



Manifestations of “less and better meat” in the values and actions of Finnish natural pasture-raised beef buyers

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Tiivistelmä - Referat - Abstract Maailmassa kulutetaan enemmän lihaa kuin koskaan ennen, mikä aiheuttaa yhä enemmän sosiaalisia, ympäristöllisiä ja taloudellisia ongelmia. Viime aikoina useat tutkijat ovat tarkastelleet kuluttajien halukkuutta ja kykyä muutokseen, ja paljon toivoa on asetettu kuluttajien rooliin aktiivisena osallistujana kestävässä ravitsemusmuutoksessa. Siksi monia kuluttajalähtöisiä strategioita on kehitetty auttamaan lihankulutuksen vähentämisessä ja edistämään siirtymistä pienempiin määriin eläinperäisiä ruokia viemättä muutosta äärimmäisyyksiin (ei lihaa/vegaani-ideologia). "Vähemmän ja parempaa" on yksi näistä strategioista. Se rohkaisee paitsi syömään vähemmän lihaa myös korvaamaan jäljellä olevan lihan "paremmalla" lihalla, jolla on positiivisia vaikutuksia ympäristöön sekä yhteiskuntaan, ja jonka mahdolliset negatiiviset vaikutukset ovat mahdollisimman pieniä. Tässä yhteydessä "paremmalla lihalla" tarkoitetaan ekstsensivisesti tuotettua luonnonlaitumella kasvatettua naudanlihaa (luonnonlaidunlihaa), jolla on positiivisia vaikutuksia esimerkiksi eläinten hyvinvointiin, biodiversiteettiin sekä viljelijöiden toimeentuloon. Tämän tutkimuksen tavoitteena on ymmärtää, millainen yhteys "vähemmän" ja "paremman" välillä on luonnonlaidunlihan ostajien keskuudessa, ja onko heidän kulutustottumuksissaan tilaa kestäväälle muutokselle. "Vähemmän ja parempaa" on suhteellisen uusi strategia, eikä sitä ole aiemmin tutkittu niiden kuluttajien näkökulmasta, jotka jo valitsevat "parempaa lihaa". Aineisto kerättiin yhteistyössä Bosgård-nimisen maatilan kanssa, joka tuottaa luomu-luonnonlaidunlihaa. Aluksi tilan asiakkaille lähetettiin sähköpostikysely, joka sai 126 vastausta. Tämän jälkeen kuutta vastaajaa haastateltiin. Tutkimuksen tulokset viittaavat siihen, että vaikka paremman lihan ostamisella ja vähemmän lihan syömisellä on selvä yhteys, sillä on myös kääntöpuolensa: monet kuluttajat syövät entistä enemmän lihaa "paremman" lihan ollessa helposti saatavilla. Lihon vähentämisen motiivit vaihtelevat suuresti, eivätkä ympäristösyöt ole niiden kärjessä. Vaikuttaa siltä, että lihansyönnin vähentämisestä luonnonlaidunlihan ostajien keskuudessa varjostavat mielihyvälähtöisyys, lihantuotannon negatiivisten vaikutusten laajuuden heikko ymmärrys, vahva luottamus suomalaisen lihantuotantoon nykyisellään sekä polarisoituneen tiedon ja asenteiden aiheuttama vastustus. Vaikka useat osallistujat olivat löytäneet heille sopivia kestävämpiä ruokailuratkaisuja, muutos ei välttämättä ole laajuudeltaan riittävä. Tämä tutkimus kyseenalaistaa, voiko "vähemmän ja parempaa" olla riittävän vahva ratkaisu tukeakseen kestävää ravitsemusmuutosta sellaisena kuin se on tällä hetkellä esitetty.		
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<p>Tiivistelmä - Referat - Abstract</p> <p>More meat is consumed in the world than ever before causing an intensifying number of social, environmental, and economic problems. Lately, consumers’ willingness for change has been examined by several scholars. Plenty of hope is placed on the consumers’ role as active participants in the sustainable nutrition transition. Therefore, many consumer-based strategies have been conceptualized to reduce meat consumption and thus enhance the transition to less animal-based proteins without taking it to the extreme (no meat/vegan ideology). “Less and better” is one of these strategies. It encourages, not only to eat less meat but also to replace the remaining meat with “better” meaning meat with positive outcomes and smaller negative environmental and social impacts. In this context “better meat” refers to extensively produced natural pasture-raised beef (luonnonlaidunliha) which has positive impacts on for instance animal wellbeing, biodiversity, and farmers’ livelihoods. This research aims to understand if buyers of “better meat” make linkages between “less” and “better” and whether they perceive the need for a sustainable protein transition. Being a relatively new approach, “less and better” has not been studied before from the perspective of consumers who already choose “better”.</p> <p>The data were collected in cooperation with Bosgård farm, which produces natural pasture-raised beef. Firstly, an email survey was sent out to the customers of the farm receiving 126 responses and secondly, six consumers were interviewed to gather a more in-depth understanding of the consumer perspectives. The results suggest that while a clear linkage between buying better and eating less exist, it also has a reverse side; many consumers are consuming more meat due to the access to what they perceive as better. The motives for meat reduction vary widely yet environmental and climate change reasons have not reached a significant position. It seems that meat reduction amongst the buyers of “better” meat is shadowed by pleasure orientation, lack of understanding of the scope of negative impacts of meat production and of the message “less meat”, high trust in Finnish meat production as such, and resistance to change caused by polarized information and attitudes. Even though many participants had found ways to incorporate more sustainable eating habits into their everyday lives and meat’s position at the top of the food hierarchy is slowly changing, the results do not seem to correspond to high expectations held by the proponents of the concept. Though this is a small study, it questions a validity of the claim that “less and better” can be a sufficiently strong solution to support a sustainable nutrition transition in the way it is currently being presented.</p>		
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Abbreviations

GHG	Greenhouse Gas
GMO	Genetically Modified Organism
NGO	Non-Governmental Organization
WCRF	World Cancer Research Fund

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1 Introduction

1.1 Background

People are consuming more meat than ever before. In 1961 the global average meat consumption was 23 kg per person per year whereas in 2018 the amount was already 43 kg (slaughter weight) (FAOSTAT, 2022). In Finland, the amount was almost twice as much - around 80 kg (LUKE, 2020a). This so-called nutrition transition or “meatification” of diets first started in Western countries where rising living standards and urbanization led to higher consumption of meat and other animal-based proteins (Sans & Combris, 2015). In the past decades, the nutrition transition has been observed also in developing countries where more and more people can now afford to purchase meat for functional (nutritional), sensory (taste) and symbolic (status) reasons (Dagevos, 2021).

Meat production and consumption contribute significantly to many environmental problems such as climate change, disruption of the nitrogen cycle, loss of biodiversity and excess use of land and water resources (Steinfeld et al., 2006). Livestock production occupies about 70 % of all agricultural land and 30 % of the earth’s total land surface (Steinfeld et al., 2006). It accounts for around 18 % of global CO₂ emissions and 37 % of anthropogenic methane emissions (Steinfeld et al., 2006). In addition, excessive meat consumption poses a threat to human health since it increases the risk of for example type II diabetes, cardiovascular diseases, intestinal cancers, and obesity (Fogelholm et al., 2014). Especially intensive meat production is associated with numerous other concerns ranging from animal welfare to the spread of antibiotic-resistant bacteria and exceeding the planet’s carrying capacity (Laestadius et al., 2016). The impacts originate from all aspects of meat production from land conversion into grazing land to transportation and processing (Steinfeld et al., 2006). Cattle, particularly, is a source of substantial negative effects in comparison to other livestock (Steinfeld et al., 2006).

Reducing meat consumption is consistently proposed as the most effective diet-related action to reduce the environmental and social impacts of the food system (e.g., Mason & Lang, 2017; Takacs et al., 2022). Yet, this does not automatically mean that meat should be given up completely. Studies have found that following a diet that does not include any meat is not necessary nor optimal when considering both health and the environment (e.g., Mason & Lang, 2017; van Dooren et al., 2014; Willett et al., 2019). FAO defines

sustainable healthy diets as “*-dietary patterns that promote all dimensions of individuals’ health and wellbeing; have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable*” (FAO & WHO, 2019). While vegan and vegetarian diets receive high scores in terms of environmental sustainability, they may not always fulfil the FAOs definition of being nutritionally sufficient and socio-culturally acceptable (Mason & Lang, 2017). Nevertheless, the amount of consumed meat should drop immensely, and more attention should be paid to the production methods. In high-income countries, this realization has started a reverse nutrition transition or, in other words, a protein transition. Protein transition is based on respecting environmental limits and following dietary guidelines instead of neglecting them (Dagevos, 2021). Shifting from animal-based proteins to alternative protein sources is central (Dagevos, 2021). Yet so far it has been slow, and consumers showed to be reluctant.

Lately, many studies have focused on consumers’ willingness to change their meat consumption habits (e.g., Dagevos & Voordouw, 2013; Niva & Vainio, 2021; Pohjolainen et al., 2016). They demonstrated that, while only a small minority is willing to stop eating meat completely, a significant part of consumers is willing to reduce the amount of meat they are eating or have already done so. This seems to be a recurring trend in Finland as well as in other high-income countries. For instance, according to Pohjolainen et al. (2016), 25 % of Finnish participants (n = 1890) reported being willing to reduce their meat consumption for environmental reasons. Yet, another study that analysed meat consumption patterns among Finnish consumers reported that 13 % of the participants (n = 1623) had already shifted their diets towards more vegetables and less meat and 39 % of the participants were in the middle of a change towards reduced use of meat (Latvala et al., 2012). The willingness to change is dependent on, for instance, the consumer’s knowledge, dietary habits, and personal value system; which values lead person’s behaviour (Mason & Lang, 2017). These values can be, for instance, animal welfare, price, flavour, environmental quality, and fairness (Resare Sahlin et al., 2020).

Many consumer-based strategies have been conceptualized to reduce meat consumption and thus enhance protein transition. These strategies include for example “meatless days”, “less and better” and “less and more varied”. Many institutions and organizations have proposed especially “less and better” as a solution for sustainable diets and a great deal

of hope is placed on consumers willing to follow strategies alike (Dagevos, 2021; MacMillan & Middleton, 2010; Resare Sahlin et al., 2020). This study focuses on the concept of “less and better” (MacMillan & Middleton, 2010). It encourages, not only to eat less meat but also to replace the remaining meat with “better” meaning meat with positive outcomes and smaller negative environmental and social impacts (Sahlin & Trewern, 2022). In this study “better meat” refers to extensively produced natural pasture-raised beef (luonnonlaidunliha) which has positive impacts on for instance animal wellbeing, biodiversity, and farmers’ livelihoods. However, the meaning of “better” is debatable and depending on the source can mean different things. Therefore, the variety of definitions is discussed more in detail later in the study.

1.2 Research questions

I approach the concept of “less and better” starting from its “better” -part by studying the consumption-related values and actions of Finnish natural pasture-raised beef buyers. Then I proceed to look at “less” to gain more concrete answers about how much meat this consumer group considers sufficient and to what degree are they willing to change their dietary habits. I aspire to understand whether there is a linkage between “less” and “better” and room for a sustainable protein transition. Being a relatively new approach, the linkage between the two aspects of “less and better” has not been studied much before, especially from the perspective of consumers who already purchase “better” meat. This research focuses mainly on beef production and consumption since it already receives the most attention within the livestock sector for its environmental and social impacts (Gerber et al., 2015).

The research questions are the following:

- What is meant by “better” and is there a linkage between “better” and “less” according to the buyers of natural pasture-raised beef?
- How do the buyers of natural pasture-raised beef understand the role of meat as a part of a sustainable diet?

2 Literature review

2.1 Finnish meat production and consumption

In 2020 about 87 million kilograms of beef, 175 million kilograms of pork, 145 kilograms of poultry and 1,4 million kilograms of lamb were produced in Finland (slaughter weight) (LUKE, 2020b). Whilst Finland is part of the 20 largest meat producer countries in Europe, its production accounts for a small percentage of the total meat production in Europe. For instance, Finnish beef production accounted only for 2 % of the total EU production (LUKE, 2020b). In comparison, one of the largest meat producers France, produced 1 435 million kilograms of beef and 2 201 million kilograms of pork in 2020 (LUKE, 2020b). Yet, when compared to the Finnish population size, the amount is considerable since the Finnish population is equivalent to approximately 0,7% of the total European population (Eurostat, 2018).

In Finland 83% of the consumed meat is domestic and around 15 % of all the meat eaten is beef (LUKE, 2020c). Finnish people consume on average about 550 g of cooked red meat (including game and processed meat) and about 215 g of poultry per week (LUKE, 2020c). A visible trend in Finnish meat consumption habits is decreasing popularity of pork and the rising consumption of poultry; the consumption of pork decreased by about 3 % between 2021 and 2022 while the consumption of poultry increased by an equal amount (LUKE, 2020c). This was possibly influenced by growing concerns related to health, the environment, and animal welfare (LUKE, 2020c).

2.2 Protein transition

2.2.1 Consumer groups

Recently, studies concerning meat consumption habits have raised a discussion about the heterogeneity of consumer groups and their prevailing attitudes. Whilst certain groups are unconcerned with the environmental and social impacts of meat, sometimes even disclaiming their existence, others can be highly aware and interested in the topic (Dagevos, 2021; Latvala et al., 2012; Pohjolainen et al., 2016; Sanchez-Sabate & Sabaté, 2019). Different studies have tried to identify these consumer groups using various approaches. For instance, Pohjolainen et al. (2016) did a statistically representative survey of the environmental consciousness within the Finnish population and identified six consumer groups: “highly conscious” (8%), “rather conscious” (20%), “careless conscious” (14%),

“rather unsure” (9%), “highly unsure” (40%) and “resistant” (8%). While the clusters “highly conscious” and “rather conscious” both understood well the environmental impacts on meat production and consumption, an outright opposing view was presented by the group “resistant” which was notably male-oriented and had slightly fewer younger consumers. The “careless conscious” recognised the meat-related environmental issues but did not consider food production problematic overall. Yet, the “rather unsure” understood that food production has a lot of negative environmental effects but did not believe meat production is one of its key issues. The largest identified group, “highly unsure”, showed that most consumers have neutral attitudes towards meat-related problems. This indicates that only a small percentage of consumers genuinely believe that meat consumption is not responsible for many environmental and social problems. This suggests that there is potential in consumer-based strategies – neutral attitudes are easier to change than negative ones.

In comparison, Latvala et al. (2012) focused on consumers’ self-reported past behaviour and intentions for change. They found that the largest group (48%) had not changed their meat consumption habits recently and were not planning on doing so in the future. This group was also called “meat lovers” and was particularly male-dominant. Meanwhile, about 13% had already shifted towards more vegetables and less red meat and the rest (39%) were in the middle of a change towards varying consumption habits that all included more vegetables. This makes 52 % of the participants flexitarians or likely-to-become flexitarians.

“Flexitarians” or “meat reducers” are a consumer group identified in the early 2000s (Dagevos & Voordouw, 2013; Latvala et al., 2012; Verain et al., 2015) Originally flexitarians were seen as “flexible vegetarians” who followed mainly plant-based diets still eating meat on occasion (Rosenfeld et al., 2020). Later, the meaning expanded to include a wider range of meat-reduction food styles. Now flexitarianism is typically defined as a food consumption pattern in which meat consumption is limited by abstaining from eating meat occasionally (Dagevos, 2021). It can be seen as a scale between a person who abstains from eating meat at least one day a week and a person who only eats meat on rare occasions (Verain et al., 2015). Being a new term, however, the definition might vary

slightly from source to source. The difficulty of defining the term lies in the variety of eating habits; both frequency and portion size matter.

Flexitarians are a diverse group of consumers with a variety of eating habits and motives. One study has further divided flexitarians into light, medium and heavy flexitarians based on the frequency and portion sizes of the meat eaten (Dagevos & Voordouw, 2013). Different ways to reduce meat have also been recognized within the group such as eating less all meat and more vegetables, switching pork to beef and more vegetables, and switching red meat to more chicken and vegetables (Latvala et al., 2012). What makes flexitarianism especially significant is the size and potential of the group. While Latvala et al. (2012) suggest that the group size is around 52% of the Finnish population some studies have found this group to be even larger. A Dutch study by Dagevos & Voordouw (2013) found that 77,1 % of the participants (N=1253) were part of the meat-reducer spectrum when using a loose definition (at least one meat-free dinner per week). Yet, at least in the Finnish context, these numbers should be taken with a grain of salt; simultaneously 79 % of men and 26 % of women in Finland exceed the nutritional health recommendation of red meat (Valsta et al., 2018). It has been suggested that since flexitarians form a substantial part of the population, even small changes in the diet could have immense effects on food consumption and drive it in a more sustainable direction (de Bakker & Dagevos, 2012). The existence of flexitarians has also been seen as a sign of changing food hierarchy; meat's iconic position at the top as a sign of masculinity, health and wealth could be shifting (Dagevos & Voordouw, 2013). Consequently, flexitarianism is seen as a possible key to solving food-related sustainability problems (Dagevos, 2021).

2.2.2 Consumer role in protein transition

The overall role of consumers in a transition towards more sustainable diets is much debated. Bauman (2009) describes consumers as “the enemies of the citizens”. This means that consumers are selfish and irresponsible; drawn to instant gratification and profit, and unable to be trusted to make good and sustainable choices (Bauman, 2009). The existence of an attitude-behaviour gap supports this idea. An attitude-behaviour gap has been detected between consumer attitudes related to meat production and consumption and their actual consumption habits. This means that even negative attitudes related to meat production (e.g., environmental impacts, animal welfare) are not necessarily followed by

reduced meat consumption (Holm & Møhl, 2000). Consumers have also been found to often exaggerate their efforts towards more sustainable diets (Latvala et al., 2012). The central position of meat in Western food culture, lack of familiarity and skill with plant-based cooking and inadequate understanding of meat in general, can be considered as partial reasons for this phenomenon (Mason & Lang, 2017).

A more positive view of the consumers' role is presented by De Bakker & Dagevos (2012). They argue that the involvement of consumers is necessary for solving the protein issue. They have identified three different routes to follow when promoting consumer-based strategies that take into account the diverse nature of today's consumers. These routes of transition are based on the consumers' levels of involvement and interest in the food they are eating - production methods, animal welfare, human health, and environmental impacts. Yet, these three routes are not mutually exclusive; the same person can follow different routes on different days or weeks. The different routes are (1) Sustainability by stealth, (2) Moderate involvement and (3) Cultural change (table 1).

Table 1. Routes of transition by De Bakker & Dagevos (2012).

Route of transition	Target group	Strategy
Sustainability by Stealth	Consumers with only little interest in their food choices	Likely to accept sustainable and novel foods introduced subtly. E.g., hybrid and fully plant-based sausages, burgers and mince that mimic certain meat products in appearance and flavour. Subtle marketing and technological solutions are in a key role.
Moderate Involvement	Light and medium flexitarians	Strategies that promote smaller or less frequent meat portions such as "meatless days" and "less and better" are in a key role. This route can be supported by normalizing dietary behaviour that includes less meat in different forms (flexitarian diet).
Cultural Change	Consumers highly interested in their food choices and how they affect the surrounding world. Often have political or ethical motives or follow heavy flexitarian, vegetarian or vegan diets.	The remaining meat is often more sustainably sourced e.g., organic. Consumers are likely to push governments to achieve sustainability goals and give criticism if this is not happening at the expected pace.

Somewhat similar ideas are brought up by Schösler et al. (2012) who, in turn, propose consumer-oriented pathways towards more sustainable diets. Two of these pathways offer a gentler solution. The first one utilizes the trend towards convenience by mixing unfamiliar ingredients with familiar ingredients – a bit like De Bakker & Dagevos proposed – by stealth. A great example of this could be hybrid meat substitutes and altered instant meals that are easy to cook and eat. The second pathway aims for an incremental change towards vegetarian meals first starting by replacing meat with familiar products like cheese, eggs, or fish. Even though these products cannot be considered much more sustainable options they can be seen as a stepping stone towards higher involvement and increased use of plant-based products (de Boer & Aiking, 2011; Schösler et al., 2012).

Two more advanced pathways include firstly, actively reducing portion sizes and secondly, so-called practice-oriented dietary change in which diets that are different from the mainstream are considered an important part of one's identity. Schösler et al. (2012) mention that these pathways are more demanding since they challenge and break currently existing meal formats and hierarchies. Therefore, these pathways require active consumers who are interested in the dietary change and willing to make an effort for it – similarly to the cultural change pathway.

2.3 The “less and better” approach among the transition strategies

A variety of consumer-based strategies are used in Western marketing and policy-making by governments, NGOs, and retailers to guide consumers in food-related decision-making. Typically, these strategies promote either elimination, replacement, or reduction of meat products (Laestadius et al., 2016). Promoting a complete elimination of meat products can be seen as a quite radical and loaded message by a majority of consumers. Considering the different levels of consumer involvement, however, “no meat” can be a well-suited strategy for consumers following mainly the cultural change pathway. Therefore, it is not surprising that fully meat-free diets are most often promoted by activist groups and NGOs working for either animal welfare or climate change (Laestadius et al., 2016). Many NGOs, however, tend to avoid using this message in fear of coming across as judgemental and in hopes of reaching a wider audience (Laestadius et al., 2016).

Promoting meat reduction in a form of meatless days and smaller portions is a much more popular message (Laestadius et al., 2016). Often this can also be paired with encouragement to replace meat products with something else (Laestadius et al., 2016). These replacements can be hybrid meat analogues, meat substitutes or more typical plant-based proteins such as legumes (less and more varied) or for instance organic or pasture-raised meat (less and better) (de Boer et al., 2014). This type of messaging can be seen as more agreeable and balanced since it gives more guidance on how to compose a balanced diet even with less meat. This is the case especially with “less and better” since many people see meat as a necessary part of a healthy diet and do not want to jeopardize their health by giving it up entirely (Mason & Lang, 2017). This is a reasonable concern since vegetarian and vegan diets are poor supplies of certain nutrients such as vitamin B12, iron and calcium and can expose to a risk of nutritional deficiencies if not taken care of (Mason & Lang, 2017). Yet, the amount of meat considered necessary by consumers is wildly exaggerated (Mason & Lang, 2017).

There seems to be a growing consensus amongst scholars that in order to push the protein transition forward it is not enough to solely focus on the amount of protein but also on its source (eg. de Bakker & Dagevos, 2012; de Boer et al., 2014; Trewern et al., 2022). Therefore, especially “less and better meat” strategy has gained a considerable amount of attention among scholars. “Less and better” meat is also considered an accessible approach since consumers could maintain their current spending by buying less but better instead of more and cheaper (Laestadius et al., 2016). Yet, it is left unclear whether higher prices are enough to drive meat reduction since high-income consumers are likely to be able to increase their spending (Neff et al., 2018; Schösler & de Boer, 2018). Additionally, taste and eating quality are notable values for buyers of high-quality meat. While consumers who prefer organic meat are found to sometimes eat less meat a substantial personal interest is demanded from the consumer to adopt the “less and better” concept (de Boer et al., 2014; Schösler & de Boer, 2018; Resare Sahlin & Trewern, 2022). Another problem with the strategy is its vagueness. Since it lacks a clear definition, it can be more easily misunderstood or misused. In the next two chapters, I will discuss the strategy and its potential definitions in closer detail.

2.4 How much is less?

The difficulty in defining “less meat” is that the definition depends on many different factors such as the meat and production method in question, the overall diets of the consumers and the aspect of sustainability considered; social, economic, environmental, and cultural. Yet, several institutions have defined their own guidelines that are based on varying factors. For instance, according to the Finnish dietary guidelines red meat (beef, pork and lamb) and processed meat should be consumed a maximum of 500 grams per week (Fogelholm et al., 2014). This amount refers to cooked meat and equals about 700-750 grams of uncooked meat. These dietary guidelines focus solely on human health and do not consider for instance environmental or economic aspects. Concurrently, World Cancer Research Fund (WCRF) recommends eating “--no more than moderate amounts of red meat and little, if any, processed meat” (WCRF, 2022). The amount equals a maximum of three portions or 350-500 g of cooked meat per week. Yet, WCRF does not recommend completely avoiding eating meat since it is a valuable source of nutrients such as iron and vitamin B-12.

Studies have found that following a diet that does not include any meat is not necessary nor optimal when taking both health and the environment into consideration (Mason & Lang, 2017). Yet, it is not surprising that when environmental sustainability is added into the equation the recommended amounts of meat drop drastically. EAT-Lancet Commission developed a universal healthy reference diet which takes into account the environmental aspects (Willett et al., 2019). This planetary health diet recommends no more than 98 g of red meat and 203 g of poultry per week. On the other hand, Van Dooren et al. (2014) suggests one portion of meat and/or fish per week for a healthy and sustainable diet. Some studies take this even further considering the production methods in detail. Van Zanten et al. (2018) argue that if livestock would be raised under a circular economy, 63-161 g of animal-sourced food (including milk and eggs) could be provided weekly per person globally. This means that the livestock would be raised utilizing mainly non-arable land and other leftover biomass such as food waste. Under this concept, livestock production in Asia and Africa could sustainably grow from the present while in the rest of the world livestock production would have to be reduced significantly (Van Zanten et al., 2018). A bit more generous results were obtained by a Swedish study that focused on the potential of Swedish ruminant meat produced by grazing on semi-natural grasslands

(Röös et al., 2016). This type of production method could provide 40-150 g of ruminant meat per person per week in Sweden (Röös et al., 2016).

When recognizing all aspects of sustainability, animal welfare should also be considered in the definition of “less and better”. One way to take animal welfare into account is to make sure the production methods can not only “*protect animals from distress, pain and suffering in the best possible way*” (Animal Welfare Act (247/1996) but also give them “a life worth living” by enabling opportunities for positive experiences and species-typical behaviour (Mellor, 2016). This is best done through “better”.

2.5 What is better?

2.5.1 Values

“Better” meat can be interpreted in multiple ways depending on which values are considered and in which socio-economic context. The choice of “better” is always based on a compromise or a trade-off since it is merely impossible to find options that would be able to compete with multiple values in all the categories; environmental quality, social and economic quality and eating quality (figure 1). The values affecting the choice of “better” can be separated into intrinsic and extrinsic values. Intrinsic values are considered to be inherently or personally valuable and rewarding such as flavour or health while extrinsic values are based on external rewards such as animal welfare, farmer livelihoods and environmental quality (Sahlin et al., 2020). The order and way these values are organized and presented in consumers' choices are dependent on, for instance, one's value system, knowledge, dietary habits, and socio-economic context (Mason & Lang, 2017). For instance, one consumer might find pasture-raised beef better because of its flavour while another one chooses it because of its positive effect on animal wellbeing and farmers' livelihoods. Similarly, someone else might prefer poultry over beef due to its lower environmental impacts, possibly compromising more on animal wellbeing.

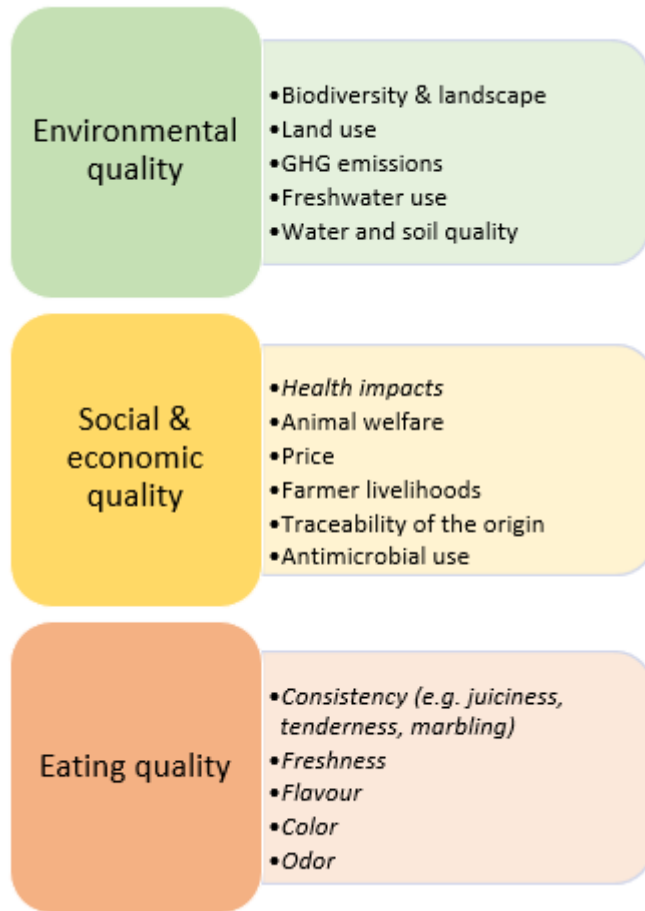


Figure 1. Some categorized intrinsic and extrinsic values that can be used to define “better” meat. Intrinsic values in *italic*. (Modified after Resare Sahlin et al., 2020).

2.5.2 Production systems – organic, pasture-raised, and conventional

The existing literature describes “better” meat in several different ways. Sahlin & Trewern (2022) wrote a review of the existing definitions and interpretations of less and better meat. They reported that the most popular production system for “better” meat was “organic” (mentioned in 14 articles) while the terms “pasture-raised” or “grass-fed”, “extensive”, and “small-scale” held a shared second place (mentioned in 8-9 articles). Other production system definitions that were used less often (mentioned in 1-5 articles) were “free-range”, “agroecological”, “regenerative” and outstandingly “intensive”.

Organic livestock production can be considered better for multiple reasons. It utilizes farming practices that support biodiversity, save natural resources and take into account animal wellbeing (Weissenberger, 2015). Organic livestock production is strictly regulated by the EU and governmental authorities being subject to control and certification

procedures (Weissenberger, 2015). Its main principles are: (1) Using cultivation and animal husbandry methods that are based on ecological systems and natural resources internal to the system. (2) Limiting the use of external inputs; especially chemically synthesised inputs. (3) Adapting the rules of production to local conditions considering for example regional differences in climate, stages of development, health status and specific husbandry practices. (Weissenberger, 2015). For instance, the use of genetically modified organisms (GMOs), synthetic fertilizers and pesticides is prohibited, and the use of antibiotics is strictly regulated. Regarding animal welfare, organic production includes rules that ensure, for example, more indoor space for the animals, access to grazing areas whenever possible and longer times before separating cows and calves (Weissenberger, 2015). Additionally, some breeds and practices that could be harmful to the livestock are prohibited (Weissenberger, 2015).

Due to strict regulations and visible marketing, organic meat products are well recognized and trusted by consumers who often attach positive attitudes to organic meat (Pohjolainen et al., 2016). This also makes it an easy definition for “better”. Additionally, many consumers report preferring the eating quality of organic meat often considering it “gourmet quality” (Schösler & de Boer, 2018). It has also been reported that organic meat appeals to men and women for different reasons. Whilst women associate organic food with connectedness to nature and purity, men tend to prefer organic because they see it as a status symbol (Schösler & de Boer, 2018)

Even though consumers often confuse natural pasture-raised livestock with organic or even conventionally produced meat, these systems are different (Stampa et al., 2020). Natural pasture-raised livestock production is not specifically regulated by governmental authorities in Finland, and it is practised only with ruminants. Finnish union of natural pasture-raised meat producers (Luonnonlaidunlihan tuottajat ry) aim to promote the method, connect producers, and promote their interest. The union uses a criterion that WWF Finland formed together with relevant stakeholders in 2013 (*Kriteerit luonnonlaidunlihan tuotannolle Suomessa*, 2013). Some of the main requirements for pasture-raised beef are:

- The animal needs to graze at least half of the grazing season on every grazing season during its whole life. Bulls are an exception, and they must graze only

during their first grazing season and after that, they can be kept indoors for a maximum of one grazing season.

- Over half of the grazing grounds need to be semi-natural grassland.
- Outside the grazing season at least 70 % of the dry matter of the feed needs to be roughage.

Semi-natural grasslands have been developed from natural grasslands that have been used for traditional agricultural activities for centuries (Herzon et al., 2022). These habitats are typically dependent on low-intensity management practises such as grazing or mowing to prevent succession towards scrub and woodland (Herzon et al., 2022). In Finland, they are part of traditional rural biotopes and include wooded pastures, grazed woodlands, heaths, and different types of meadows (seashore, dry, mesic, freshwater, alluvial and fen). In addition, areas such as Natura-areas and other protected areas, buffer zones, forest patches, forests, archaeological areas, and fields that have been unfertilized for at least five continuous years can be used for grazing of natural pasture-raised beef (*Kriteerit luonnonlaidunlihan tuotannolle Suomessa*, 2013). These types of areas are considered biodiversity hotspots since according to the latest IUCN Red List of Threatened species 24,4 percentage of threatened species in Finland live in the traditional rural biotopes and other human-shaped environments such as other farmlands (Hyvärinen et al., 2019).

Natural pasture-raised cattle are used to manage semi-natural grasslands and other biodiversity hotspots. Therefore, it has qualities that support biodiversity and animal wellbeing, often even more than organic livestock production alone (Stampa et al., 2020). Additionally, pasture-raised livestock systems can utilize non-arable land, act as carbon sinks and reduce GHG emissions, nutrient losses and water use (Torres-Miralles et al., 2022). Some studies argue that intensive livestock production uses less land, water, and fossil fuels to produce an equal amount of beef while having a notably lower carbon footprint than any other method (e.g., Capper, 2012). However, often these studies have not included biodiversity impacts or soil carbon stock changes in the calculations (Torres-Miralles et al., 2022). Yet, intensive livestock systems can also be considered “better” but with different kinds of trade-offs. Capper (2012) argues that: “*All beef production systems are potentially sustainable; yet the environmental impacts of differing systems should be communicated to consumers to allow a scientific basis for dietary choices.*” This argument leads back to the discussion about how much responsibility should and can be left

solely to the consumers in advancing the protein transition. Even though the universally adopted definition of “better” remains open, a common consensus can be recognised; in the context of sustainability, “better” does not exist without “less”.

3 Materials and methods

This thesis is a mixed methods study combining both quantitative and qualitative data, with the main focus on qualitative data. The data was collected through an email survey and interviews targeting buyers of Finnish natural pasture-raised beef. The survey and interview participants were recruited in cooperation with a farm called Bosgård. Bosgård is located in Porvoo, Southern Finland and produces primarily organic & natural pasture-raised beef. They have kept beef cattle since 1992. The cattle are Charolais cattle, and the farm has a total of 130 calvers and a maximum of 350 animals at a time. The farm advertises its produce as: “*High-quality, organic & natural pasture-raised beef produced with ethical and environmentally friendly methods*”. The meat is sold directly to private customers, restaurants, and a few chosen merchants.

Acquiring participants through a farm was chosen as the most reliable way to reach a sample that best represents Finnish natural pasture-raised beef buyers and consumers. Bosgård was chosen because its produce can be considered “better” in several ways due to its production methods. Additionally, the University of Helsinki has previously cooperated with the farm, so proposing cooperation was easier due to existing connections. The farm agreed to send the call for interview for its customers if they were in turn helped to collect customer satisfaction data. The call for interview was sent via email as a part of a customer satisfaction survey that was also made by the author. The farm sent the survey since the contact information of the customers could not be disclosed to third parties. The farm also offered two gift cards to the farm shop worth 50 euros to use as incentives: Everyone answering the survey could participate in a gift card raffle and everyone participating in the interviews had a chance to win a second gift card.

3.1 Email survey

The email survey was made by using Google Forms. It included questions related to both this thesis and customer satisfaction and was loosely based on a customer satisfaction survey Jenni Pesonen made for Bosgård in 2012 as a part of her master’s thesis (Pesonen,

2015). The questionnaire was divided into three sections: (1) Background information, (2) Consumption habits and (3) Bosgård farm customership (Appendix 2.). Additionally, at the end of the questionnaire, the participants were given a chance to leave their details to further participate in the interview and/or gift card raffle. Mainly the results from sections one and two were used for this study and the rest was meant for the farm's use. The section concerning consumption habits included five questions related to meat consumption and preferences when buying meat products. The questions were both multiple-choice and open-ended questions. The survey was sent to approximately 2300 customers who had all bought meat from the farm in the past (Appendix 1). It was open for two weeks between 11.10. – 24.10.2022 and received 126 replies. The response rate was 5,5 which can be considered good for an email survey. The survey results were analysed in Microsoft Excel.

3.2 Interviews

Since the aim of the study is to gain an in-depth knowledge of the consumers' thoughts and actions, a semi-structured interview was chosen as the main data collection method which would further complement more generalizable survey data. The aim was to gather a sample size of between 5-10 participants or until the data starts repeating itself. Out of the 126 survey respondents, 65 reported willingness to participate in the interview. The interviewees were further chosen from respondents who had either (1) reduced their meat consumption within the last three years or (2) whose meat consumption had either remained the same or increased, but who ate meat a maximum of 1-3 times a week (less than 46 % of the participants). This limited the possible interviewees to 39 people. An email to further agree on the interview date was sent to 23 respondents. The emails were not sent all at the same time so I could further try and select interviewees with different attributes (e.g., gender, age, education, household size). For instance, the oldest survey respondents (≥ 70) were ruled out since according to the survey results their main motivators for low or reduced meat consumption were slowing metabolism and health reasons. Finally, interviews were agreed upon with six respondents. The rest either never replied or the proposed dates were not suitable for them. Considering the limited extent of master's theses and the qualitative nature of this study, this number was deemed suitable. Additionally, some repetition could already be detected from the interview data. The interviewees were given a choice between an interview via zoom or by phone. Five agreed

to a zoom interview while one person preferred a phone call. All the interviews were recorded by using two different audio recorders in case one recording would fail. This was a reasonable precaution since the main recording failed during one interview.

The interview rubric was divided into four sections: (1) Consumption habits, (2) Purchasing meat, (3) Qualities of beef and (4) Sustainable diet and dietary change (Appendix 3 & 4). The interview rubric was used to guide the interview, but some questions were adjusted to the specific interviewee based on their survey answers. All the interviews lasted 40 to 60 minutes except for the fifth one which was done over the phone and lasted only 25 minutes. The participants were informed that the interviews would be recorded, and that no personal information would be published. To protect the participants' anonymity and to minimize the risk of harm, the materials were handled confidentially and deleted from my databases after the work was completed. Some of the data were safely transferred to the university's protected database for further research. Additionally, some personal information was grouped into broader categories and removed from the citations. The citations were translated to the best of my abilities aiming to preserve their original meanings.

Overall, the interviews went well. On a couple of occasions, the interviewees had forgotten the agreed time and they had to be contacted to remind them and agree on a new time. Most of the interviewees seemed quite relaxed and open and they were happy to give long answers. Only the phone interview came across as more rushed. The order and the number of questions were suitable, and they were understood by the interviewees well apart from the question related to "sustainable diet". Some of the participants wanted to hear a definition for the term before answering the question but this was prepared for. Additionally, the interviewees gave positive feedback at the end of the conversations and expressed their interest towards the finished study.

The interviews were transcribed using the transcription -tool provided by Microsoft Word. After this, they were analyzed in Atlas.ti -software (ATLAS.ti 22 for Windows) by using qualitative content analysis. The interview rubric was used to frame the analysis leaving space for possible unexpected discoveries. Careful examination and comparison of the data led to the interviews being coded into 143 codes. Both thematic and in-vivo

coding was applied. The codes were further split into 15 groups which were the main themes that arose from the interviews (Appendix 5).

4 Results

4.1 Survey and interview respondents

The gender ratio of the 126 survey respondents was nearly even (table 1). The average age was 56 years, the median was 58 years, and the standard deviation was 11, demonstrating that most of the respondents were middle-aged or older. The most common household type (53,2 %) was a two-adult household where the adults had either never had children, or the children had already moved out (table 1). The second most common household type was a one-person household (12,7 %). Two-adult households with two children (9,5 %) or one child (7,9 %) were the third and fourth most common household types. Several other kinds of households were present such as one-adult households with one or more children and two-adult households with three or more children. However, their percentages were so low that they were grouped into one group “other or unknown”. The respondents were quite highly educated since 60,4 % had a bachelor’s or higher degree either from a university or university of applied sciences. While the least educated 6,3% had only attended lower secondary education, they were typically older than the average respondent. Most of the respondents lived in Uusimaa, relatively close to the farm. A prominent part lived in the Greater Helsinki region (Helsingin seutu) but a few lived further away. For instance, one respondent reported living in Lapland. The respondents represented a loyal customer base since 44 % had been Bosgård’s meat-buying customers for 5-10 years and 15 % for over 10 years. On the other hand, 38% had been Bosgård’s customers for less than 5 years and several had just recently started buying meat from the farm. The most common way to receive the meat order was to pick it up directly from the farm (63 %), and home delivery was the second most popular option (15 %).

Table 2. Survey respondents

Age group	n=126	
20-29	1	0.8%
30-39	14	11.1%
40-49	19	15.1%
50-59	33	26.2%
60-69	44	34.9%
70-79	15	11.9%
Gender		
Male	62	49.2%
Female	63	50.0%
Other	1	0.8%
Education		
Doctoral degree	6	4.8%
Master's degree	38	30.2%
Bachelor's degree	32	25.4%
Upper secondary education or equivalent	39	31.0%
Lower secondary education	8	6.3%
On-the-job training or equivalent	3	2.4%
Household type		
2 adults	67	53.2%
1 adult	16	12.7%
2 adults & 2 children	12	9.5%
2 adults & 1 child	10	7.9%
Other or unknown	21	16.7%

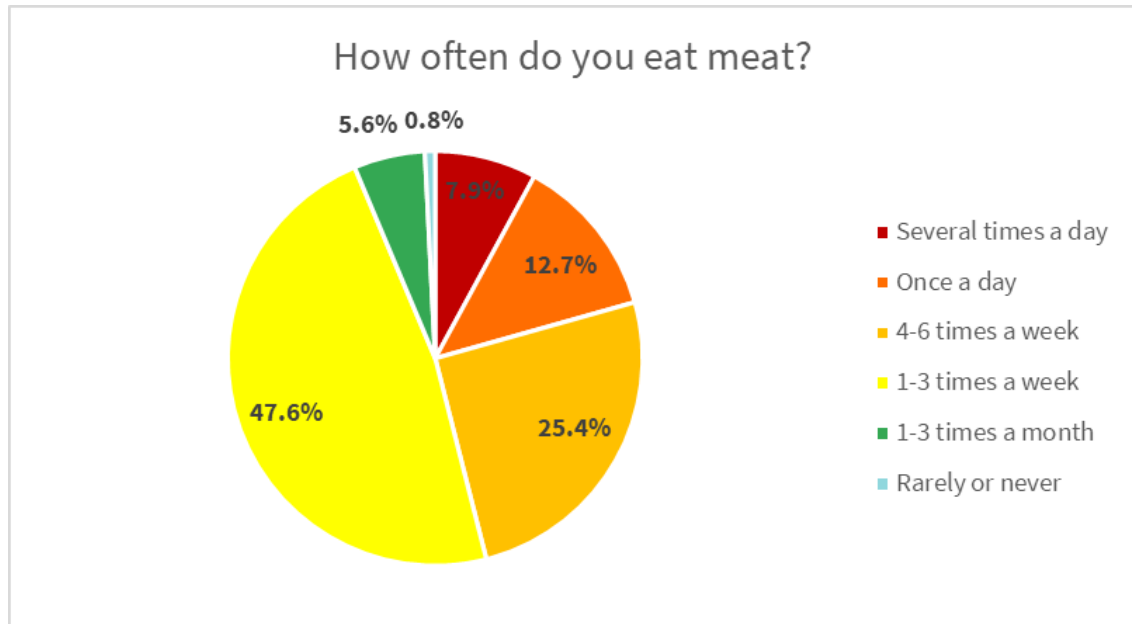


Figure 2. The reported overall meat consumption of the survey respondents; n = 126.

When the survey participants were asked how often they ate (any) meat, the most common answer was 1-3 times a week (47,6 %). Moreover, a total of 54 % reported that they ate meat 1-3 times a week or less including one respondent who did not eat meat at all.

About 46 % of the participants ate meat 4-6 times a week or more often including 7,9 % that ate meat more than once a day. However, there might have been differences in how this question was interpreted. Some participants might have only included the main meals without considering for instance breakfasts or snacks, while others might have only included meals containing red meat though it was clarified at the beginning of the questionnaire section, that the questions related to overall meat consumption.

Table 3. Interviewees' profiles; n = 6

ID	Age group	Gender	Education	Meat consumption	Change in meat consumption	Household type
1	60-69	Male	Master's degree	4-6 times a week	Decreased a little	2 adults
2	60-69	Female	Master's degree	1-3 times a week	Decreased a little	2 adults
3	50-59	Female	Bachelor's degree	1-3 times a week	Stayed the same	2 adults, 2 children
4	40-49	Female	Doctoral degree	Rarely or never	Decreased a lot	2 adults
5	30-39	Male	Master's degree	4-6 times a week	Decreased a little	2 adults, 2 children
6	60-69	Male	Upper secondary education	1-3 times a week	Stayed the same	2 adults

Out of the survey respondents, six people participated further in the interviews (table 2). The interviewees represented the different age groups well but were, on average, more educated than the survey respondents. All participants reported being omnivorous except for interviewee 4 (I4) who identified herself as vegetarian but ate fish, eggs, and dairy (a lacto-ovo-pescatarian). I4 was accepted as an interview participant since she was a regular customer of Bosgård. She bought natural pasture-raised beef regularly for her relatives, and her partner ate meat almost daily. The other respondents ate meat either 1-3 times a week or 4-6 times a week. Most of the interviewees were especially interested in the topic of “better” meat and dietary habits through their careers or hobbies.

4.2 Qualities of “better” beef

4.2.1 Eating quality

When the interviewees were asked to describe high-quality beef, all except I4 started by describing its flavour and other eating and cooking qualities such as fattiness and odour. Yet, they were aware of how for example the production methods, feed and cattle breed affected these qualities.

“When we eat beef less frequently it allows us to put quality first. The quality is most apparent through the flavour.” Interviewee 1

”First of all, it [high-quality beef] tastes good. It has good cooking qualities and I know where it’s from, where it has been butchered and when.” Interviewee 2

“Flavour and fat percentage are good indicators of quality. For instance, Limousin has a low fat percentage, yet Hereford and Agnus have more fat and aromatic flavour. It all depends on what they eat.” Interviewee 6

It was evident that flavour was the main reason to buy natural pasture-raised or other high-quality beef. If the meat would not taste good, it would not be bought in a similar manner despite all the other values attached to it. Additionally, I1 and I2 said that they considered beef as a refined food that was mainly eaten on the weekends or during celebrations. Similarly, I3 mentioned that high-quality beef was often offered to guests or eaten on special occasions. I5 agreed that cooking beef was often more time taking because he wanted to make something tasty and special of it. However, all the participants occasionally cooked beef on weekdays typically as mince.

“If I buy beef then it needs to be “an experience” [makuelämys]. I don’t buy beef just for the sake of it, I can buy chicken instead. I only buy beef if it tastes good.”

Interviewee 5

All the participants mentioned, without being directly asked, a negative eating or cooking experience with meat that motivated them to buy better, high-quality beef. The stories revolved around an unpleasant flavour, texture, smell and look of meat from an unknown origin, often bought or eaten outside of Finland. By choosing high-quality beef they wanted to avoid these unpleasant experiences and further ensure that the production and processing methods were in order.

“--We lived abroad for a while, so we definitely know what poorly produced stress meat tastes like. I would rather eat a rubber boot instead. As a result, we don’t want to buy meat of bad quality under any circumstances.” Interviewee 3

4.2.2 Production methods

Three repeating production-related themes were organic, local/domestic, and natural pasture-raised. Buying organic produce was especially important for the interviewees whether they were buying meat or other food products. Two interviewees (I2 & I6) estimated that almost all the beef they eat is organic or natural pasture-raised. Three interviewees (I1, I3 & I4) said that 40-60 % of the beef eaten in their households is organic or natural pasture-raised. The organic production method was not as important for I5. However, he was aiming to start buying beef only from local producers. The production-related themes were seen as important because of the values they uphold. Organic, local/domestic, and natural pasture-raised beef were associated with a healthier and safer product and increased animal well-being, environmental sustainability, and overall ethics.

“Of course, avoiding all the possible additives; chemicals or excessive fertilizers is part of the package [organic production]” Interviewee 1

“Domesticity is necessary even just to be able to monitor the use of antibiotics and such. We don’t buy foreign meat.” Interviewee 2

4.2.3 Biodiversity and landscape

A few interviewees also mentioned the importance of grazing to biodiversity and landscape. Especially I2 spoke about how grazing cattle is not only important to the biodiversity and traditional rural biotopes but is also an important part of the Finnish landscape and even culture.

” --I wish that grazing livestock continues to be part of the Finnish landscape. It brings more biodiversity, insects, and birds --” Interviewee 2

”People eat meat so it needs to be ethically produced. That is why I support natural pasture-raised meat. Also, traditional rural biotopes are very important and without grazing, they would overgrow. Something needs to be gained from grazing so if there would be no product [beef] there wouldn’t be grazing.” Interviewee 4

Yet, even more importantly several interviewees saw cattle production as a part of the biological cycle. This gave out the impression, that eating “better” beef, is necessary for the environment.

“Then there is this idea that we should stop meat production completely and only eat vegetables. I don’t believe that our ecosystem could handle that either. Where do we get all the fertilizer from? I would rather trust organic production and manure as a fertilizer.” Interviewee 2

Only one interviewee mentioned anything negative related to natural pasture-raised production. I4 admitted that she had some reservations towards natural pasture-raised beef being discussed as fully environmentally friendly like it has only a positive impact on biodiversity and climate. She was concerned with the amount of silage (winter feed) that is produced on arable land due to the climate conditions of Finland. She expressed that even though there are much bigger problems in livestock production, this caused her some mixed feelings.

4.2.4 Animal welfare

The results showed that animal welfare was relatively important for all interviewees, but it was typically not one of the first values mentioned. The interviewees were more likely to use the broader and vaguer term “ethical” to describe optimal cattle production rather than mentioning animal welfare. Besides, five of the participants trusted Finnish beef production to be ethical. Additionally, I3 and I6 spoke about the importance of easy and stressless butchering and I3 mentioned that buying natural pasture-raised beef had taught her more respect towards the cattle and she followed the cows’ lives through farms’ websites. I1 mentioned that during the meat purchase situation he was no longer thinking about the animal welfare aspect but expected that to be in order.

“Yes, it [animal welfare] is quite important. It's more pleasant to eat when I know that it [cow] has had a good life compared to the situation in which you don't know in what kind of stall it has been standing in, still waiting to reach the desired weight.” Interviewee 3

4.2.5 Price

For most interviewees, the higher prices were not a problem. They were happy to pay more money for high-quality beef that represented values important to them. The cost was seen as a marginal part of all food costs, and since people ate less meat, they could also afford to pay more for the “better”. This was confirmed by the survey results which showed that price was, along with “knowing the producer directly or indirectly”, the least meaningful value related to beef.

”If it’s good it can cost but if it’s not good then it cannot... And then I won’t buy it.” Interviewee 5

4.3 Towards a sustainable diet

4.3.1 Beef production as a part of a sustainable diet

The interviewees were asked to describe a sustainable diet (Figure 3). The results reflected similar values to what made them choose “better” meat. The interviewees believed in having a versatile diet that allows everything in moderation, being sufficient and healthy. They wanted to eat tasty, fresh, and locally produced foods that have undergone minimal processing. I4 underlined that a sustainable diet can look different for different individuals based on, for instance, their values, preferences, health conditions and living environments. Three interviewees mentioned that a sustainable diet should include less meat, but concurrently livestock was seen as an important part of sustainable agriculture and diet.

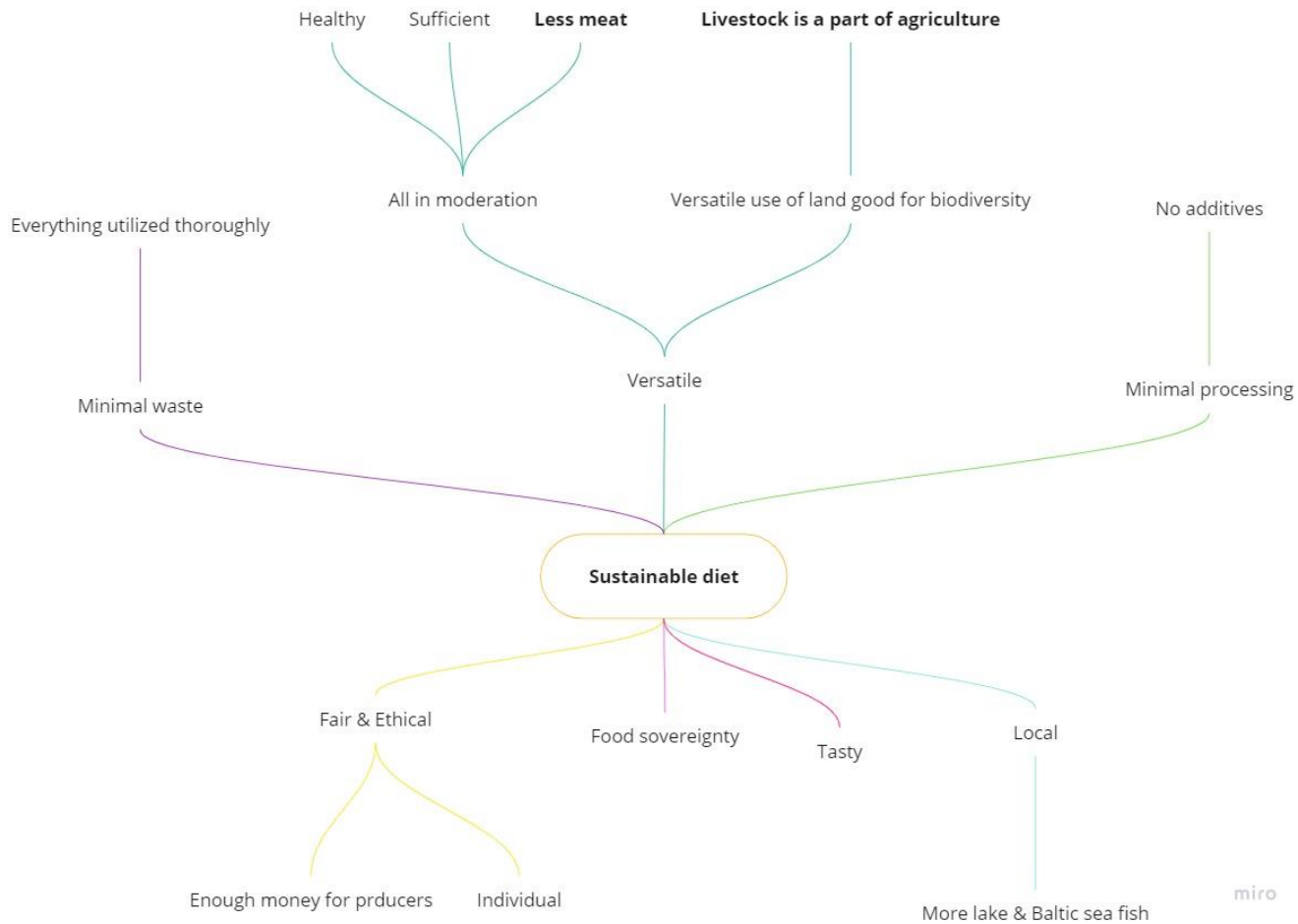


Figure 3. Sustainable diet according to the interviewees; n = 6.

The sustainability of meat production was a topic that evoked contradicting opinions. The participants were also asked whether they considered something problematic in the production and/or consumption of beef. All of them considered intensive livestock production problematic for animal well-being as well as the environment. In this context, the interviewees often mentioned unethical production in countries such as Brazil, Argentina, and Germany. I4 went into more detail and mentioned for instance human rights problems, food waste and nutrient runoff. Moreover, the interviewees identified other faults in meat production I1 brought up the “horrific” possibility that one fast food beef burger might contain meat from over ten different animals. I6 mentioned his unwillingness to buy meat from the breed Belgian Blue as he considered it unethical. The breed is highly refined and has an extremely lean and muscular physique which causes many health problems (Weissenberger, 2015). On the other hand, Finnish beef was considered safe, environmentally sustainable, and ethical often even if it was conventionally produced. A

couple of the interviewees mentioned that by choosing Finnish beef they did not have to have a guilty conscience about eating meat.

“It took me a while to understand that organic, domestic beef that eats grass all year round is actually a good solution in terms of climate. There’s no need to feel guilty about eating it.” Interviewee 2

“But of course, in my opinion, for the most part, all livestock live good lives in Finland. The differences between organic or natural pasture-raised and conventional production methods are not that big. I can’t say this with 100 % certainty, but in Finland, farms are monitored carefully, and the farmers have an ethical desire to take good care of the animals. I would imagine.” Interviewee 3

“I don’t think Finnish beef production is problematic because we have a lot of grass growing on its own. It’s a completely different thing in, for example, Brazil, where rainforests are being cut down and the land is irrigated in order to feed the shockingly large cows. That is completely unethical! Yet, I think it’s really important to think about regional differences. I really don’t like the fact that eating beef is being blamed for destroying all the rainforests. Well, we don’t have rainforests here.” Interviewee 3

“Lately the environmental issues have been on display all the time but the way I see it is that in Finland the livestock production is like from a different planet compared to countries that practise intensive livestock production. What we have is very ethical and balanced.” Interviewee 6

Even though all the participants identified several problems with beef production and consumption, five of them described them as something that is mostly happening elsewhere and is not affected by their actions. Yet, they felt like they could make a difference by eating only Finnish beef, paying more attention to the origin of the meat also in restaurants, choosing organic and natural pasture-raised and to a degree reducing meat consumption. However, the latter was found somewhat questionable by a few participants, even the ones who agreed that a sustainable diet includes less meat. On some occasions

very contradicting ideas were presented one after another, for instance first stating how reducing meat consumption is important and next pondering whether this actually is the case.

4.3.2 Changes in total meat consumption and the linkage between “better” and “less”

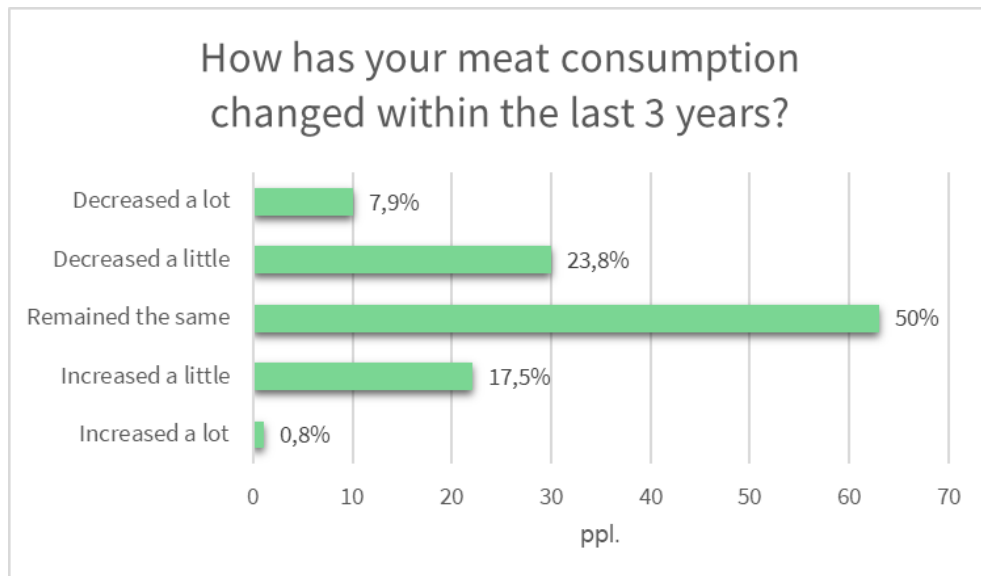


Figure 4. Survey participants’ reported change in meat consumption within the last three years; n = 126.

Out of the 126 survey participants, 50 % reported that their total meat consumption had remained the same within the last three years (figure 4). 31,7 % reported that their meat consumption had decreased either a little or a lot, while 18,3 % had increased their meat consumption. Only one of the latter said that their meat consumption had “increased a lot”. The respondents were asked to specify how these changes could be detected on a weekly/monthly basis. Some answers from the respondents who had decreased their meat consumption included comments such as:

“It has reduced because animal wellbeing is important and overconsumption of meat is unhealthy” Survey respondent, Male 40-49

“Every week 2-3 days have been completely replaced by vegetarian food.” Survey respondent, Female 50-59

"We eat much less meat and the remaining meat is organic, free-range or game meat." Survey respondent, Male 40-49

On the contrary, the respondents who reported an increase in their meat consumption explained the change like this:

"I have started eating more red meat. We bought a BBQ package which had a lot of red meat from Bosgård. It was really tasty!" Survey respondent, female 20-29

"We have reduced our total meat consumption but increased the use of beef by replacing processed and cheaper meats (sausages, ready-made meatballs etc.) and investing more in high-quality cuts of red meat. We used to eat those 2-3 times a month, now at least weekly." Survey respondent, male 30-39

The survey respondents were asked whether natural pasture-raised beef had an impact on the change in their meat consumption and what kind. 13 % of all the respondents (17ppl) specifically expressed that natural pasture-raised beef did not have an impact on their meat consumption 12 of which had reduced their meat consumption. Yet, 50 % of the participants who had decreased their meat consumption (20ppl) reported that natural pasture-raised meat had a positive effect on the reduction. Other motives that were mentioned for the decrease in meat consumption were ageing and the need for less food (3), animal welfare (3), supporting biodiversity (1) and health (2). Interestingly, no one mentioned environmental or climate reasons as a motive for meat reduction. However, the participants were not specifically asked about the motives and therefore the answers were left deficient. On the other hand, 47 % of the respondents who had increased their meat consumption (11ppl) reported that natural pasture-raised beef had partially caused the increase in their meat consumption.

"Yes it has [affected the increase in meat consumption]. I much rather buy meat from you [Bosgård] than from the regular market after high processing. I can barely feed regular market meat to my dog. :D" Survey respondent, male 30-39

“Yes, there is a big difference. Natural pasture-raised meat is the only option.”

Survey respondent, female 30-39

Other reasons for an increase in overall meat consumption were the increased price of fish, the good flavour of the natural pasture-raised or other high-quality beef and health. Especially the one person whose meat consumption had “increased a lot” explained that he followed a ketogenic diet; the respondent and his partner followed a special diet in which most of the daily energy intake came from meat. This was done for claimed positive health effects. Otherwise, the respondents had not specified the reasons for the increase in total meat consumption. Additionally, 5 people reported that their consumption levels remained the same, but they had started to pay more attention to the origin and quality of the meat.

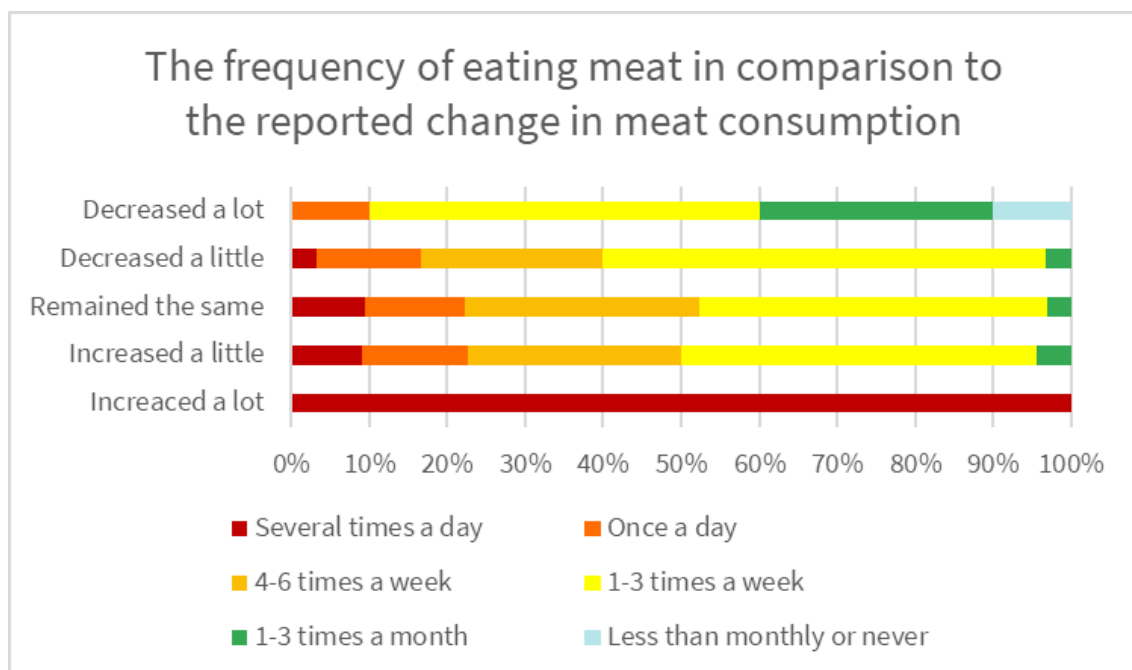


Figure 5. The frequency of eating meat in comparison to the reported change in meat consumption; n= 126.

When the frequency of eating meat was compared with the reported change in meat consumption, it revealed that there was very little difference between the eating frequency of respondents who had decreased and increased their meat consumption a little as well as whose meat consumption had remained the same (figure 5). The differences were

magnified only in the cases of “increased a lot” and “decreased a lot”. Yet, several participants who had reported a large decrease in their meat consumption still ate meat daily.

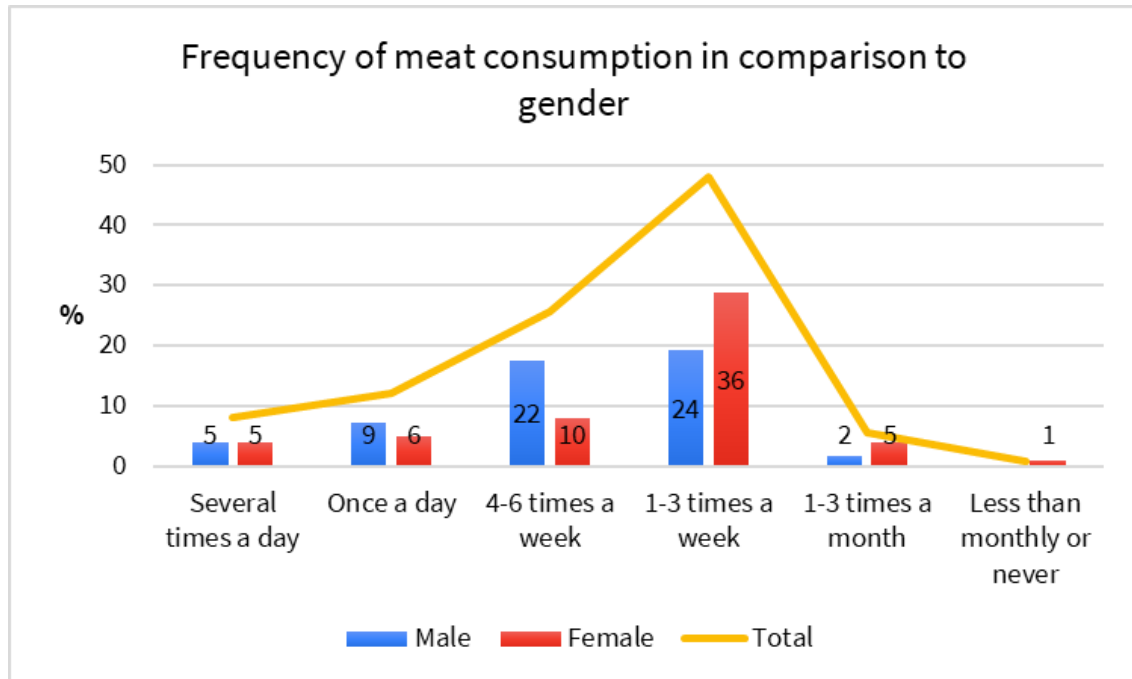


Figure 6. The frequency of meat consumption in comparison to gender; n= 126.

When comparing the frequency of meat consumption with the gender, the male respondents were overrepresented in groups “once a day” and “4-6 times a week”. The female population, on the other hand, was more present in groups “1-3 times a week”, “1-3 times a month” and “Less than monthly or never” (Figure 6).

The more detailed replies from the interviewees revealed that even though only four of them had reported in the survey that their meat consumption had decreased (table 2), all six of them had either intentionally or unintentionally started eating less meat together with their households. I1 described the unintentional change in this manner:

“The share of vegetables grows all the time. The propaganda doing its work. Affecting in the back of my head. –I haven’t tried reducing my meat consumption forcedly or intentionally. My diet has gotten a bit lighter as time has passed. Maybe I could say it has modernized--.” Interviewee 6

The ongoing climate conversation, that I6 called “propaganda”, was mentioned by all the interviewees as a cause for reduced meat consumption. This was the case even with the interviewees who had some contradicting ideas about whether reductions in meat consumption are necessary – they were not sure whether reducing meat consumption is necessary but reduced it anyway because of climate change reasons.

4.3.3 “Less meat” according to consumers

Two different dietary recommendations were presented to the interviewees in aspiration to concretize how much is “less meat”. The guidelines used were Finnish dietary guidelines (max. 500g of red meat/week) and the planetary health diet by Eat-Lancet commission (max. 100g of red meat/week) (Fogelholm et al., 2014 & Willett et al., 2019). Regarding the Finnish dietary guidelines, the interviewees were not familiar with them. Yet, all the interviewees considered 500g a reasonable amount of red meat per week and trusted the guideline to be based on facts. Four of them (I1, I2, I5 and I6) estimated that they ate a maximum of 500g of red meat per week, sometimes notably less. I1 mentioned that he used to eat more when he was younger because of higher energy consumption and more “traditional” eating habits. I3 on the other hand mentioned that she and her family sometimes ate more but that 500g could be a good goal.

The 100g limit caused more suspicion. All the participants thought that the amount was very small, yet I2 and I5 believed that reaching the amount was possible but required serious changes in eating habits. Both had at least considered trying a vegetarian diet at some point. On the other hand, several interviewees were not convinced that it was necessary to reduce meat consumption as dramatically, especially in Finnish conditions. The planetary health diet was considered theoretical and generalised. I1 and I6 mentioned that they believed in equity but not in equality; not everyone could or should follow the same diet. Overall, the interviewees thought that what they currently ate was a reasonable amount or required only small reductions and changes.

4.3.4 Application of sustainable eating practices

The interviewees had found multiple different ways to incorporate more sustainable eating habits into their everyday lives in addition to choosing “better” meat (table 4). The interviewees were not asked directly about these sustainable eating habits, but they came up while discussing their overall diets and ways they had reduced their meat consumption.

A few additional ways to eat less meat were named by the survey respondents who had reduced their meat consumption. These were: eating less red meat and more chicken or only chicken or fish and “better” beef. However, most survey respondents did not specify how they had reduced their meat consumption.

Table 4. Different ways the interviewees incorporated more sustainable eating habits into their everyday lives.

Less meat and more vegetables	<ul style="list-style-type: none"> • Eating diverse, colourful, and healthy plant-based meals that look and taste like vegetables (no meat substitutes or processed alternatives). • Plant-based gourmet cooking inspired by e.g., a cooking magazine. • Learning plant-based recipes and cooking • Vegetarian food days • Always choosing the plant-based option at work lunch. • Advertising plant-based foods for picky children with the name of the meal (e.g., avocado pasta or tomato soup) instead of it being “plant-based”. • Partially replacing meat with vegetables. For example, by adding beans into a chicken soup or grated carrots into a macaroni casserole. • Partially replacing meat with meat substitutes such as soy protein or Härkis. • Cooking meals in which meat is not in the main role • Eating smaller portions of meat.
Less protein	<ul style="list-style-type: none"> • Eating less protein overall.
Production and transportation	<ul style="list-style-type: none"> • Buying organic and local produce. • Buying game meat.
Food waste	<ul style="list-style-type: none"> • Buying discounted foods that would otherwise go to waste (hävikki) • Buying less desirable cuts of beef (e.g., organs)
Self-sufficiency	<ul style="list-style-type: none"> • Fishing, hunting, picking berries & mushrooms, and growing one’s own vegetables.
Other	<ul style="list-style-type: none"> • Eating more Finnish lake or Baltic sea fish.

However, the participants had faced some difficulties in changing their diets towards more sustainable ones. These difficulties were mainly related to health, accessibility, and effort. On one hand, I2 mentioned that eating plant-based protein alternatives such as legumes was difficult since they tend to upset her stomach. She also mentioned the difficulty of sometimes controlling herself from buying tasty meat products. I3 on the other

hand had problems making more plant-based foods at home since one of her children had negative attitudes towards vegetarian options and would rather only eat meat. Additionally, the effect of one's partner's dietary habits was mentioned by I2 and I4, both good and bad. I5 reported that he had a few years back tried going fully vegetarian, but it had caused serious health problems that set him back:

“We tried reducing our meat consumption at one point by becoming vegetarians [lasted for 6-8 months], but it didn't work out. My blood iron got really low so we had to start eating red meat again. -- Maybe I started it too lightly and didn't think enough about how to compensate for the nutrients I was used to getting from red meat.” Interviewee 5

4.4 Concerns regarding false information and polarizing attitudes

All the interviewees considered plant-based foods and meatless meals part of their normal diet, and all of them reported having reduced their meat consumption consciously or unconsciously. A few of them even mentioned how they admired people who follow a vegetarian diet. Regardless some of them did have some reservations towards vegetarian products and vegan lifestyles. Many of them were eager to voice their concerns. Especially the men (I1, I5 & I6) did not understand the need for meat substitutes or did not find their advertising appealing. I1 said that meat substitutes do for him what a red rag does to a bull – irritates and makes him angry.

“I have nothing against good vegetarian options, but what comes to soy sausages or seitan ham... well if it's the only option to stay alive, then I could eat them. I just don't understand meat being replaced with something that just looks similar --.” Interviewee 1

“Only a person living in this kind of well-being bubble can afford to play these games [be vegan]. It's not real and it doesn't lead anywhere. I do know some vegans, who don't make a fuss about it but then there are these city vegans who do all kinds of rallies and protests.” Interviewee 6

Since most of the participants either believed that meat production and livestock are important for the biodiversity and environment or considered domesticity an important value, they wondered if a plant-based diet is environmentally more sustainable especially when considering Finnish conditions. This was followed by identifying problems in plant-based diet: Many foods such as avocados, quinoa and tomatoes are transported over long distances and oftentimes cannot be produced in Finland to a similar quality. At the same time for instance Spain is spending their scarce water supplies to produce fresh vegetables for our use. Soybean cultivation is associated with many environmental problems and many meat substitutes are highly processed. The participants did not want to be misled with false information or judged for actions they found reasonable. In this way, the interviewees were concerned about the tension in public discussion caused by polarizing attitudes between vegans and meat eaters. This comment illustrates the above concerns:

“I am especially concerned about the new political current in which cattle is demonized unwarrantedly without understanding the biological cycle as a whole.”

Survey respondent, male 40-49

5 Discussion

5.1 Key findings

Natural pasture-raised beef buyers could be characterized as a group of mainly middle-aged or older people with relatively high incomes. When using the flexitarian definition of “*at least one meatless day a week*” 79,4 % of the survey participants can be described as flexitarians (Verain et al., 2015). Yet, when using the loose definition “*at least one meat-free dinner per week*“ used by Dagevos & Voordouw (2013) up to 92,1 % of the respondents can be described as flexitarians. These high percentages can be seen as a sign of the high potential for change in this consumer group. Yet a large part of the survey and interview participants had the features of taste- and quality-oriented consumers or dedicated buyers of organic which Schösler & de Boer (2018) describe as conventional lifestyles that are more difficult to challenge. Out of natural pasture-raised beef buyers, the interviewees represented the part that is most receptive to sustainable changes in consumption habits since they showed moderate to high interest in their food choices and had already changed their meat consumption habits to less and better.

The way the survey and interview participants described “better” was very similar to previous literature that has focused on consumer’s opinions on the matter (e.g., Schösler & de Boer, 2018; Stampa et al., 2020) They preferred buying organic and natural pasture-raised meat because of the variety of values associated with these practices. These values were, for instance, better animal welfare, human health, and safety but most importantly good flavour. The participants scarcely referred to environmental benefits when describing “better meat” in contrast to the scientific literature that has aimed to define “better” (e.g., Resare Sahlin & Trewern, 2022). Additionally, buying domestic meat was extremely important to all the interviewees and many survey respondents. The interviewees drew a clear line between domestic and foreign beef and extensively and intensively produced beef. Extensively produced beef and especially domestic beef production was seen as rather problem-free and faced with positive attitudes. According to both de Boer et al. (2014) and Graça et al. (2015), positive attitudes towards meat are associated with a decreased willingness to reduce meat consumption. Similar results were obtained by Li et al. (2016) who found that consumers who trusted in the existing regulations and production systems to provide an acceptable level of quality, ethics and food safety were less willing to change their meat consumption habits. This was implied by over half of the interviewees who explained that by only consuming Finnish meat, often organic or natural pasture-raised, they could compensate for eating meat without needing to necessarily reduce their meat consumption.

The latter suggests that the Finnish food system is seen as a closed system; its environmental and social impacts are limited by the country's borders. This type of belief indicates a low awareness of the beyond national impacts of livestock production. A similar problem was illustrated by the references to rainforests. In South America, the rainforests are being cleared for agricultural production causing alarming habitat, biodiversity, and carbon sink losses (MEA, 2005). Even though there are no rainforests in Finland or Europe, many natural habitats were cleared for agricultural use already during the previous conversion to agriculture (MEA, 2005). For example, Europe lost 50-70% of its original forest cover and in Finland, deciduous forests on rich soils (lehto) and wetlands have been cleared for agricultural use, which is, in turn, dominated by livestock production (MEA, 2005; Routio & Valta, 1990).

The results indicate a clear connection between the “better” and “less” since half of the survey participants who had decreased their meat consumption agreed that buying natural pasture-raised beef had impacted their meat reduction. Yet, the core motivators varied greatly, no survey participant directly mentioned environmental and climate reasons as a motive for meat reduction. The connection also goes both ways: a large part of the participants who had increased their meat consumption reported that access to “better” meat affected the increase. This seems to relate to the positive attitudes toward meat production and trust in Finnish agriculture as such. Additionally, many survey respondents reported only focusing on buying “better” without changes in the amount of meat eaten.

The relatively large share of meat reducers (31,7 %) could be seen as a positive finding. Yet even some of the participants who reported reductions in their meat consumption ate meat daily or several times a week. The weekly amounts of meat the interviewees considered reasonable were also at the high end of the scale when considering what is recommended for a sustainable diet for both health and the environment (e.g., van Dooren et al., 2014; Willett et al., 2019). None of the interviewees were familiar with the Finnish dietary guidelines (Fogelholm et al., 2014). The reductions in meat consumption were also diluted by suspicions regarding the suitability and sustainability of plant-based diets in Finnish conditions. The interviewees recognized livestock as an important part of agriculture: it supports biodiversity and provides fertilizer and food, especially in winter when the cold climate sets limits for food production. It appears that people have forgotten that not long-ago plant-based diet was traditional and normal even in Finland and meat was considered a luxury product. In the 1950s, Finnish people ate on average 29 kg of meat per year (slaughter weight) in comparison to the current 80 kg (LUKE, 2020a) Finnish diet included higher portions of grains, root vegetables, faba-beans, as well as milk and fish (Kylli, 2021). At the same time, the scope of the negative impacts of livestock production is not understood. It is documented, that choosing plant-based ingredients even when they are not locally sourced is more effective in reducing the overall environmental impacts than eating locally sourced foods that include meat (Pelletier, 2015).

The lack of understanding of the food system as a whole was demonstrated also by, for instance, referring to the negative environmental impacts of soybean cultivation. These issues were presented in a somewhat defensive way but also with serious concern and

genuine wonder. Most food production indeed has some negative environmental or social implications. Soybean cultivation, for instance, is associated with deforestation and the use of GMOs (Ritchie & Roser, 2021). However, about 77 % of global soy is used for livestock production and only 7 % is used directly for human food (Ritchie & Roser, 2021).

On a positive note, the participants were interested in their dietary choices and had found a variety of ways to move their diets in a more sustainable direction. Meats' position at the top of the food hierarchy has been changing; even the interviewees who were the most sceptical about the ongoing climate discussion and demand for reducing meat consumption reported that they had reduced their meat consumption. Yet, they voiced one more challenge for dietary change: polarizing attitudes which are causing resistance and worry. Whilst extreme strategies such as “no meat” and “vegan ideology” might be suitable for targeting younger generations, women and people living in urban areas, they might increase the resistance in certain groups such as buyers of “better meat” (Nevalainen et al., 2023).

5.2 Limitations

Some limitations of the study should be acknowledged. The sample of natural pasture-raised beef buyers is not representative of the Finnish population generally but represents a very niche group. Furthermore, the location of the selected farm might have caused the sample to represent even the Finnish natural pasture-raised and other high-quality beef buyers somewhat poorly; the farm is located near the capital city area and many of the participants lived in the Greater Helsinki region. This area has been found to differ from the rest of Finland with, for instance, higher incomes and more liberal views (SVT, 2019). Living in cities is also associated with consuming less meat than in rural areas (Nevalainen et al., 2023). In addition, self-selection bias might have occurred both in the survey and interviews. This means that people who are more open and interested in the topic than the general sample frame are more likely to participate in the study (Robinson, 2014). Signs of self-selection bias were, for instance, evident in high interest some of the interviewees expressed towards the topic during the interviews and through their careers and hobbies. This effect might also be amplified by the small number of interviewees. Additionally, subjectivity is always present in qualitative research since ultimately the

researcher chooses the way of interpretation and exploitation of the data (Bumbuc, 2016). I have tried to avoid biases in the results by acknowledging my position as the researcher, carefully planning the data collection and analysis, and most importantly, transparently reporting the reasons behind all decisions.

The survey sample size represents the exact target group well, but the accuracy of the participants' self-reported behaviour regarding the frequency of meat consumption and changes in eating habits is questionable. Without measuring the actual change, it is not possible to state the results with certainty. This is the case since consumers have been found to exaggerate the positive implications of their diets whilst self-reporting (Latvala et al., 2012; Rosenfeld et al., 2020; Vinnari et al., 2009).

Some of the questions could have been formulated better. Additional questions regarding the motives to eat less/more meat and values when choosing meat products (also for participants whose meat consumption had not changed) could have helped to collect more insightful data. Especially the question number seven “*How important are the following values to you when purchasing meat products? (Very important, fairly important, important, slightly important, not important at all, no opinion)*” could have been improved by asking the participants to rank certain values from most to least important instead of asking a multiple-choice question. Additionally, it should have been clarified more clearly whether the questions were related to overall meat consumption or only beef/red meat.

When it comes to the interviews, all of them could have been organized through Zoom to ensure that the interviewees were focused on the interview. This way the interview data would have been more coherent. Lastly, I4 did not represent a consumer of natural pasture-raised beef due to her vegetarian diet, but as a buyer of the product she added valuable diversity of opinions.

5.3 Future work

Older consumers and men are less likely to decrease their meat consumption (Nevalainen et al., 2023; Schösler & de Boer, 2018). Therefore, previous literature has suggested that policies supporting the protein transition should target especially men and older

generations (Schösler & de Boer, 2018). Since the buyers of high-quality beef are typically middle-aged or older and include men who seem to be more interested in their food choices than average, maybe the “less and better” -strategy could be targeted to this group specifically. Perhaps focusing on clearly defining “less” and advertising a variety of more sustainable eating habits (e.g., in table 4) in marketing and avoiding strict and polarized demands and claims (e.g., “no meat” & demonization of beef) could reduce the resistance that especially “meat lovers” and men have previously shown and motivate them to change their eating habits more sustainable. More attention could be paid to the sustainable eating habits that different age groups are most willing to follow. This could be an interesting topic for future research.

6 Conclusions

Even though a clear connection between the two aspects of “less and better” exists among the buyers of natural pasture-raised meat, a reverse side can be detected; many consumers are consuming more meat due to the improved access to what they perceive as better. The motives for meat reduction vary widely yet environmental and climate change reasons have not reached a significant position. It appears that meat reduction amongst the buyers of “better” meat is shadowed by pleasure orientation, lack of understanding of the scope of negative impacts of meat production and of the message “less meat”, high trust in Finnish meat production as such and resistance to change caused by polarized information and attitudes. Even though many participants had found ways to incorporate sustainable eating habits into their everyday lives and meat's position at the top of the food hierarchy is slowly changing, the results do not seem to correspond to high expectations held by the proponents of the concept. Though this is a small study, it questions a validity of the claim that “less and better” can be a sufficiently strong solution to support a sustainable nutrition transition in the way it is currently being presented.

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9 Appendices

APPENDIX 1. Cover letter for the customer satisfaction survey

Tervetuloa vastaamaan Bosgårdin asiakastytyvyyskyselyyn. Voit voittaa lahjakortin!

Bosgårdin tärkein voimavara ovat tyytyväiset asiakkaat. Bosgård haluaa edelleen kehittää toimintaansa niin, että palvelu vastaa parhaalla mahdollisella tavalla asiakkaiden tarpeita ja toiveita. Oheisen kyselyn avulla keräämme tietoja kokemuksistanne Bosgårdista sekä sen tarjoamista tuotteista ja palveluista liiketoimintamme kehittämiseksi. **Kyselyyn vastaaminen vie noin 10 minuuttia ja vastanneiden kesken arvotaan 50 e arvoinen lahjakortti.** Pääset vastaamaan oheisesta linkistä:

<https://forms.gle/4jwrU1TjwBUIQSLF7>

Kyselytutkimus Bosgårdin kartanon asiakkaille

Bosgårdin tärkein voimavara ovat tyytyväiset asiakkaat. Bosgård haluaa edelleen kehittää toimintaansa niin, että palvelu vastaa parhaalla mahdollisella tavalla asiakkaiden tarpeita ja toiveita. Oheisen kyselyn avulla keräämme tietoja kokemuksistanne Bosgårdista sekä sen tarjoamista tuotteista ja palveluista liiketoimintamme kehittämiseksi. Kyselyyn vastaaminen vie noin 10 minuuttia ja vastanneiden kesken arvotaan 50 e arvoinen lahjakortti. Pääset vastaamaan oheisesta linkistä: <https://forms.gle/4jwrU1TjwBUIQSLF7>

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forms.gle

APPENDIX 2. Text template for online survey including invitation to interview (English translation)

Online questionnaire for the customers of Bosgård Farm

Bosgård's most important assets are satisfied customers. Bosgård wants to continue to develop its products and services so that they meet the needs and wishes of customers. With the attached survey, we collect information about your experiences with Bosgård and its products and services in order to develop our business.

You have been selected for this study from Bosgård's customer register. The data will be used only for this research. The information you provide will be treated confidentially, and individual information will not be made available to anyone.

Answering the survey takes about 10 minutes, and a **gift card to Bosgård farm (worth 50 e)** will be drawn among those who answered. Please note that the contact information for the draw and the information on the forms will be kept separate.

Iisa Hyypiä, a student at the University of Helsinki's Faculty of Bio and Environmental Sciences, is responsible for analysing and reporting the research data. The material is also used in her master's thesis on consumer opinions and consumption habits related to meat, especially pasture-raised beef. At the end of the survey, there is an option to leave contact information to participate in the master's thesis interview. The identity of the interviewees will not be revealed in the thesis. Among those participating in the interview, another **gift card worth 50 e** will be drawn.

All answers are valuable to us!

We hope that you will answer our survey as soon as possible, but no later than 23.10.2022.

(In Swedish) Note! You can also answer the open questions in Swedish!

Best regards,

Bosgård farm

For more information about the study, please contact Iisa Hyypiä

0407493038,

iisa.hyypia@helsinki.fi

**Obligatory*

Background information

1. Gender *
 - a. Female
 - b. Male
 - c. other
2. Age *
3. Municipality of residence *
4. Education (highest grade completed) *
 - a. Basic education
 - b. Upper secondary education
 - c. Lower university or polytechnic degree
 - d. Higher university or polytechnic degree
 - e. Doctoral degree
 - f. Other:
5. Persons living in the same household *
 - a. Adults
 - b. Children (under the age of 18)
6. Household gross income

Consumption habits

The following questions are related to your meat consumption in general

7. How important are the following values to you when purchasing meat products?
(Very important, fairly important, important, slightly important, not important at all, no opinion) *
 - a. Quality
 - b. Flavour
 - c. Consistency
 - d. Freshness
 - e. Healthiness
 - f. Price
 - g. Animal welfare
 - h. Taking care of the traditional rural biotopes
 - i. Domesticity
 - j. Traceability of the origin
 - k. Supporting the producer
 - l. Knowing the producer personally or indirectly
8. How often do you eat meat? *
 - a. Several times a day
 - b. Approximately once a day

- c. Approximately 4-6 times a week
 - d. Approximately 1-3 times a week
 - e. Approximately 1-3 times a month
 - f. Less often or never
9. Has your meat consumption changed within the past three (3) years? *
- a. Increased a lot
 - b. Increased a little
 - c. Stayed the same
 - d. Decreased a little
 - e. Decreased a lot
10. If your meat consumption has changed within the past three (3) years, how can this be detected in weekly/monthly level? (Example: *"I used to eat only chicken and pork every week but during the last year I have started eating beef as well approximately 2 x a week."*)
11. If your meat consumption has changed within the past three (3) years or before that, did natural pasture beef have an impact on this? What kind?

Bosgård farm customership

The following questions focus on your customership with Bosgård's farm. When you answer questions, focus on thinking specifically about the products and services you have bought from Bosgård farm.

12. How many years have you been Bosgård's meat purchasing customer? (If you don't remember exactly, estimate.) *
13. How often do you buy meat from Bosgård farm? *
- a. Less than once a year
 - b. Once a year
 - c. Twice a year
 - d. Three times a year
 - e. Four times a year
 - f. Five times a year or more
14. How much meat do you buy at one time? *
- a. Under 10 kg
 - b. 10-15 kg
 - c. 15-30 kg
 - d. 30-60 kg
 - e. Over 60 kg
15. How do you typically pick up your order from Bosgård? *
- a. Directly from the farm
 - b. From the capital city area's pick-up point (Kotitilan myymälä)
 - c. Someone else picks up my order for me from either the farm or capital city area's pick-up point
 - d. I order delivery

- e. Other:
16. How do you typically share the meat order you bought? *
- a. My household uses all of it
 - b. I share the meat with my relatives and/or friends
 - c. I share the meat as business gifts
 - d. Other:
17. How satisfied are you with the following qualities of Bosgård meat products? (Extremely satisfied, very satisfied, slightly satisfied, not at all satisfied, no opinion) *
- a. Quality
 - b. Flavour
 - c. Low fat percentage
 - d. Marbling
 - e. Availability
 - f. Selection
 - g. Packaging shape
 - h. Certainty about the origin of the meat
 - i. Price
 - j. Delivery method and speed
 - k. Taking care of the traditional rural biotopes
 - l. The condition and cleanliness of the farm
18. Possible improvement suggestions and wishes regarding meat products?
19. How often do you/have you visited the Bosgård farm? *
- a. Never
 - b. Once
 - c. Regularly about once a year
 - d. Regularly about twice a year
 - e. Three times a year or more often
20. When you have visited Bosgård farm, what other things have you done on the same journey?
21. Bosgård's website address is www.bosgard.com. What do you think about the website? *
- a. Website is clear
 - b. Website is beautiful
 - c. Website has plenty of information about the farm, products and services
 - d. Other:
22. How satisfied have you been with the following products are services Bosgård offers? (Extremely satisfied, very satisfied, slightly satisfied, not at all satisfied, no opinion) *
- a. Meat products
 - b. Farm shop
 - c. Restaurant
 - d. Meeting and event spaces
 - e. Program services for groups and private guests

- f. Nature and culture paths
 - g. Events
23. How likely would you recommend Bosgård's services and products to others? (1-10)
*
24. Possible improvement suggestions and wishes regarding Bosgård's products and services?
25. *Have you ever organized a group event at Bosgård, such as a meeting of your work community or recreation days, wedding, or birthday party? If you have, don't answer, and continue to the next section. If you have never organized a business or private event at Bosgård, why?*
- a. Bosgård's inconvenient location
 - b. Price request was too high
 - c. I didn't know it is possible to organize events and meetings at Bosgård
 - d. Something was missing from the offer
 - e. Other:
26. If you have organized a business or private event at Bosgård how satisfied were you with the following things? (Extremely satisfied, very satisfied, not satisfied, or unsatisfied, slightly unsatisfied, extremely unsatisfied)
- a. Food
 - b. Site
 - c. Service
 - d. Incidental programme
 - e. Value for money
27. How likely would you organize business or private event at Bosgård in the future? (1-5) *
28. Other possible feedback

Participating to an interview

I am a master's student in Environmental Change and Global Sustainability program at the University of Helsinki and I am doing a master's thesis on consumer opinions and consumption habits related to beef, especially natural pastured beef.

I am looking for interviewees for my research who buy natural pastured beef regularly, at least once a year.

The interviews are individual interviews lasting no longer than an hour, which are arranged via video call or by telephone as agreed. The interviews take place between October and November. The interviews are recorded and transcribed. Among the interviewees, a gift card worth 50 euros will be drawn to Bosgård's farm.

The interview materials will be handled strictly confidentially and will only be used for this master's thesis and a possible doctoral dissertation. The identity of the interviewees will not be revealed in the research.

If you are interested in participating in my research, please leave your contact information below and I will contact you as soon as possible. All experiences and views are valuable for my research!

Many thanks for your help!

Iisa Hyypiä

0407493038,

iisa.hyypia@gmail.com

29. Name, email and/or phone number

Participating in the raffle

Many thanks for answering the survey! If you want to participate in Bosgård's 50-euro gift card draw, please leave your contact information below. The information will be used only to run the draw and the winner will be notified personally during November.

30. Name, email and/or phone number

APPENDIX 3. Interview rubrics

(English translation)

NOTE! The results of the survey may affect how the questions marked in orange are formulated.

Consumption habits

- Would you tell us a little about your diet and that of your household?
 - o Do you eat chicken, fish, red meat, pork, game?
 - o Are there vegetarians in your household?
- How often do you eat meat?
- How often and in what situations do you eat beef?
- What kind of foods do you eat when you don't eat meat?
 - o What kind of vegetarian food do you make/eat?

Purchasing meat

- Where (other than Bosgård) do you get your beef?
 - o E.g. directly from another farm/home delivery, supermarket
- When did you first buy pasture-raised meat?
- Would you estimate how much of the beef your household uses is natural pasture meat or organic?
 - o Rating %

Values related to beef

- What do you think "high-quality beef" is like?
 - o Do you think natural pastured meat is like this?
- What kind of things influence the fact that you have chosen to buy meat from natural pastures?
 - o Health, environment, society, high-quality eating
- In your opinion, how does natural pastured meat differ from so-called regular beef?
- Has buying pasture-raised meat taught you anything about agriculture, grazing animals, etc.?
- Do you think there is anything problematic or difficult about producing/consuming beef?

Sustainable diet and diet change

- What do you think a sustainable diet is like?
 - o "Sustainable operations aim to guarantee people's well-being without depriving future generations of the opportunity to guarantee their own well-being. Typically consists of three parts: social, ecological and financial sustainability."
- Next, I will read you a couple of different nutritional recommendations, and I would like to hear what kind of thoughts they evoke in you. I read them one by one:
 - o According to Finnish nutritional recommendations, for health reasons, a maximum of 500 g of meat products and red meat per week (ripe meat) should be consumed (2014).
 - o The EAT-Lancet Commission (i.e., an international group of experts) has designed a "planetary diet", according to which a maximum of around 100 g of red meat should be eaten per week (2019).

- Have you reduced your own or has your household's meat consumption decreased in the last few years? (all meat vs. beef) Alternatively, from the increase in meat consumption (see background information)
 - o How, how much? (e.g., reducing the portion size, reducing the number of times)
 - o What things have influenced?
 - o If so, what kind of food have you replaced meat with, or e.g., beef /chicken?
- Are you going to reduce your meat consumption (further) or even give it up altogether?
 - o Why?
 - o If not, what would motivate you?

APPENDIX 4. Interview rubrics / Haastattelukysymykset (Original in Finnish)

HUOM! Kyselyn tulokset saattavat vaikuttaa siihen, miten oranssilla merkityt kysymykset muotoillaan.

Kulutustottumukset

- Kertoisitko vähän omasta ja kotitaloutesi ruokavaliosta?
 - o Syötkö kanaa, kalaa, punaista lihaa, porsasta, riistaa?
 - o Onko kotitaloudessasi kasvissyöjiä?
- **Kuinka usein syöt lihaa?**
- Kuinka usein ja millaisissa tilanteissa syöt naudanlihaa?
- **Teettekö tai syöttekö kasvisruokaa?**
 - o Millaisia kasvisruoka teette/syötte?

Lihan hankkiminen

- Mistä (muualta kuin Bosgårdista) hankit naudanlihaa?
 - o Esim. suoraan joltakin toiselta tilalta/kotiinkuljetuksella, marketti
- Milloin ostit ensimmäisen kerran luonnonlaidunlihaa?
- Arvioisitko, kuinka suuri osuus kotitaloutesi käyttämästä naudanlihasta on luonnonlaidunlihaa tai luomua?
 - o Arvio %

Mikä tekee naudanlihasta hyvää ja laadukasta

- Millaista on mielestäsi ”korkealaatuinen naudanliha”?
- Minkälaiset asiat vaikuttavat siihen, että olet valinnut ostaa luonnonlaidunlihaa/luomua?
 - o Terveys, ympäristö, yhteiskunta, laadukas syöminen
- Miten luonnonlaidunliha/luomu eroaa mielestäsi ns. tavallisesta naudanlihasta?
- Onko luonnonlaidunlihan ostaminen opettanut sinulle jotain maataloudesta, laiduneläimistä tms.?
- Onko naudanlihan tuottamisessa/kuluttamisessa mielestäsi jotain ongelmallista tai hankalaa?

Kestävä ruokavalio ja ruokavalion muutos

- Millainen mielestäsi on kestävä ruokavalio?
 - o ”Kestäväällä toiminnalla pyritään takaamaan ihmisten hyvinvointi viemättä tulevilta sukupolvilta mahdollisuutta taata oma hyvinvointinsa. Koostuu tyypillisesti kolmesta osasta: sosiaalisesta, ekologisesta ja taloudellisesta kestäväyydestä.”
- Seuraavaksi luen sinulle pari erilaista ravitsemussuosittelusta, ja haluaisin kuulla, millaisia ajatuksia ne sinussa herättävät. Luen ne yksi kerrallaan:
 - o *Suomalaisten ravitsemussuosittelusten mukaan lihavalmisteita ja punaista lihaa tulisi terveydellisistä syistä käyttää viikossa maksimissaan 500 g (kypsää lihaa) (2014).*
 - o *EAT-Lancet Komissio (eli kansainvälinen asiantuntijaryhmä) on suunnitellut ”planetaarisen ruokavalion”, jonka mukaan punaista lihaa tulisi syödä viikossa maksimissaan noin 100 g (2019).*

- Oletko vähentänyt omaa tai onko kotitaloutesi lihankulutus vähentynyt viimeisen muutamana vuoden aikana? (kaikki liha vs. naudanliha) Vaihtoehtoisesti lihan kulutuksen lisääntymisestä (kts. Esitiedot)
 - o Miten, kuinka paljon? (esim. annoskoon pienentäminen, kertojen vähentäminen)
 - o Mitkä asiat ovat vaikuttaneet?
 - o Jos olet, millaisilla elintarvikkeilla olet korvannut lihan?
- Oletko aikeissa vähentää lihankulutustasi (entisestään) tai jopa luopuvasi siitä kokonaan?
 - o Miksi?
 - o Jos ei, niin mikä motivoisi?

APPENDIX 5. Qualitative content analysis – code groups

1. Dietary habits
2. Family and food
3. Eating quality of high-quality beef
4. Production qualities of high-quality beef
5. Negative experiences with meat
6. Problems in meat production and consumption
7. Finnish meat production
8. Understanding of food systems
9. Understanding of sustainable diet
10. Sustainable eating practices
11. Meat reduction
12. Concretizing “less” meat
13. Difficulties in eating more sustainably
14. Negative attitudes towards vegetarian/vegan products/lifestyle
15. Fear of polarizing attitudes