

The Economical Impact of the Fisheries and Aquaculture Industry in Norway

– a Multiplier Effect Study

Trude Olafsen
SINTEF Fisheries and Aquaculture

Co-authors: Merete G.Sandberg, Ingvild Aarhus, Gro Holst¹ and
Mattias Hoffman¹

¹SINTEF Technology and Society

National analysis

Intention:

To clarify the socio-economic importance of the Norwegian Fisheries and Aquaculture Industry

- Increased importance of the Norwegian Fisheries and Aquaculture Industry has created increased focus from the press, politicians, market and the public
- Globalisation of the industry and increased competition make it constantly important for the industry to work within a good framework
- The Norwegian Fisheries and Aquaculture Industry wants to stand forward as important and with strength on the political arena, comparison with other industries are getting tougher

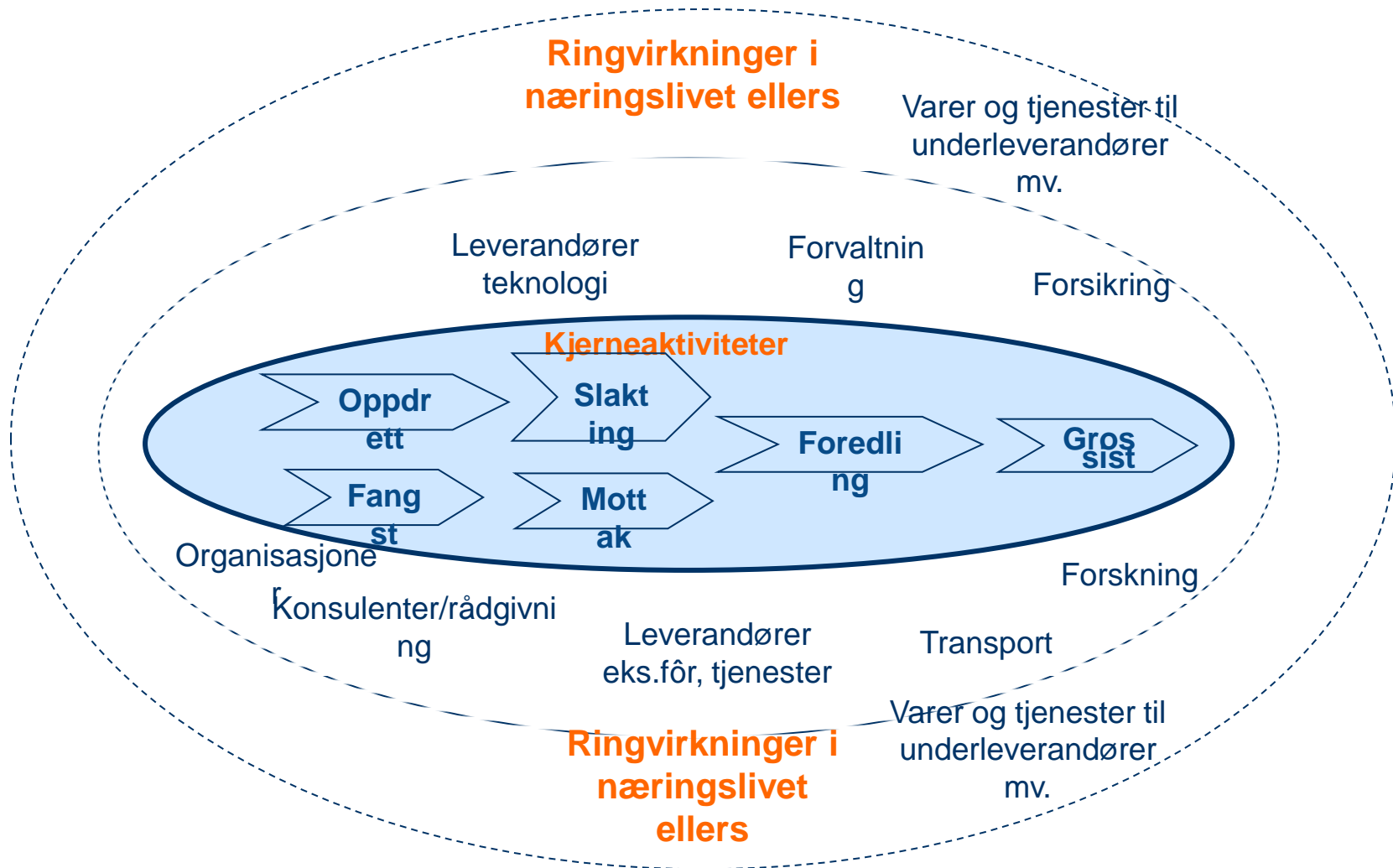


A need to clarify the real impact of the industry in all parts of the value chain

Method

- Main steps in the work;
 1. Mapping the size (scope) of all
 - core activities within the Fisheries and Aquaculture Industry
 - size and composition of deliveries to the industry (direct and indirect-called multiplier effects)
 2. Establish a data basis for model calculations – connecting detailed figures for the industry with main figures in the National Accounts (provisional 2004 and final 2002)
 3. Modelling and calculation of direct and indirect multiplier effects of the core activities – using PANDA for this work
 4. Analysis and reporting

The value chain



Direct effects; Direkte deliveries of goods and services for operation and investments.

The documentation made

- Total impact of the Fisheries and Aquaculture Industry measured in employment, contribution to GNP and turnover
- Value chain
 - Aquaculture (Fish farming, Fish processing and Wholesale/trade)
 - Fisheries (Fishing fleet, Fish processing and Wholesale/trade)
- Industry groups Fishing fleet, Fish farming, Fish processing and Wholesale/trade
- The impacts are estimated both for the core activities and for other parts of the industry (multiplier effects)



Value added- contribution to GNP

- Contribution to Gross National Product (GNP) is in this context a measure in the National Accounts and a term describing the Value Added made/created by the industry
- The Value Added term is in a day to day language used in many different ways. Contribution to GNP will in this analysis be understood as remuneration to work and capital

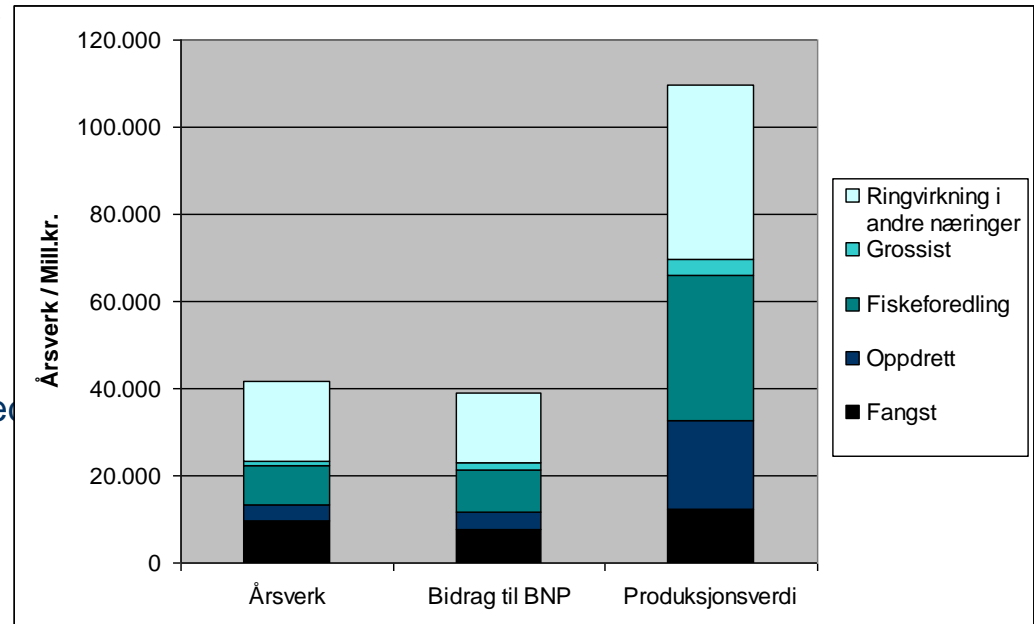


Fisheries and Aquaculture Industry - 2007

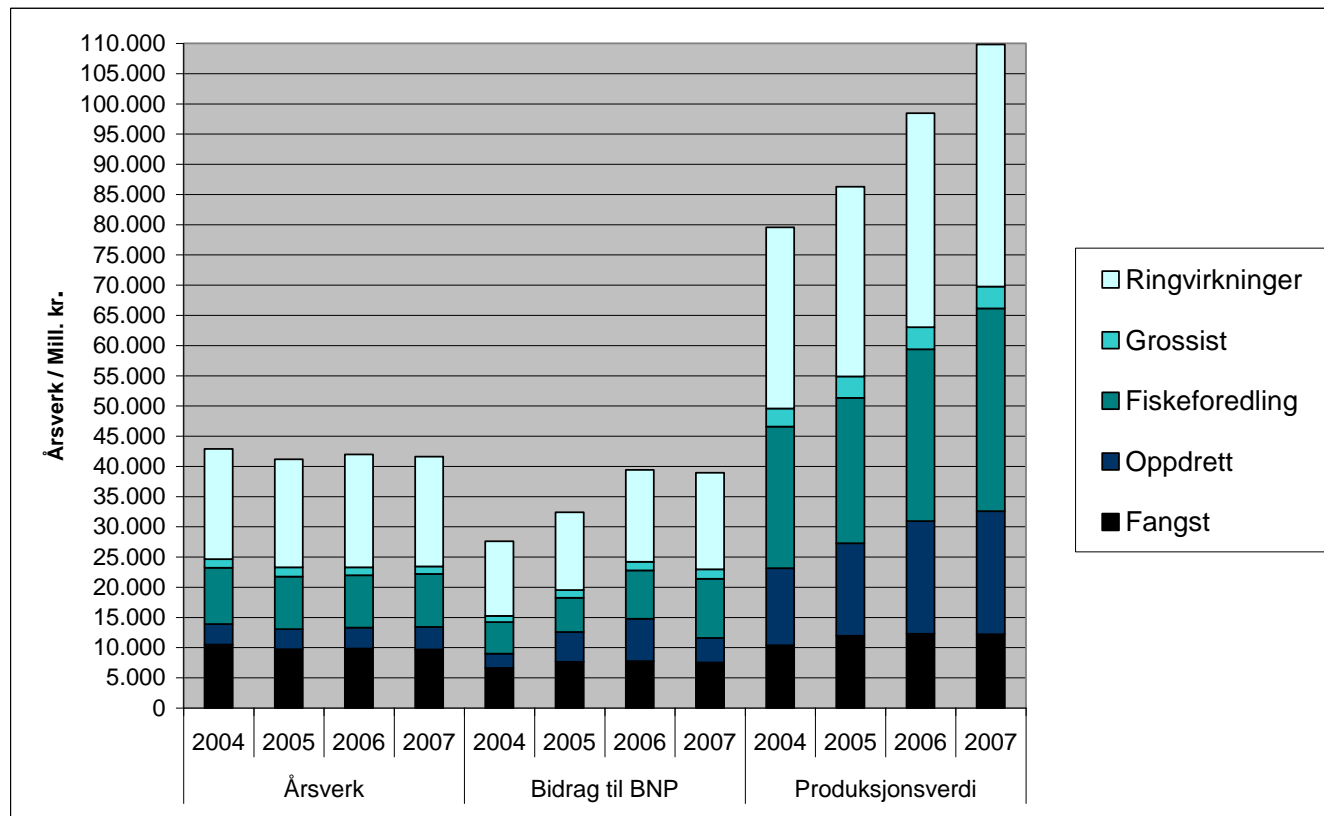
- Approx. 41.600 man-years in Norway are created by the Aquaculture and Fisheries industry.
 - The multiplier effects are approx. 18.200 of these man-years.

- Total Value Added (Contribution to GNP) is 39 billion NOK.
 - The multiplier effects constitutes approx. 16,0 billions of the value added.

- Total production value is 110 billion NOK.
 - The multiplier effects constitutes approx 40,0 billions of the production value.



Key figures 2004-2007



Key figures from 2007

- 41 600 man-years

Whereof: 23 400 in the core activities
18 2000 in other industries

- 111 billion NOK in production value

Whereof: 70 billions in the core activities
41 billions in other industries

- 39 billion NOK in value added (contribution to GNP)

Whereof: 23 billions in the core activities
16 billions in other industries



Photo: SINTEF



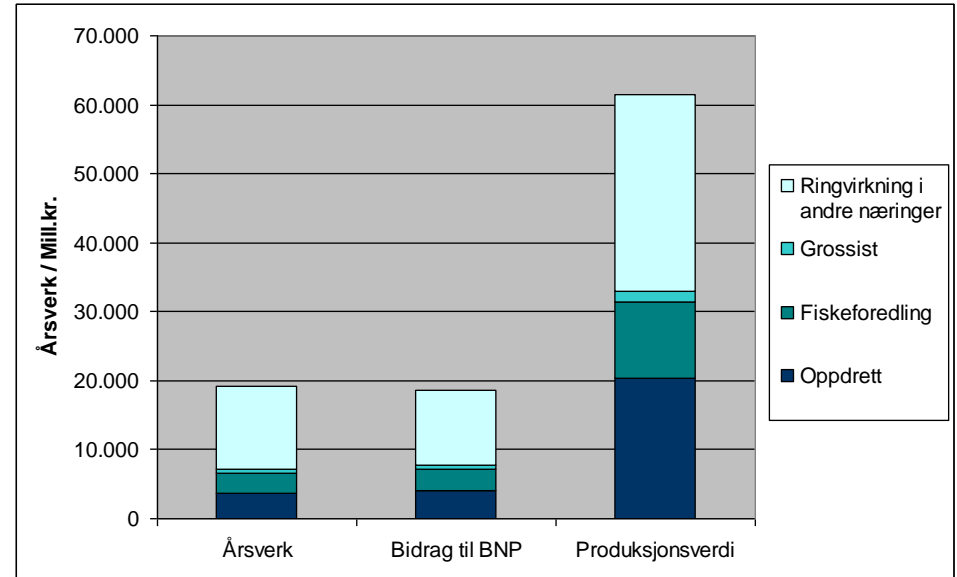
Photo: Jon Arne Grøttum

Main characteristics 2007

- From 2006 to 2007 the production value increased in all parts of the industry except in the fishing fleet where it was stabil.
- The industry's contribution to GNP is the same as in 2006. This in spite of a increase in volume of 230 000 tons. This is mainly due to a decrease in prices from 2006 to 2007.
 - The contribution to GNP is largest in the processing, followed by the fishing fleet
 - Contribution to GNP went down from approx. 7 billions in 2006 to 4,2 billion NOK in 2007, this is compensated by a increase in processing and in multiplier effects.
- Very little change in employment figures from 2006 to 2007

Value chain Aquaculture

- Man-years has increased with 16% from 2006
- Value added (contribution to GNP) is approx. 7,8 billions NOK in 2007 from the core activities, this is a decrease of approx 3. billions from 2006.
- The increase in production value from 2006 to 2007 on+13,6 billions. This is due to increase in the farming part.
- For the core activities lower prices compared to 2006 and increased production volumes are explanations.



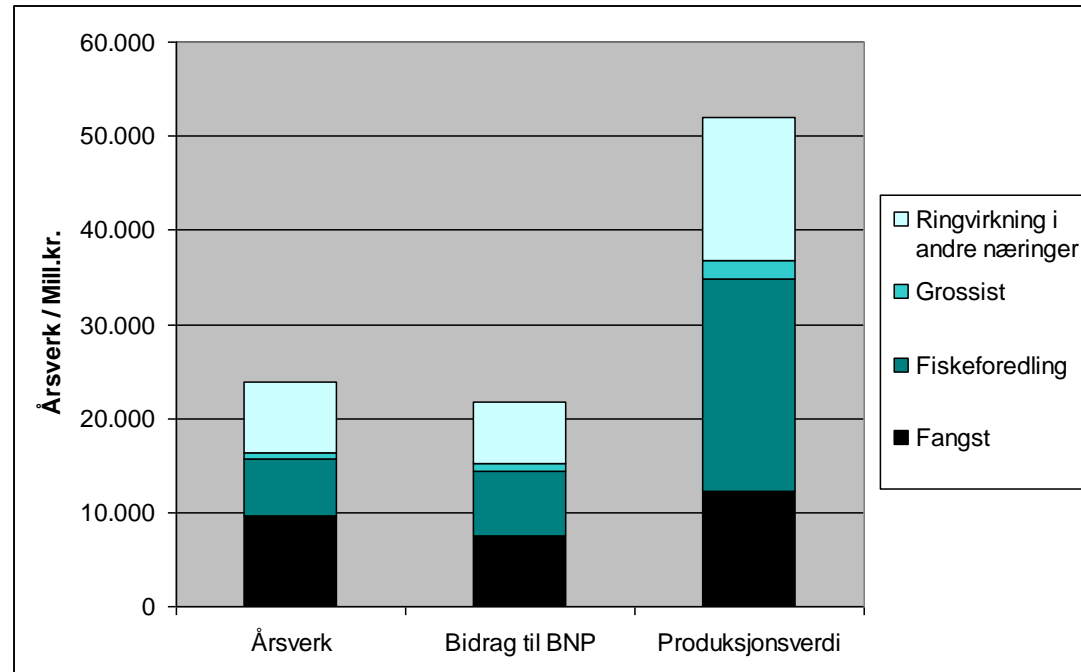
Value chain Fisheries



- In sum the Fisheries value chain employs 23 900 man-year in 2007.

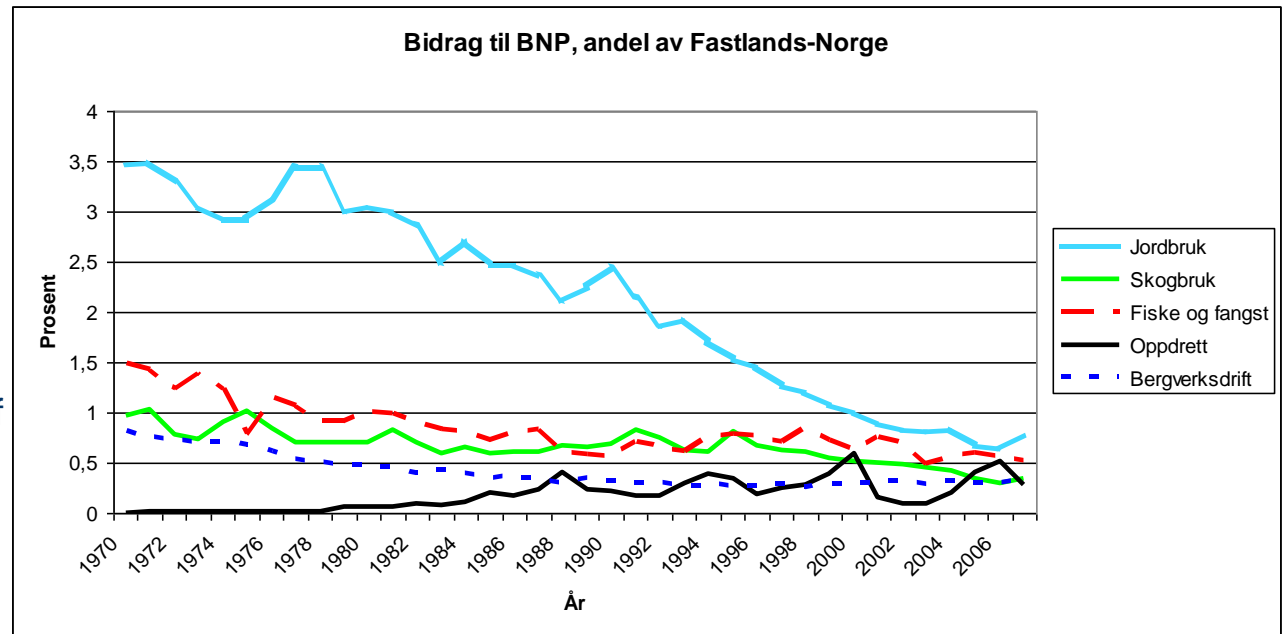
- The contribution to GNP was 21,8 billion NOK, an increase of 0,7 billions from 2006 to 2007 .

- The production value was 51,9 billions. A small decrease compared to year 2006 , due to a decrease in multiplier effects (-1,9 billions).



Fisheries and aquaculture – compared to other primary industries in Norway

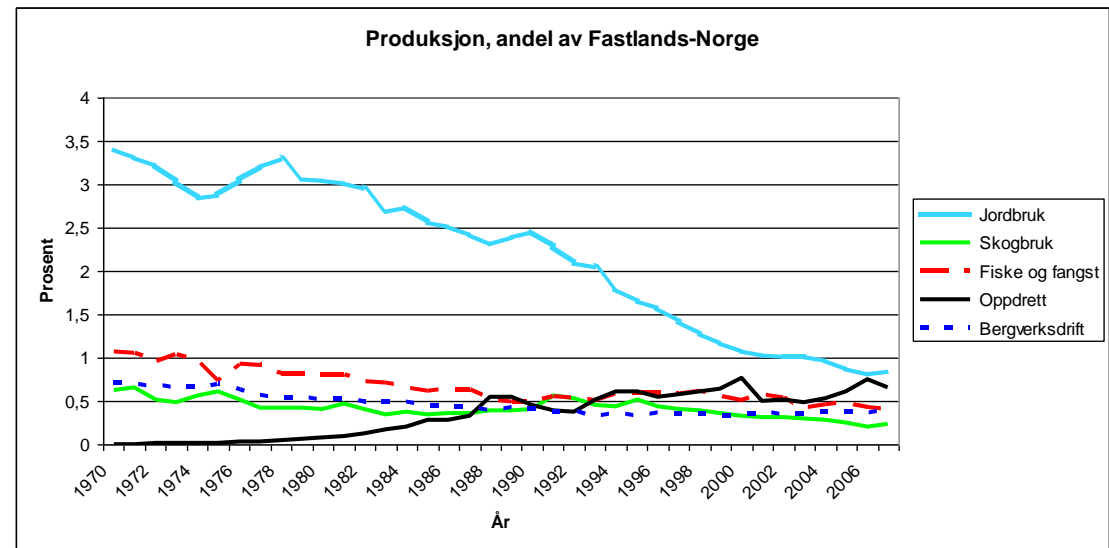
- Here we see the primary industry's relative contribution to Continental-Norway's GNP (measured in running prices)
- The Fishing fleet has a marginal higher contribution to GNP than Fish farming
- The value added share of Fish farming varies over time (more than its production value), something which illustrates this industry's vulnerability.



**Part of Continental-Norway's contribution to GNP,
for chosen resource based industries**

Fisheries and aquaculture – compared to other primary industries in Norway


- The resource based industries falling relative importance comes from the strong growth in other parts of the economy.
- None of the mentioned industries alone more than 1 % of Continental-Norways production value.
- The Fishing fleet and Fish farming together makes 1,04 pst.
- Fish Farming is the only resource based industry which clearly seems to increase its relative contribution, but you find large fluctonations from year to year.



Part of total production value Continental-Norway, for chosen resource based industries

Further development of the analysis

- We will make the analysis regional, not only national
- Would like to get an even better grip on the supplier industry
- Would like to combine results of the regional analysis with knowledge of industry clusters, can we explain differences we find in regions?
- Can we do this in a Nordic perspective?
- What about a European perspective?



Thank you for your attention!

Photo: Jon Arne Grøttum