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# Seafood and Climate Change

**Carbon issues in the seafood industry – consumer perceptions and commercial realities**

**A Seafood Processor's Perspective**

By Mike Mitchell  
Technical Director  
The Seafood Company





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## Generic terminology is shaping public perception

- **Carbon Footprint** – has become a generic term to describe the environmental impacts of goods and services
- **Global Warming / Climate Change** – widely used in the media to signify post industrial revolution societal impacts on the environment – images of sea level change and flooding create strong ‘doomsday’ messages for the public
- **Food Miles** – a simple and ‘intuitive’ message that says “local is best” There is a clear tendency for the public to associate high ‘food miles’ with large ‘carbon footprints’, ‘global warming’ and other major environmental impacts



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## **Public perception – is an intuitive perspective**

- Our industry has begun to address the ‘knowledge gap’ on the wider environmental impacts of seafood production but the media and public perceptions still ‘lag’
- **Much of what we are learning is counter-intuitive**
- It is understandable that there is a degree of scepticism from the public over the more complex messages from scientific learnings
- Food miles is a classic example of this – how can globally shipped food be better for the environment than locally sourced?
  - It just doesn’t make sense to the consumers of our products!!!

# 'Young's Seafood to Thailand': A mini-case study

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**12,000-mile scampi trip condemned**

**Plans to send Scottish seafood on a 12,000-mile trip to Thailand to be peeled before being sold in the UK have been condemned by environmentalists.**



Young's Seafood said the move, which will result in 120 job losses at its plant in Annan, was necessary due to "prohibitive wage costs" in the UK.

Friends of the Earth Scotland described the decision as "madness".

It said every tonne of scampi shipped to Thailand would generate half a tonne of carbon dioxide emissions.

**VIDEO AND AUDIO NEWS**  
See what's behind the firm's decision  
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## **The decision to process scampi in Thailand**

- In October 2006 Young's took the decision to move from mechanical peeling of nephrops in our factory in Scotland to hand peeling in our own factory in Thailand
- This decision was taken for quality reasons in light of a consumer preference survey – hand peeled product was seen to have better eating qualities than machine processed scampi tails
- It was not commercially possible to hand peel scampi in Scotland without adding at least £1 to the selling price of the product
- It was considered essential for our business to remain competitive in the market place to introduce quality improvements without generating food inflation for the consumer



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## Reactions to the scampi to Thailand decision

- FoE director Duncan McLaren said: "It clearly makes economic sense but the environmental impact of this is remarkable...  
...for the few pounds it is saving the company, it is costing the rest of us - costing the planet - many pounds of environmental damage."
- The Young's Consumer Careline was bombarded with messages from concerned consumers threatening to boycott our product range
- BBC online blog generating over 1000 hits overnight – many threatening to boycott Young's products



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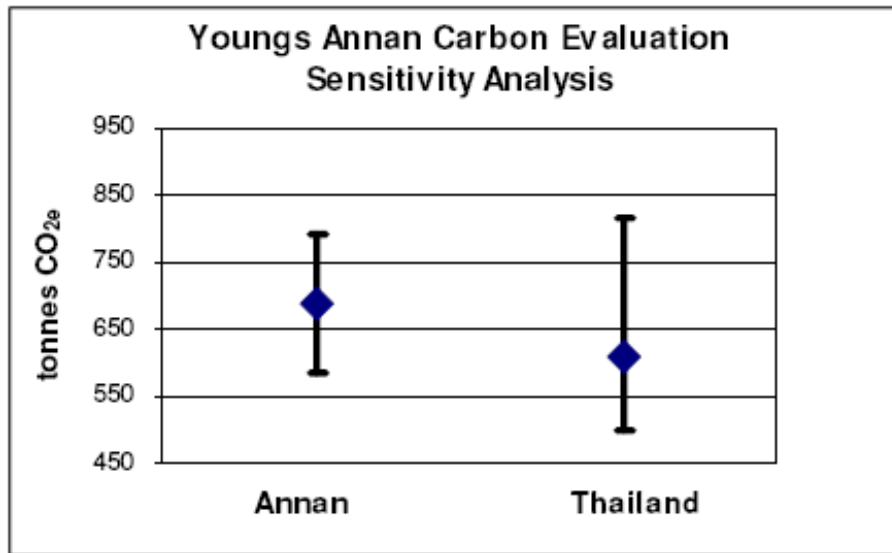
## **Introducing science to the debate**

- In response to these challenges, Young's Seafood commissioned an independent GHG comparison of Scottish machine processed tails with Thai hand peels tails
- This work was commissioned to the Carbon Trust and the detailed assessment was made by the scientific team at Enviros
- This report was made available for download from our corporate website and clearly showed that the decision to hand peel scampi in Thailand did not represent a significant change to the CO<sub>2</sub>e profile of the finished product – even with the large 'food miles' distances involved

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## Carbon Trust Findings



- The graph shows the calculated CO<sub>2</sub>e emissions at Annan before closure of the mechanical peeling line, and hand peeled in Thailand.
- The diamonds represent the calculated CO<sub>2</sub>e and the bars demonstrate what the value *could be* taking into account uncertainties in the calculations.





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## Extract from Enviros Conclusion

“Based on the data provided by Youngs and CO2e conversion factors researched by Enviros, the evaluation showed that no net increase in CO2e emissions had occurred. However, taking into account the accuracy of the information used for the calculations, under extreme circumstances there could be a net reduction in annual CO2e emissions of up to 292 tonnes (equivalent to 48 households\*) or an increase in CO2e emissions of up to 229 tonnes (equivalent to 38 households\*).”

\* Source: Energy Saving Trust, 6 tonnes CO2 per household: [http://ez.est.org.uk/your\\_impact\\_on\\_climate\\_change/surprising\\_statistics/home\\_and\\_the\\_environment](http://ez.est.org.uk/your_impact_on_climate_change/surprising_statistics/home_and_the_environment)



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## 'Scampi to Thailand' assessment

It just doesn't make sense!!!

Or does it?

Hand peeling gives better yields of edible product...

- If Thai hand peeling gives better yields than Scottish machine peeling the result is lower emissions per tonne of final product
- Assume yield goes from 35% to 37%
- And fishery burns 2,000 litres per live tonne
- Then:
  - fuel consumption is reduced by ~300 l/t product
  - emissions are reduced by ~950 kg CO<sub>2</sub> eq!



## **A counter-intuitive position**

- The concept of 'food miles' leads the consumer to believe that local is best and conversely, long distance food travel is inherently bad for the environment.
- There are good reasons to promote locally sourced produce but these need to be honest and fairly represented – 'food miles' do not necessarily equate to a rationale for selling locally sourced seafood.
- In these discussions, we must ensure that the debate encompasses all stages of production, not just the proximity of the market to the capture fishery but also; primary and secondary processing, storage and all phases and modes of transportation.
- As a business and a brand, we were negatively impacted by the intuitive perception of the scampi to Thailand issue
- This still persists in the ethernet...

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## What did we do to build our knowledge?

- We quickly saw that the understanding of these issues is in the early stages of scientific investigation, especially with respect to the 'at sea' activities of seafood capture and the impacts of yield, transport type and energy source.
- The most successful manufacturing businesses are built upon measurement, monitoring and control systems.
- Findus Group therefore initiated two research relationships; with Dalhousie University in Canada and SIK in Sweden to further investigate the contribution to global warming, CO<sub>2</sub> emissions and other environmental impacts of our own supply chains



The logo for The Seafood Company features a dark blue rectangular background. At the top, the word "THE" is written in white, uppercase letters. Below it, the word "SEAFOOD" is written in a large, bold, white, uppercase font. Underneath "SEAFOOD", the word "COMPANY" is written in a smaller, white, uppercase font, with wide letter spacing.

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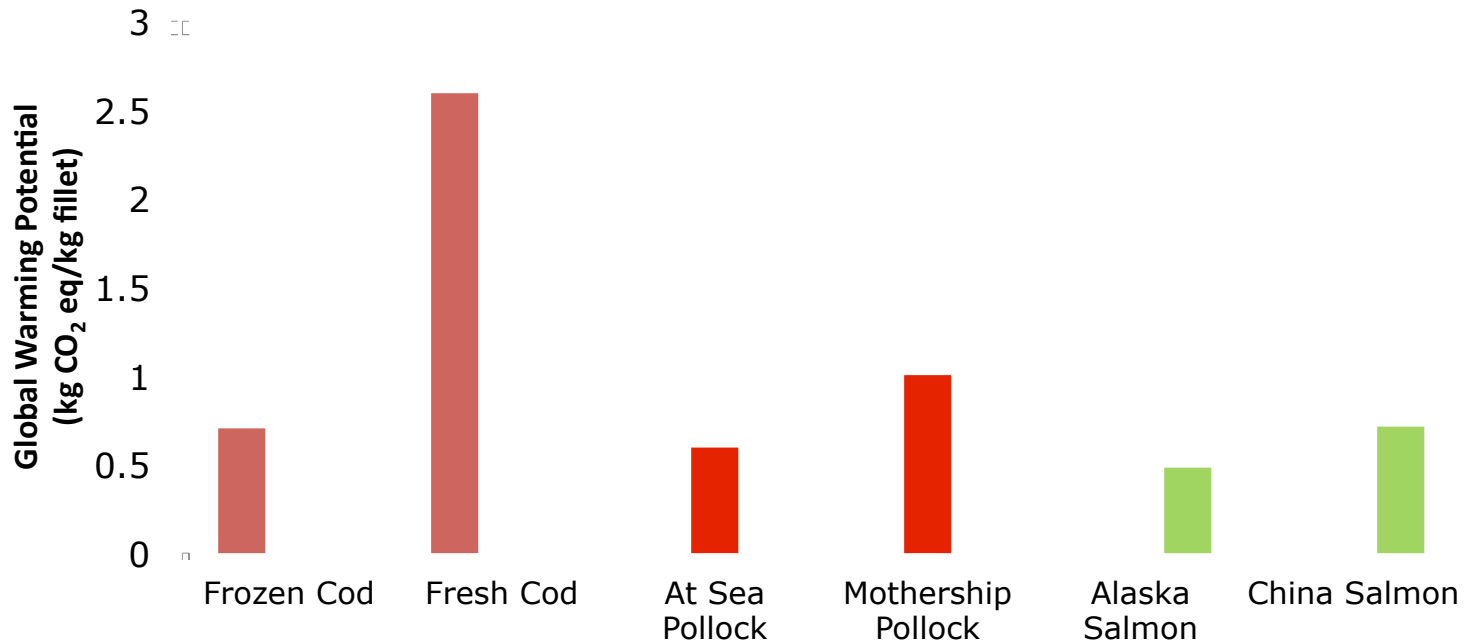
## The UK Project

- A project with Dalhousie was initiated which ran for two years ending in 2010 and constituting a sponsored Masters programme for Sarah Fulton conducted under the tutorage of Professor Peter Tyedmers.
- Three supply chains were chosen for study; representing diverse elements of the UK supply base:-
  - US Alaska pollock
  - Icelandic line caught cod
  - Alaskan Pacific salmon
- This level of detailed scientific assessment of the carbon emissions associated with seafood production was unprecedented at that time in the UK and has provided essential insight into our upstream supply chains

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## Results: GHG Emissions to Grimsby



DALHOUSIE  
UNIVERSITY

*Inspiring Minds*

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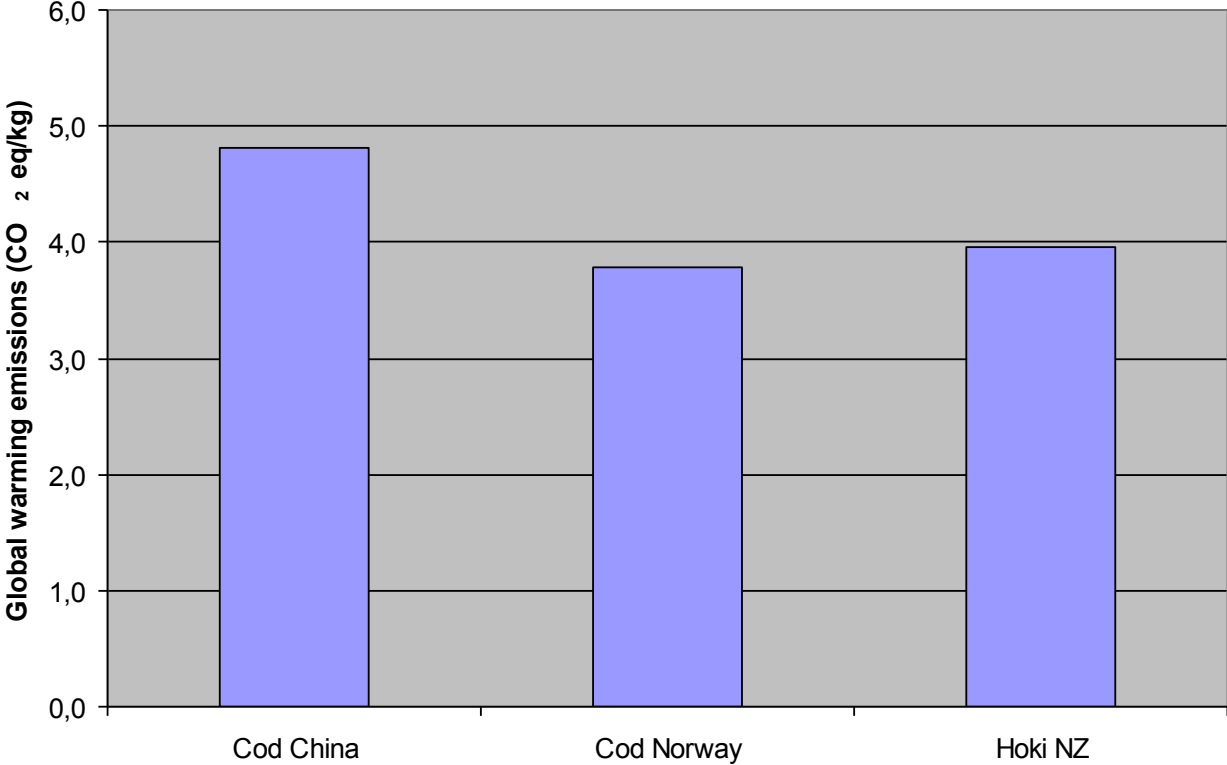
## The Swedish Project

- A project with SIK was conducted in February 2008 by Friederike Ziegler at The Swedish Institute for Food and Biotechnology
- Three supply chains were chosen for study; representing core Findus brand seafood products
  - Norwegian caught and processed cod
  - Norwegian caught cod processed in China
  - New Zealand hoki
- This selection enabled us to take a view on the relative impacts of local v global supply chains.





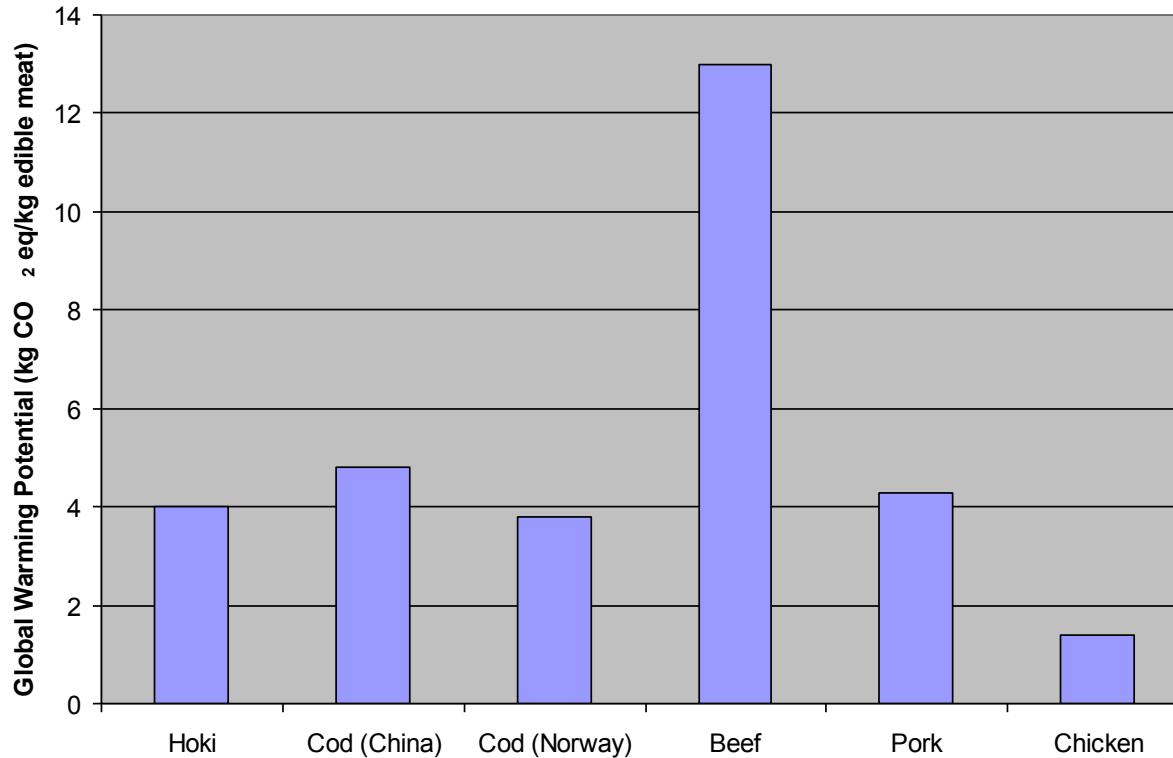
# Results – GHG emissions to Helsingborg



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## Comparison with other meat protein products



The logo for The Seafood Company is centered at the top. It consists of a dark red rectangular bar with the word "THE" in white, uppercase letters. Below this bar is a larger dark blue rectangular bar with the word "SEAFOOD" in large, white, uppercase letters. Underneath "SEAFOOD" is the word "COMPANY" in smaller, white, uppercase letters. The background of the slide features a coastal scene with waves in the foreground and a lighthouse on a rocky outcrop in the distance under a clear sky.

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## What do we need to achieve?

- Explode the myth of ‘food miles’
- Promote the recognition that it is more important *how* the fish are caught than *where* and that transport mode matters just as much as distance
- Build our knowledge and understanding of the environmental impacts in different supply chain scenarios
- Collaborate in developing sectoral knowledge in this area
- Develop a ‘common language’ and set of metrics
- Communicate more credibly with the consumer about the science and move the ‘food miles’ debate away from simplistic notions
- Consider other associated eco-system impacts for marine food resources



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## Take-home message

- For a sense of scale, consider this – the best available estimate of global trade in seafood is around \$100 billion
- That's about 1/650th of global economic activity.
- So trying to prevent climate change by reducing emissions in the seafood industry is “like trying to save a burning house by dousing a toothpick” (Brad Warren)
- Message: Reduce industry’s own emissions but don’t stop there. Real aim is to keep ocean making lots of fish.
- So the objective is **not just** to reduce the seafood industry's emissions (which is good and necessary but not sufficient)
- The real promise here is to use the industry's CO2 reduction/efficiency efforts as part of a larger awareness building exercise and hopefully lead to a situation where policy and governance is implemented to protect the climate and the oceans which sustain us.



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**Thank you for listening**

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