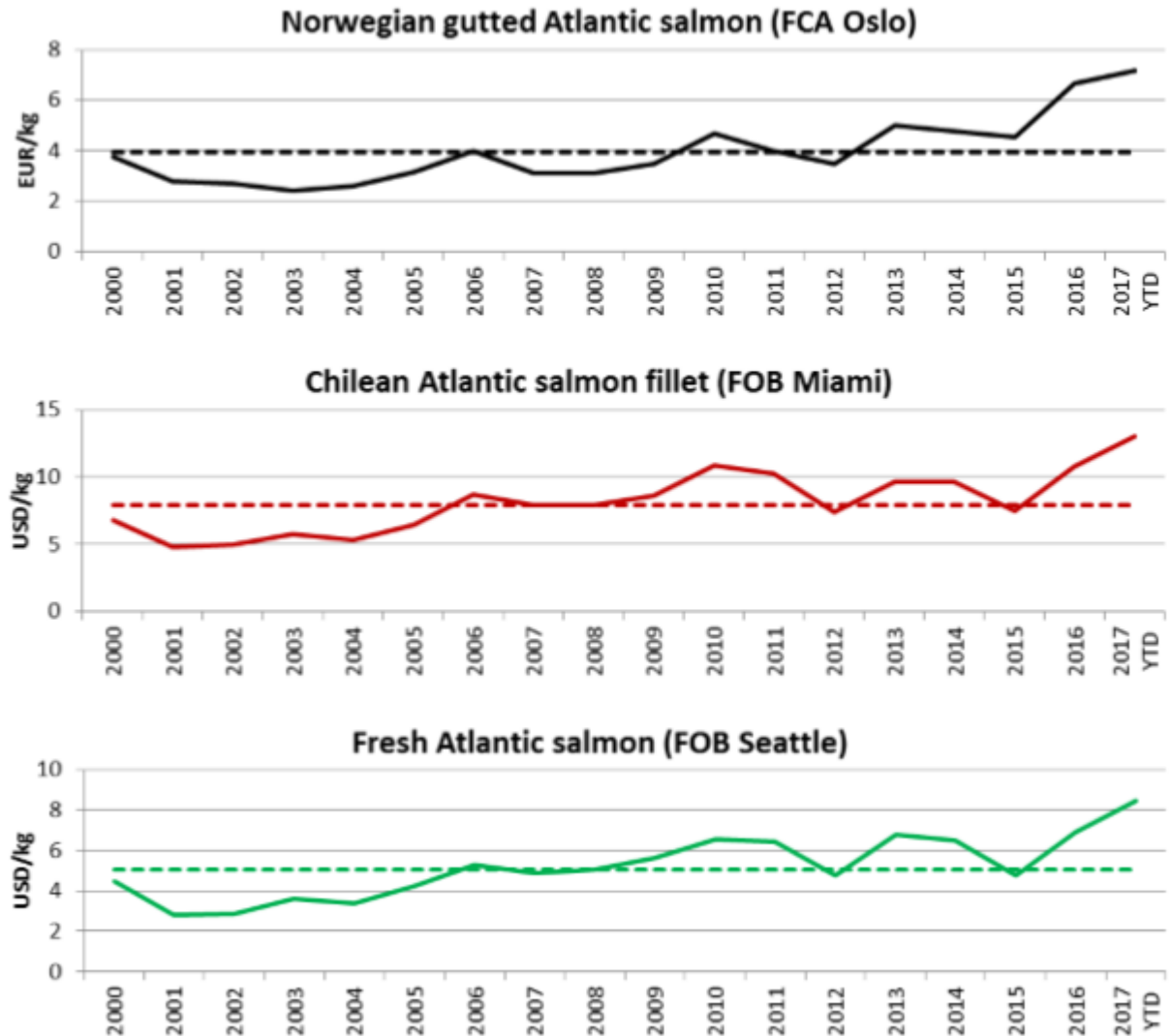
Norway: c50% of global salmon production



Chile: c25% of global salmon production

Structural undersupply & higher prices

- The sector struggles to grow supply & demand is very strong
- Higher prices will balance supply and demand
- High prices are here to stay, unless some tech revolution



Changes of regime are not usual

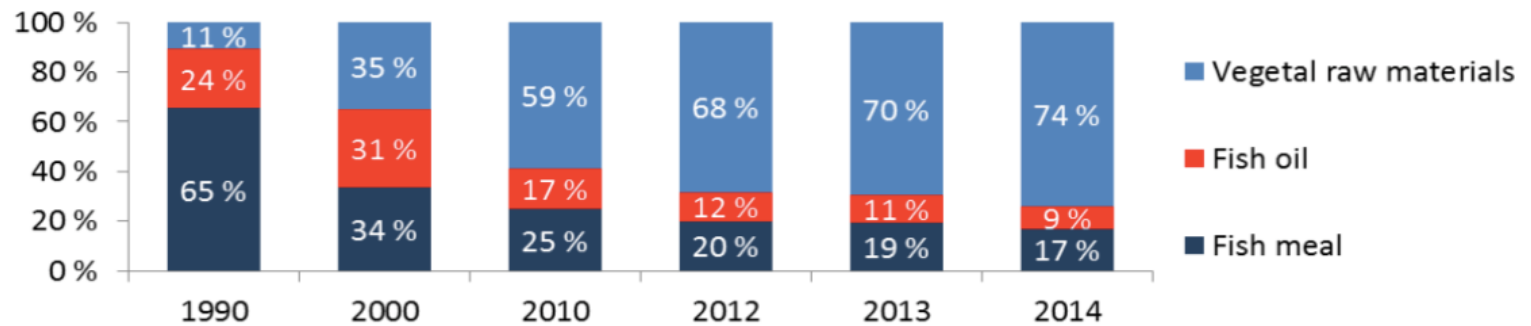
- Salmon farming used to be cyclical, volatile and with mid-cycle returns around cost of capital
- The sector experienced a change of regime. Strong demand over the years coped with limited supply have led to higher prices.
- Salmon is scarce
- The sector makes 20% ROIC on average at current prices 70 NOK kg
- We will not be back to historical returns as 1) sector is structurally undersupplied and 2) costs have gone up by 50% in 6-7 years

- . When we started our analysis, back in 2011, costs per kg. were 20 NOK per kg, now at 33+ NOK per kg
- . Feed prices have substantially moved up
- . Sanitary issues are very costly on treatment costs

	Norway (NOK)	Canada (CAD)	Scotland (GBP)	Chile (USD)
Feed	15.20	2.44	1.56	1.96
Primary processing	2.76	0.47	0.29	0.50
Smolt	2.91	0.58	0.42	0.67
Salary	2.00	0.51	0.22	0.25
Maintenance	1.18	0.21	0.16	0.23
Well boat	1.06	0.18	0.19	0.26
Depreciation	1.00	0.25	0.19	0.23
Sales & Marketing	0.30	0.01	0.04	0.02
Mortality	0.71	0.00	0.12	0.03
Other	6.36	1.11	0.81	1.44
Total*	33.49	5.77	4.00	5.58

Cost per KG. of salmon produced

Development of raw materials in salmon feed in Norway



Mix of salmon feed 1990-2014

Main risks? Technology



Salmar OceanFarm

Expensive

Ocean farms

On shore farming

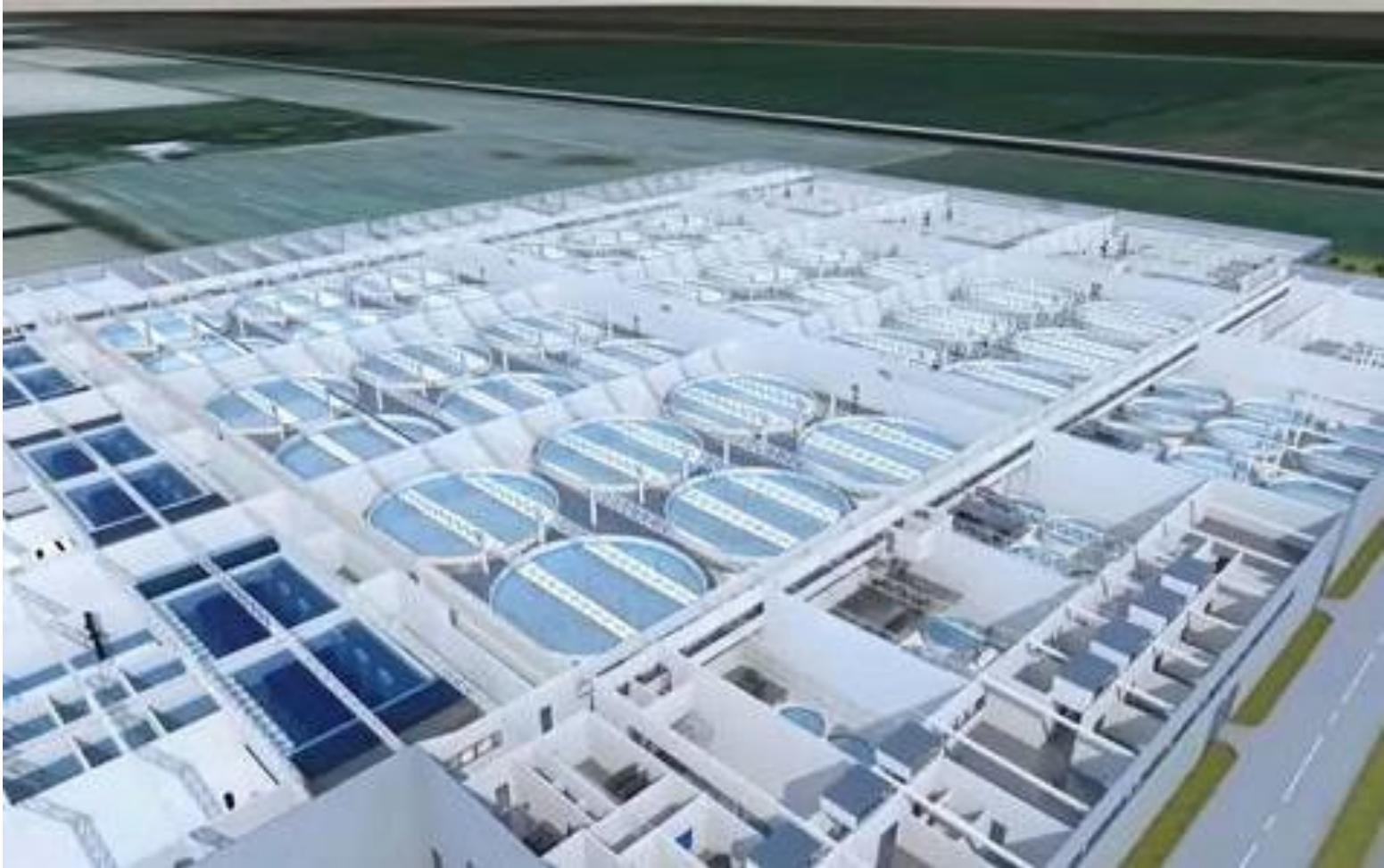
Genetics

Slow

- Closed system
- Improves sanitary conditions
- Capex, maintenance and opex still unclear



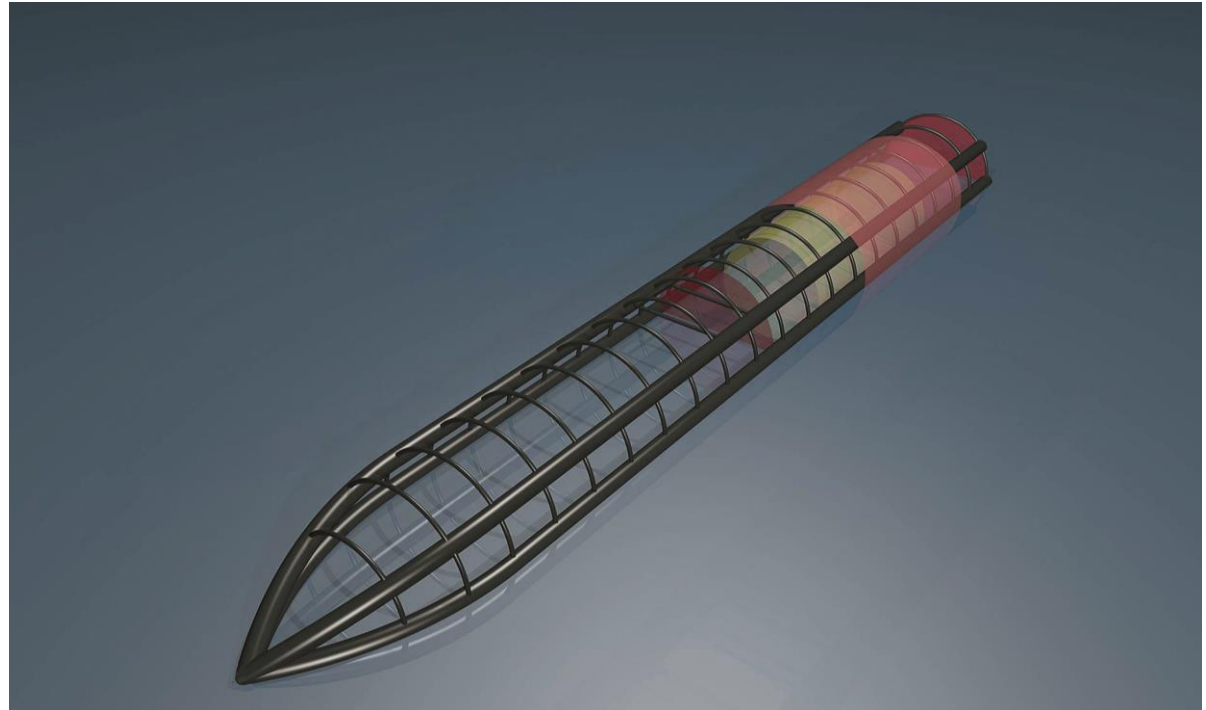
Given 6 licenses (16 requested).



350mn \$ CAPEX Project in Florida

And many other less advanced projects

- Number of projects but few real pilots
- Marginal capacity
- Higher CAPEX
- Not a risk in the mid term, next 5y



Sea cage project. Early times

Shares have massively outperformed



- **PER (19) between 8.5x-14.5x**
- Bakkafrost 14.5x MHG 12.4x Leroy 10.3x NRS 9.3x Grieg 8.5x

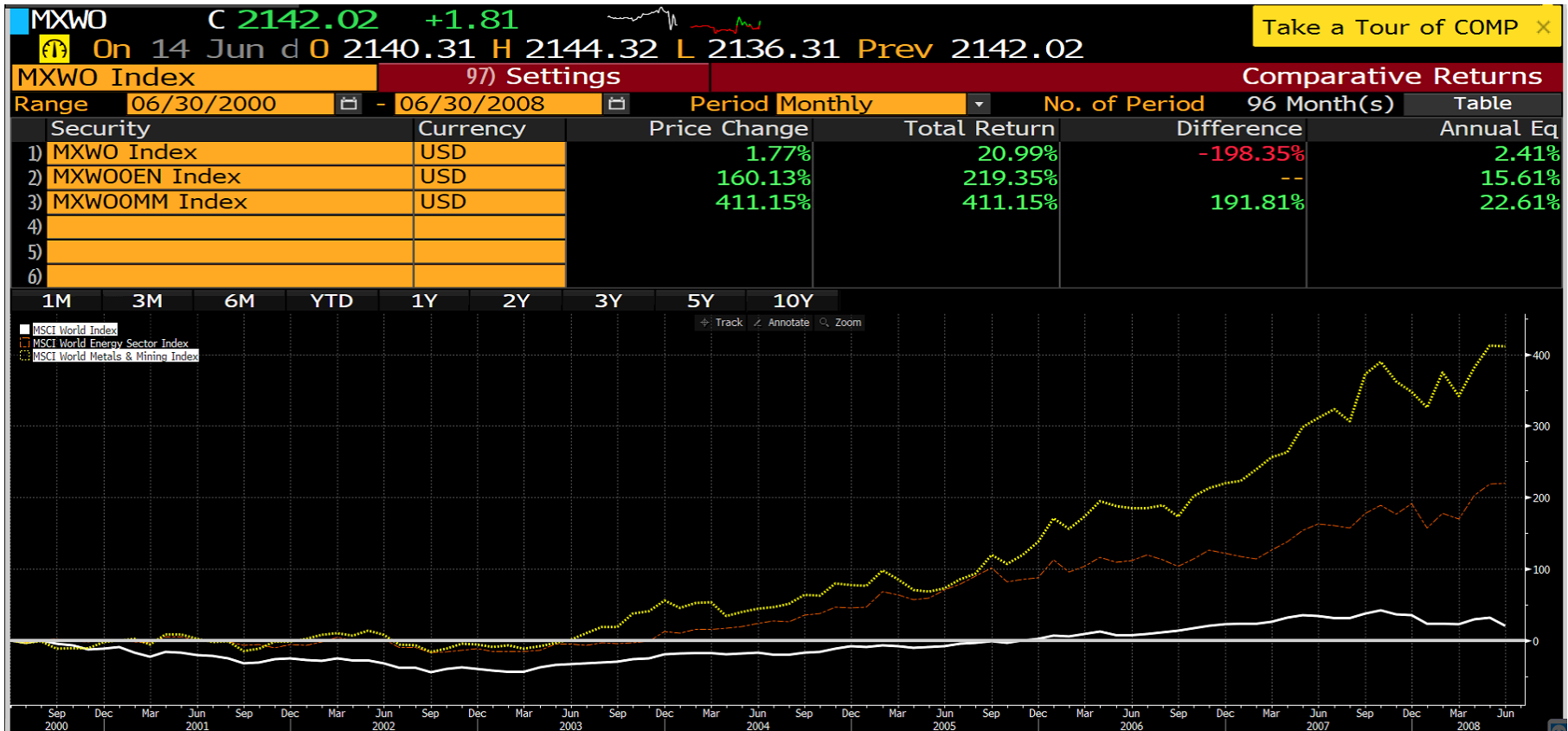
- **Dividend Yield(s) 4-6%**
- Bakkafrost 4% MHG 6% Leroy 4% NRS 5% Grieg 5%

- **IRR's: 10-13%**
- Between 10-13% IRRs at normalised prices and returns

Should you be the owner of one of these fish farms, would you sell it at a PER of 12x?

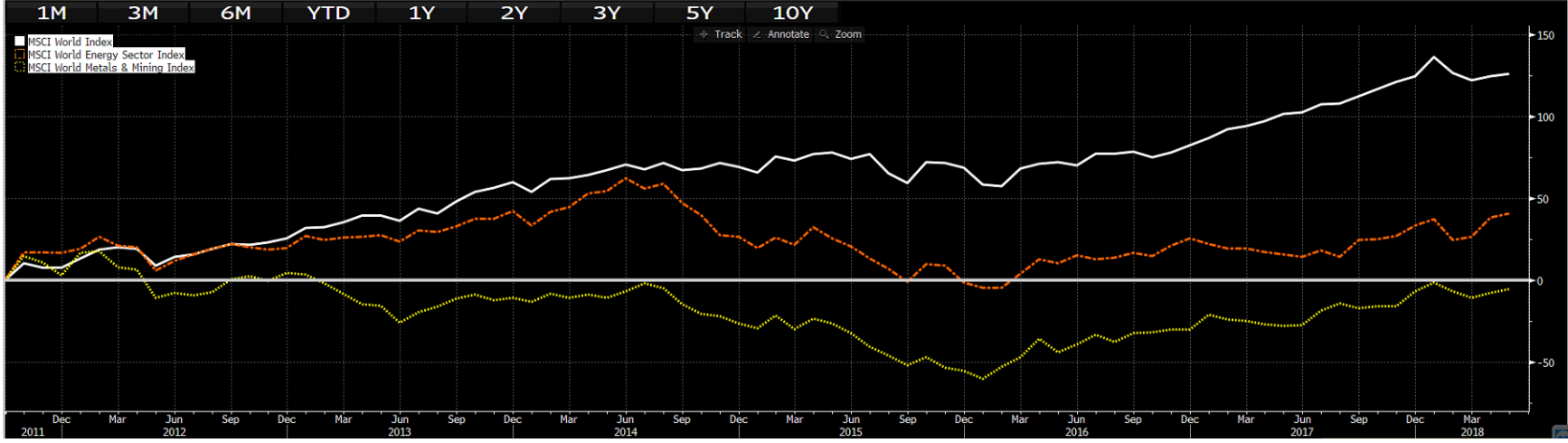


Bergen. Leroy Seafood Salmon Site March 18



MXWO C **2142.02** +1.81
 On 14 Jun d O 2140.31 H 2144.32 L 2136.31 Prev 2142.02 Take a Tour of COMP x

MXWO Index		97) Settings		Comparative Returns				
Range	09/30/2011	-	05/31/2018 <th>Period</th> <td>Monthly <th>No. of Period</th> <td>80 Month(s) <th>Table</th> </td></td>	Period	Monthly <th>No. of Period</th> <td>80 Month(s) <th>Table</th> </td>	No. of Period	80 Month(s) <th>Table</th>	Table
Security	Currency	Price Change	Total Return	Difference	Annual Eq			
1) MXWO Index	USD	89.57%	126.04%	85.21%	13.00%			
2) MXW00EN Index	USD	12.10%	40.83%	--	5.27%			
3) MXW00MM Index	USD	-21.76%	-5.18%	-46.01%	-0.79%			
4)								
5)								
6)								



LTIFGEU LX \$ NAV 142.76 -0.76

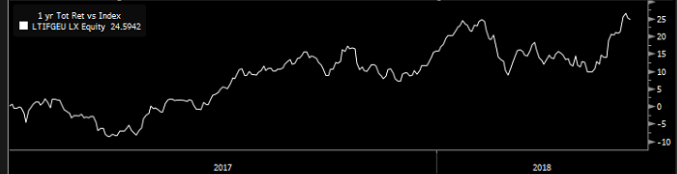
On 23 Apr

LTIFGEU LX Equity Report Page 1/4 Security Description

1) Profile 2) Performance 3) Holdings 4) Organizational

LONG TERM INV-NATRAL RES-USD Objective Natural Resources Sect...
 Long Term Investment Fund - Natural Resources is a Sicav incorporated in Luxembourg. The objective of the Fund is to achieve long-term capital appreciation. The Fund primarily invests its assets in worldwide equity securities relating to natural resources. The Fund mainly invests in companies whose main business is to produce, extract, and refine natural resources. [FIGI BBG000PNBYW9]

6) Comparative Returns | COMP >>



7) NAV USD 142.760
 Assets 04/23/18 EUR 17.47M

Performance	Return	Percentile
1 Month	12.14%	96
YTD	7.44%	98
1 Year	28.57%	98
3 Year	13.48%	95
5 Year	3.97%	79
Px Source	Banque Pictet/Luxem...	

Bloomberg Classification

Fund Type	SICAV
Asset Class	Equity
Industry	Thematic
Market Cap	Broad Market
Strategy	Blend
Geo. Focus Region	International
General Attribute	Natural Resources

Fund Info	
Inception Date	05/29/2007
Share Class	Retail
Min Investment	N.A.
Min Subsequent	N.A.
Min IRA	N.A.
Expense Ratio	2.60%

Fees	
Front Load	.00%
Back Load	.00%
Early Withdrawal	N.A.
Current Mgmt Fee	1.50%
Performance Fee	15.00%
12b1 Fee	N.A.

