

Towards Sustainable Dietary Change

An Exploration of Norwegian University Student's Attitudes
toward Meat Reduction

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Abstract

The current food system is associated with various environmental implications. The meat industry has been recognized as a substantial contributor to these environmental implications and places enormous strain on ecosystems. A shift toward more sustainable diets, such as plant-based and low-meat diets have therefore been emphasized as a significant component of climate change mitigation. By combining results from individual interviews and focus group interviews, this master thesis investigates whether Norwegian university students are aware of the environmental impacts connected with meat consumption and explore their attitudes toward sustainable dietary change.

The finding demonstrates that students lack sufficient knowledge of the interconnected and problematic consequences of the meat industry. The results further highlight the significance of habits and sociocultural aspects that influence the type and amount of meat consumed by students. Meat substitutes and plant-based alternatives have an essential role when examining students' willingness to reduce their meat intake. Prices, convenience, and skills of meat substitutes are also considered significant impediments to sustainable dietary change. The study draws upon the Intention-Behavior Gap and The Theory of Planned Behavior as a theoretical framework for understanding students' inconsistency between intentions and their actual meat consumption behaviors.

According to the findings, being unaware of the pressing concerns diminishes the probability of consuming less meat for environmental reasons. Comprehending social perceptions around meat consumption is a prerequisite for effectively transitioning to a more sustainable source of food. Improved information dissemination, media attention, and education on the benefits of plant-based diets may enhance societal knowledge and promote the acceptability of sustainable dietary change. The study concludes that achieving nutritional and environmental sustainability will necessitate a considerable amount of effort from a wide range of stakeholders including structural changes, supportive legislation, technology innovation, as well as consumer willingness for change.

Preface and Acknowledgement

Although this master thesis marks the end of my studies at the University of Agder, it also represents the beginning of a new personal chapter. This experience has been rewarding, enlightening, and educational, and it has inspired me to think differently.

I would like to express my sincerest appreciation to all the students who agreed to be a part of my interviews and participate in this study.

A special acknowledgment goes to my supervisor Vito Laterza. I appreciate the constructive feedback and guidance you have put in to assist me in delivering the best work.

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“And yes, I know we need a system change rather than individual change. But you can not have one without the other.”

(Greta Thunberg, 2019)

1. INTRODUCTION

The human population has grown dramatically over the last two centuries. The world's population has increased from nearly 1 billion to approximately 7.9 billion people, and it is expected to continue to grow by more than two billion people over the next 30 years. Estimates suggest that humanity will reach 9.7 billion by 2050, with a peak of close to 11.2 billion by 2100 (United Nations, 2019). Humans have been exceptionally innovative in overcoming environmental barriers, addressing current problems, and ensuring adequate food and resources for the rising population through a combination of agricultural, public health, medical, societal, and technological innovations (Stubbs et al., 2018). However, human actions and inventions have placed unprecedented stress on the earth's systems, resulting in contemporary global crises that endanger human populations' health and the environment. Scientists all around the globe have proclaimed and warned about the climate emergency through comprehensive assessments, reports, and declarations, tying our excessive consumption and human behaviors to the current and escalating climate and biodiversity disaster (Ripple et al., 2019).

Finding a sustainable way to feed the world's population is one of the world's most serious concerns today and in the next decades. The modern world is dominated by humans, and our intensive food system has evolved into an extremely complex and demand-driven system that is continually changing and expanding. Meat has long been regarded as a vital source of nutrients and an essential component of people's diets across the world. In response to economic growth, rising consumer demand, and preference, meat production has been extensively cultivated and farmed for decades (Ritchie & Roser, 2019). The worldwide demand for meat has increased dramatically over the last 50 years as a result of fast-growing populations and economic development, with an annual production of more than 340 million tons (He et al., 2020; Ritchie & Roser, 2019). With a population of over 7.9 billion people, a transformation in the way we produce and consume food will be critical to meeting the sustainable development goals, that interlink our food systems to climate change, ecosystems, and societies (NORAD, 2021). The existing food and meat production systems have a significant influence on the environment, with extremely high levels of greenhouse gas emissions, freshwater usage, and agricultural land use (Ritchie & Roser, 2019; IPCC, 2018). Humanity is facing a grave catastrophe, not just in terms of the environment, but also in terms of human health and well-being (Willett et al., 2019). The increasing alarm around our existing food model and its

harmful effects on human health, animal welfare, food security, and climate change are forcing us to research, develop and change to more sustainable food systems and diets.

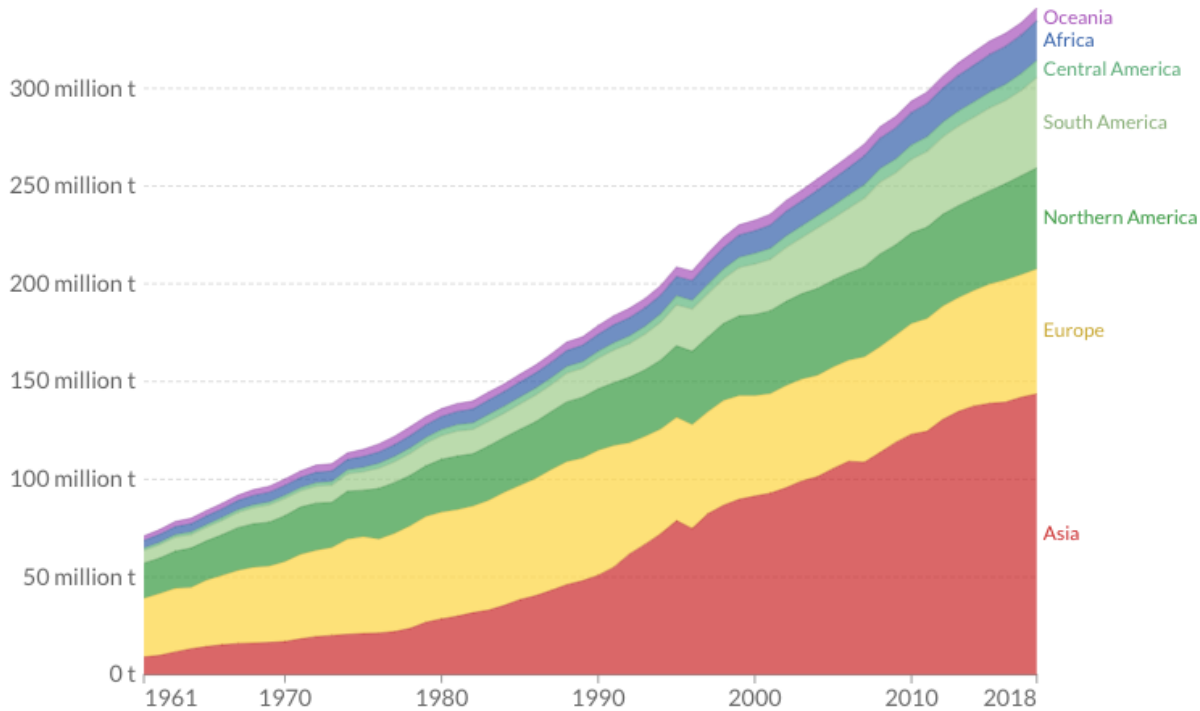


Figure 1: Global meat production, 1961 to 2018

Source: (Ritchie, & Roser, 2019).

1.1. Research Scope and Geographic Context

The younger generation has demonstrated to be peculiarly encouraging of pro-environmental behavior and promotes high levels of participation in climate change threats and challenges (Tyson et al., 2021). This became clear in August 2018 at the start of the global youth-led Fridays for Future climate strike movement, which demonstrates the youth's commitment and fighting spirit for better prospects for the future. As a corollary, the youth play a vital role in moving civilization toward a low-carbon and climate-resilient future, which includes supporting renewable energy sources, adopting environmentally friendly habits, and executing disaster risk reduction initiatives (United Nations, 2021).

There are numerous challenges linked to climate change and meat production whilst the importance of consumer choices has not received the greatest research attention yet. The environmental impact of the meat industry is evident, but how aware is the younger generation,

and how does it affect their choices in everyday life? As plant-based alternatives for meat are emerging and growing in the Norwegian market, this research will explore the younger generation's attitudes and behaviors toward sustainable dietary change. The study will not go into depth explaining what climate change is, aside from highlighting the threats climate change poses to the ecosystems. This thesis will rather explore the contemporary food sector, with an emphasis on the meat industry, addressing the adverse environmental impacts of meat consumption. Furthermore, I believe that getting an understanding of the political, economic, and cultural factors is crucial in this debate (Klößner, 2017). Nevertheless, consumer awareness and a behavioral change within the population are perceived as part of the solution to the complex issues surrounding meat consumption, health, and the environment (Austgulen et al., 2018; Godfray et al., 2018). There is extensive literature on this field at the global level, however, much of the research is based on quantitative data. Limited research exists on youth's attitudes toward sustainable dietary change in Norway within a specific geographical setting. This gap in the field is what this thesis intends to investigate further. Therefore, this research will be narrowed down to a specific region, focusing on the meat consumption and attitudes of university students in Kristiansand.

1.2. Background and Rationale

The choice of topic for my master thesis has been chosen for many reasons. One of them is that we are facing a climate emergency and biodiversity crisis, whereas global food production put enormous pressure and irreversible effects on the Earth system and local ecosystems (Willett et al., 2019). However, little interest and action have been put into agricultural policy changes by Norwegian authorities and policymakers. On the other hand, the Norwegian strategy has been to increase national meat production instead of adapting sustainable food systems that can transform and promote healthy diets for our population (Austgulen et al., 2018). Even though plant-based diets are becoming more popular in Norway, there is still a lot of skepticism and unwillingness to reduce daily meat consumption. The demand for meat keeps climbing as meat is an important element in Norwegian culture and traditions, and it is still regarded as one of the most important sources of nutrients. The significance of young environmental perspectives is linked to the population's future aspect for climate action. The younger generation will not only inherit a world dominated by unpredictable weather and ecological disasters. The current and next generations will also adopt cultural norms, traditions, and social consumer behaviors.

For this reason, it is critical to gain a thorough understanding of the dynamics and driving forces of consumers' behaviors and their attitudes toward sustainable dietary change. The goal of this thesis is to provide insight into the viewpoints of a small sample of Norwegian University students and the motives that drive their behaviors with focus on their attitudes, behaviors, and intents. Whereas there are studies on Norwegians' attitudes towards meat and the population's readiness for a reduction in meat consumption (Austgulen et al., 2018; Vatn et al., 2022; Kubberød et al., 2002; Larsson et al., 2002), obtaining further knowledge about these factors and what might preserve or transform them is essential for the development of environmental policies, as well as for consumers and the public self-reflection and climate action.

1.3. Research Objective and Research Questions

The meat production's contribution to air pollution, massive quantities of land and water consumption, and biodiversity losses call for a change. Given that reducing the consumption of livestock products is one approach to mitigate the food productions impact on the environment, it is critical to investigate what motivates the younger generation towards changes in preferences and dietary choices. The objective of this thesis is to provide insight and in-depth understanding of attitudes of reduced meat consumption and sustainable dietary change. This master thesis will explore climate change knowledge and attitudes amongst university students and if the growing market of meat substitutes, have if any, affected their meat consumption. Building upon existing research in the field of environmental behavior, I will study the relationship between contextual forces, personal values, and social and cultural significance, as well as discuss the challenges and paradoxes that arise when looking deeper into this social phenomenon. Recognizing meat consumption as an important factor in student's environmental footprints, the study will address the following problem statement:

To explore the attitudes and behaviors Norwegian University students have towards reduced meat consumption and their willingness for sustainable dietary change.

The following research questions will guide the master thesis to answer the problem statement.

- RQ1. How do students reflect upon the relationship between their meat consumption, health, and sustainability?
- RQ2. What influences the type and amount of meat consumed by students?

RQ3. To what extent do environmental awareness and knowledge affect students' meat consumption and their attitudes toward plant-based alternatives?

RQ4. What are the main factors that explain students' reluctance toward meat reduction and sustainable dietary change, and how do we address them?

1.4. Overview and Structure

The thesis is divided into six chapters. The following outline describes the structure and key points of each chapter:

Chapter 2 – Literature Review and Theoretical Framework

Presents essential contextual information from existing literature on; The Climate Emergency and Livestock production Impacts; The Position of Meat in Norwegian Society; and The Future of Meat, before introducing the theoretical framework of The Theory of Planned Behavior and Intention-Behavior Gap. This literature and framework provide an outline of the rising concerns of today's food system with the growing consumption of meat. The chapter further demonstrates the current societal need to rethink their eating behavior in order to contribute to the protection of the ecosystems and human health.

Chapter 3 – Methodology

Describes the methodology of this study by looking into the research design and applied strategies. An exploratory case study with a qualitative research strategy was chosen to gain in-depth understanding and knowledge. In order to grasp and address the research question, a combination of inductive and deductive reasoning was used. The data collection and analysis strategies that were used are introduced and explored. Further are ethical considerations and research reflexivity addressed.

Chapter 4 – Empirical Findings

Presents the empirical findings attained from 15 individual interviews and one focus group. The chapter is structured around the research questions and presents the patterns and statements discovered in the student's responses.

Chapter 5 – Discussion and Analysis

This chapter discusses and analyzes the empirical findings from the interviews in light of the literature review and theoretical framework. The goal of this chapter is to examine the findings in connection to what they imply for the research questions and to answer the study's problem statement. The analysis further discusses the paradoxes and dilemmas that students are confronted with on a regular basis while making dietary decisions and reflects on the broader context of the examined questions.

Chapter 6 – Conclusion

This part establishes the relationships and concludes with the study's key discoveries and insights. The chapter presents the final with policy implications, limitations of the study, and suggestions for further research.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The literature review will be divided into relevant sections. Firstly, an overview of our current ecological and climatic crisis will be presented, interlinking this to our existing economic growth paradigm and over-exploitation of land and natural resources. By doing this, we recognize that individual consumption habits and dietary choices are strongly linked to levels of human health and environmental repercussions, and it is significant to understand the contextual forces that shape the worldviews and constructs of the world's power balances. Secondly, an overview of meat's role in Norwegian society will be provided, highlighting the importance of culture and tradition, gender and living condition, as well as media and dissemination of information. Thirdly, empirical literature on behavioral intent and willingness for change will be introduced, with a presentation of the blossoming field of vegetarianism and plant-based alternatives. Fourthly, relevant literature on the future perspectives of meat and plant protein consumption in Norway will be presented. Highlighting the motivations and impediments to towards sustainable dietary change, as well as underlining the necessity of technology advancements for sustainable consumption and food security. Lastly, The Theory of Planned Behavior and Intention-Behavior Gap will be presented, which is the theoretical frameworks that this master thesis draws upon.

2.1. The Climate Emergency and Livestock Impacts

Rising prosperity and increased meat consumption have been acknowledged as widespread phenomena. Throughout the 20th century, several high-income countries have embraced meat as the foundation around which meals are prepared. The enhanced production capacity of the animal-food supply chain has supported and promoted these cultural and social practices as meat has become broadly accessible and financially affordable (Clonan et al., 2015). Global eating behavior and food demand have magnified and shifted due to complex social and economic forces in particular; growing urbanization, expanded market share by international commerce and food and service chains and businesses, elevated marketing and mass communication, hypercompetitive prices, with the combination of technical and cultural advancements (Sage, 2016).

The focus on addressing climate change has tended to be on 'environmentally friendly' mitigation strategies, such as the deployment of renewable or nuclear energy, advancements in energy efficiency, or the shift to low-carbon transportation. As shown in figure 2, 74% of greenhouse gas (GHG) emissions are clearly caused by energy, such as in the form of power, heating, transportation, or industrial operations (Ritchie, 2019). However, the global food and agricultural system, which includes everything from production to post-farm processing and preparation of commodities, are important components, and account for one-quarter of global greenhouse gas emissions (Ritchie, 2019).

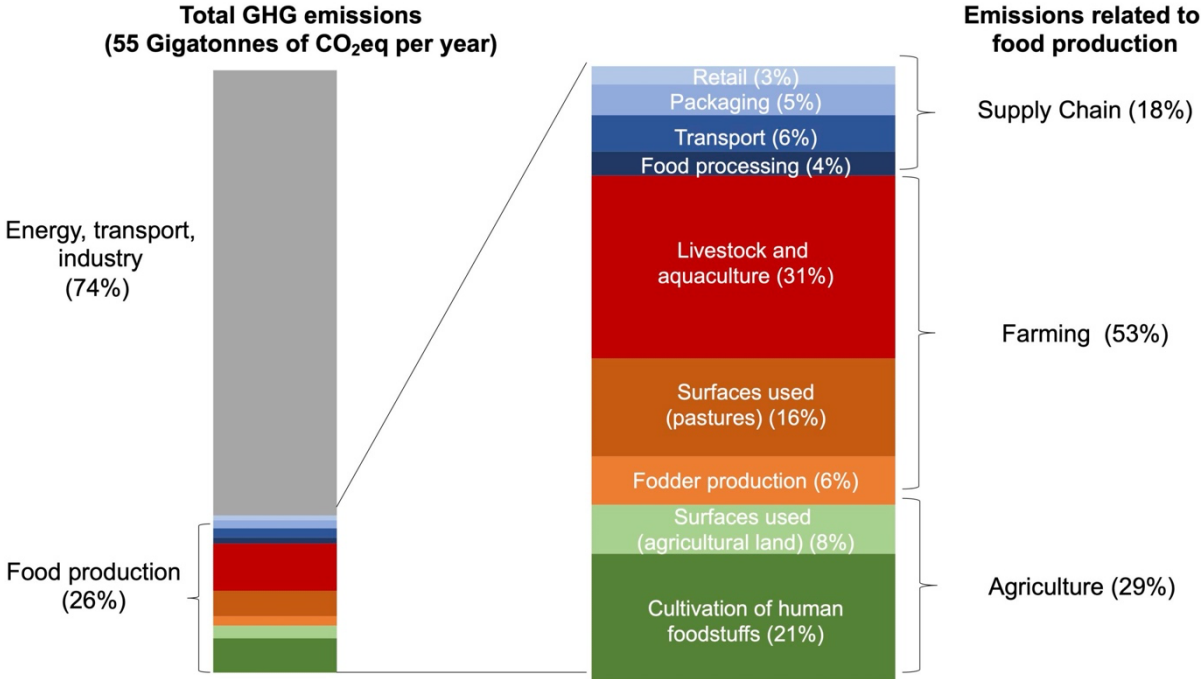


Figure 2: Global greenhouse gas emissions from food production

Source: (Ritchie, 2019).

Extensive literature has emphasized their concerns, connecting contemporary human activities to the current climate emergency in the act of pushing the planet's boundaries to the ultimate limit, speedier than the planet's ecosystems can restore and the atmosphere can naturally sequester (Ripple et al., 2019; Schneider et al., 2011; Steffen et al., 2015). Currently, humanity extract and consume the earth's natural resources unsustainably, and a transition in global processes and systems is a significant component of lowering GHG emissions and improving human health (Ripple et al., 2019). Livestock production, and meat production in particular,

necessitates large land and water resources, and has a significantly larger ecological and environmental impact than plant-based food production (Godfray et al. 2018; Ritchie & Roser, 2020).

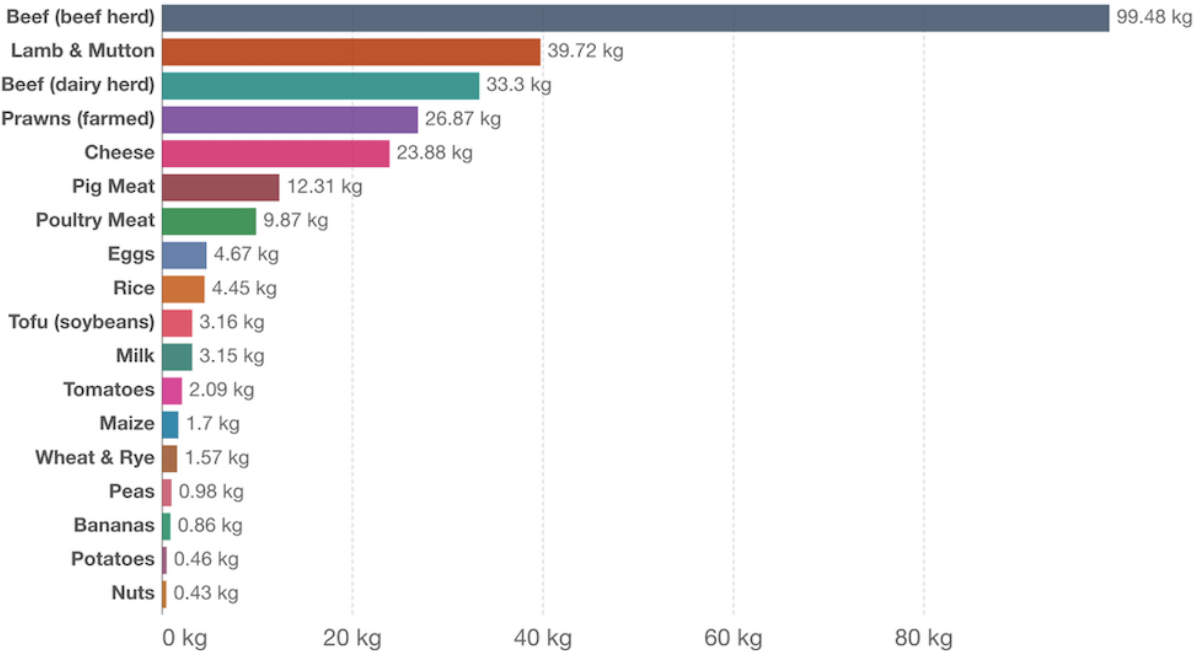


Figure 3: Greenhouse gas emissions per kilogram of food product

Source: (Ritchie, & Roser, 2020). Greenhouse gas emissions are measured in kilograms of carbon dioxide equivalents (kgCO₂eq) per kilogram of food product. This means non-CO₂ greenhouse gases are included and weighted by their relative warming impact.

Excessive and constantly growing meat consumption rates offer serious concerns in the context of planetary boundaries. To avoid increased levels of ecological harm beyond the current level, the environmental footprint of animal products, as well as consumption levels, must be significantly reduced (Parlasca & Qaim, 2022; Steinfeld et al., 2006). Comprehensive research has studied the pressure an increased demand from a growing population and consumption has and will subsequently put on the planet (Bindraban et al., 2012; Foley et al., 2011; McMichael et al., 2007; Poore & Nemecek, 2018; Westhoek et al., 2014). It is being progressively recognized that the current global food supply is closely connected to world peace and in the achievement of the Sustainable Development Goals (SDGs). Conflicts and armed conflicts, climate change, and the worldwide pandemic are putting a pressure on the planet’s finite resources, resulting in a lack of healthy and sustainable food for everyone. Furthermore, addressing key concerns in today's world such as human health, ecology, and socioeconomics

(Chen et al., 2019), widespread obesity and hunger have major negative health consequences (McMichael et al., 2007). There is a pressing necessity to minimize human activities' environmental harm to prevent surpassing planetary boundaries while still maintaining a healthy diet for the world's rising population (Chen et al., 2019). As a result, it is critical for future food supply and demand that the agricultural industry diminish its environmental imprint while simultaneously adopting a sustainable practice.

2.1.1. Norwegian Environmental Awareness and Generation Z

Norway has seen a tremendous increase in wealth and prosperity since the 1970s. This has been accompanied by an increase in consumption, resulting in greater resource use and environmental footprint. Norway's rising private consumption has a substantial influence on resources and the environment. Food, in particular animal products, housing, energy and transportation, all contribute to high private consumption (Hille, 2012). The populations' understanding of this massive environmental imprint and lack of willingness to carry their fair share of the burden, demonstrate evident inconsistencies.

In a large-scale study of 38.000 Norwegians, 80% said they believe climate change is occurring, though most were just somewhat concerned (Aasen et al., 2019). Evidence addressing individual responsibility for climate action yields varying findings. There is a widespread belief that international organizations, national governments, enterprises, and industries have the ability to address climate change and reduce GHG emissions. However, according to an international comparative study, 54% of Norwegians feel that people lack the ability to make a difference in the fight against climate change (Smith, 2019). According to the same study, Nordic countries rank the lowest, with just 10% to 14% believing that climate change will seriously impair their lifestyles. The public is divided concerning what it will take to combat climate change. While some believe that large lifestyle adjustments would be required to deal with the effects of climate change, others believe that new technological breakthroughs will handle the majority of the issues caused by climate change (Tyson et al., 2021).

Environmental deterioration appears to be a worry for the current generation in essence for future generations to have a sustainable environment of food. Vermeir & Verbeke (2006) found indications that young consumers in Belgium are very interested and involved in sustainable food consumption. The findings support prior studies on adolescents' perceptions of food-

related environmental consequences. Furthermore, evidence suggests that customers with a high level of participation have more favorable views and are more ready to purchase environmentally friendly products (Vermeir & Verbeke, 2006). Additionally, the modification of engagement lead to increased customer involvement levels. As a result, presenting consumers with the benefits of sustainable purchases results in a more personal connection to sustainability. However, there appears to be a gap in Norwegians' perceived consumer responsibility and self-efficacy in their behavior choices and action.

Previous research conducted in Norway has explored and compared characteristics of young low-meat consumers and attitudes towards meat (Larsson et al., 2002; Kubberød et al., 2002), and investigated voluntary change in food choices (Klößner, 2017). A recent Norwegian publication on “Consumer Readiness to Reduce Meat Consumption for the Purpose of Environmental Sustainability” (Austgulen et al., 2018) emphasizes Norwegian consumers' lack of awareness and understanding of the severe climate implications of meat production and consumption. According to the study's findings, the majority of people believe that decreasing food waste and boosting the production of locally produced food are more beneficial environmental measures than lowering meat consumption. This underestimating of meat's climate effect among Norwegian consumers is consistent with prior findings among consumers from other nations (Campbell-Arvai, 2015; Hartmann & Siegrist, 2017; Latvala et al., 2011; Tobler et al., 2011). The study further explains the low awareness among Norwegian consumers of the way meat production is handled and framed in Norwegian public discourse (Austgulen et al., 2018). Therefore, total elimination of animal-sourced products is viewed by many as unrealistic (Dagevos & Voordouw, 2013).

According to comprehensive research, increased economic development corresponds with less environmental awareness. Climate change is viewed as a problem that mainly affects different geographical areas, with hardly any influence on the regional individual basis in Europe (Deisenrieder et al., 2020). These findings imply that educational efforts should focus on increasing students' attitudes about the food-environment relationship while also empowering them to conduct a wider range of activities to minimize their food-related environmental impact (Campbell-Arvai, 2015). The question of how to successfully influence consumer behavior and reduce meat consumption in light of the social and cultural value of meat in Norwegian remains unsolved.

2.1.2. Healthy, Sustainable and Transparent Food Systems and Diets

Current meat intake practices are regarded as unsustainable. A well-balanced diet is essential for optimal mental and physical wellbeing at any stage of life. A dietary change in compliance with The Norwegian Directorate of Health's dietary recommendations and guidelines can reduce the risk of contracting non-infectious illnesses, such as cancer, cardiovascular disease, and type 2 diabetes (Helsedirektoratet, 2021). A diet in compliance with these recommendations has the potential to deliver additional years of good life as well as major societal advantages. In a 2016 study, the Norwegian Directorate of Health assessed the potential social benefits of following dietary standards to NOK 154 billion per year (Helsedirektoratet, 2021). A sustainable diet is characterized by, among other things, a greater intake of vegetables, fruits and coarse grain products and a decreased consumption of red and processed meat. This shift will require a substantial change in peoples eating patterns, a significant decrease in meat and vegetable oils, a modest decrease in cereals, roots, and fish products, and a considerable increase in people's intake of greens, fruits, legumes, nuts, and seeds (Chen et al., 2019). Food waste reduction and a more plant-based diet have also been shown to mitigate the ecological footprint of food production (Helsedirektoratet, 2021). Bjartnes et al. (2019) emphasized that decreasing meat consumption can be seen as a difficulty and threat for some agricultural industries, however, growing vegetable consumption may open opportunities for expanding enterprises and farmers in the vegetable and plant-based sector. If meat consumption diminishes, market structures involved with meat product manufacturing, from farmers to consumers, may weaken in the society. Increased consumption of wheat, fruits, and vegetables, on the other hand, implies new market opportunities for agriculture and food industry segments engaged in vegetable commodities (Bjartnes et al., 2019).

According to Kubberød et al. (2006), meat and meat products are produced and sliced in an unrecognizable manner which cover the original animal origin. Manufacturing or processing the meat before consumption eliminates the underlying nature and reduces the likelihood of unpleasantness (Kubberød et al., 2006). Hoogland et al. (2005) investigated the impact of increasing consumer-oriented transparency in the supply chain. Transparency is argued to allow individuals to make more conscious buying decisions, aligned with their personal beliefs (Hoogland et al., 2005). However, the study's findings revealed an influence primarily among individuals with universalistic ideals, limiting the ultimate possibilities of transparency as a strategic instrument. Furthermore, the study found that consideration for animal rights did not

necessarily convert into food choices since the meat products in a grocery store do not show customers the product’s origin (Hoogland et al., 2005).

2.1.3. Climate Change Mitigation Through Dietary Change

With globalization and economic growth, people's dietary choices have transformed and shifted towards more resource-intensive foods. A cross-country comparisons study has shown a strong correlation between the quantity of consumed meat and their socioeconomic status (Ritchie & Roser, 2019). Increases in per capita meat consumption have been significantly greater in nations that have undergone substantial economic transitions in comparison to low- and middle-income countries (Ritchie & Roser, 2019). A growing body of research supports incorporating environmental priorities into nutritional guidelines (Aleksandrowicz et al., 2016; Chen et al., 2019; De Boer et al., 2016; Jarmul et al., 2020) and have recognized the demand-side measures such as dietary changes as a means of delivering positive impacts toward sustainable agricultural production, healthcare, water consumption, and environmental degradation (Kwasny et al., 2022; Poore & Nemecek 2018).

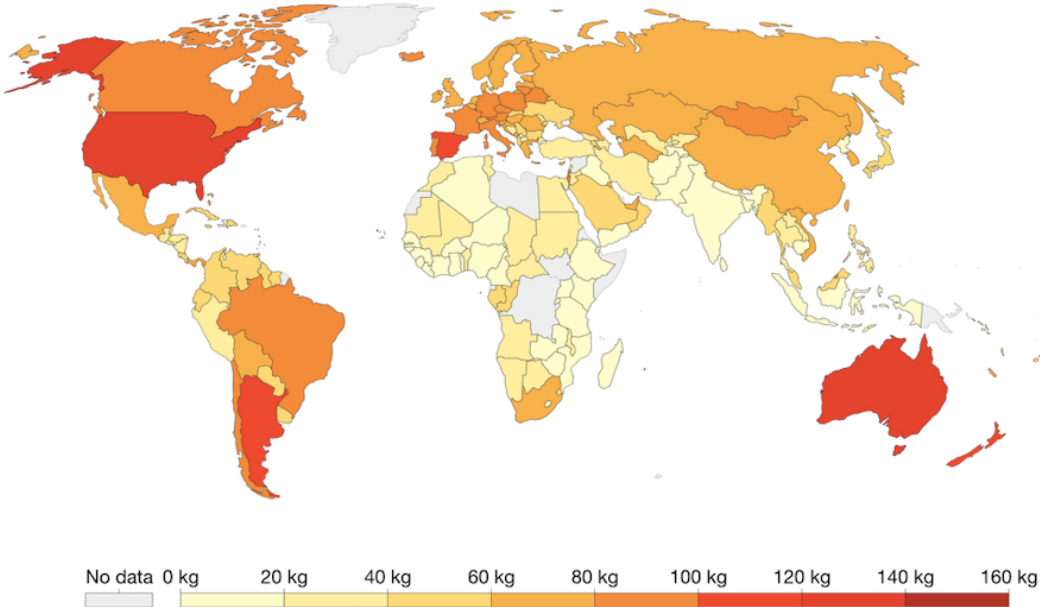


Figure 4: Meat supply per person, 2017. Average total meat supply per person measured in kilograms per year. Source: (Ritchie, & Roser, 2019). Data excludes fish and other seafood sources. Figures do not correct for waste at the household/consumption level so may not directly reflect the quantity of food finally consumed by a given individual.

The adoption of low impact "sustainable diets" has been extensively advocated as an essential climate change mitigation approach (Jarmul et al., 2020). A sustainable diet is usually referred to a diet based on high plant-based nutrients while minimizing animal-based and processed foods. Promotion and adoption of dietary shifts towards e.g., vegan, vegetarian, and Mediterranean diets might provide a substantial contribution to reaching several of the 2030 the Sustainable Development Goals (Chen et al., 2019). Comprehensive assessments of the typical Western diet's environmental footprint have found that a dietary transition to more ecologically sustainable eating patterns might reduce GHG emissions, land and water use substantially (Aleksandrowicz et al., 2016), as well as a significant reduction in negative health effects when compared with existing diets (Chen et al., 2019). However, it is crucial to identify the potential trade-offs of transitioning towards "sustainable diets" at a national and regional level. The current results from research differed noticeably. Nevertheless, it is critical to underline the complexities involved when determining the environmental sustainability of diets. Jarmul et al. (2020), emphasize the importance of real-world, context- and region-specific validation of the health, environmental, and wider aspects of diets and choices. While local and seasonal diets provide advantages such as preserving the regional economy and agricultural diversity, attempts to decrease dietary-related environmental consequences in high-consuming countries should focus on lowering animal-based consumables.

A new scientific report emphasizes the important role and long-term advantages of significant decreases in meat consumption levels in high-income nations (Parlasca & Qaim, 2022). The findings indicate that we must cut meat consumption by 75% but highlight the nuances that must be used as a basis for low- and middle-income countries. Agricultural products are highly concentrated sources of nutrients and protein that are seen as an important source for public health and well-being (Aleksandrowicz et al., 2016). Including meat in local diets may effectively reduce prevalent undernutrition and boost human health, particularly in areas where good plant-based alternatives are not accessible or affordable (Parlasca & Qaim, 2022). Whilst excessive meat consumption is not coherent with environmental development and sustainability, low to moderate consumption will be attainable, even with a total population exceeding 10 billion people (Parlasca & Qaim, 2022; Willett et al. 2019). This means that in certain areas, large reductions in meat intake are essential, whilst certain increases may be beneficial in other places (Parlasca & Qaim, 2022).

2.2. The Position of Meat in Norwegian Society

There is no question that meat production and consumption are strongly ingrained in Norwegian society and the food economy. The meat industry is a substantial component of Norwegian agricultural production and a prominent and influential actor in the possibility of a protein transition like a shift from meat-centered diets to more plant-based diets (De Bakker & Dagevos, 2012). Meat consumption has a long history in Norway and is viewed as an important component of traditional cuisine, as well as fundamental for human nutrition and health (Kubberød et al., 2002; Kildal & Syse, 2017). Norway's per capita meat consumption was measured at 67.46 kilograms per person per year in 2017 (Ritchie & Roser, 2019). However, the Norwegian agricultural production appears to be incredibly unprofitable and unsustainable, as the farmers report a production cycle that is running on a deficit (Nordby et al., 2022). The Norwegian state subsidizes agriculture with NOK 26 billion every year, of which around 47% goes to meat production (Gaasland, 2018). Norway's carbon footprint from consumption patterns will remain essentially steady over the next several decades unless consumption of meat is dramatically decreased. Bjartnes et al (2019) found that by cutting meat consumption by half before 2030, greenhouse gas emissions could be 1.5 million tons lower than the current levels. Substantial decreases in meat consumption before 2050 estimates a 70% reduction from present-day levels. This means that emissions will be approximately 2 million tons lower in 2050 than they are now. Further examination is needed to define sustainable diets along with a broader range of environmental, economic, and social indicators (Aleksandrowicz et al., 2016). Moreover, the sustainability level of diets needs to be viewed in light of population density, assessment concerning planetary boundaries, and presumptions of external factors.

According to a recent Swedish study, a rapid dietary transition or removal of meat may be extremely difficult for people (Collier et al., 2021). The research uncovered that the meat-eating participants were typically more open to purchasing locally produced animal products or reducing the amount of meat in their meals, rather than limiting their meat consumption in favor of meat substitutes. These dietary measures appeared to be recognized as adequate environmental action and animal welfare protection (Collier et al., 2021). These findings are consistent with previous research highlighting the underestimating of meat's environmental impact (Austgulen et al., 2018). Short-distance and locally produced meat is seen as more environmentally and animal friendly compared to global production, and expansion of livestock production in Norway is often encouraged (Austgulen, 2014). Poore &

Nemecek (2018) conducted the biggest meta-analysis of food systems in history, emphasizing the greenhouse impact of various food categories throughout the world. The most significant result from this research is the wide range of GHG emissions from various protein and food sources. Attempting to eat local would only have a massive influence if transportation was responsible for the major portion of the ultimate carbon footprint of food. However, this is not the case for the majority of foods (Ritchie, 2020). This study focuses on what to eat rather than eating locally. Consuming minimal meat and animal products, or moving from red meat to chicken, pig, or plant-based alternatives, can significantly lower your carbon footprint (Ritchie, 2020).

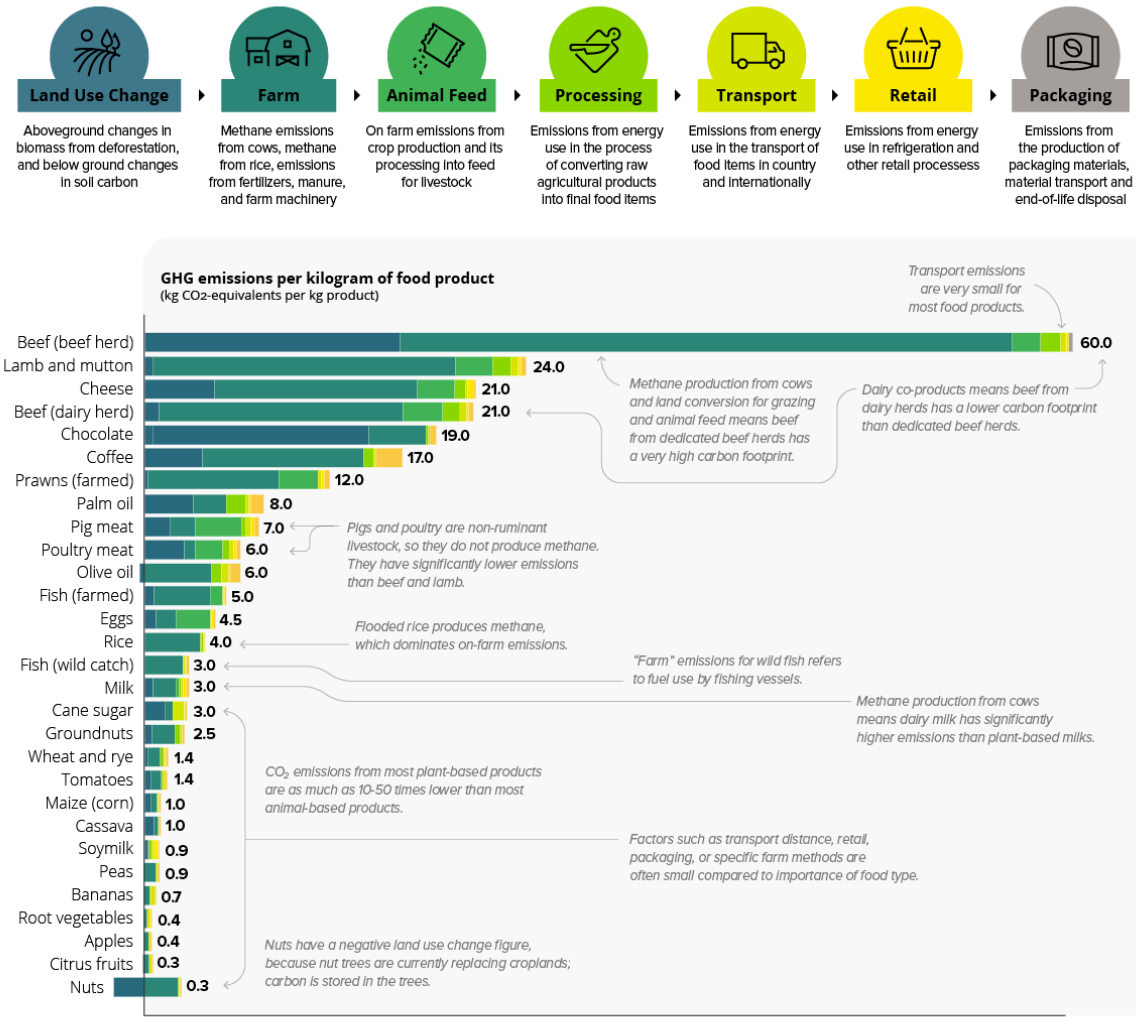


Figure 5: Food: Greenhouse gas emissions across the supply chain

Source: (Poore & Nemecek, 2018). Greenhouse gas emissions are given as global average values based on data across 38,700 commercially viable farms in 119 countries. Image source: (Ritchie, 2020).

2.2.1. Cultural Food Practices – Social and Cultural Significance

Over the past several decades, empirical evidence and scientific alarm about human climate change have progressively accumulated (IPCC, 2019b). However, the increase in public environmental consciousness deviates from the application of the scientific agreement, which explains why, when studying public climate considerations, one must incorporate sociocultural factors (Tyson et al., 2021). Past studies have shown that possessing environmentally friendly beliefs and norms has an impact on a variety of environmentally relevant behaviors (Stern et al., 1999; Vatn et al., 2022). Considering how the cultural practices influence individual food choices, it is critical to explore the social implications of meat as well as the ideological underpinnings of our present dietary habits. According to Vlek & Steg (2007), culturally embedded sustainable thinking and increased solidarity are essential to make ecosystems and biodiversity habitable for current and future generations. The research emphasizes the necessity of increased environmental awareness and accountability for people to consider themselves as part of nature, as well as nonhuman nature being recognized as a key social and economic priority. These kinds of cultural and conceptual shifts necessitate considerable psychological and societal upheavals (Vlek & Steg, 2007).

Schösler et al (2012) detected disparities in age groups that may indicate shifting cultural tendencies. The Dutch study revealed that individuals' meat preferences, as well as meat alternatives and meal arrangements, are affected by age (Schösler et al., 2012). This indicates that the preferences of the younger generation dietary preferences may thus be prone to societal changes in dietary habits. Meat's unique position is becoming less evident in this structure, which may make meat substitutes and a transition to a sustainable diet, smoother. Despite rising awareness of healthy eating and a balanced diet, which encompasses plant-based meals, research suggests that high consumption of meat and low regard for plant-based choices remains the prevalent cultural trend (Schösler et al., 2012).

2.2.2. Demographic Effects and Influences

Meat and especially red meat have historically been associated with wealth, upper-class, masculinity and power, which have played a central role in people's culture, traditions, and everyday life (Kildal & Syse, 2017). Extensive studies on meat consumption and gender have been published over the last decades. Gender is also considered as a significant socio-demographic factor of meat intake and associated perceptions (Cordts et al., 2014). Evidence

shows that men and women think about and relate to food in different ways much due to environmental activism and vegetarianism being characterized as feminine, while meat represents a masculine ideology (Kildal & Syse, 2017; Kubberød et al., 2002; Grunert et al., 2014). Women in the Nordic nations have demonstrated a more inclined attitude to eat sustainably, as well as young women show a greater worry about their meat intake (Kubberød et al., 2002). According to Tobler et al. (2011), women are more willing to reduce their consumption of meat and are more likely to consume fruits and vegetables. This gender disparity is especially pronounced when it comes to meat consumption where males are far less ready to reduce their consumption of animal products. Furthermore, research suggest that men consume higher quantities of meat, and are more likely than women to emphasize the importance of meat in their diet (Kubberød et al., 2002; Kildal & Syse, 2017; Tobler et al., 2011). These studies point to a variety of demographic influences, including the fact that women appear to be more concerned about sustainability, but there is no difference in degree of knowledge and understanding. Interestingly, studies have discovered that conceptions of masculinity might alter over time, and that atypical masculine, as observed amongst university educated males, is associated with healthier meat and vegetable preferences (De Boer et al., 2014).

Comprehensive research on attitudes towards meat highlights the role of meat inside the households and social occasions, as meat is positioned on top of the food hierarchy with linkages to a “proper” meal (Kenyon & Barker, 1998). The study further demonstrates how teenagers experience increasing autonomy and independence to become individuals they may oppose family ideas and get introduced a wider and more open-minded thoughts and behaviors on dietary habits. Eating patterns are extremely interwoven with traditional values and influenced by the social society. A deeper understanding of consumers' perspectives, values, and attitudes toward meat consumption as well as a review of the drivers and interconnected dimensions of norms, culture, and inherit social behaviors is important in the pathway for change.

2.2.3. Media and the Spread of Information

Scientific data and media engagement are some of the numerous factors influencing public concern about climate change and sustainable diets. However, worldview and identity are frequently more significant than cognitive capacity in the selection and interpretation of data

regarding complicated situations (Aasen, 2017). According to Pidgeon (2012), certain research indicates that people's perceptions regarding climate change are shaped by both their ideological beliefs and their assessment of the threats to their ideals and values. Younger generations of social media users have demonstrated to be more engaged with material regarding the need to solve global climate change. Individuals born after 1996 (Gen Z) have lived their entire existence in an internet and technology era. According to a recent study from the United States by Tyson et al (2021), Generation Z and younger generations are exposed to more climate-related material on social media platforms and are more willing to engage with it than older generations. According to the findings of this survey, a sizable proportion of generation Z and Millennial social media users are alarmed that nothing has been done to solve the problem of global warming (Tyson et al., 2021).

According to Gonera and Milford (2018), increased initiatives from both businesses and policymakers are needed to inform and acquaint consumers with plant protein products and their environmental and health advantages. A prior systematic review examined and evaluated the evidence for many population-based lifestyle modification interventions, including altered dietary habits (Mozaffarian et al., 2012). This study found six major strategies for improving lifestyle habits: (1) Media and educational efforts; (2) labeling and consumer information; (3) taxes, subsidies, and other economic incentives; (4) strategies in schools and workplaces; (5) local environmental changes; and (6) direct prohibitions and mandates. In addition to legislation and guidelines for sustainable dietary change, teaching individuals about healthy and sustainable food, the welfare of the animals, and the environment at a young age may be a vital component and effective strategy against information overload. Furthermore, Mozaffarian et al (2012) highlight the benefits and possibility of inherent sustainability, such as changing the physical environment, product cost or accessibility, or regulatory or societal acceptability of certain items or behaviors. The relationship between values and climate change concern can be formed through a variety of mechanisms, resulting in information processing bias and information comprehension bias. Aasen (2017) emphasizes the tendency for individuals to seek knowledge that corresponds to their sociocultural assumptions and values. Peoples personal need to safeguard their socially constructed position by adapting their ideas and concerns to those of like-minded individuals may explain the role of values in information searching. The study also found that the pace of transformation in views on climate change varied depending on one's starting point (Aasen, 2017).

2.3. The Future of Meat?

2.3.1. Vegetarianism and Substitutes – A Blossoming Field

Plant-based substitutes are becoming increasingly essential in the discussion over sustainable practices in Western countries. While consumption of meat in emerging regions continues to rise, consumption in several Western countries, such as France, Switzerland, and Germany, has plateaued or is even slightly declining (Weinrich, 2018). The recent years have followed a rapid increase in plant protein products and meat substitutes within the Norwegian market. However, most of the population's willingness to adapt their animal-based diet towards a more sustainable and plant-based diet appears to be particularly reluctant to change (Weinrich, 2018; Weinrich & Elshiewy, 2019). According to previous studies, conventional dietary behavior appears to be rooted in convenience and inexperience, as well as a lack of information and ideas for cooking meat-free meals, and appear to be important barriers to lowering meat intake (Weinrich, 2018). Findings from Weinrich's (2018) cross-cultural comparison imply that cultural disparities exist, which may necessitate the use of country-specific meat alternatives. It has been projected that replacing meat with plant sources would substantially lower the expenses of climate change mitigation, as well as minimize disease risk related to red meat and processed meat intake (Vainio et al., 2016). However, meat continues to play an important role in Norwegian society and diets, therefore, social, and cultural significance are seen as factors that may jeopardize efforts to reduce meat consumption. Norwegian consumers prefer and seek the flavor and texture of meat, and many perceive meat as a healthy and vital element of their diet. Kubberød et al. (2006) argue for a disconnection between people and the slaughtering process of animals, based on the premise that meat is produced and sliced in an unrecognizable manner which cover up the animal origin. Manufacturing or processing the meat before consumption eliminates the underlying nature and reduces the likelihood of unpleasantness (Kubberød et al., 2006).

Earlier dietary studies have specifically looked at how routine, ambition, aspirations, beliefs about one's own skills, and knowledge influence behavior change (Schösler et al., 2012; Vainio et al., 2016), in addition to values, social practices, self-efficacy, and intent (Latvala et al., 2012). There is some evidence that personal motivations can contribute to transforming one's eating patterns. The substitution of meat and dairy products with plant sources necessitates the change of unwanted behaviors with new ideas, which has been observed to be far more difficult than introducing new habits because motivations linked with unwanted behavior might act as hurdles (Vainio et al., 2016).

2.3.2. Motivations and Impediments Toward Sustainable Dietary Change

A large body of literature has explored consumers' readiness to embrace a low-meat diet (Austgulen et al., 2018; Cheah et al., 2020; Hoek et al., 2011), motives underlying the adoption of sustainable and healthy diets (Vainio et al., 2016), consumers acceptance and desire for meat alternatives in general (Schösler et al., 2012; Weinrich & Elshiewy, 2019), and elaboration of attitudes regarding various substitute possibilities and identification of future pathways to (partial) meat substitution (Schösler et al., 2012). In terms of the variables influencing meat consumption, sociodemographic disparities, as well as consumer motivation and intention, have shown to have a considerable impact on consumption patterns. Individuals' perceived self-efficacy, rewards, and costs of altering their behavior have all been identified as crucial elements in people's eating habits. There have previously been several studies that seek to provide an overall understanding of individual aspects of consumption (Carrington et al., 2010; Vermeir and Verbeke, 2006). Terlau and Hirsch (2015) identified the following as the key challenges to sustainable consumption, in addition to personal and social impact factors:

- Price is the most significant purchase barrier for meat-free and plant-based alternatives, as they are perceived as more expensive than meat.
- Flavor/texture factors: The taste of plant-based alternatives and meals without meat, is a crucial factor for many people and is one of the most significant buying barriers for meat consumers.
- The availability and ease of use: Plant-based alternatives are not readily available and vary according to where people buy and what they seek. Low sales of plant-based goods may be attributable in part to this scarcity. Furthermore, consumers must make an extraordinary effort to locate and gain knowledge and cooking skills for meat alternatives. Consumers who value convenience frequently avoid making this extra effort.
- Lack of/overload of information, transparency, and the accompanying lack of trust: Consumer information and transparency in the meat market differ significantly. Customers can be overloaded, under-informed, and feel a lack of belief in meat production's environmental and social performance.

The dilemma of how to successfully influence consumer behavior and limit meat intake where essential, remains unsettled. Parlasca & Qaim (2022) emphasize education and information building as critical components in increasing motivation and knowledge among consumers. Furthermore, policy measures are seen as required to incorporate several of the biggest externalities (Parlasca & Qaim, 2022). Many variables impact people's consumption and dietary

habits. Individuals may purchase local or seasonal products for greater taste, organic products for health (Niva et al. 2014), or limit their meat consumption because of animal welfare considerations (Latvala et al. 2012) or high prices and low convenience. As a result, it is critical to understand what motivates people's perceptions of meat substitutes and a reduced intake of meat. Even though there is existing literature on attitudes and behaviors toward meat consumption among Norwegian adolescents (Kubberød et al., 2002), and lifestyle-related characteristics of young low-meat consumers (Larsson et al., 2002), limited research includes the Norwegian younger generation's attitudes and underlying barriers or drivers towards sustainable dietary change.

2.3.3. Food Security and Technological Improvements for Sustainable Consumption

Multiple environmental challenges, as well as global factors, are currently working against agricultural production and food security. These rising concerns include decreased genetic variety of food crops, pesticide resilience, the HIV/AIDS pandemic, increased feminization of agriculture, ozone depletion, extreme weather events, environmental degradation, unpredictable prices of food, and declining agricultural development (Khan & Hanjra, 2009). Collectively, such forces constitute serious challenges to regional food security, with huge consequences for the environment and global security, and human rights. The climate system, food system, ecosystems (land, water, and seas), and socioeconomic system are all intricately linked on a regional and global scale (IPCC, 2019a). As demonstrated in figure 6, food security is claimed to have a considerable impact on human well-being, which is also indirectly connected to climate and ecosystems via the socio-economic system (IPCC, 2019a). It is important to acknowledge that future food security and sustainability mean more than just a changing diet. It involves halting agricultural expansion, enhancement of crop efficiency, and lowering water usage, and local production. Many scholars have addressed the concerns around food security prospects (De Boer & Aiking, 2011; Dinar et al., 2019; Khan & Hanjra, 2009; Wheeler & Von Braun, 2013). With rising shortages of resources and land, significant improvements in modern agriculture, infrastructural facilities, and farm management approaches are seen as part of the solution. Aside from changes in personal consumption patterns, technical advancements are required to make meat and the livestock industry more sustainable.

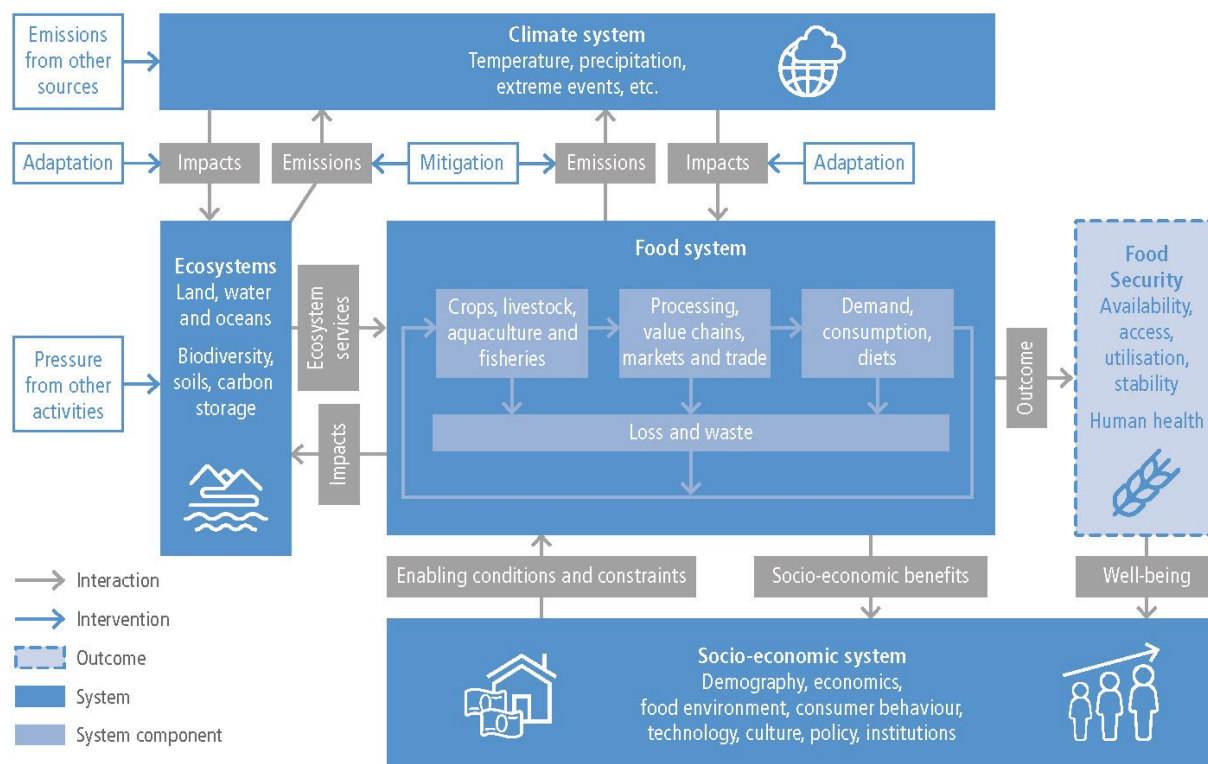


Figure 6: Interlinkages between the climate system, food system, ecosystems, and socio-economic system.

Source: (IPCC, 2019a).

There are several technical solutions available to enhance livestock genetics, as well as feeding and agricultural methods, which must be further researched and deployed on a large scale (Parlasca & Qaim, 2022). Innovation must therefore play a significant role in the development of meat substitutes for good nourishment with significantly reduced environmental and climate impacts. Growing living muscle cells from cattle in bioreactors, fully independent of animal production, is an innovative and potentially strong alternative to challenges. This is sometimes referred to as cultured meat or lab-grown meat.

Despite predictions that modern technologies and biotechnology will increase food production, minimizing agricultural yield losses due to diseases, floods, droughts, and pests remain critical for global food security. The underlying question that remains unanswered is whether agricultural developments and technological advancements can secure global food security (Dinar et al., 2019). Climate adaptation solutions will contribute to alleviating the detrimental consequences of climate change on the food chain and environment. Mitigation strategies can help minimize GHG emissions from the food system and ecosystems (IPCC, 2019b). Bindraban et al. (2012) promote a shared common knowledge base recording hard-won location-specific

solutions to properly prevent or mitigate degradation and ensure steady food production. In defiance of a steadily increasing scholarship over the last years, much remains unanswered regarding many of climate change's consequences on food security. Further research, sustainable food policies, and institutional structural change needs to be put in place for the prosperity of future food security (Steinfeld et al., 2006; Wheeler & Von Braun, 2013).

2.4. Theoretical Framework

I have now gone through the empirical literature and will proceed to introduce the theoretical framework of this study. The presented literature has highlighted the climate emergency and the consequences of the meat industry, as well as the vital role meat have in Norwegian culture and future prospects of meat. The next step is to explicitly link the literature review to the theoretical framework and further tie it to the research questions.

2.4.1. The Theory of Planned Behavior and Intention-Behavior Gap

A large number of empirical research have focused on consumer attitudes and behavioral patterns toward a reduced meat consumption (Cheah et al., 2020; Dagevos & Voordouw, 2013; Latvala et al., 2012; Sanchez-Sabate & Sabaté, 2019; Vermeir & Verbeke, 2006; Weinrich & Elshiewy, 2019). The current food system can generally be seen as a system based upon an individualized and rationalized model, where consumers are expected to investigate and reflect upon various societal concerns in their food choices: quality of the food, health considerations, animal welfare, child labor, local inhabitants, economic output, and environmental sustainability (Kjærnes, 2012). The Theory of Planned Behavior (TPB; introduced by Ajzen, 1985) is a theory being used to effectively determine self-discipline planned actions, which are activities that an individual may perform using their own unrestricted choice, but which can be inhibited or encouraged depending on external elements (Ajzen, 1991). The TPB implies that individuals are generally rational, which means that they weigh facts and knowledge about a decision to better grasp the repercussions and effects of that decision or behavior (Lentz, 2020). These considerations are subsequently converted into attitudes about behavior, as well as the ensuing desire to undertake the effort, which will be an immediate predictor of individual behavioral performance. The Theory of Planned Behavior, in particular, will further allow the researcher to expand on past literature that had previously applied the theory to the study of

meat consuming behavior. As a result, an outline of the theory and its possible application in the research of meat reduction will be presented.

Sustainable consumption is dependent on a decision-making process that incorporates the public's social responsibility along with personal wishes and preferences (Vermeir, & Verbeke, 2006). Previous research on behavior change have discovered a difference between intentions to change behavior and actual behavior change due to concerns such as perceived consumer efficacy, the availability of substitute to meat, and impediments related to prevalent societal norms (Vermeier and Verbeke, 2006). This study will draw upon The Theory of Planned Behavior (Ajzen, 1991), Furthermore, the theoretical framework of this study will derive from Terlau & Hirsch (2015) decision-making model of sustainable consumption. These frameworks lay the foundation for how to understand of the students decision-making process in everyday food choices. Furthermore, provides the master thesis with the basis to gaining knowledge about how students reflect on the issue of concern can provide details for the perceived aspirations of a reduced meat consumption and sustained dietary change. The research’s framework of attitudes, intentions, and behaviors for sustainable dietary are derived from Terlau & Hirsch (2015) decision-making model of sustainable consumption. The model illustrates and builds on previous presented literature that clearly illustrates how individual, social, and external elements influence behaviors towards sustainable dietary change. Given that perceived belief in individual ability to execute behaviors required to achieve specified performance is seen as an essential component of pro-environmental behavior, this study incorporated perceived self-efficacy into the model to form the extended decision-making model of sustainable consumption. The research framework of this study is depicted in Fig. 7.

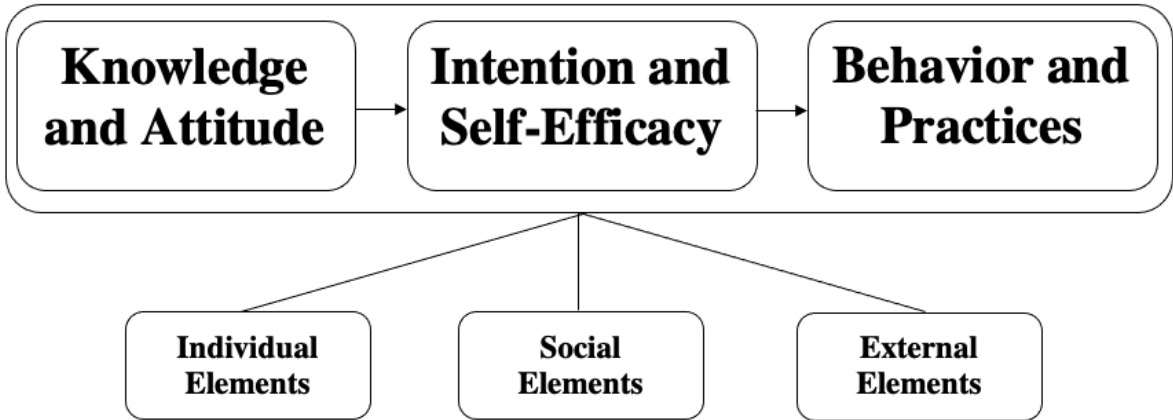


Figure 7: Research framework of attitudes, intentions, and behaviors for sustainable dietary change

Source: Researcher’s own construct based on Terlau & Hirsch (2015) Decision-making model of sustainable consumption

According to research's framework of attitudes, intentions, and behaviors for sustainable dietary change, people's knowledge and attitudes create their intention and contributes to different levels of self-efficacy. Intentions and high levels of self-efficacy drive an individual's behavior for sustainable consumption practices. Although people support the general idea of increased sustainability in the food system, the attitudes and engagement are frequently not mirrored and unequivocally consistent in their behavioral patterns (Vermeir, & Verbeke, 2006). The discrepancy between consumer interest in ethical concerns and their eating habits has garnered considerable attention (Carrington et al., 2010; Kjærnes, 2012; Loy et al., 2016; Sniehotta et al., 2005; Tarfaoui & Zkim, 2017; Terlau & Hirsch, 2015; Terry & Hogg, 1996; Vermeir, & Verbeke, 2006). This paradox is referred to as an Attitude-Behavior Gap, Value-Action Gap, or an Intention-Behavior Gap. As it may appear, customer behavior is one of the most complex and uncertain components of the whole supply chain, necessitating specific attention. The complexity of sustainable food consumption and change of behavior needs to be further investigated. Kjærnes (2012) argues that it is problematic to only focus on individual choice when trying to make sense of the ethical and social issues in the practices of buying and eating food. Consumer choice is better grasped as a political ideology and part of a supervisory system involving the state, global market solutions, and voluntarism (Kjærnes, 2012). By exploring attitudes, intentions, behaviors, and the connections between student's worldview and beliefs, the study can obtain an understanding of the meat consumption habits and desire to change of the participants in this study.

This framework is relevant to this master's thesis because the study aims to investigate the attitudes and behaviors of Norwegian University students toward reduced meat consumption and their willingness to change behavior toward more sustainable consumption. Drawing upon these the frameworks I will explore if there is an obvious discrepancy between the study's participants' views toward sustainable consumption and their actual behavior. Furthermore, investigate the many and interrelated influences that individual elements (e.g., age, gender, education, motivation, beliefs, knowledge, skills), social elements (e.g., society norms, cultural environment, media influence and information), and external elements (e.g., political incentives, availability, purchasing environment) have on students' knowledge and aptitudes of meat consumption. Further if it shapes intention and that the students feel a level of self-efficacy, and it this is corporate in to planned behaviors and sustainable consumer practices.

3. METHODOLOGY

This chapter will outline the methodological, strategic, and practical decisions that shaped the process of data collection and analytical methodologies used in this research. Firstly, a description of the research design and strategy for the study will be exhibited, with an overview of why a qualitative approach is suitable for this specific research. Secondly, the details of the research's qualitative data collection methods are presented, including an overview of the sample and sample strategy as well as interview methods used in the study. The chapter will then address the data analysis approach that has been applied to the research. Finally, the ethical and reflexivity aspects of the performed qualitative research will be examined.

3.1. Research Design and Strategy

The overall methodology that underpins this master thesis is a qualitative research design. As the objective of the thesis is to gain a deeper understanding of a sociological phenomenon, a qualitative single case study method was utilized. By using an exploratory case study methodology, the thesis conducts an in-depth exploration of students' dietary perspectives and choices as well as the individual and contextual forces that shape their actions and attitudes. A case study design has been proven to be especially suitable for research that wants to investigate 'how' or 'why' questions of a phenomenon in social settings (Yin, 2009). This research conducts an in-depth assessment of one single case study's complexity and specific nature (Bryman, 2016). Although the research draws on broader cultural comparisons, this research only covers samples from one particular university in Kristiansand.

Qualitative research is a research methodology that relies and emphasizes words over numbers and quantification in the data collection process and analysis (Bryman, 2012). This study's research strategy is constrained by a constructionist and interpretivist foundation. Bryman (2012) defined interpretivist approach as the meaning and comprehension of the social construction as examined through the participants' perceptions of that reality. Considering this master thesis, this approach is used for data collecting methods such as interviews and focus groups. Furthermore, a constructivist approach claims that social realities and their interpretations are continually constructed by social actors. According to Bryman (2012), social phenomena and categories are not only formed through social interaction, but they are also constantly subjected to change. In previous years, the terminology has grown to incorporate the

idea that academics' views of the human structure are constructed. In other words, the researcher ultimately presents a specific interpretation of social life instead of a definitive version.

Additionally, this research is based on a mixture between inductive and deductive reasoning. According to Bryman (2012), deductive reasoning is a logical approach in which you proceed from broad concepts to particular conclusions. This is often seen in contrasted with inductive logic, which begins with observations and leads to universal conclusions. The particular study initiated deductive logic by reviewing extensive literature on the subject, and then developing research questions and theoretical framework which guided the data collection with participants. Further, the study applied inductive reasoning when gaining new insights emerged through data collection beyond the boundaries and expectations established by the research questions and literature review.

The individual semi-structured interviews had the aim of getting in-depth views of the students' thoughts and opinions, while the focus groups aimed of contributing to more of a dynamic debate, with the objective of analyzing and interpreting possible conflicts, opinions, and tensions between the participants that can strengthen and contextualize the data. Since the focus of this research was to grasp the participants' perspectives, ideas, and attitudes, detailed questions were required with the interest of engendering more in-depth personal information. This data collection method was applied to the research to capture the nuances of the individuals' constructed understandings. The decision to combine individual semi-structured interviews with focus group interviews provided a complex opportunity for unrestricted explanation and observation. The case study design was especially beneficial in revealing students' dominating and existing ideas.

3.2. Data Collection Methods

3.2.1. Sample and Sampling Strategy

For this research, it was especially interesting to look at the younger generation of students since the youth are typically considered the forerunners in the climate change fight and are generally more environmentally concerned about the planet's future than earlier generations. Younger people are the customers of the future and need to be ready to face the challenges in the next half-century. They are likely to carry their habits into older age and should therefore promote behaviors for sustainable food consumption patterns in the population (Vermeir &

Verbeke, 2006). Therefore, the research had no purpose of looking for environmentally conscious students who had adopted a more sustainable diet that included little or no meat. Nonetheless, the main goal of this thesis set was to focus on the general students' understandings, actions, and attitudes regarding sustainable dietary change.

The recruitment process of participants was based on the *snowball sampling approach*. This technique introduced in Bryman (2016) involves identifying and recruiting one or two informants that apply to the research project, which again introduces other possible participants that can be interesting in the research (Bryman, 2016). The main criteria for the selection of respondents were that the participants were enrolled at the University of Agder. In general, the participants varied in age, gender, and field of study. The participants that willingly choose to participate in the study were flexible and easy to communicate with. In this case, as a student at the University of Agder myself, gaining access to appropriate participants to contribute to the case study was achievable.

The sample for this study consisted of fifteen young university students in the age group 20–27 in Kristiansand, Norway. By choosing to study behaviors of university students, ethical considerations were in place as people under the age of 18 were naturally excluded from the study. The targeted demographic was purposefully chosen to preserve impartiality and enhance the validity of the informants who reflect the typical consumer. Thus, the study has intentionally avoided settings where vegans or vegetarian students may be located, such as various Facebook groups or environmental youth organizations, because such young people would represent social groupings with pre-existing pro-environmental sentiments. Even though the sample size may have ended up smaller than expected, the study and its collected data serve as a basis for comprehending certain trends in the student's and the younger generation's behaviors and attitudes. The context of university students at the University of Agder in Kristiansand involves a vast combination of various nationalities, backgrounds, beliefs, and so on, which means that the data is gathered in an urban environment that may provide a good representation of diversity in perceptions and practices.

3.2.2. Interviews as Method

To answer the research questions the research will mainly be based on qualitative methods and data collection techniques that are generally associated with less structure and more flexibility

(Bryman, 2016). A literature review of the current research topic was initially conducted, with the goal of generating understanding for the research and creating an interview guide for the study. As part of the preparation, two interview guides were created: one for personal interviews with students and another for focus group discussions.

The qualitative data collected for this master thesis has been gathered through semi-structured interviews and focus group interview. In total fifteen students, six female and nine males, from six different faculties at the University of Agder participated in the individual interviews. The data collection period took place between January and March 2022, with a mix of both face-to-face interviews and interviews conducted over Zoom. The interviews were all audio-recorded and varied somewhat in duration from 25 minutes to 50 minutes. Each interview and focus group were conducted and transcribed in Norwegian. For the sake of anonymity, the students were assigned numbers ranging from 1 to 15, with the capital letter representing gender (e.g., 6F and 12M). The initial phase of the research was the semi-structured individual interviews. Each interview began with an introduction during which the participants were asked to expound on their dietary preferences, followed by questions about environmental awareness and views toward the meat industry. It was essential to gain a greater understanding of the students' dietary habits, health reflections, and environmental attitudes toward reduced meat consumption, all while being placed in a wider context.

The individual interviews provided good information to further develop and elaborate on some of the questions. After collecting data from semi-structured individual interviews, three of the students that participated in an individual interview agreed to take part and participated in the focus group interview. The focus group consisted of three students which gave the discussion a free flow. In this way, the research got students' individual thoughts on the subject before collectively going on the topic during the focus group. The individual semi-structured interviews had the aim of getting in-depth views of the students' thoughts and opinions, while the focus groups contributed as more of a dynamic debate. Furthermore, it provided the opportunity to interpret conflicting opinions, tensions, and behaviors between the participants that strengthen and contextualize the data. The open interview format provides solid insight for identifying points between local and global environmental concerns. In addition, categorization proved effective in identifying several features and characteristics that were later examined further. Information regarding the students' financial income was not revealed in this study because some students may have considered these details private. However, the students were

questioned about the power of price and the convenience of commodities, which provided some indicators concerning the students' purchasing power and the food prices' impact on their buying habits. For future studies, it may be worthwhile to conduct multiple case studies with a comparative comparison of pupils from various socioeconomic backgrounds.

3.3. Data Analysis

The research objective and four sub-questions presented in section 1.3 guided the data analysis and interpretation of this study. To analyze the data from the interviews and focus groups, an iterative inductive approach, described by O'Reilly (2005) as a process of “read-then-do-then-write” was emphasized. This method of analysis involves a combined procedure of gathering data, analyzing data, and writing the research from start to end.

All files and original audio recordings were saved at the University of Agder's OneDrive and properly transcribed into a word-document, with all information kept confidentially. According to Bryman (2016) and O'reilly (2012), the data was qualitatively analyzed using thematic analysis and coding, which implies that the data was split down into distinct categorizes or themes and those units were labeled. After thoroughly categorizing every data, the analysis ended up with 4 main categories, each with subcategories to make sense of the themes. Two more codes were added that were not included in the semi-structured interview guide but arose throughout the conversations. With the purpose of getting a clear overview of the findings, each data source was gathered and examined individually, thematically ordered, and color-coded based on a selection of themes and categories. This enables a thorough overview of the trends and for determining which themes and subcategories were somewhat more significant than others, thereby establishing which subject to emphasize more. When the themes and categorizes was clearly defined, then the collected data was translated into English. Due to the moderate number of interviews and data sets, this analytical approach works efficiently.

3.4. Ethical Considerations and Reflexivity

Prior to any explorations, it was critical to review a clear and detailed guideline for the ethical concerns I wanted to establish for the master thesis. The project was considered subject to notice

due to the aim of collecting personal data from University of Agder. An application was submitted to the Norwegian Centre for Research Data (NSD) and was approved at the end of November 2021. Participation in this research was completely voluntary, and all participants were informed of the study's goal and were required to sign a consent form before participating in the interview. The NSD authorization allowed use of tape recorder during the interviews, with strict confidentiality and preservation rules for the material provided by the informants. All data and sensitive information were fully anonymized for ethical considerations and protection. The research activities have been conducted in an open, systematic, and honest manner in compliance with the fundamental values and norms of research ethics (NESH, 2019; NSD, 2021).

Due to the global pandemic Covid-19, the interviewing process was a little different than what it originally was intended. The overall methodology and research design were adaptable and fit into scenarios and cases of Covid-19 disruptions. To limit unnecessary risk to my participants, the individual interviews were carried out over Zoom instead of being conducted face-to-face. However, in time for the focus group, the national Covid-19 guidelines in Norway allowed for more physical contact, therefore, the focus group was conducted face-to-face. Due to a rise in Covid-19 cases during the time of focus groups, there was a difficulty of gathering participants to be a part of more than one focus group in total. As such, the sampling size of focus groups participant ended up smaller than planned.

It is crucial to grasp the concept of reflexivity whenever examining a phenomenon in social science. As a university student of environmental and development studies, it is recognized that this field of study has affected my perspectives. Therefore, thinking and acting ethically as a qualitative researcher is vital, and my own opinions and prejudices must be kept to the absolute minimum (Bryman, 2016). This includes working to preserve integrity and generosity, as well as preserving autonomy when obtaining approval and access (Reid et al., 2018). I have done my utmost not to allow personal beliefs to influence or color any facts, presenting students' ideas and interpretations as objectively as possible. To guarantee honest and appropriate research, full transparency of all sources, documentation, and results have been declared. The results are presented with probity, irrespective of researchers' values and biases, and in line with the ethical research guidelines in social science (NESH, 2019).

4. EMPIRICAL FINDINGS

The following chapter presents the empirical findings from individual interviews and the focus group. The data will be presented thematically in line with the research questions, before being analyzed in the discussion chapter. The chapter will first start with an introduction to the individual and focus group interviews will be provided with a classification of the student's meat consumption levels and further illustrations of the findings.

4.1. Findings from Individual Interviews and Focus Group

The semi-structured interviews took somewhat different directions as there were notable differences in students' levels of comprehension and knowledge of the specific topics. Student four informants were particularly expressive and offered more detailed replies to the more complex questions than other students. While some participants were moderately or greatly interested in the issue of discussion, others displayed less consciousness and indifferent attitudes, as evidenced by responses including "I don't know" or "I have thought about that." Findings from the individual interviews revealed remarkably diverse levels of meat consumption and dietary choices among young students in Kristiansand. According to the findings from the individual and focus group interviews, six men and one woman eat meat multiple times a day. One male participant informed that he ate meat daily or almost daily, 4-5 times weekly. One female and two male students eat meat every other day. One female eats meat occasionally, less than 3 times a week. And three female students reported that they have chosen a meat-less diet. With these details, the students were broadly classified into different categories, with the pattern shown below:

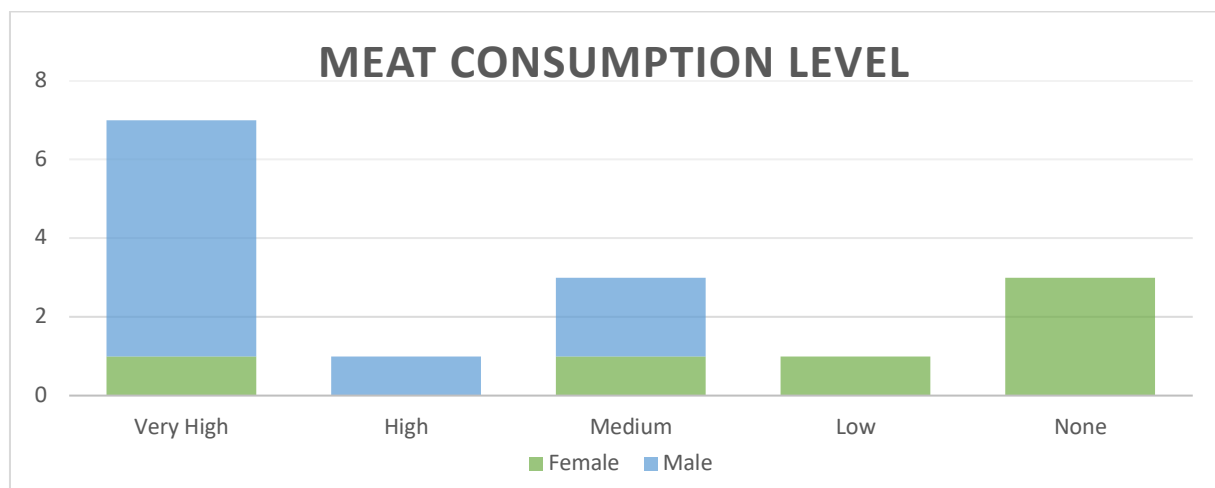


Figure 8: The frequency with which student participants consume meat

Very high – students who consume meat numerous times per day.

High – refers to students who consume meat on a nearly daily basis, four-five times per week.

Medium — refers to students who rarely consume meat for dinner but eat meat as a topping on the bread slice.

Low - refers to students who consume meat seldom, fewer than three times per week.

None – refers to students who do not consume any meat in their diet.

The following sections will present the collected empirical findings and statements from the interviewed students. The chapter's structure is based on the themes and patterns identified and on the research questions. The first research question of this master thesis is: “How do students reflect upon the relationship between their meat consumption, health, and sustainability?” which aims to get a deeper understanding of students' consideration of the interconnection relations between the current meat consumption, sustainability, and human healthiness. The following sections, therefore, present the students' perceptions of the links between meat consumption and climate change. Furthermore, addresses students' perceptions of the Norwegian meat industry, transparency and knowledge, health-related attitudes, and ethical concerns about meat consumption.

In relation to the second research question, which is “What influences the type and amount of meat consumed by students?”. The findings will, therefore, highlight the elements that influence students' type and amount of meat consumed, which include students' habits, culture, and social norms, as well as perceived gender differences in meat-eating behaviors and the impact of living conditions.

The third research question is “To what extent do environmental awareness and knowledge affect students' meat consumption and their attitudes toward plant-based alternatives?”. The findings will demonstrate students' environmentally conscious, attitudes toward a reduced meat consumption, and thoughts of plant-based diets, and alternatives. This section will also present the student's behavioral intention for sustainable consumption and their perceived levels of self-efficacy.

The fourth research question is “What are the main factors that explain students' reluctance toward meat reduction and sustainable dietary change, and how do we address them?”. This

last section will present the students' perceived components that explain their reluctance or willingness to reduce their consumption of animal products. The findings include lack of motivation and skills, price and convenience as well as a perceived overload of information as central barriers. Furthermore, students' future perspectives on sustainable diets, as well as how they feel the drivers and barriers for behavioral change should be addressed, will be outlined

4.2. Perceived connections between meat consumption and climate change

Based on the students' different levels of meat consumption, it was necessary to investigate their reflections on environmental sustainability and green consumption to gain a greater understanding of the students' motivations for decisions and behaviors. The students were asked about how they view the meat industry and the consequences of climate change in Norway in comparison to other regions of the world. The degree to which students understood the meat production processes and their environmental impacts varied substantially. Some students expressed a low level of understanding and had not given much thought to the environmental factors associated with meat consumption. This became apparent from responses such as: "When it comes to meat production and climate impacts, I know there is a lot of CO₂ pollution from the production. Besides that, I don't know as much about it." (Respondent 7F); "I know it affects the climate, but it is not something I think much about." (15M). Another example of limited environmental awareness was one student's (9M) answer to the question: "What are your thoughts on meat production in relation to climate change?", where he answered: "I have heard that cows emit a lot of methane and CO₂, which contributes to the climate emissions. But I do not quite see the problem, cow farts, it is necessary, should we slaughter every single cow on the planet?" (9M). The findings show a tendency for male students to express more skepticism and a lower level of environmental awareness than their female counterparts. This may appear reasonable given that male respondents outnumber females in this study, but it also reflects the fact that all *non-meat* eaters in the research are female respondents.

On the other hand, several of the students showed a greater reflection and knowledge of the consequences of extensive meat production. Some of the interviewees brought up overproduction and industrialized meat as an environmental concern: "In terms of climate change, I do not think the current overproduction of meat is righteous, as it leads to large

methane emissions (. . .) and is harmful to the environment.” (3M) The student further elaborates on the problem of overproduction and consumption:

The farms in Norway get way too many subsidies from the state in order to keep the production going. Even when they produce more than consumers manage to eat. I do not quite understand the meaning of keeping the farmers in production when meat stocks are frozen down and filled up, and as a result, much eatable food gets thrown away because it is out of date. (3M)

Three female students were particularly interested in the subject and were continuously on the lookout for additional facts and information. However, the findings of this case study indicate that there is a lack of understanding of the connection between global warming and meat consumption. Furthermore, many students do not see meat reduction as the best or most effective solution for the current world issues.

4.2.1. The Norwegian Meat Industry, Transparency and Knowledge

The students’ knowledge of Norwegian meat production was also questioned. There were great differences in the knowledge and interest in the specific topic. The students that had reported a minimal interest imagined the Norwegian meat industry as better and more ethical compared to international production. One student (1M) said: “I do not know much about the meat industry. I have heard scare stories, but I guess, and I hope that we have better production in Norway than in other countries.” Another student (5F) elaborated about the international production compared to the Norwegian meat industry:

When it comes to the global and national level, I hope that the Norwegian meat production is better and more ethical than at the global level. I feel the international production is a much worse, rotten system, as they can do whatever they want. Norway has more rules and better protocols and systems. (5F)

A male student (9M) highlights that he has not familiarized himself with sufficient knowledge “but I have heard a lot of negative things about the production. That the animal treatments are not the best. But I think it is better production conditions in Norway, at least they say so.” Other students that were interested in the topic reported that they had watched many documentaries and read about the processes and systems behind meat production:

We are talking about meat production being much better in Norway, but then we compare with the very worst of the worst. I would say that Norway paints a picture and embellishes the truth when it comes to Norwegian farms and meat production. (8F)

Other students elaborated on the subject: “I think the production is too high and that it can be too brutal” (5F). One student (7F) questioned the Norwegian Food Safety Authority's meat production regulation, claiming that they are unable to have sufficient controls on all poor conditions and breaches of animal welfare. However, she highlights the importance of food inspection controls and feel it is safe and good that we have a Food Safety Authority that acts if they receive reports of concern. When discussing environmental awareness and the relationship between sustainability and meat consumption, many students believed transparency will become an important element in future food system and product marketing: “I think transparency is a keyword here. Where consumers can get all the information about the entire production process and make reflected and individual choices based on that” (Focus Group). Another female student (7F) elaborates on the point of transparency by pointing at the impact of proper information: “People need to be more exposed and informed, gain better experiences and knowledge about changing their diet towards a more sustainable one.” However, one student illustrates how transparency would not appeal to or change the behaviors of all consumers, as there are very different views and opinions about the subject:

I have never thought about a need for transparency in the production line, and I think I am talking for many when I say I have never thought about where my pants are made. I trust Norway and that the products they sell are righteous. (1M)

4.2.2. Health-Oriented Perspectives of Meat Consumption

Many of the students, particularly the male students were enthusiastic about exercise and maintaining a healthy diet. As a consequence, the students recognized meat as an essential source of nourishment and one of the simplest ways to acquire high levels of protein in an active lifestyle. Although the majority of the students were familiar with the Norwegian Directorate of Health's dietary advice and guidelines, only a few were aware of the actual recommendations for red and processed meat quantities. Two students stated that they had not given much thought to the relationship between health and meat consumption, except that they had both heard that red meat was not healthy in large amounts and that it could produce high cholesterol and be

carcinogenic (9M and 10M). The health perspective of meat consumption was not something students thought much about in everyday life. Furthermore, the health argument was not seen as a compelling reason to alter one's dietary habits and behaviors. One student further stated: "I do not really care; I feel everything in this world is carcinogenic." (9M) The findings indicate that there are generally low levels of health-related concerns among the students that participated. However, one female student (5F) raised the concern about the abundance of meat in Norwegian diets: "I believe that our diets are overly meat-based and that we typically consume too much meat which is not healthy for the population." (5F). One student (6F) proclaimed fast and significant health benefits associated with the transition to a vegan diet and expressed her wish that Norwegian diets and national dietary guidelines would include more plant-based and whole-grained foods.

4.2.3. Animal Welfare and Ethical Considerations

When the students were asked about animal welfare and their ethical considerations in terms of meat consumption, the answers varied a lot. One student (7F) showed clear knowledge of the subject; however, her behaviors did not reflect her attitudes: "I think it is quite strange and absurd that their (the farmed animals) whole existence is based on us getting to eat being satisfied. But again, I do not do anything about it." (7F). Other participants also report a degree of knowledge about animal welfare in meat production, but it does not affect or changes his consumption behaviors: "I have seen some videos online of animals on farms and in slaughterhouses. I think it's ugly and rough scenes that attract attention, but it does not affect me further than that." (4M) Another male student with a reported *high* meat level acknowledges the awareness of the situation in farms and slaughterhouses but chooses to keep it at a distance to avoid having to make a choice: "I am relinquishing that responsibility a little, and it may be a little selfish, but I choose not to look at the big picture, but rather at my own pleasure." (9M)

Other participants expressed a strong desire to learn more about the welfare requirements of farmed animals. One of the students (6F) cited the climate crisis and animal welfare as the main reasons as to why she adopted a plant-based diet, by seeing the vegan dietary choice as a more ecologically friendly alternative. Furthermore, she emphasizes that one of the reasons she chose a plant-based diet is that she does not believe killing is a human urge; she supports this by stating that she could never have slaughtered an animal. In addition, the student believed the whole meat industry and production are wrong and unethical, referring to the statement that the

meat production is extensive: “The calves are seized from their mothers an hour after birth (...) they are also forcibly inseminated one month after birth in order to procreate again. This is how the cows’ lives are planned out, and I find it grotesque.” (6F). Another female student goes on to expound on the meat production scale, believing that lower production scales work far better to preserve high animal welfare, and that it is critical that meat production and consumption decrease in light of global warming.

I grew up on a farm, so I understand the distinctions between small-scale production and mass production of meat. Smaller farm productions are far better and more ethical; the animals may spend the summer in the mountains and have a better existence. (5F)

One respondent reported that she does not eat meat or any types of animal products in her diet. The student demonstrates how differing perspectives on animal welfare and ethical considerations among family members with different dietary choices may be problematic:

If a family member asks why I does not eat meat, I explain my views on the meat industry, and typically the response is that we have much better treatment of animals here in Norway than in Australia, where it is poor. I understand that things are far worse elsewhere, but just because things are worse elsewhere, I do not believe it justify eating meat at home. (6F)

The student continues to explain that, while the Norwegian meat industry provides better animal welfare compared to other nations, she does not believe it is adequate. Claiming that something is wrong with the system, as production is always pushed to the limit, putting enormous strain on the sector and farms as everything is about cutting costs. One student (3M) does not see the Norwegians farmed animal production as sustainable. Emphasizing that he does not understand the purpose for keeping Norwegian farmers engaged when meat stockpiles are depleted, frozen, and discarded in large quantities due to spoilage. The student continued by stating that he believes Norway has higher animal welfare regulations than the United States and certain Eastern European nations that may place less emphasis on animal rights: “However, I still do not believe that the eight weeks of outdoor movement that cows are entitled to in Norway is sufficient.” (3M)

A few of the students appear to value animal welfare and feel that their plant-based consumer habits have a good impact. Some students suggested that choosing animal products that

encourage welfare standards, such as free-range meat and eggs, is another method to eat animals in a more ethical manner. However, none of the *very high* and *high* meat consuming students report that they purposely seek and buy these products. Local food production was pointed out by several students as one of the solutions to the global and national problems:

I think Norway has a better and more ethical production than many other places. I am also very much in favor of us having a good production in Norway rather than importing lots of meat. So, I believe short transferred and local food is much better for the environment. (7F)

If the meat had come from a more animal-friendly and sustainable farm in Norway, where the meat is short-distance and the animals are fed in a sustainable way, I think that production would have been much better for the environment. (Focus Group)

Furthermore, fishing and hunting were considered by many students as better and more ethical options. Arguing that meat that is naturally caught, is much better as they live in the open air and are not part of the assembly line production. One student further and elaborates: “Hunting and fishing meat that is naturally caught, is much more ethical. As they live in the open air and are not part of the assembly line production; it is the large farms that I see as the problem.” (3M).

4.3. Sociological Aspects of Meat in Meals

4.3.1. The Power of Habits, Culture, And Social Norms

In the interviews, students were asked about their eating habits in the course of social and traditional get-togethers. Nine out of the fifteen students reported that all their meals are meat-based traditional dishes during the holidays and celebrations. Three students ate fish on Christmas Eve and other usually meat-based dishes during the rest of the year. Four students stated that they have tried or always make plant-based alternatives during the holidays. There were notable differences in the understandings and rationales among the students who tried plant-based alternatives and students who usually make these dishes every year: “During Christmas, we eat meat-based dishes like chops, ribs, and steak. This year, my sister actually made a nut roast or mushroom roast, which I thought was a little weird.” (9M); “I made some

plant-based meals for my brother at Christmas who wanted to eat a little less meat. But we usually have the traditional meals during the holidays.” (3M) Another student stated:

On Christmas Eve we have everything possible, chops, ribs, there are veggie cakes, and there is nut roast for me. I look at food as a social thing and something I enjoy. But of course, at times it is very stressful to cook and sometimes it is very fun. (6F)

One of the students (8F) explained that being a vegetarian/pescatarian in her everyday life is no problem. However, holidays and more traditional occasions could be a bit trickier:

At Christmas times and during holidays, I think it is stressful to have a different diet than the rest of the family. The others eat the traditional dishes, and I always make a plant-based substitute for myself. It can be a bit stressful with two dinners, different dishes, pots, and sauces, but it works, and I think it is worth it (...) in social settings. (8F)

The participants were further asked about their social eating habits and what they usually make for dinners with friends. The answers from the interviewees revealed that the students mostly cooked tacos, pizza, pasta, and salads. The responses to whether the meals were generally meat-based or plant-based varied. There were generally positive attitudes and openness to trying new plant-based dishes, but some of the students expressed concern about the taste, texture, saturation, and availability of plant-based options. The students who were classified with a *very high* meat intake reported that they always included meat in their dinners, and some stated that they feel something is missing if a meal does not contain meat. Although many of the students that are in the *very high* meat consumers category said they were willing to eat more plant-based the majority of the students reported that they typically choose to have meat in addition if one of their friends chooses to have beans in the taco. Many of the students consider meat to be a fundamental part of a meal. Habits and routines were recognized as an important component and rationale for their actions as it is an instinctive routine in daily life: “I think habits are the main contributor to meat consumption, it is what we have grown up with and are accustomed to.” (8F). Furthermore, family attitudes and perceptions were also acknowledged as essential factors in the perceived image of meat in society. A female participant (13F) exemplifies the profound effect culture, friends, and family have on people's eating choices:

I think friends and family influence each other a lot. If all my friends had been vegetarians, I would probably have been introduced to more alternatives to

meat. When there are few friends of mine that eat plant-based, it makes it easier just eat our usual meat-based meals. (13F)

One student (15M) verifies this description with his statements: “Eating habits depend on where you were born and raised, who you hang out with, and which family you grow up in.” (15M) Another male student (14M) expands on this concept, noting that culture and traditions are inextricably linked. He goes on to demonstrate the differences in traditional and cultural preferences, adding that traditional Norwegian dishes are almost entirely meat-based, especially during the holidays. The student claimed that he considered it as challenging to choose different dishes such as nut roast while everyone else was having traditional Christmas feasts.

One of the students (3M) with a meat consumption level of medium attempted to live a vegetarian lifestyle a few years ago. He emphasizes the importance of tradition and norms in Norwegian culture by sharing a narrative about the social pressure of choosing different dietary alternatives:

Often people comment on what you eat when you have a meal without meat, which could lead them to teach me that the way I ate was wrong. It was very annoying in the long run. There is often a debate around the table, that you do not get enough. I'm probably not the typical person to become a vegetarian either, so people that it was fun to comment on everything I ate. (3M)

4.3.2. Gender Differences and The Influence of Living Environments

All informants had the opinion that there was a gender difference on the topic of meat consumption, animal welfare, and environmental awareness. Pointing that both genders could be equally concerned with the subject, but often more women were involved. “Women usually have a greater sense of responsibility and compassion and think more about the next generations.” (Focus Group); “Women often have a greater conscience and empathy than men, (...) and have more sympathy for animal welfare and environmental awareness.” (15M)

There was also a clear demonstration that students knew mostly females that had chosen a more plant-based diet: “I know a good deal of people that live in Oslo, mostly have chosen to reduced not relinquish their meat consumption. Such as taking vegetables in the lasagna instead of meat, and trying new recipes, these friends are mainly girls.” One of the female participants (13F) with a *high* meat consumption level reported: “I imagine that girls are more conscious and may

follow the trend of becoming a vegetarian. I however do not think this is something for me, but I feel like I have a little “boyish” attitude to the subject.” The students were asked “Do you think there is a gender difference in meat consumption?”, one male student (14M) replied: “I have the opinion that there are more women who are vegans, vegetarians or pescatarians, as women are a little more open and empathetic to change behavior.” Another student (12M) also elaborates on the gender distribution, believing that there are more girls than boys who take a stand on the issue and change their diets. He goes on to say that he feels it has a negative impact when more females than men switch to a more plant-based diet. He supports this argument by sharing his personal experience with women who are judgmental of others who eat meat, that he further believes has the opposite effect: “It delays the process through which more individuals reduce their meat consumption.” (12M). This statement was followed up by the interviewer: “Why do you think there will be such an opposite effect?”:

Because people often do not like to be told what to do. I had a friend a while back who was a vegetarian. At first, people laughed at him, because there are often people who are looking for alternative ways who started as vegetarians. But now you see that it has become more and more normalized and accepted by society. (12M)

During the focus group discussion, masculinity was also brought up and linked to the topic of meat consumption. “I think the masculinity image around meat is a big factor in why many people will not stop eating meat”; “At least for men, I think many people think it's a bit feminine to eat plant-based meals”; “However, at the same time, steak and beef can also be seen as a bit tacky nowadays (...) There is an extremely different image and trends around dietary choices.” (Focus Group). Many of the participants point out a change in their eating habits in recent years. Their living situation was particularly signaled as a reason for certain changes in consumption and eating habits. Students reported that after leaving their childhood homes and collectives, they started to make their own meals and food decisions:

When I lived in a student collective, the goal was just to make the simplest and fastest dinners. And when I lived at home, I ate what my family ate, which was almost always meat-based (...) The last years I have started making a meal from scratch with recipes from my vegetarian book. (5F)

One student (11F) who does not consume any meat, demonstrates how dietary choices outside of society's norms can be inconvenient. “In the beginning when I was a vegetarian and I still

lived at home, it was a bit demanding for my family to have two dinners every day. I remember that I thought it was stressful and challenging.” A male student specifies how his eating habits and routines have changed after he moved in with his girlfriend: “There have been some changes and you have to adapt to her eating habits.” (2M). Another student also indicates that his recent dietary changes are due to moving in with his girlfriend that is a vegetarian: “When I lived at home, I thought little about my meat consumption. When I started my studies, I got other experiences that were different from home. Influenced by the media, friends, and acquaintances has significantly decreased my meat consumption.” (12M)

4.4. Environmental awareness and its effect on student’s meat consumption

In general, there were varying answers to students’ knowledge of the meat industry and environmental awareness. Some students reported a real concern about the meat industry, others had not reflected much on the subject, while a few did not care. During the interviews, students were asked about their attitudes and thoughts about a reduced meat intake. The majority of the students expressed a willingness and openness to a meat reduction in their diets. One of the participants (6F) talked about a meatless diet for over six years and could not be happier about her decision to change to a vegan diet. Another female student with a meat consumption level *none*, states:

I understand that not everyone is going to stop eating meat, but I believe it is vital that there are people like me to introduce others to plant-based alternatives and new flavors, showing them that it works and that you get full without meat. (8F)

She goes on to emphasize the consequences of individuals eating vegetarian meals only twice a week, believing that it will have a significant effect on the environment. Although most of the students had a positive attitude toward reduced meat-eating most of the students with *very high* and *high* consumption levels of meat reported no change in dietary behaviors due to environmental knowledge and awareness. Furthermore, some of the students thought that society was not prepared or intent for changes in diets: “I choose to be naive and not take a stand on everything. I think you can make some changes here and there, but it should not make it more stressful in my everyday life.” (Focus Group) Another student reflected:

I know there is a lot of information and nasty videos (of the meat industry) out there that would surely have influenced my choice. But I want to eat meat, I feel it is the only healthy thing in my diet. So, then I choose to look the other way and be ignorant and ignore the problems surrounding meat production.
(13F)

A female student (7F) reflects on the explanation around the level of awareness and the absence of action: “I think it is more important to make changes in other sectors than in food habits. But of course, one must make some sacrifices, but I feel it is very difficult to change the population's attitudes to their own diet.” In the focus group discussion, the topic of environmental action was further addressed: “Researchers say that we are in a crisis, but do not feel like there is anyone who is in crisis mode. Except for a few who fight a battle but are often labeled as hysteric”; “I think it's weird how some people are “hysterical” while others are seeing the climate crisis. This makes it difficult to believe, but it is sad if it turns out that we are doing irreversible damage to the earth.” (Focus Group)

4.4.1. Attitudes Toward Plant-Based Diets and Alternatives

The students were asked about their attitudes towards meat substitutes and the image surrounding these types of products. Most of the students saw these substitutes as a good and positive alternative to meat. However, many of the students indicated that vegetarianism is a trend, seeing plant-based alternatives and meatless options as widespread trendy food preferences: “I do believe people choose a diet without meat for the sake of the environment and health benefits. Plus, because it is trendy nowadays, in 5-10 years I do not think it will have the same image.” (10M). One student (7F) puts it like this: “Vegetarian options have gone from being a bit dull and alternative, to cooler and trendier. I think this is a good trend, it leads to more experiences and different recipes that make it easier to choose plant-based.” Another student (3M) supported this statement, “but in a limited amount”, calling attention to the fact that many of these plant-based alternatives are processed soy products and not necessarily healthy. However, he saw the alternatives as a “good start and opening entrance to more plant-based, where you are introduced and can learn more about new flavors and recipes that can lead to healthier diets and choices.” (3M) When asked how friends react to making vegetarian dishes, the following answers were reported from the *nonmeat* eaters: “Most people agree that we just cut it (meat), without any protests. Many of my friends like it and eat little meat themselves.” (11F); “I try to introduce friends to new dishes. I have a very good vegetarian

cookbook that I use a lot. I really enjoy eating vegetarian dinners, but sometimes we have tacos with minced meat as well.” (5F); “It is very much a question of who I am with, but often there are vegetarian meals, or someone has meat next to or on one part of the pizza.” (8F). The student further underline that there is a big difference between groups of friends and what is accepted as the “normal”.

The students were further asked about the conditions for them to consider a reduced meat intake. One of the students (10M) answered: “There must be something that can replace the meat, which I think tastes the same and as good as meat. For example, I do not like beans instead of meat in tacos.” One of the students in the focus group discussion pointed out that she did not like the thought of substituting meat with processed alternatives to meat in her daily meals. “I'm not a fan of those substitutes. When I am not eating meat, I would rather have legumes or vegetables for dinner, than find a substitute that is similar but does not taste as good as meat.” (Focus Group) Nevertheless, she emphasized that she understands the importance of meat substitutes for people who never eat meat, like vegans and vegetarians. The other student in the focus group followed up on her statement and underline the significance of plant-based alternatives to reduce meat consumption:

Meat substitutes would be an absolute must if I were to eat more plant-based. For me, it does not feel like a full meal if there was not something that took the place of the meat in the meal. Beans instead of chicken would not be sufficient for me, but a vegetarian burger instead of a meat burger I would have been willing to exchange. It is also important that they are healthy and have a lot of protein in addition to being plant-based. (Focus Group)

One participant (4M) reports that he is positive too and has tried many plant-based alternatives to meat. However, most of them have not lived up to his expectations “the substitutes are constantly compared to the taste and consistency of meat” which makes it hard for people to move towards a sustainable dietary change.

4.4.2. Behavior Intention and Level of Self-Efficacy

During the interviews, all the students acknowledged that we are currently in the middle of a climate emergency. However, meat production and consumption were not recognized by all students as one of the biggest drivers of climate change. Several students reported that they did not look at a reduction in meat consumption as an effective way to tackle the climate challenges:

“I do not know how much of the emissions meat production is responsible for, but in my head, it is a small part. I do not feel it is the way to tackle our climate challenges.” (10M). This statement was followed up by the interviewer: “What do you think it takes for us to reach the Sustainable Development Goals?” 10M: “I think cutting emissions is essential, but I feel the transportation sector is considerably worse than the meat industry.” Other students also bring up recycling rubbish, saving power by turning off the light, shorter showers, and public transportation as environmentally friendly actions that can make a difference in the long run. However, even though one male student brings up public transportation as an alternative he continues with: “but that is completely out of the question.” This builds up under the argument that habits are incredibly interwoven in society and behaviors can be extremely difficult to change. One more student (13F) reflects upon her level of self-efficacy and a spatial distancing from the problem: “I do not feel individual responsibility or that our action has any effect in the big picture at the global level.” She elaborated her answer by saying that she did not believe a reduction in meat consumption has any effect on the climate crisis. Another male student (2M) elaborated that he believed climate change was an important topic but pointed out that since we in Norway are not that affected by global warming yet, people do not acknowledge the problem, or do not think it is a big problem yet. Many students reverted to alternate options that did not require them to change their behavior. When asked if we have a universal obligation for other people's environmental impacts, one informant stated that he would not cease eating meat for the sake of the planet, further elaborating; “plant-based products must replace the meat” in some way for him to be motivated. (4M). Another student with *very high* meat consumption underlined this statement by acknowledging the awareness of the situation in farms and slaughterhouses but chooses to keep it at a distance to avoid having to make a choice: “I am relinquishing that responsibility a little, and it may be a little selfish, but I choose not to look at the big picture, but rather at my own pleasure.” (9M). The response is reflective of half of the participants questioned, demonstrating how simple it is to focus on practicalities rather than establishing an ethical sense of personal responsibility.

4.5. Drivers and Barriers Toward Sustainable Dietary Change

4.5.1. Lack of Motivation and Skills

Motivation was highlighted as one of the main barriers and regarded as a justification for many of the student's dietary behaviors and choices. Even though students reported that they see plant-based diets as a good option, they lack the motivation to make an active change to their diets.

As one student (3M) points out: “It takes longer to prepare a good vegetarian meal.” He acknowledges that he would only need to put in some effort and time to do some research “but I am not motivated enough, so it is easier for me as a full-time student to just eating meat.”

Another student (4M) highlights a reduced meat intake as a good alternative, but not an option that he would consider for himself at this moment: “I find it hard to expand my cooking skills, and in the bottom line, I am not motivated to get more educated and change the way I eat.” He further pictures vegetarian cooking as a more time-consuming process, emphasizing lack of motivation as the main barrier to dietary change (4M). When the students were asked: “What are the conditions for you to consider a reduced meat intake?” many of the participants pointed at a lack of familiarity and skills in preparing plant-based meals as a big contributor to keep on eating meat. As one student (1M) communicated: “I would need something that replaces meat, and unfortunately I do not have the knowledge to make a full plant-based dinner.” Another male student expressed:

I do not have a problem with a meat reduced consumption, but then I must actively seek knowledge and implement it in my everyday life. I'm open to it, but what stops me is that I feel it's more time-consuming to eat more plant based. (9M)

4.5.2. Price and Convenience

Price and convenience were important themes for the students. Even though students answered that they had a positive attitude toward meat substitutes, the minority of the students bought plant-based alternatives themselves in the context of everyday life. Several of the *very high* and *high* meat consuming students reported that they would gladly choose more environmentally and animal-friendly products, but price and personal economy were a barrier that stopped them from choosing these products. A significant proportion of the students pointed out price as a big influence on what they choose to eat. As a student (1M) responded to “what are the conditions for you to consider a reduced meat intake?”: “I am open to reducing my meat intake, but it must be convenient, and cheaper than a meat-based diet.” Another student (9M) has the same attitude, saying: “I feel it's more expensive, and feel you need more ingredients and basic products to get a good taste, while with the meat you can just toss it in the pan, season a little, then it is a good taste.” One of the female students who have a low level of meat consumption understands and agrees that it can be expensive to eat more plant-based:

It can be expensive the first time to make vegetarian recipes because there are often a lot of spices, sauces, and ingredients that you do not usually have in

the house. But once you have bought them, they last for many dinners, and it is delicious and fun with new recipes and flavors. (5F)

The student elaborated on the price differences between plant and meat-based options: “I think meat is too cheap compared to the vegetarian options. When vegetarian alternatives are more expensive than meat, it gets even harder to get consumers to choose other substitutes over meat.” (5F). Another student also reflected on the price levels of meat substitutes, arguing that plant-based options need to become cheaper: “Now it is a bit expensive, so people prefer, and it is easy to just choose the regular meat. Furthermore, fruits and vegetables must be cheaper” (8F).

4.5.3. Information Overload

It appears that the media coverage with differing viewpoints regarding meat consumption, health, and sustainability confuses the students making it harder to make informed and reflected dietary decisions. This was pointed out by one of the students:

I think people are swayed when sources indicate that meat is bad for you, but then other sources bring out contradictory information, pointing out that a diet devoid of meat raises the danger of vitamin deficiencies and a lack of essential nutrients that individuals need. When there is so much conflicting evidence, it's difficult to know what to believe. (7F)

This conflicting information was also evident through the interviews of students who had different views on the health perspective of meat consumption. The students point out that it is difficult and time-consuming to gather the appropriate information to make sustainable and ethical dietary choices, and that it might be an issue of too much available information. One male (15M) student expresses his dissatisfaction with the situation: “I feel there is too much information out there but limited specific information for people who are not motivated enough to familiarize themselves on which products to choose.” Continuing his reflection: “I think there should be a greater focus on making it easier for consumers to choose more animal-friendly and plant-based products.”

4.5.4. Future Perspectives of Sustainable Diets

The interviews obtained many different perspectives and reflections of students’ thoughts on technological and further prospects of meat consumption. Many students were optimistic about

the future, believing the next generations will be more environmentally conscious. Furthermore, that lab-grown meat and new technology will mitigate the unsustainable practices of the present meat production. Others were more pessimistic about the future global prospects of reduced meat consumption:

I guess the meat consumption will decrease a little, but I do not think there will be big changes. People are too fond and too selfish to opt out of meat. In addition to the fact that we are extremely addicted individuals that do not like to change their habits. (1M)

Another student (3M) predicted that meat consumption in the Nordics and other Western countries will be reduced, and that people would eventually consume less meat. Furthermore, seeing there is a trend toward consuming more plant-based foods for reasons of health, the environment, and animal welfare. However, the student predicted that this tendency will be more evident in the western areas, claiming worldwide meat consumption as growing and expected to continue.

When students were asked about how they envision food production and meat consumption in 20 years, one of the *non-meat-eating* students (6F) found it difficult to decide if fancy technology where with lab-grown meat has taken a large place in the market. The student further emphasized that she thinks brands like “beyond meat” and other big meat substitute brands will continue to grow. She argues for this based on the major transformation and the fourfold rise of accessible plant-based brands during the seven years she has been a vegan. The student also emphasizes the beneficial outcomes of a greater market for plant-based products, as well as the fact that the items are placed alongside meat products in stores: “I believe it is extremely helpful since it puts all of your alternatives in front of you, which may lead an ordinary Norwegian to try a plant-based alternative.” (6F). Another of the *low* meat consuming students (7F) thinks that the ripple effects of people eating less meat will be greater and that more people will be affected. “However, if you look at the trends in food production, I think we will see larger and fewer industrial farms that buy up the small farmers, we see that in Norway as well.” (7F) Seeing the importance of greater focus on innovation, i.e., further development among the farmers so that production can be sustainable and that they do not base their entire industry on a meat production that must be subsidized to be able to keep going.

4.5.5. The Role of Citizens, Governments, and Businesses

The interviews caused discussion around the role of citizens, governments, and businesses in bringing about sustainable diets. Some students raised questions about the structures of the food system and socio-economic inequalities. Pointing out the difference in the price of healthy and unhealthy raw food and products. Local and organic alternatives are the most expensive alternatives. One of the students reflects on the economic and availability aspects of the industry:

We as customers demand fresh, cheap, and available goods at all times. And it sounds good, but as we can see, this has its downsides. An industry that due to economy and competition is set to operate inhumanely. Concerning animals, water, labor, and transport. Local food is sent out of the country to be packed, then returned to Norway for slaughter because it is a cheaper cost. (12M)

Many students moved their attention from personal to corporate and political duties. Students illustrated a frustration towards the meat-based cultural society that Norway represents. Pointing out that the responsibility must be taken not only by the individual consumer but the political and corporate responsibility.

It is the system there is something wrong with, the production is pushed to the maximum at all times which puts extreme pressure on the industry and it's all just about lowering costs. And the state substitutes the peasants with funds for it to go around. I think meat should have been more expensive and cost what it cost, so you had to think about whether it was worth it before buying. (6F)

Another student also points out the complexity of the processes: "It takes so much to have such production and animal husbandry going, but water, food, and soy, it must be produced and sent. I distance myself from it because I do not think anything of it." (8F) During the focus group interview, the students touched on topics such as taxonomy, greater demands on sustainability, and transparency. "Everyone would have bought the most organic and sustainable foods if it was cheaper and if people were more informed about the sustainable cost of the current systems." (Focus Group); "I think the authorities have a responsibility here, the consumers need an opportunity to choose the better alternatives." (Focus Group). Another student further elaborated on the subject: "they (Norwegian farmers) get way too many subsidies from the state to keep it going, even when they produce more than consumers manage to eat.

5. DISCUSSION AND ANALYSIS

The aim of this thesis has been to explore the attitudes and behaviors Norwegian University students at the University of Agder have towards reduced meat consumption and their willingness for sustainable dietary change.

This chapter is structured into four sections with the goal on connecting the previously presented findings to empirical literature. The research questions of the study will now be explicitly addressed through the lens of existing theories and conceptual frameworks.

- RQ1. How do students reflect upon the relationship between their meat consumption, health, and sustainability?
- RQ2. What influences the type and amount of meat consumed by students?
- RQ3. To what extent do environmental awareness and knowledge affect students' meat consumption and their attitudes toward plant-based alternatives?
- RQ4. What are the main factors that explain students' reluctance toward meat reduction and sustainable dietary change, and how do we address them?

In light of extensive research and literature, this chapter will discuss the dilemmas and paradoxes of dietary choices. Addressing students' views and limited reflections of the meat industry, health-related perceptions, and ethical concerns in connected with their personal meat consumption. Furthermore, link the importance of sociocultural norms and demographic influence on the type and amount of meat the students consume. The discussion further address students' environmental awareness, attitudes and behavioral intentions connected to their meat consumption and perceived level of self-efficacy. Lastly, the lack of motivation and skills, price and convenience will be presented as barriers for students to reduce meat consumption. Strategic information sharing and technological solutions is addressed as part of the solution for sustainable dietary change.

5.1. RQ1: How do students reflect upon the relationship between their meat consumption, health, and sustainability?

In this section, I will answer the first research question based on the following four sub-themes that are directly linked to the research question. The first sub-theme highlights the limited environmental awareness and knowledge that the students have about the relationship between their meat consumption, health, and sustainability. the second theme for discussion will link the students' reflections on animal welfare and ethical consideration to the consumption of meat. the third sub-theme emphasizes and discusses the health impacts in light of the current dietary guidelines and recommendations. lastly, the cultural invisibility to transparency will be stressed, as it is extremely relevant for the understanding of the student's reflections on the interconnected dimensions of meat consumption.

5.1.1. Limited environmental awareness and knowledge

As shown in chapter 4, meat consumption is linked to a number of ethical, health, and environmental concerns. The complex challenges surrounding the level of meat consumption in the modern era are many. Scholars have addressed the challenges around industrialized meat and declared increased production and consumption as a major driver of climate change which is responsible for the exhaustion of freshwater and land resources, and degradation of ecosystems (Parlasca, & Qaim, 2022; Ritchie & Roser, 2019; IPCC, 2018). There is a growing concern around our current food paradigm and its negative consequences on human health, animal welfare, food security, and climate change, but how aware are University students in Kristiansand about this? The findings from this study demonstrate divided and varying reflections of the interconnection effects of meat consumption.

Some students reported a lack of comprehension and had not given much attention to the environmental aspects of consuming meat. Other students, mostly female students showed a greater reflection and knowledge of the consequences of extensive meat consumption. Previous research has shown that having environmentally friendly ideas and values has effects on a range of ecologically important actions (Stern et al., 1999; Vatn et al., 2022). Furthermore, it has been suggested that animal welfare and sustainability concerns increase in correlation with people's economic and educational levels and hence are more prominent in high-income countries than in low- and middle-income countries (Parlasca, & Qaim, 2022). The findings somewhat support

previous research, as some students report significant concerns which have had an effect on their dietary choices, however, only half of the participants had *no, low or medium* level of meat consumption. The data suggest that male students are more skeptical and have a lower degree of awareness than their female counterparts. This may sound reasonable considering that men outnumber women in this research, however, none of the male students reported trying to eat plant-based or consuming a reduced amount of meat. Furthermore, six of the nine male participants reported their meat consumption to be *very high*, while only two male students expressed a *medium* consumption level (refers to students who rarely consume meat for dinner but may eat meat as a topping on the bread slice). According to the findings, there is a misconception about the relationship between environmental degradation and meat intake. Many of the participants in the interviews were similarly uninformed of the detrimental environmental effects of meat production and consumption. This underestimating of meat's climate effect among Norwegian consumers is consistent with prior results among consumers from other nations (Campbell-Arvai, 2015; Latvala et al., 2012; Tobler et al., 2011). This lack of comprehension can be explained in part by the fact that some students do not perceive a reduction in meat consumption in Norway as the most effective answer to current global concerns, and partly as students are not confronted with the benefits of sustainable consumption. Furthermore, this empirical study confirms previous research on adolescents' perspectives of environmental impacts of food, which highlight that high involvement have more positive attitudes and are more open to purchasing sustainable products (Vermeir & Verbeke, 2006)

5.1.2. Animal-Friendly Meat and Ethical Considerations

As introduced in the findings, the majority of students reported a confidence in Norwegian agricultural welfare practices compared to global production standards. The participants' perceptions of Norwegian meat production were generally positive. Several of the students view Norwegian meat as the most environmentally and animal-friendly meat available. Other students, however, referred to documentaries and stories that expose animal cruelty in Norwegian farms and meat production, which the Norwegian Food Safety Authority controls have failed to prevent. The animal welfare discussion focuses on intensive and complex meat production practices. Animal welfare concerns in these systems are frequently attributed directly to excessive stocking density, prophylactic antibiotic usage, largely profitability breed targets, a scarcity of variety in environment and floor covering, and constrained access to basic and natural behavior (Parlasca, & Qaim, 2022). Overproduction and industrialized meat were brought up as environmental

concerns by some of the students. Research shows that young women are often more concerned about animal welfare than men (Parlasca, & Qaim, 2022), which is also demonstrated in this case study.

Most of the ethical arguments for reduced meat consumption were based around improving their living conditions and limiting animal suffering. The findings illustrated that this was argued to be unrighteous, and some students thought it was strange and not right that their whole existence is based around feeding humans. These types of statements show the altruistic and self-sacrificing attitudes of some of the students, as they give up meat because of their own beliefs. Although all of the students agreed that animal welfare standards need to improve and that the meat supply chain is not sustainable, there was a visible discrepancy between a number of students' wishes and their actual purchasing decisions. This illustrates the Intention-Behavior Gap which demonstrates how difficult it is to attain voluntary desirable habits in the absence of supportive policies and market-based solutions. This will be covered more later in the discussion.

5.1.3. Health impacts and dietary guidelines

The consumption of meat is currently high in many western countries, including Norway, which is also acknowledged from the findings of this study. Many studies over the years have elucidated the current intensive production and high consumption of meat with its connection to negative effects on human health (Van Loo et al., 2017; Bonnet et al., 2020) the environment (Steffen et al., 2015; Willett et al., 2019; Cheah et al., 2020) and animal welfare (Latvala et al., 2012; Ruby, 2012; Bonnet et al., 2020). It has been predicted that substituting meat with plant sources will significantly reduce the costs of climate change mitigation while also reducing the illness risk associated with red meat and processed meat consumption (Vainio et al., 2016). However, half of the participants preferred the flavor and texture of meat and described the meat as a healthy source of nutrition and one of the easiest methods to obtain high quantities of protein in an active lifestyle. The Norwegian Directorate's dietary advice and guidelines are clearly underutilized, as few students were aware of the current recommendations for amounts of red and processed meat. The majority of the students agreed that eating too much red meat was unhealthy, since it may cause high cholesterol and be carcinogenic. Nonetheless, many students did not consider the health-oriented argument as a compelling reason to modify one's eating habits and activities. As comprehensive research underlines that significant decreases in

meat consumption in developed nations would benefit both health and the environment (Parlasca, & Qaim, 2022).

The evidence of detrimental health impacts is higher for high meat consumption levels, which is applicable to any type of meat but mainly for red meat (processed and unprocessed) and processed meat (Parlasca, & Qaim, 2022). It is consequently critical that the Norwegian Directorate of Health's dietary advice and guidelines give national dietary recommendations that include a significant decrease in meat and vegetable oils, a modest decrease in cereals, roots, and fish products, and a considerable increase in people's intake of greens, fruits, legumes, nuts, and seeds (Chen et al., 2019). Scholars also underline the importance of a transition in which industry and policymakers can exert a much greater effort in educating users about plant-based protein alternatives and their health and environmental advantages. Considering the number of study participants that showed a lack of knowledge and awareness on this matter, it can be asserted that persistent media and targeted communication can be a useful resource to engage students in shifting to more sustainable diets.

The following section have answered the first research question by highlighting the reflections students have upon the relationship between their meat consumption, health, and sustainability. As highlights above, there are limited knowledge and awareness around the consequences of high levels of meat consumption. There is varying awareness around animal welfare and the ethical considerations around meat consumption. Furthermore, the majority of the participants do not consider the health-oriented arguments as a compelling reason to modify their consumption of meat.

5.2. RQ2: What influences the type and amount of meat consumed by students?

The following section will address the second research question, by highlighting the relevance of culture, identity, and gender differences, which are demonstrated to have a direct impact on the type and amount of meat consumed by the interviewed students.

5.2.1. Foundations of Culture and Identity

Many empirical studies have explored the factors that influence meat consumption and readiness to reduce consumption. Austgulen et al. (2018) identify cultural and social values, along with underlying habits and routines, as key factors in the willingness to reduce meat intake. As many students regard meat as satisfying, fulfilling, sociable, and traditional, it appears that it is particularly difficult to cut back on their consumption of meat. In wealthy and highly developed countries, such as Norway, the type of meat and quantity consumed can be regarded as a decision rather than a need. However, these decisions are not consistently rational, intentional, or informed. Rather, people's consumption choices are commonly unconscious and instinctive actions based on heuristic reasoning with profound influence from contextual elements (e.g. nutritional and health characteristics, packaging design, serving sizes, noticeability, and branding) (Stubbs et al., 2018). The empirical findings from this case study support scientific evidence over the last decades which attributes the current dietary habits and meat consumption patterns to the power of culture, tradition, identity, social norms, gender, and socioeconomic position (De Bakker & Dagevos, 2012; De Boer et al., 2009; Stubbs et al., 2018). In Norway, traditional links between meat intake and conceptions of nutritional sufficiency, power, strength, and masculinity have been observed (Kildal & Syse, 2017). Along with the same conventional context, plant-based diets have a tendency to be associated with femininity and the nutritional deficiency (Stubbs et al., 2018).

The practice of eating meat appears to be strongly established in Norwegian society. Participants who consume a lot of meat indicate that a meal should include three components: meat, carbohydrate, and vegetables. Several students did not consider a meal to be wholesome and sufficient if it did not include meat or something that substituted meat. A few students also remarked that beans and legumes were not sufficient to replace meat in a meal. As the majority of students consider meat as a part of Norwegian society, social gatherings and different dietary preferences may appear to be an obstacle or difficulty for those in the minority. The students with a low and zero meat intake discussed the cultural pressures around meat consumption, such as being invited to dinner with friends or family where there is no vegetarian alternative available. The interview explored thoughts around if a host would feel upset and believe a guest is difficult if he or she cannot simply consume what the rest of the guests is served. Since eating meat appears to be the norm in Norwegian culture, low and no-meat eating students reported that they always bring their own plant-based alternative or seek to help with the meal preparation. However, participants also underline a significant change, with more vegetarian

options and plant-based alternatives available in restaurants and grocery stores. This might indicate that sociocultural diets and lifestyles in terms of meat intake have already to some extent been altered in Norway, and hence meat-free dinners are becoming relatively common. Notwithstanding, most students believed that meat was still an important element of human nourishment and that total removal of meat in society was implausible. Such statements confirmed the evidence from De Boer et al (2014) and Verain et al (2015) that cultural and structural components, as well as consumer preferences, are crucial, and that a comprehensive understanding to defining meat substitutes is therefore considered necessary, rather than concentrating strictly on meat-free and plant-based alternatives (Weinrich, 2018).

5.2.2. Gender Differences

Previous literature highlights the importance of consumers addressing their personal health, their environmental footprint, and animal rights, all of which are influenced by a variety of factors such as sociodemographic and gender elements (Leibovici & Holdsworth, 2015). Combined, these elements affect opinions about food consumption, both of which are essential in forecasting consumer behavior and possibly adjustable to improve a population's welfare or sustainability consumption behavior. The findings from this case study illustrate undeniable gender differences in consumer behavior between men and women. Previous research has revealed that males consume more meat than women and that men are seldomly motivated to limit their meat consumption (Stubbs et al., 2018). The findings support earlier studies demonstrating that males consume more meat and are less likely than women to switch to a plant-based diet. This trend may reflect the association of meat (particularly red meat) with conventional notions of masculinity. Notably, two of the male students reported a medium meat consumption, which can be drawn to studies that have discovered that conceptions of masculinity may fluctuate over time and that nontraditional masculinity, as found among highly educated men, is associated with healthier meat and vegetable preferences (De Boer et al., 2014).

Vegetarianism and environmental activism have been identified as feminine qualities (Garnett, 2021). Several students stated that they anticipated gender differences in environmental and animal-friendly attitudes. This difference in behavior was explained by the fact that women have greater empathy, sense of responsibility, and compassion than men. Furthermore, participants believed that women are thought to be more concerned about future generations

than men. In this study, the relationship between meat and masculinity and vegetarianism and femininity is expressed in the declared differences in meat intake between female and male participants. To summarize, the male students reported a lower willingness and likeliness to choose or adapt to plant-based diets. Improving the flavor, quantity, and price availability of vegetarian alternatives is expected to boost students' attitudes towards reduced meat consumption and their willingness for sustainable dietary change, which is important for enhancing human and environmental health.

The following section have answered the second research question by highlighting the significant influence culture, tradition and identify have on students' choices of type and amount of meat consumed. Gender differences, and the social acceptance of meat have also been identified as major contributor to consumption of meat.

5.3. RQ3: To what extent do environmental awareness and knowledge affect their meat consumption and their attitudes toward plant-based alternatives?

Based on the discovered views of plant-based alternatives and a reduction in meat consumption, I will address the third research question. This research question is directly connected to the framework of the Intention-Behavior Gap since it has been established in the previous findings chapter that some students have the intention to change their consumption of meat, but their behaviors are not always reflected.

5.3.1. Attitudes Towards Plant-Based Alternatives

Climate change perceptions and attitudes have been proven to be predictive of consumer readiness and willingness to lower consumption of animal products and embrace more sustainable food alternatives (Austgulen et al., 2018). Given the societal consequences of meat-eating, more plant-based alternatives appear to be a viable alternative to present dietary habits. Vegetarian food is becoming more widely available, and as this study show, more and more students are becoming more aware of the health benefits of following a plant-based diet. However, according to the participants in this study, vegetarians, pescatarians, and vegans are

still in the minority according to the findings. Despite growing interest in sustainability and generally positive consumer attitudes, behavior patterns do not always translate into attitudes. In accordance with the findings of this case study, some respondents still have skeptical and dubious opinions about removing meat from their diets.

However, the evidence suggests that there may be a shift in the cultural image and satisfaction with meat, as meat can be viewed as outdated and tacky, furthermore, that cultural norms associated with meat are gradually shifting in students' daily lives. Nonetheless, meat is still regarded as a healthy and nutritious source of protein, and it continues to hold a strong position in students' holidays and traditional dinner gatherings with family and friends. The students declared to disagree on whether a diet with less meat is healthy and "balanced." There are still some uncertainty and skeptics among students with *very high* and *high* levels of meat consumption, worrying that a plant-based diet would not satisfy their hunger and that they would not get enough proteins and vitamins. On the other hand, participants that reported a vegetarian, vegan, or pescatarian diet acknowledged that you must investigate to make sure you get all the nutrition needed for the diet to be balanced and healthy. Furthermore, they also underline that this is not problematic, and saw this argument for continuing a high consumption of meat as incomprehensible and little informed. This highlights the many perspectives on what constitutes a sustainable and nutritious diet and advocates for improved sharing of facts and information on a more plant-based diet. In addition to a more effective method for encouraging individuals to adopt more sustainable diets.

5.3.2. Intention-Behavior Gap

Several features of behavior change are touched by an Intention-Behavior Gap, which refers to when individuals begin creating intentions to change their behavior but do not take further action to put their intents into practice (Stubbs et al., 2018). Comprehensive studies have investigated the alleged gap between a favorable attitude toward environmental behavior and a behavioral intent and willingness to buy sustainable food products (Vermeir & Verbeke, 2006). Such an Intention-Behavior Gap is also evident in this case study. Although a significant proportion of the students acknowledged that we need to do something about environmental challenges and animal welfare in the modern livestock sector, most participants do not act or do not act persistently. A portion of this gap between intention and behavior can be attributed to the structural forces that preserve traditional, cultural, socioeconomic, convenience, and

hedonic power over people's food options and choices (Stubbs et al., 2018). Another factor, which is also evident in this study, is that students are only vaguely aware of the connection between the food products they consume, their own health, the environment, and animal welfare. It is also worth noting that many students demonstrate open knowledge of the Intention-Behavior Gap while appearing unaffected by their lack of commitment to action. Despite the traditional and cultural significance of meat in Norwegian diets, there seems to be some evidence suggesting that the rapidly growing trends and technology in agricultural production, consumption, and waste meat could shift consumers' attitudes towards more sustainable habits and options. Notwithstanding, it is fundamental to highlight that shifts in consumer understanding, behaviors, or motivations are unlikely to have a considerable effect on food, environment, or health without corresponding political and strategic changes.

To answer the research third question, I have presented literature and findings on attitudes towards plant-based alternatives. The result indicates that some students that are aware of the environmental consequences of meat consumption change their diets towards more plant-based alternatives. However, the study illustrates a clear outline of the Intention-Behavior Gap, whereas students with very high and high meat consumption levels indicate that they have the intentions to reduce their meat consumptions but are not able to conduct these attitudes and intentions into action and behavior.

5.4. RQ4: What are the main factors that explain students' reluctance toward meat reduction and sustainable dietary change, and how do we go forward to address them?

In this section, I answering to the fourth research question, which addresses students' unwillingness to reduce their meat consumption and sustainable dietary change and directly link the reluctance to a lack of motivation and skills. Price and convenience are two other recognized barriers that will be examined in order to explain the research question. The highlighted relevance of cultural invisibility to transparency will be presented. Finally, the significance of strategic information sharing, and technological solutions is the final sub-theme that will address the research question of how we go forward.

5.4.1. Motivation and Skills

One of the main reasons for students' reluctance towards meat reduction can be argued to be lack of motivation. As demonstrated in the previous presentation of findings, motivation is recognized as being among the driving elements underlying individuals' behavior, hence it is difficult to promote sustainable dietary change if a person is not motivated. As a result, it is critical to analyze what elements that encourage a reduced meat intake. Consumer self-efficacy is another important element discovered in the research (Austgulen et al., 2018). Although changing one's diet is difficult for most people, those who have a strong sense of self-efficacy and motivation in relation to reduced meat consumption are more likely to do so (Austgulen et al., 2018).

Several students expressed a lack of knowledge and skills on what to make and how to prepare meat-free meals. It appears that many students believe it is very difficult to make plant-based meals. Furthermore, they do not have the motivation or know where to gain the information to obtain the knowledge and skills to implement a dietary change. The participants stated that particularly during the holiday season it was very convenient to eat the traditional meals that are served at family gatherings and celebrations. Only a few participants reported that they have attempted to make or regularly make plant-based substitutes during holiday seasons and social occasions.

5.4.2. Price and Convenience

Pricing of meat and meat substitutes was discussed in-depth and illustrated varying thoughts from the students. In the Norwegian market, meat can be very cheap, whereas meat alternatives are still relatively expensive. Furthermore, the price-quality ratio was assessed as poor and unpropitious by many of the students with high meat consumption. These arguments support findings by Weinrich (2018) that French consumers found the price and quality of meat-free products too high compared to the price of meat. Students who consume limited and no meat believed that the high price of meat substitutes discouraged individuals from adopting long-term dietary changes. In the semi-structured interviews, the students were asked a follow-up question regarding acceptable price ranges for them to willingly choose more plant-based products in favor of meat. The focus group members concluded that the cost of the meat alternatives was not the most important element as long as the quality of the product was

satisfactory. Other students confirmed that they would not pay more for a roughly similar meat substitute than for a meat product. These findings suggest that meat substitutes should be cheaper for several of the respondents to prefer plant-based goods over meat. This aligns with prior studies on people's propensity to buy meat replacements, which concluded that a buying incentive would be meat substitutes being less expensive than meat (Weinrich, 2018).

Previous research has linked favorable views about animal welfare to decreased meat consumption and a greater frequency of “higher welfare” meat purchases (Clonan et al., 2015). The students showed a positive attitude towards local and own hunted meat. However, local meat, fruits, vegetables, and other “higher welfare” animal-sourced goods are typically more expensive than calorie-dense basic meals. As a result, nutrient-adequate meals are generally vastly more expensive than calorie-sufficient ones (Parlasca, & Qaim, 2022). This supports many of the student’s cognition and behaviors. The findings show that convenience and price motives serve as barriers to replacing meat with plant proteins. Although all students had positive attitudes toward meat substitutes, they are perceived as more expensive and less convenient, which results in most of the students being reluctant to a meat reduction and dietary change. On the contrary, students with a low or no intake of meat argued that one reason for substituting meat with vegetable proteins is due to affordability, as beans and soy products are often less expensive than meat in Norway. However, traditional eating patterns from some of the participants appear to be rather fixed, as motivation, convenience, and the price is considered important barriers to lowering their meat intake. These results are consistent with prior studies demonstrating that the relevance of motivations connected to old habits is influenced by perceived complexity in shifting one’s dietary patterns (Vainio et al., 2016).

5.4.3. From Cultural Invisibility to Transparency

Current production and consumption practices of meat are regarded as unsustainable. Sustainable consumption may necessitate individuals to eat less meat and meat farmed in a far more ethical and socially responsible manner. According to research, people who consume less meat are more likely to examine the origins of the meat they eat as well as animal welfare while purchasing meat (Clonan et al., 2015). Furthermore, studies have shown that customers who are concerned about animal welfare and origin are far more willing to choose organic and free-range products (Hoogland et al., 2005). Consumers' opinions regarding the food production system in general and the lack of openness in the meat market have been acknowledged as

significant (Austgulen et al., 2018). Strengthening consumer-oriented transparency in the production process can therefore be a strategic instrument for influencing consumer behaviors towards more sustainable dietary choices.

Participants in this study with *very high* and *high* meat consumption were more likely to agree that animal welfare standards in Norway are extremely good compared to other countries. This either shows that more frequent meat eaters believe that meat from Norway is raised too high animal welfare standards, or it illustrates that some do not think critically about the problem. According to previous studies, there may be a certain degree of “cultural invisibility” around the slaughtering process of meat, which creates the separation necessary so that meat may be eaten without the need of addressing the well-being of the animal concerned (Clonan et al., 2015). This potentially applies to the current societal classification of “factory farmed animals” and “household pets”, with life experiences establishing these divisions at a young age (Clonan et al., 2015). It is evident that the existing food system makes it difficult for students to translate their animal or/and environmental concerns into corresponding food choices. Much due to limited knowledge and transparency of the industry, and because the meat products come freshly slaughtered in the grocery store, without much that reminds consumers of its animal origin. Evidence suggests that individuals that get presented with a transparent picture of farmed animal origin and of current animal welfare, will respond by either avoiding buying meat or by favoring free-range and organic meat (Clonan et al., 2015). Transparency at all stages of the meat supply line could therefore further contribute to more conscious consumption of animal-based goods and become a driving force toward sustainable dietary change.

5.4.4. Strategic Information Sharing and Technological Solutions

Some of the concern and confusion identified by the students in this study seem to have originated in the way media cover the agricultural production in Norway. Norwegian Directorate of Health advocates a diversified diet rich in vegetables, berries, fruits, whole grains, and fish, with restricted amounts of processed meat, red meat, salt, and sugar (Helsedirektoratet, 2021). Few of us strictly adhere to these dietary requirements. Only 14% of us consume adequate vegetables, whereas 56% follow nutritional recommendations for red and processed meat (Nysted et al., 2019). A number of the respondents argue that gathering the necessary knowledge to make sustainable and ethical eating choices is difficult and time-consuming and that there may be an issue of too much available information. The contradiction

of the health discourse (meat is beneficial, excessive meat consumption is harmful, meat substitutes are good but also unhealthy owing to a deficit of vitamins and nutrients) may necessarily imply that people are confused and unsure about health concerns and that there is a lack of information around meat intake (Weinrich, 2018).

Increasing information to customers about these environmental challenges might enhance incentives to limit meat consumption (presuming that customers care about environmental health when they receive such knowledge and are committed to making dietary adjustments (Vermeir, & Verbeke, 2006). Furthermore, knowing the many motives that promote (or may promote) meat reduction behaviors might assist in determining why certain individuals already have adjusted existing consumption habits and what a transition towards meat reduction could look like for someone else. Considering that most study participants stress a lack of available information on this subject, it can be claimed that persistent, targeted media might be a valuable strategy to encourage and enable moving towards more sustainable diets.

Alongside shifts in personal consumption and diets, technical breakthroughs are required to make meat and livestock production more sustainable. There are several technical solutions available to enhance animal genetics, as well as feed and animal welfare methods, which must be further researched and deployed on a large scale. Innovation must play a significant role in developing meat substitutes for nutritious nourishment with drastically reduced environmental and climate implications. All of these techniques must be undertaken simultaneously. Switching to more environmentally sustainable practices demands several behavioral, structural, and technical adjustments at different levels (Parlasca & Qaim, 2022). Further financial studies are necessary to facilitate this transition by designing appropriate policies and incentive mechanisms that take into account all key sustainability aspects. The modification and modernization of the European livestock safety systems are prompted by science and the need for cost-effectiveness in the cattle and meat industries, but it is contingent on many political and socio-economic interests. The transition from a traditional to a contemporary system is an evolution, not a revolution, and is thus a long, carefully directed process fueled by input from many stakeholders. It provides several chances to promote public health cost-effectively, while at the same revealing complex challenges (Blagojevic et al., 2021).

To answer the research fourth question, I want to draw upon The Theory of planned behavior and the external, social, and individual elements that influence and explain student's reluctance

towards meat reduction and sustainable dietary change. Individual elements that contribute as a barrier if the students have a lack of self-efficacy, motivation, and skills. Further, cultural invisibility and transparency has been acknowledged as a social factor that is significant in this debate. Further, price and convenience are highlighted as an external factor that prevail students from reducing their meat intake. Finally, strategic information sharing, and technological solutions are external factors that the study emphasizes as important drivers for addressing and promoting sustainable dietary change.

6. CONCLUSION

This master thesis has aimed to explore and gain deeper insight and knowledge about attitudes and behaviors around sustainability and dietary habits of university students in Norway. The following problem statement was developed as a foundation for the study; *“To explore the attitudes and behaviors Norwegian University students have towards reduced meat consumption and their willingness for sustainable dietary change.”*

As a research design, a qualitative single case study was chosen to gather the in-depth knowledge required to answer the problem statement and research questions of this master thesis. A combination of inductive and deductive reasoning was also applied to comprehend and explain the phenomena using conceptual frameworks. As a case study was chosen, an exploratory research strategy was regarded as most applicable, allowing for a better understanding of the social phenomena of behavioral intention and meat consumption. Through a case study involving 15 semi-structured interviews and a focus group, insights into students' attitudes, behaviors, and understandings of the stated problem were obtained in a real-world environment. Although the sample size is too small to draw broad conclusions about Norwegian attitudes and behaviors in general, the findings of this study align with comprehensive studies on meat consumption and behavioral concepts, indicating that the trends seen in earlier research are also reflected in the younger generation of Norwegian's behaviors and willingness to change. This case study explored several of the motivational factors that explain a student's awareness and efforts to minimize their meat consumption, as well as what influence him/her to shape habit for sustainable dietary change. Although disclosing the individual, social, and situational factors that impact particular attitudes, intentions, and actions is challenging, this research attempted to do so.

The research has looked at how students think about the connection between meat consumption, health, and sustainability. Present results show wide differences in the level of awareness and reflections between students. According to the findings of this study, half of the respondents lack sufficient knowledge, are uninformed, and are somewhat ignorant of the meat industry's problematic consequences for the environment and human health. Many of the participants in this study were unaware that the meat industry is responsible for large proportions of water and land consumption, deforestation, a substantial percentage of emissions, and other severe environmental consequences. Considering that high consumption of red and processed meat

can raise the risk of developing certain health problems, the health element is also viewed as a significant element for considering reduced animal products in diets. However, half of the students had minimal insights into the health benefits and ethical dilemmas concerning the meat industry and meat consumption. On the other hand, participants reporting choosing a plant-based diet, or a low meat consumption were significantly more aware of the environmental concerns, animal welfare issues, and health benefits of a diet mainly based on fruits and vegetables. Therefore, the study draws the conclusion that being unaware of the issue diminishes the likelihood of consuming less meat for environmental reasons.

The findings further illustrate the significant sociological aspects of meat that influences the type and amount of meat consumed by students. Students' habits, living situations, and cultural significance have been examined in this study. It is evident that students' opinions of food are influenced by their traditional cultures and experiences. Many study participants indicate that they had been taught as children that meat is an essential component of a balanced diet. Further, high consumption of meat was linked with masculinity, and vegetarianism was regarded by many students as feminine. Students showed how food perceptions and the role of meat in meals may change over time and be associated with increased education. This is consistent with prior research linking higher education and income to increased environmental consciousness and decreased use of animal products.

The study also explored at how environmental awareness and knowledge impact students' meat intake and attitudes toward plant-based alternatives. Meat substitutes and plant-based alternatives have an essential role when examining students' willingness to reduce their meat intake. The majority of the study's respondents believe that flavor, texture, and price is the most significant factor in their decision to consume meat. Increased environmental awareness and knowledge have shown to be an effective component for reduced meat consumption and is also illustrated by the students that have a low or a total plant-based diet. Besides that, the students with high meat consumption claimed that they were willing to consume more plant-based alternatives. However, the findings illustrate that their intentions do not reflect their actual behavior.

The thesis has further looked at the main factors that explain students' reluctance toward meat reduction and sustainable dietary change, and how we address them. The findings from this case study have found that there are multiple drivers and barriers to sustainable dietary change.

Identifying motivation and skills, price and convenience, and information overload as the student's main barriers to reducing meat consumption. Price is indeed a critical determinant since it is stated that meat substitutes are typically more expensive than traditional meat, making it more difficult to form new habits. According to the findings, more and more accessible knowledge about those issues and effects would make people more conscious of their everyday eating habits and may lead to a reduction in meat consumption. The media and information sharing are critical in this situation because the scale of the problem is so significant that more attention should be paid in the public arena to raise awareness.

Finally, to answer the problem statement; even though I believe a reduced meat consumption and a shift towards more sustainable dietary practices is possible, the thesis has revealed the significance of the social contexts, knowledge, abilities, expectations, and motivations for dietary behavioral change. The concept and significance of meat are firmly embedded in Norwegian culture. Therefore, the specific position of meat must not be overlooked, especially as it appears to be directly related to the structural features of meals. In terms of planned behavior, attitude, and intention, it is evident that meat consumption is deeply ingrained in most of the students habit and routines, so even minor dietary changes demand sufficient motivation and self-efficacy. In general, knowledge, information, motivation, skills, technology, and innovation, as well as socioeconomic and demographic factors, are important determinants that need to be addressed for the likelihood of a reduction in meat consumption and a shift towards sustainable dietary change.

6.1. Policy Implications

Achieving nutritional and environmental sustainability will necessitate a considerable amount of effort from a wide range of stakeholders; comprehending social perceptions around meat consumption is a prerequisite for effectively transitioning to a more sustainable source of food. To be suitable for this purpose, all diet modification initiatives must be accompanied by quantitative justifications, suggestions, and recommendations. These solutions also necessitate close collaboration with key commercial stakeholders committed to facilitating dietary changes through various interventions, including innovation and development of technological advancements for sustainable consumption and food security. Hence, the significance of the cost and pricing of meatless products and other promotional elements must be considered. As

it will be unlikely to secure industry and commercial cooperation to promote eating less meat, the approach will need a coordinated collaborative effort from the public and significant government advocacy. I believe the Norwegian government needs to encourage and promote dietary change through strategic initiatives aimed at raising the intake of low-fat, high-vegetable diets. This method may be successful in Norway if price strategies are accompanied by governmental measures that stimulate and make it profitable for plant-based agriculture to produce vegetables, fruit, legumes, and beans for human use rather than subsidizing animal-sourced products, as it has traditionally been the case among non-vegetable crops. This might incentivize people to reduce their meat consumption while also lowering their intake of saturated fat and increasing fiber nutrition.

Respondents in the present study had a limited understanding of the relationship between the consumption of processed meat and its environmental consequences, indicating the need for public health measures to increase awareness of this situation. Increasing consumer awareness and knowledge of plant protein sources and communicating its comparability and health qualifications in comparison to today's animal-based protein diets will be a crucial educational element in transitioning towards a more sustainable dietary change. It remains to be seen what health related and sustainability evidence that must be presented to encourage dietary changes. In practice, it is important not to overwhelm consumers with textual data and information as they will only consider and address these concerns if they have the processing time, cognitive ability, and willingness to grasp the meaning of the information.

With the understanding that information sources alone do not necessarily result in rapid diet changes, increased taxation of processed and red meat could be explored, which could be an element for long-term societal acceptance of consuming behavior. Although Norwegian nutritional guidelines recommend restricting red and processed meat consumption, meat is firmly ingrained in the Norwegian diets. Attention must be given to cultural norms and social beliefs that needs to go through a major transformation to achieve the required cutbacks in consumption to accommodate ecological responsibility. Legislators must recognize and assure that dietary recommendations not only address the nutritional, ecological, and resource demands of the present consumers but also for the future generations to come.

Lastly, I want to highlight the necessity for additional research and investigation from a broader set of multidisciplinary stakeholder and scientific perspectives, tackling these

legislative, technological, and social concerns through collaborative efforts in interprofessional collaboration. I believe that by continuing to emphasize multidisciplinary interaction, a more comprehensive set of knowledge will develop, leading to more powerful socio-technical solutions to these concerns and potential opportunities.

6.2. Limitations

There are certain limitations to the study that need to be addressed. Climate change is a wide issue that plagues many various fields and sectors. This case study does not go into depth explaining what climate change really is, aside from highlighting the threats climate change poses to the ecosystems. Furthermore, the thesis explores the contemporary food sector, with an emphasis on the meat industry, addressing the adverse environmental impacts of meat production. Subsequently, the study does not address the environmental footprint of different sorts of foods; solely broad references are provided. The purpose of this study is to investigate the differences in students' choices and preferences when it comes to meat/non-meat products, as well as what might encourage students to consume fewer animal-based products. Therefore, the presented research does not provide a deep insight into the specifics of products such as plant-based meat, cultured meat, or others. Rather, it focuses on the overall function that non-meat alternatives pose in students' opinions and everyday life. The geographic boundaries under which the study was undertaken are further limitations of the current study. The research also has a limited sample size and a time limitation with the restricted time period and with the number of study participants interviewed. During this study, I solely questioned students at the University of Agder. Consequently, a large part of the population was excluded from the research. Looking back at my work, a greater study population could have been appointed for a greater representation of the Norwegian students' attitudes and perceptions on meat consumption and sustainable dietary change, leading to a more significant sample of results. This could have enhanced the study's representativeness and universal applicability.

Nonetheless, the goal of this thesis was not to attain worldwide representation, but rather to obtain knowledge regarding meat consumption and sustainable behaviors. Considering meat production and consumption are significant contributors to climate change, this thesis attempted to explore students' attitudes and actions that might aid in mitigation and shift toward more sustainable diets.

6.3. Further research

This study adds to our understanding of meat-reduction attitudes and practices, as well as the requirements that are needed for sustainable dietary change. However, further exploration of different diets, nutritional sustainability variables, and behaviors will be essential. Such knowledge is required to continuously undertake public health initiatives targeted at promoting more sustainable dietary habits.

Further, I believe it would be useful in future research to explore other municipalities in the country to compare the ideas and distinct viewpoints across the country. Other environments and lifestyles may provide various perspectives and attitudes of other parts of society. It would also be enlightening to compare the findings of other nations or cultures. Moreover, I believe it would be relevant for future studies to include additional factors such as different education levels, backgrounds, income, health aspects, and quality of life, which can help us better understand the effects of diets, what drives behavior and ways of thinking. Further, it would be interesting to carry out a comparative study to investigate the methods that raise awareness and measures that shift individual consumption towards more sustainable diets. In addition, I consider it will be critical to research mitigation solutions that can give co-benefits across multiple value orientation stakeholders. Other research areas that need to be examined include how to build a "we" framework for behavior action that is essential for mitigating climate change and allowing individuals with diverse motivations to participate in the environmental responsibility and for the benefit of society as a whole.

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