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FOOD SUPPLY CHAIN



Attitudes towards PEF and environmental labelling in the Nordic agri-food sector-case studies

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SUMMARY

The PEF -“project” is now in its transition phase and an implementation phase is the next step. Included in the implementation of PEF is the communication of PEF results to consumer (B2C) and business to business (B2B) communication. A labelling scheme has been identified as one potential way of communicating PEF to consumers. However, before a label can be decided upon and communicated, the PEF methodology needs to be known and accepted by stakeholders along the Nordic agri-food chain. The Nordic Environmental Footprint (NEF) group requested the NordPEF group to examine the attitudes to PEF as concept and how PEF can effectively be explained to consumers and farmers so that they accept the need for such type of information for their decision making. The NEF group also called for the NordPEF group to perform a more in-dept expert analysis of how environmental properties of food and other agriculture products may be communicated to the stakeholders; identifying possible barriers, how environmental information is communicated today and with what results, and if there is a need for a PEF label.

Stakeholders in the Nordic Agri food chains representing different types of food chains were contacted, such as the Norwegian seafood association in Norway, Atria in Finland, Danish Crown in Denmark and Lantmännen in Sweden. Stakeholders were contacted based on share of the national markets and their influence in the agri-food chain. The number of respondents added up to 17, with representatives from the food industry, retail and business associations who represented primary producers. Questions were asked on knowledge of PEF, attitudes to a PEF methodology and labelling.

All respondents state that PEF is relevant to them and that there is a need for PEF. However, the knowledge of PEF varies greatly between the different organizations, and it ranges from no knowledge at all (prior to the interview) to active involvement in the development of PEF. About half of the respondents had heard of PEF prior to the interview, but many lack the basic understanding of PEF.

There is more to PEF than the labelling and it was identified that retailers have a big responsibility for displaying best PEF products as the labelling per se is not enough for consumer to choose that product and retailers could also act as gatekeepers and control what types of products that enters the supermarket shelves.

Attitudes towards environmental labelling respondents were positive to a label but emphasized that it needs to be simple yet accurately reflecting the environmental impact, which is the main challenge for the PEF label. The respondents agrees that the best way of communicating B2B was using fact sheets.

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1 Introduction

The PEF guide was developed as one of the building blocks of the Flagship initiative of the Europe 2020 Strategy – “A Resource-Efficient Europe.” (EC, 2011; Zampori and Pant, 2019). In April 2013 the Commission adopted Recommendation 2013/179/EU on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations, which had the Product Environmental Footprint (PEF) Guide⁵ as its annex. The aim was to establish a common methodological approach to enable EU member states to assess, display and benchmark the environmental performance of products, services and organisations. The PEF methodology is based on Life Cycle Assessment (LCA) and the 16 environmental impact categories included are relying on scientifically sound impact assessment methods that are agreed at international level (Zampori and Pant, 2019).

The PEF -“project” is now in its transition phase and an implementation phase is the next step. Included in the implementation of PEF is the communication of PEF results to consumer (B2C) and business to business (B2B) communication. A labelling scheme has been identified as one potential way of communicating PEF to consumers. However, before a label can be decided upon and communicated, the PEF methodology needs to be known and accepted by stakeholders along the Nordic agri-food chain. The Nordic Environmental Footprint (NEF) group requested the NordPEF group to examine the attitudes to PEF as concept and how PEF can effectively be explained to consumers and farmers so that they accept the need for such type of information for their decision making.

The NEF group also called for the NordPEF group to perform a more in-dept expert analysis of how environmental properties of food and other agriculture products may be communicated to the stakeholders; identifying possible barriers, how environmental information is communicated today and with what results, and if there is a need for a PEF label.

The EC report on communication “Assessment of different communication vehicles for providing Environmental Footprint information” from 2018 (Lupiáñez-Villanueva et al., 2018) formed a basis to the work performed in this project. To be able to understand the attitude, opportunities and barriers towards using PEF results in the communication among stakeholder’s interviews were conducted in each Nordic country (SE, DK, NO, FI) with agri-food stakeholders along the supply chain.

1.1 Case studies

Stakeholders in the Nordic Agri food chains representing different types of food chains were contacted, such as the Norwegian seafood association in Norway, Atria in Finland, Danish Crown in Denmark and Lantmännen in Sweden. Stakeholders were contacted

based on share of the national markets and their influence in the agri-food chain. The number of respondents added up to 17, with representatives from the food industry, retail and business associations who represented primary producers. A list of the respondents can be found in Appendix I (respondents wishing to remain anonymous have been excluded).

The method consisted of emailing persons at sustainability departments, often known contacts to the interviewers, in order to arrange an approx. 1,5 hour interview on Skype. The email consisted information about the project, a summary of PEF with examples of different labels and an invitation to the workshop that was arranged in the project. Organizations that did not answer to the email were not contacted again because of budget limitations. The interviews were held in a free form and a list of questions was used to form a basis, but additional questions were also asked depending on the replies from the respondent. The interviews sometimes needed more explanations of PEF and led to overall discussions on how to communicate environmental information. Notes were taken during the interview and stored in a shared project folder. In total, three project members carried out the interviews.

Questions were asked on knowledge of PEF, attitudes to a PEF methodology and labelling. The interview questions are listed below.

Questions, start the interview with:

- Do you provide environmental information to consumers?
- To business associations: Do your members provide environmental information to consumers?
- If yes, what type of information? How has the feedback been?
- If no, why not?
- Have you planned to provide environmental information to consumers?
- If yes, how and what type of information, e.g. only carbon footprint or different categories of impact?

PEF methodology

- To producers: Is PEF relevant for your products?
- To business associations: Is PEF relevant for the products your members sell?
- To producers: Have you or your business association been involved in the development of PEF?
- To business associations: Have you or your members been involved in the development of PEF?
- If PEF is not relevant, please elaborate
- Are there benefits of using PEF?
- Are there barriers/cons to using PEF?
- What price level for performing a PEF is reasonable for you/your producers?

Communication towards producers

- An idea is to develop communication materials about PEF to producers, as small easy to read leaflet. Would this be effective to communicate the benefits with PEF?
- If yes/no, please explain further

Communication towards consumers (word document with labels and short explanation for each format)

- What is your opinion about the labels?
- Which one do you prefer for your consumers? Why?
- Other ideas of communication vehicles?
- To business associations: Is there a need for a label

1.1.1.1 The knowledge of PEF in the Nordic agri-food chain

More than half of the respondents communicate environmental information to consumers today, via packaging, websites and campaigns, often in a qualitative manner and not quantitative with a number on the environmental impact. Identified as main drivers for calculating their environmental footprint of products or services was, as was for SME's in the report by Lupiáñez-Villanueva et al., (2018), to cover organizational awareness, customer satisfaction and improvements of environmental practices.

All respondents state that PEF is relevant to them and that there is a need for PEF. However, the knowledge of PEF varies greatly between the different organizations, and it ranges from no knowledge at all (prior to the interview) to active involvement in the development of PEF. About half of the respondents had heard of PEF prior to the interview, but many lack the basic understanding of PEF, e.g. that it is led by The Commission in order to create a single market for green products with an agreed methodology, that it introduces PEFCR:s that allow for benchmarking of products, that there is a following policy phase etc. Interview results showed that at least one Norwegian organization, at least one Finnish organization and several Danish organizations have participated either directly or indirectly in the development of PEF. There was no indication that any Swedish organization had taken part in the development. Following that, most organizations are carefully positive to PEF but want to know how it will play out for them and their products and are waiting to see what will come out of it before making up their minds about PEF, e.g. how will the methodology and PEFCR be defined for my products, will a traffic light label be implemented and will my products be red, will my competitor also have a PEF, will it be mandatory etc. The respondents also answered that PEF has to be easy for all stakeholders to understand and to communicate, and that it has to be easy to implement. It should not be too costly to implement, i.e. there should be a balance between the cost and the return of the investment, or the cost should be equal to all implying that PEF must be mandatory. Three interview respondents are skeptical to PEF because of how the methodology is defined today regarding included environmental impact categories, functional unit and allocation rules.

1.1.1.2 Benefits and barriers to using PEF

The respondents mentioned several things they thought was positive with PEF:

- It includes several environmental impacts, compared to other initiatives that are single issue initiatives
- It is possible to benchmark against competitors' products
- It is 3rd party verified, which means increased credibility
- Potentially it could be used as a scoring system to manage environmental performance of your product portfolio, i.e. set targets and follow up the portfolio

- It is easier, especially for SME's to use existing methodology for communication, rather than having to invent something new
- It would truly mean a level playing field
- It could be used in operations management as decision support, depending on whether the methodology captures improvement of practice or not
- It could be used as a starting basis for discussions between B2B, which should also include price, e.g. how much is environmental performance valued in monetary terms?

They also mentioned several risks or potentially negative things with PEF:

- There is a risk that the consumer will focus too much on choosing a product with the best environmental footprint in a category, rather than reflecting on what category has the lowest environmental impact. This potential problem is valid when a product may be substituted with another one, e.g. oat drink with milk in porridge, beef mince with soy mince in tacos etc. Respondents also mentioned that the substitution is not always evident.
- It would lead to increased costs and the producers state that it is almost impossible to get more paid for sustainable food products
- The complexity could be considerably higher for organizations with diverse product portfolios
- There are uncertainties whether PEF (the label) would be effective in those cases when existing labels are already effective, e.g. the "From Sweden" label is especially effective when it comes to meat products.
- A lot of data is needed especially from primary production
- LCA competence is needed and if that competence is not in-house it would mean that one would need to hire a consultant. It would be both costly but it would also be a barrier in itself to make that decision
- There are some actors that will lose on PEF, and they will put up barriers towards PEF
- Perhaps there is no one that will go first and no first-followers?

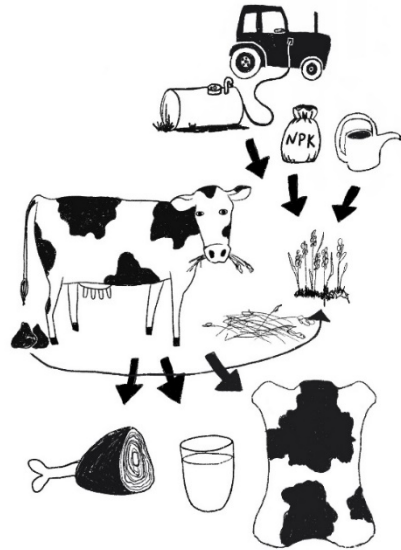
1.1.2 Suggestion to communication material PEF methodology

Several respondents to the interview had no knowledge of PEF methodology and one of the requests from the NEF group was to suggest an easy way of explaining PEF in a convincing manner. Below is a suggestion from the NordPEF group on how PEF could be explained, materialized as a label.



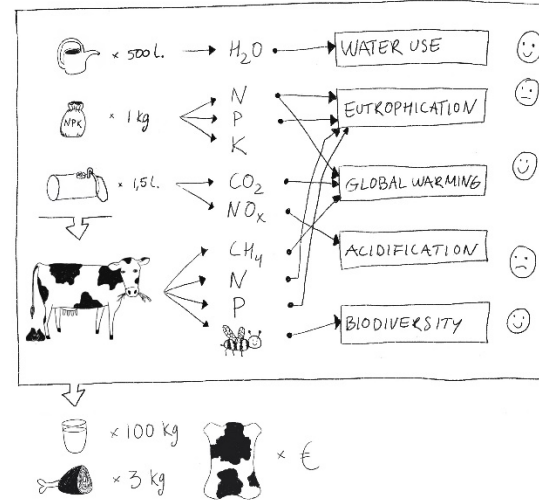
There are many products to choose from at the supermarket today. The consumer wants to know that the product one buy is the most sustainable on the market. How does one know what product to choose?

About half of European consumers think it is not easy to differentiate between environmentally friendly and other products and only about half of them trust producers' claims about environmental performance



At the farm level, with inputs such as diesel, fertiliser and water, the output is food and other products. The activities on the farm give rise to greenhouse gas and other emissions.

Product Environmental Footprint (PEF) is a common way of measuring environmental performance for products.



A PEF study measures all quantifiable environmental impacts over the life cycle of your product, including emissions to water, air and soil, resource use and depletion, and impacts from land and water use.

The PEF results can be used to identify improvement possibilities in your production and in dialogue with your buyers.



The PEF results can also be used on a consumer label to compare your products to similar products or to the European benchmark. This gives you competitive advantage and credibility and the consumer can choose the most sustainable product.

1.1.3 Environmental labelling

In the Lupiáñez-Villanueva et al., (2018) report an SMEs' online survey showed that a significant number of mid-sized SMEs worked actively with environmental issues. About half of the SMEs consulted had an internal environmental policy in place, often based on LCA indicators and covering topics such as climate change, water use, land use, but also topics related to human health, such as toxicity and cancer, and natural resources. About one third of the SMEs publish information on environmental issues targeted at their clients (Lupiáñez-Villanueva et al., (2018).

EU consumers have been concerned about the environment for some time (Flash Eurobarometer, 2009) and are interested in receiving information about the environmental impact of products, but the environmental performance of products is not among the main criteria affecting consumers' purchase decisions today (Lupiáñez-Villanueva et al., 2018). Currently price, quality, brand and availability are more relevant considerations in many product categories.

However, there are today several national environmental labels and the EU has the EU Eco label. A label should work as an instrument that indirectly reduces the environmental impact and GHG emissions of food. This can according to be Vandenberg *et al.*, 2011 be done in two ways; either by influencing consumer choices to stimulate a move away from products with high environmental impact to less environmentally damaging products, and/or by encouraging producers to identify efficiencies in GHG reduction throughout the supply chain.

Important parameters for an environmental labelling are that consumers have trust to the label, which means that third party verification is necessary to guarantee and enhance the reliability and credibility, and hence effectiveness, of the label. An environmental label must, therefore, be introduced carefully so that it attracts consumer attention in competition with all the other information such as brands, fair-trade labels, country of origin, different quality labels and nutrition information (Röös and Tjärnemo, 2011; Thøgersen, 2000). It has also been identified that a label needs the support of a strong authority and stakeholder commitment and a dedicated long-term campaign to create awareness and trust in the label. These parameters have also been identified as important for an implementation of a PEF-label (Lupiáñez-Villanueva et al., 2018).

For food products it has been shown that a label has some effect on sales. Hainmüller et al. (2011), found that the sales of Fair-Trade certified coffee in the USA, rose by 10 percent when displayed next to unlabeled coffee in supermarkets. Vanclay et al. (2011) undertook a study in a regular grocery store in Australia with a demographic similar to the median for the whole country. Thirty-seven products in five product lines of high-volumes sale items (milk, spreadable butter, canned tomatoes, bottled water, and non-perishable pet foods) were labeled to indicate embodied GHG emissions and sales were recorded over a three-month period. Green (below average), yellow (near average), and black (above average) footprints indicated GHG emissions embodied in groceries. Sales increased with 4 % compared to unmarked products when climate information was provided the consumers. When green-labeled products were also the cheapest, the shift was more substantial with a 20 percent significant switch from non-labelled to

(Vanclay et al., 2011). Matsdotter (2013), displayed milk cartoons with a climate labels in a supermarket and sales increase with 6% compared to unlabeled cartoons.

One of the biggest obstacles for a successful labelling scheme is that strong habits govern food consumption decisions (Röös and Tjärnemo, 2011) and that (in general) climate certified products often comes with a higher price. It might be that, in order to change the behavior of most consumers, the climate certified product would also need to be within the cheapest product category, i.e. lower in price compared to the conventional produced product (Röös and Tjärnemo, 2011; Vanclay et al. (2011). However, the aim of PEF is to be widespread so a PEF label will not automatically be related to high price products.

In the “PEF-project” one of the aims has been to investigate the possibility of communication the PEF/PEFCR results to consumers, implemented as an environmental label. During the PEF pilot phase, the development and testing of communication vehicles for communicating PEF information was performed over a three-year period. It involved sector associations; large, medium and small enterprises; environmental sustainability experts and European citizens. There were 51 initiatives spanning a wide range of sectors, 27 concerned PEF communication in business to business (B2B) contexts and 24 for business to consumer (B2C). A range of communication vehicles were tested including labels, declarations, reports, web pages, videos, banner, info-graphics, ads and newsletters (Lupiáñez-Villanueva et al., 2018).

Below follows the interview questions asked to the respondents and the results of the interviews.

1.1.3.1 Interview questions on environmental labelling

The questions asked at the interview with the 17 respondents from the agri-food sector were:

Environmental information:

Do you provide environmental information to you customers today?

If yes, what type of information?

Communication towards producers:

An idea is to develop communication materials about PEF to producers, as small easy to read leaflet.

Would this be effective to communicate the benefits with PEF?

If yes/no, please explain further

Labelling:

What is your opinion about environmental labelling?

Which one do you prefer for your consumers? Why? (EG traffic light, factsheet, spider diagram etc) Examples provided, see Figure 1.



**DIFFERENT WAYS IN WHICH
PRODUCT ENVIRONMENTAL INFORMATION
COULD BE PRESENTED**



http://www.ec.europa.eu/environment/eussd/smgp/communication/product_information.htm

Figure 1. Examples of communication vehicles for business to consumer and Business to Business provided by the EU (Lupianez-Villanueva et al., 2018).

Other ideas of communication vehicles?

Below are the results from the interviews shown, divided into sections.

1.1.3.2 Communicating environmental information

There is more to PEF than the labelling and it was identified that retailers have a big responsibility for displaying best PEF products as the labelling per se is not enough for consumer to choose that product and retailers could also act as gatekeepers and control what types of products that enters the supermarket shelves.

Most respondents communicate some type of environmental information to their customers. No respondent communicates absolute number on environmental impact of products but provide information on self-improvements such as less packaging, reducing their carbon footprint with x %, using bioenergy etc.

The other type of environmental information provided were through labels e.g. MSC for fisk, Organic label, "From Sweden" and Eco labels.

Attitudes towards environmental labelling respondents were positive to a label but emphasized that it needs to be simple yet accurately reflecting the environmental impact, which is the main challenge for the PEF label. Similar results have been found in the pilot studies for other sectors (Lupianez-Villanueva et al., 2018).

Respondents raised concerns towards what the benchmark was going to be set and if comparison to one's own previous performance was done, as this it would give an excellent result to those which performed bad in the first run. Most of the respondents also found that the comparisons between product categories that will be made by a consumer is a tricky issue to solve and that this is an issue for the respondents.

One organization was negative to a PEF environmental label; Organic Denmark. Organic Denmark does not think a new label will benefit their products and do not in any way recommend a new environmental label for food. Organic Denmark has an "organic label" which is well established and has high consumer recognition and trust. According to Organic Denmark "new labels will only cause confusion and may actually reduce environmentally positive action from consumers".

1.1.3.3 Thoughts on communication vehicles

We found that for B2C communication more work is needed to find the most suitable label as no consensus on how the label should look like and contain was found among the respondents. Many respondents wanted a simple label, just a logo e.g. as the EU Eco label.

Lantmannen Sweden- a three tiered label to rough (or the traffic light, with a barcode where additional information can be found for interested consumers. However, Lantmännen in Sweden, preferred a 5-tier label (e.g. as the existing Energy label) and don't think single score can work. The Finnish company Atria also thought that

introducing a label similar to what already exists and has high trustworthiness, e.g. the Energy label, consumers may accept this label faster.

It is important for the respondents that the consumer trust the label so as when seeing the label trust the methodology behind it.

We found that for B2B communication there was more consensus that a fact sheet would be the most useful as more and complex information can be communicated B2B.

1.2 Discussion and conclusion

1.2.1 Attitudes to and awareness of PEF methodology

The knowledge of PEF methodology was low in the group that was interviewed, and it is important that information on PEF is communicated more strongly for the concept to be accepted and tried. As Lupiáñez-Villanueva et al., states in the EC report from 2018, it is crucial to “raise awareness about the agreed PEF/OEF method among all the stakeholders emphasising the beneficial impact of the environmental sustainability for current and future generations” to achieve an impact on companies and consumers.

- Action from the EU commission to communicate what PEF is and the need to act is of importance and vital if PEF shall be accepted and used widely in the near future.
- There is a need for digital information linked to the product that provides more detailed information about the PEF. It would partly serve a similar purpose as the label, i.e. boost the credibility, but it can also be used in quantified self-services, e.g. analysis of last month grocery shopping and how the consumption could be changed to meet one's individual targets.
- More organizations need to be convinced to participate actively, rather than standing aside and see what comes out of it.
- There are several new initiatives on communicating environmental information to consumers, based on a pragmatic approach and done by individual actors or smaller consortia. There are risks with these initiatives that consumers stop using environmental information in their decisions, however the benefits of not waiting on PEF have been assessed to outweigh the risks. Thus, there is a strong need for PEF.
- One of the tasks in the project was to examine how PEF can effectively be explained to consumers and farmers so that they accept the need for such type of information for their decision making. One critical question that arose in the project is who will communicate PEF to consumers and farmers? Based on the interviews neither the producers nor the business associations are ready to communicate to farmers. Instead they want to wait and see what PEF will mean to them before promoting it to the farmers. The retailers are also not ready to communicate PEF to consumers. Previous studies argue that there is a need for a strong stakeholder commitment, and therefore also retailers and producers need to come aboard.

1.2.2 Labelling

The testing on communication vehicles towards consumers during the pilot phase of PEF resulted in these conclusions (Lupiáñez-Villanueva et al., 2018):

- with prices being equal, a high environmental score on a label has a very large positive and significant effect on consumer choice;
- an environmental label is seen as important on products that are new or big, expensive, durable items (e.g. cars);
- an environmental label is seen as important on products that impact consumers' own or their children's health.

The authors could identify important parameters for an effective communication of the environmental footprint to consumers:

- Translate complex results into simple information: clarity, readability and transparency are essential as consumers find many of the Environmental Footprint impact categories difficult to grasp.
- In line with these difficulties, consumers prefer the use of graphics, bars and colour scales to numbers, scientific terms.
- Consumers gave high support to the traffic light (better, average and worse represented with colours) and to the energy label format (A-E performance scale).
- Avoid information overload. Consumers indicated that showing 3 midpoints is sufficient.
- Certification proves an important element to increase trustworthiness of information. Certification must be third party or come from a consumer association.

It can be concluded that the results from our interviews are in line with the parameters stated above. A PEF label is needed but it is a complex matter to unite over a suitable label for consumer communication. Several respondents thought a traffic light was a good suggestion but there were no unanimous view on how a label should be designed.

The respondents thought that B2B has more chance of success than B2C as it is easier to communicate in that way and PEF can have an impact and results in less environmental impact from products. For B2B a fact sheet or similar was thought as a good type of communication vehicle.

Lupiáñez-Villanueva et al., (2018) found in the testing of communication vehicles that also that clarity and simplicity is important, which was also expressed in by respondents in our interviews. Business partners expect more detailed information and are more likely to have the expertise to understand it. However, complex technical messages need to be clearly explained or simplified as it is non-experts in LCA involved.

As for B2C communication, verification was seen as very important to guarantee credibility and these results were also found by Lupiáñez-Villanueva et al., (2018). It can be concluded that the results from the interviews regarding PEF labelling were in line with the results generated by Lupiáñez-Villanueva et al., (2018) concerning attitudes towards labelling and the important parameters for effective communication.

2 References

EC, 2011. European Commission 2011: COM(2011) 571 final: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Roadmap to a Resource Efficient Europe.

Flash EUbarometer, 2009. Europeans' attitudes towards the issue of sustainable consumption and production, Flash EB Series #256, The Gallup Organisation, Hungary

Lupiáñez-Villanueva, F., Tornese, P., Veltri, G.A. and Gaskell, G., 2018. Assessment of different communication vehicles for providing Environmental Footprint information. Request for Specific Services for the implementation of the Framework Contract no. EAHC-2011-CP-01, Final Report

Röös, E. and Tjärnemo, H. (2011). Challenges of carbon labeling of food products: a consumer research perspective, *British Food Journal*, 113(8), 982 – 996

Thøgersen, J., Haugaard, P. and Olesen, A. (2010). Consumer responses to ecolabels, *European Journal of Marketing*, 44(11/12), 1787 – 1810

Vanclay, J. K., Shortiss, J., Aulsebrook, S., Gillespie, A. M., Howell, B. C., Johanni, R. and Yates, J. (2011). Customer response to carbon labeling of groceries. *Journal of Consumer Policy*, 34(1), 153-160

Vandenbergh, M.P., Dietz, T. and Stern, P.C. (2011). Time to try Carbon Labeling. *Nature Climate Change* 1:4-6

Zampori, L. and Pant, R., 2019. Suggestions for updating the Product Environmental Footprint (PEF) method, EUR 29682 EN, Publications Office of the European Union, Luxembourg

APPENDIX I

List of respondents:

Lantmännen, Sweden

Orkla, Sweden

Atria, Finland

Findus, Sweden

Svenskt Kött; Sweden

Lantbrukarnas Riksförbund (LRF); Sweden

COOP; Sweden

Arla, Denmark

Organic Denmark, Denmark

Danish Crown, Denmark

Sjömat Norge, Norway

Excluded are respondents who wished to be anonymous (#6).