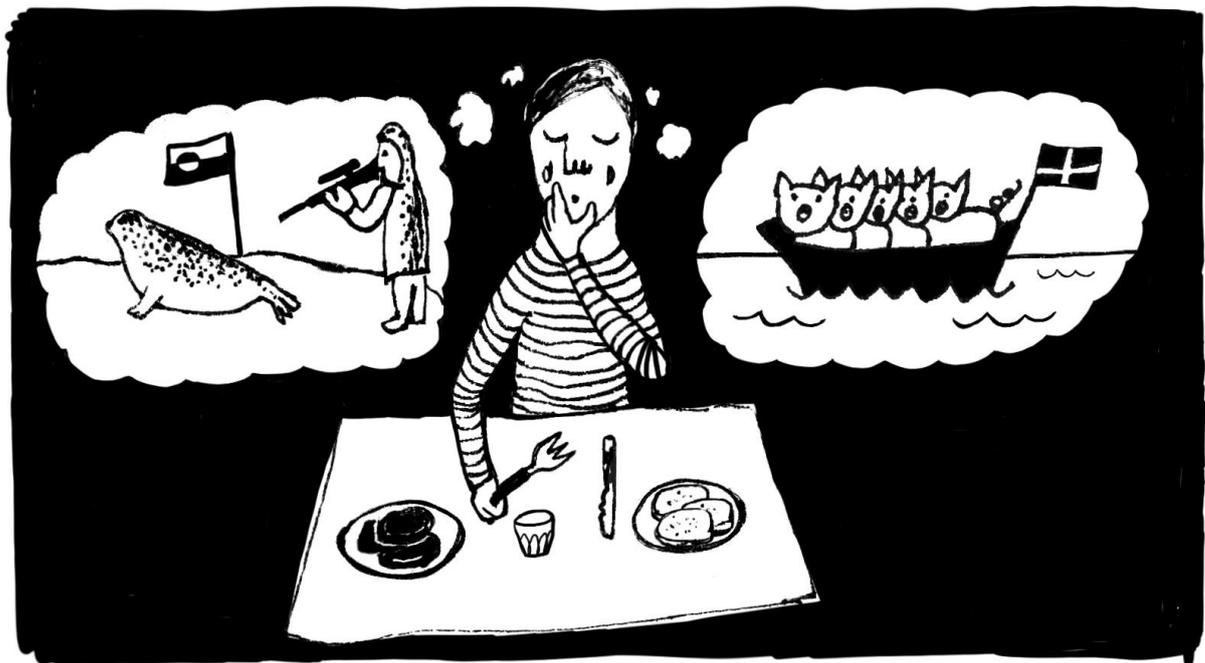




TWENTY SEVENTH MEETING OF THE COUNCIL
3 - 4 April 2019, Tórshavn, Faroe Islands

DOCUMENT 16	MMFR – Report of the LCA pilot study: “Local seal or imported meat? – LCA of environmental impacts of food choices in Greenland”.
Submitted by	Secretariat
Action requested	Take note
Background	<p>Following the 2012 Ministerial Meeting emphasizing the importance of an increased focus on marine mammals as a food resource, NAMMCO carried out in 2012-2017 the project “Marine Mammal as Food Resources” (MMFR), funded by the Nordic council of Ministers, the Greenland Government as well as NAMMCO.</p> <p>The outputs of the project were several:</p> <ul style="list-style-type: none"> • A white paper document titled “Marine Mammals: a Multifaceted Resource”, presenting facts and myths around whaling and sealing in NAMMCO Countries in an ecological perspective, which was posted and extensively used on the NAMMCO website (74pp.) • An executive summary/appetiser/trailer to the larger document. • One information leaflet “No food – or?” • The development of a communication strategy for flagging most efficiently marine mammals as logical and natural food resources. • Numerous presentations in various fora, focussing on marine mammals as a food resource in the context of ecosystem impact, blue economy and environmental costs. • At the end of 2017 a pilot Life Cycle Assessment study (<i>cradle-to-grave analysis</i>) was initiated with the Swedish Research Institute RISE: “Local seal or imported meat? – LCA of environmental impacts of food choices in Greenland”. <p>The present document reports on the progress and development of this pilot LCA study.</p>

“LOCAL SEAL OR IMPORTED MEAT? – LCA OF ENVIRONMENTAL IMPACTS OF FOOD CHOICES IN GREENLAND”.



1. BACKGROUND

LCA is a method which has been used for a few decades for quantifying a broad suite of environmental impacts of the product through their supply chain in a procedure, standardized by ISO (ISO 2006ab). Starting with extraction of raw materials, the analysis follows all relevant steps of the life cycle up until consumption and end of life treatment. It is often used to make comparisons between products, or the same product produced through different chains. It has been particularly utilised in seafood production to identify which are the links which would allow to decrease the carbon footprint in the most cost-efficient ways (e.g., Ziegler et al 2013, 2016ab, in press).

2. AIMS

Here, the goal is to quantify the relative environmental impacts of consuming marine mammal products versus other meat proteins, with Greenland as first example. In this case, locally hunted seal meat is compared with the most common alternative protein food product consumed, as identified through import statistics and consultation with Greenlandic retailers. Both indicated that pork meat is the dominating type of meat imported and that it is primarily sourced from Denmark.

3. PARTICIPANTS

The study, initiated by NAMMCO (Desportes) is led by Friederike Ziegler from RISE Research Institutes of Sweden (Gothenburg), with the collaboration of the Greenlandic Ministry of Fisheries, Hunting and Agriculture and the Association of Fishers and Hunters in Greenland (KNAPK). All the organisations are part of the reference group and assisted with data collection.

4. FUNDING

The project is funded with remaining fund from the MMFR project, arising from the Nordic Council of Ministers.

5. PROGRESS AND DEVELOPMENT OF THE PILOT LCA STUDY

The study is close to completion and the results should be submitted for publication in a scientific journal in April, with as first option **Environmental Science and Technology**.

The production, processing and transportation of the alternative product to Greenland, pork meat imported from Denmark, was contrasted with locally produced seal meat to study primarily greenhouse gas emissions and energy use. Other impacts are discussed qualitatively such as, animal welfare and use of land, antibiotics and pesticides in both supply chains (alternative protein and seal).

For seal meat, the system studied entails the production and use of supply materials used in hunting (gasoline and ammunition) and was investigated through a survey distributed among KNAPK members.

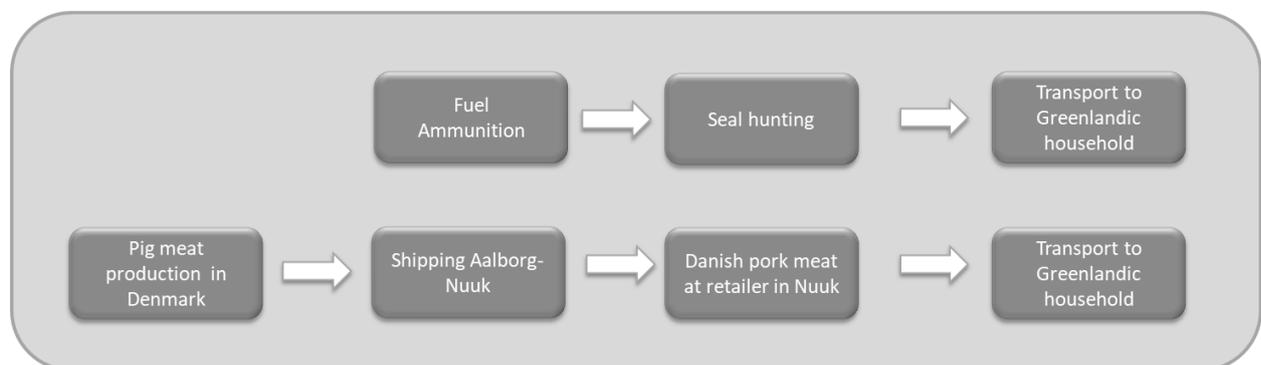


Fig. 1 The two main supply chains for consumption of animal-source foods in Greenland

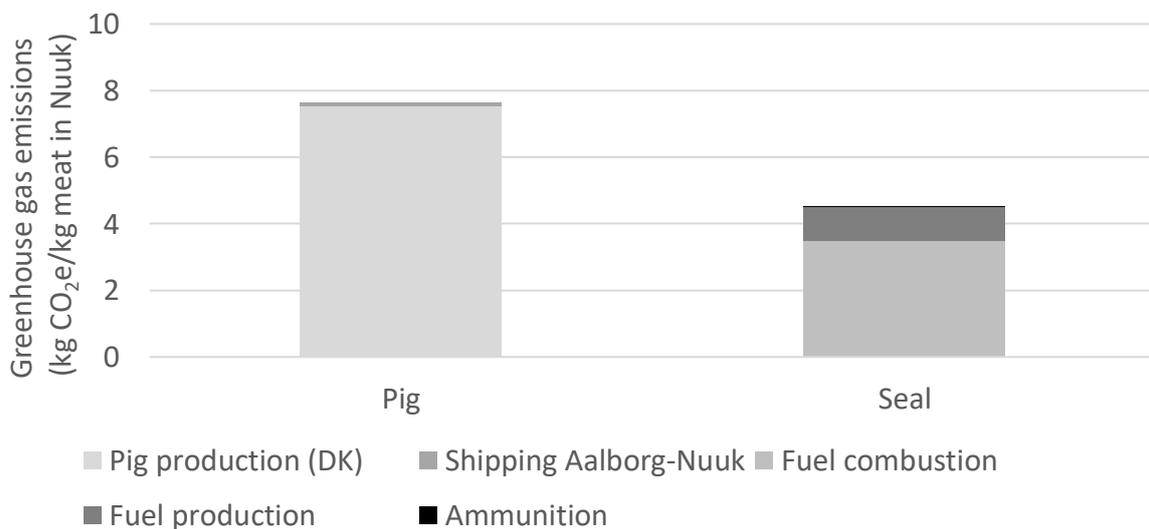


Fig. 2 Greenhouse gas emissions of imported pig (supply chain starting with feed production, pig production in Denmark and shipping to Nuuk, Greenland) and locally hunted seal meat (worst case scenario).

When comparing the worst-case scenario for seal meat with imported pig meat, the emissions of pig meat are clearly higher (close to double for the worst seal scenario and four times the best seal scenario) and are mainly generated in the production phase, not due to shipping.

A qualitative analysis (advantage versus disadvantage) was also made on other relevant aspects of the two supply chains studies, such as Greenhouse gas emission, land and pesticide use, animal welfare, nutritional content, marine resource use sustainability, risk for content of contaminants and antibiotic traces. Most disadvantage was attributed to the Danish pig production.

The pilot study points to seal meat from hunting as a better animal food option in Greenland than imported pig meat from a climate perspective, but also in terms of a number of other aspects assessed qualitatively. While this conclusion rests on limited data and needs further exploration, it clearly contrasts with the stigmatization on marine mammals as food resource.

The selection of hunters was not random (based on availability) and does not represent all Greenlandic seal hunting, this study should therefore be seen as a pilot study to quantify the environmental impacts of seal hunting in relation to an alternative food source, rather than as a fully representative comparison. A more refined study is warranted, also expanded to other alternative proteins, included plant proteins.

6. USE OF RESULTS

Results will be presented in a report and submitted for publication. They will be used to inform (through NAMMCO website and possibly in presentations in different fora) about the relative environmental performance of consuming in Greenland seal products versus an alternative imported animal-based food.

The result of the pilot study will be used for applying for funds to refine and extend the Greenlandic study and also initiate an LCA analysis in all NAMMCO countries, i.e., conduct LCA analysis of the environmental impacts of consuming products from marine mammals caught in the different countries versus consuming alternative protein product, locally produced or imported and including plant protein.

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