"I prefer not to think too much about my food"

Sustainable diets in Denmark

By Iris Scholten

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AALBORG UNIVERSITY
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"I PREFER NOT TO THINK TOO MUCH ABOUT MY FOOD"
SUSTAINABLE DIETS IN DENMARK

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ABSTRACT

The aim of this study was to identify values in the eating pattern of Danish youth (youth between 18 and 30 years old) and set up requirements for developing a possible technology or service which inspires people to change to a sustainable diet.

The theory of moralising technology by Peter-Paul was used to describe the role of technology and its possible unintended consequences. Additionally, the theory of moralising technology inspired the use of the grounded theory, the user-centred design approach, and interaction design which have been used as an inspiration for the data collection, data analysis, and the design of the requirements.

Empirical data was collected through participatory observation at a local voluntary food share event, workshops, expert interviews, and casual conversations with young Danes.

This study found three main requirements, namely: the technology or service should be (1) in accordance with the users' values, (2) morally responsible, and (3) motivational. Different values were discovered in the eating pattern of the Danish youth, including: (cultural) habit, taste, price, health, simplicity and nutrition. Motivations to make a diet change were often related to health reasons, influence of the social circle, and environmental reasons.

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PREFACE

This research is done in the context of my Master thesis in Techno-Anthropology at Aalborg University, Denmark.

The research has been a great learning experience for me, as I could combine the knowledge I obtained in my bachelor in Human Technology and the knowledge I obtained in my master in Techno-Anthropology.

First, I would like to thank my supervisor Astrid Oberborbeck Andersen for all the input and great supervision during this semester. It was a pleasure to work together. I would also like to thank all the people who participated in my research. Additionally, I would like to thank the collaboration with KUL Nordkraft, the developer of Alle Carte, and the Danish Vegetarian Society for all the new insights and useful tips. Lastly, I would like to thank my fellow students for the valuable discussions and support during this semester.

All photos are taken in North-Jutland, Denmark. Source photos:

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- Discussion : Bert Scholten, 2016
- Conclusion : Iris Scholten, 2016
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READING GUIDE

This report consists out of nine main chapters. First, a detailed description of the focus in the present study is presented in Chapter 1 Problem Analysis. The problem analysis produced an understanding of the problem by introducing a wide range of literature. Different researches of FAO, the Food and Agriculture Organisation of the United Nations, has been used, as FAO is a leading agency in the field of sustainability. The understanding of the problem is explained in Chapter 2 Problem Statement. Next, different theories are explained that are used throughout the study in Chapter 3 Theoretical Framework. Chapter 3 Theoretical Framework is closely connected with the Chapter 4 Methodology, where different approaches are presented. Chapter 4 Methodology also gives insight in the data collection, the role of the researcher, and ethical considerations. Furthermore, Chapter 5 Analysis clarifies the findings in relation to some of the different theories presented in Chapter 3 Theoretical Framework. Chapter 6 Requirements presents the requirements discovered throughout the analysis. Following, the analysis and requirements are discussed by tracing the quality of the data to the used methods. This is presented in Chapter 7 Discussion. Next, the conclusion is presented in Chapter 8 Conclusion. Finally, future research and perspectives are explained in Chapter 9 Future research. The references used throughout the study are presented in the Bibliography at the end of the report.

1. PROBLEM ANALYSIS

1.1 INTRODUCTION

Since prehistoric times, the human food system and consumption routines have changed and transformed societies and the world. In 2016, the report *Plates, pyramids, planet. Developments in national healthy and sustainable dietary guidelines: a state of play assessment"* by the Food and Agriculture Organisation of the United Nations (FAO) state that there have been huge developments regarding the food system and consumption routines. For example, agriculture practices and systems of distribution have made it possible to enable population growth and an improved diet for many people. However, these developments have brought severe costs as well. Current food production is responsible for destroying the environment. It contributes to climate change, air pollution by greenhouse gas emissions, water pollution, land pollution, biodiversity, species extinction, and deforestation (FAO 2016, FAO 2006). Even though the whole industrial process of food production contributes to these circumstances (farming, transport, cooking and waste disposal), the agriculture sector is where the biggest impact arises, especially the production of livestock (FAO 2016). According to the FAO (2006), authors of the report *"Livestock's long shadow"*, the impacts animal agriculture cause are immense on all aspects of the environment. The environmental issues are directly and indirectly related to animal agriculture, as for example through grazing on the land or through the production of crops as food for the animals. These changes in land-use by grazing and crops, as the gases which are emitted by the animals and their wastes are all contributing to climate change (FAO 2006). The gases emitted by animals are shortly

explained by toxic flatulence of the animals, which is harmful for the environment as it contains methane as Andersen and Kuhn explain in their documentary *"Cowspiracy: The sustainability secret"* (Andersen en Kuhn 2014).

The environmental impact animal agriculture causes goes hand in hand with the growing world population, the increasing production of animal-based products and changing food preferences. On a global scale, the prediction of meat production in 2050 is estimated to be double the amount compared to the production in the beginning of 1999 (FAO 2006). According to Apostolidis and McLeay (2016), a senior lecturer in marketing and an associate pro-vice chancellor (Research & Innovation), these occurrences and an increase in overall incomes have led to more consumption of meat all over the world (Apostolidis en McLeay 2016). Macdiarmid et al. (2015) from the Public Health Nutrition Research Group claim that the consumption of animal-based products (including meat products, dairy products and fish) is considered as a burden for the environment, as the production has a huge environmental impact (Macdiarmid, Douglas and Campbell 2015). In the article *"Sustainability and meat consumption: is reduction realistic?"*, Dagevos & Voordouw (2013), a sociologist of consumption and researcher of consumer behaviour, describe that especially the consumption of animal-based products are recognised highly unsustainable (Dagevos and Voordouw 2013). Notarnicola et al. (2016), researchers within the Ionian Department of Law, Economics and Environment and the Institute for Environment and Sustainability, similarly state how meat and dairy products are most burdening for the environment (Notarnicola, et al. 2016). Table 1:1 shows the past and expected trends in the consumption of meat and milk in developing and developed countries.

Table 1:1 Past and expected trends in the consumption of meat and milk in developing and developed countries (FAO 2006)(2015 is based on a prediction)

|	Developing countries					Developed countries				
	1980	1990	2002	*2015*	2030	1980	1990	2002	*2015*	2030
Food demand										
Annual PC meat consumption (kg)	14	18	28	*32*	37	73	80	78	*83*	89
Annual PC milk consumption (kg)	34	38	46	*55*	66	195	200	202	*203*	209
Total meat consumption (Mt)	47	73	137	*184*	252	86	100	102	*112*	121
Total milk consumption (Mt)	114	152	222	*323*	452	228	251	265	*273*	284

The consumption of meat and milk, for both developing and developed countries, rise and the prediction is that the consumption keeps rising for 2030 (FAO 2006). Although both

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developing and developed countries have an increase in the consumption of animal-based products, this study will only focus on one developed country, in this case Denmark. According to the Danish Council on Ethics (Danish: Det Etiske Råd), Denmark has a generally high consumption of animal-based products (Det Etiske Råd 2016). Although specific numbers in the case of Denmark have not been found, a general global trend to a global environment can be seen in the Table. However, in order to propose any changes in the food production and consumption of Danes, it is needed to focus on Denmark only. Nevertheless, systems of food production and consumption are globalised, therefore the Danish food production and consumption is not a national level entity that can be changed alone, without considering the global connections.

In 2016, the Danish Council on Ethics published a report *"The ethical consumer"*, which discusses the notion of the ethical consumer where the consumers take responsibility for the ethical problems food production may cause through their consumption (Det Etiske Råd 2016).

The Danish Council on Ethics (2016) emphasises how human activities are the dominating cause of environmental changes happening. This includes the agriculture sector, which is responsible for 14,5% of the human greenhouse gas emissions, which the production of beef responsible for 41% of the sector's emissions and the milk production 20% of the sector's emissions. (Det Etiske Råd 2016). Due to the production of livestock, the number of livestock is enormous. Figure 1:1 shows a difference in biomass between people, wild animals and pets and livestock. This image shows the overpopulation of livestock animals in the world.

In the report of the Danish Council on Ethics, it is discussed how the consumption of food, where the production is harmful for the climate, is an ethical dilemma (Det Etiske Råd 2016). The council states that if your actions will not harm other people, people have the freedom to act however they desire. This makes the consumption of food an ethical dilemma. According to the Danish Council on Ethics, Danes need to change their lifestyle and eating habits, as these are currently not considered sustainable (Det Etiske Råd 2016).
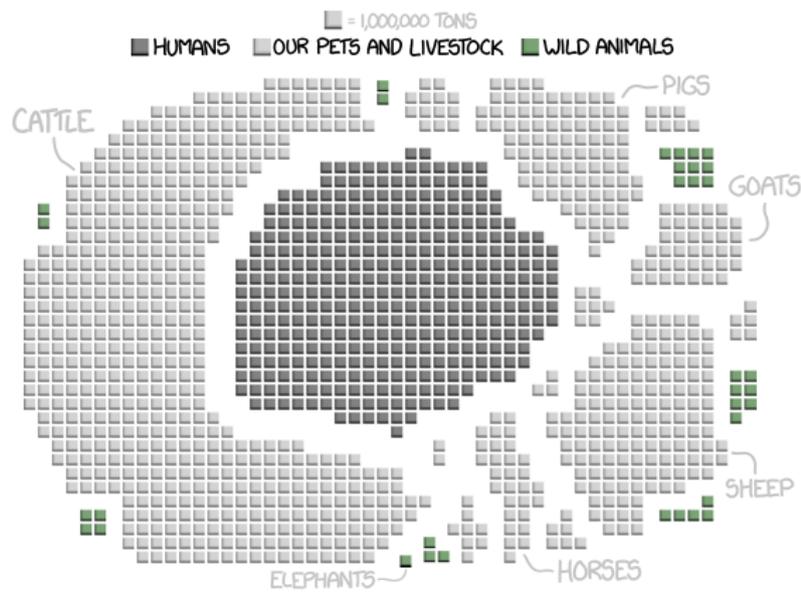
1:1 Biomass compared between humans, pets and livestock and wild animals (Munroe 2014) (Smil 2002)

As the production of animal-based products have a disastrous impact on the environment and the consumption is expected to rise, it is essential and an ethical obligation to reduce the consumption of animal-based products worldwide to get a more sustainable diet (Dagevos and Voordouw 2013, Apostolidis and McLeay 2016, Det Etiske Råd 2016). To obtain a better understanding of a sustainable diet, it is necessary to explore the meaning of a sustainable diet.

1.2   SUSTAINABLE DIETS

A sustainable diet can have different meanings, as the definition of sustainability is an often-used word for debate. Sustainability can differ from only focused on environmental objectives, to a broader understanding where environment, social and economy are the main three components within the definition of sustainability (FAO 2016). In the report of FAO (2012)*"Sustainable diets and biodiversity"*, the definition of a sustainable diet was agreed upon and is explained as:

"Sustainable diets are those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources." (FAO 2012).

According to this general definition, sustainable diets should have a low impact on the environment, but it also states that well-being, cultural acceptability, accessibility, security and economically fair as important components and should be taken into consideration as well. A schematic representation of the key components of a sustainable diet is shown in Figure 1:2.

Figure 1:2 The key components of a sustainable diet (FAO 2012)

An example of a sustainable diet is given in Table 1:2. The table shows the advised dietary changes for the Nordic populations. The Nordic populations include: Denmark, Finland, Iceland, Norway and Sweden (and Greenland, the Faroe Islands and Åland) (FAO 2016).

Table 1:2 Dietary changes promoting energy balance and health in Nordic populations (FAO 2016)

Increase	Exchange	Limit
Vegetables	Refined cereals – Wholegrain cereals	Processed meat
Pulses		Red meat
Fruits and berries	Butter – Vegetable oils	Beverages and food with
	Butter based spreads – Vegetable oil based fat spreads	added sugar
Fish and seafood	High-fat dairy – Low-fat dairy	Salt
Nuts and seeds		Alcohol

Problem Analysis

Although Greenland is part of the Nordic population, it is difficult to put the same guidelines on the Greenlandic population as the other Nordic populations, such as Denmark. According to an article on the website *"Modern Farmer"*, non-local vegetables and other kinds of food have to be shipped long distances to get to Greenland, because the communities living there are very isolated. However, there is a slight change going on due to climate change and many other reasons, as the Artic temperatures have increased. This also means that in the south-western coast of Greenland there has arose a possibility to develop more agriculture. This is however, still very unpredictable as the soil is poor, the climate unpredictable, and it has high supply costs (Nobel 2013).

The example given of a sustainable diet for the Nordic populations is similar to sustainable diets from many other countries around the world according to FAO (2016). Brazil also advises to eat mostly plant-based foods and to restrict the amount of red meat. The difference is that Brazil does not advise fish (FAO 2016).

As the production of animal-based products has a negative influence on the component biodiversity, environment and climate within a sustainable diet, lowering the consumption of animal-based products is considered as a part of many sustainable diets around the world. Another related key component within a sustainable diet to the consumption of animal-based products is caring about well-being and health. Health related problems in developed and developing countries such as obesity, diabetes, and other health conditions, have been associated with high levels of meat consumption (Apostolidis and McLeay 2016, Graça, Calheiros and Oliveira 2015).

In 2011, the Danish Consumers Cooperative Society (Danish: Fællesforeningen for Danmarks Brugsforeninger, FDB) launched a new food pyramid which supports people to make a healthy and balanced meal (FDB 2011).

The food pyramid has three layers where the bottom layer is considered most important and the top layer as less important. Figure 1:3 shows the Danish food pyramid.

In the pyramid, the animal-based products are placed in the two top layers and considered less important compared to plant-based products. Every layer in the pyramid is also divided in a way that the bottom products have a higher prioritisation than the top products. A fish, for example, is more preferable than red-meat. The Danish food pyramid also points out the need to eat more local Danish products than imported products. For example, eating more apples or

pears instead of grapes and oranges. This new food pyramid does not only put the focus on a balanced healthy diet, but it also relates to the climate by promoting local food products and by categorising vegetables as a better option than meat (FDB 2011). Local and seasonal food products are also another key component of a sustainable diet (FAO 2012).

Figure 1:3 The Danish food pyramid (FDB 2011)

A more intangible component of a sustainable diet is the cultural heritage. In the article, *"Attached to meat? (Un)Willingness and intentions to adopt a more plant-based diet"*, Graça et al. (2015), researchers within social psychology at the University of Lisbon, state: *"In many western countries meat has become a symbol of food itself, an item taken as granted to which most consumers feel they are naturally entitled to."* (Graça, Calheiros and Oliveira 2015, 113) Especially in most western countries and societies meat products are considered as a dominant and traditional component of the everyday diet (Apostolidis and McLeay 2016, Macdiarmid, Douglas and Campbell 2015). Although several benefits are associated with having a plant-based diet and meat alternatives, a lack of willingness to reduce animal-based products and a low consideration for meat substitutes are still the most common pattern in most western societies (Graça, Calheiros and Oliveira 2015). Therefore, to encourage to change to a more sustainable diet of people will be a challenge without altering social norms (Macdiarmid, Douglas and Campbell 2015).

There is, however, a lack of research that investigates the encouragement of consumers on changing their diet (Apostolidis en McLeay 2016). According to Macdiarmid et al. (2015),

most researches in the field of sustainable diets nowadays tend to disregard the social and cultural aspects of changing a diet and focus generally on the health and environmental aspects. However, Macdiarmid et al. (2015) claim that these social and cultural aspects will influence the willingness of people to change their diet. They also state how pleasure, status, habit, social pressures, and social norms are controlling factors of eating behaviours and associated with eating meat (Macdiarmid, Douglas and Campbell 2015). In the report of the FAO (2006), it is also described how environmental issues are basically social issues. The report states:

"The health of the environment and the availability of resources affect the welfare of future generations, and overuse of resources and excess environmental pollution by current generations are to their detriment" (FAO 2006, 5-6).

Thus, lowering the consumption of animal-based products will have positive effects on some of the components of a sustainable diet, but this change should not disrupt the cultural values of people. In order to recognise the dietary pattern in Denmark, it is necessary to grasp an understanding of the Danish culture in relation to food.

1.3   DANISH FOOD CULTURE

As someone who has lived in Denmark for 1,5 year and spending free and university time mostly with Danes, I experienced how my life as a vegetarian became a little bit more difficult. I like to discover new kinds of food which is typical for the country, but I discovered already early in my stay that the possibilities to try new food are not that great. I learned that the Danish cuisine mostly exist out of dishes with meat. – **Field diary 10/03/2017**

Figure 1:6 Flæskesteg (Colourbox 2006)

Figure 1:5 smørrebrød with leverpostej (Ranek 2012)

Figure 1:4 Frikadeller with red cabbage and potatoes (Colourbox 2013)

The field note is supported by conversations with Danes on answering the question: *"Which meals would you consider as typical Danish?"*. Naturally, there are many traditional Danish meals. However, most often the questioned Danes referred to: flæskesteg (roasted pork)(Figure 1:6), frikadeller (meat balls)(Figure 1:4), stegtflæsk (fried pork), smørrebrød (rye bread with butter and different toppings, such as leverpostej (liverpaste))(Figure 1:5), sild (herring), risengrød and risalamande (rice pudding). Most of the typical Danish dishes are combined with potatoes.

According to the Danish Council on Ethics, the Danish lifestyle is far from sustainable. Denmark has agreed with the United Nations and the European Union to reduce the greenhouse gas emissions by 80% - 95% in 2050 in relation to 1990. To reach this goal, it is necessary and, in the opinion of the Danish Council on Ethics, an ethical obligation of the Danes to change their eating pattern (Det Etiske Råd 2016). Nevertheless, to place all the responsibility on the consumer is controversial, because there are many indications that it might be inefficient. The Danish Council on Ethics (2016) state the following:

- An individual does not do that much difference for the nature and climate. Many can feel that their effort does not matter.
- People can get amotivated when seeing that others are not taking part.
- A tragedy of the commons: the situation where individuals act independently according to their own interests. But when everyone acts in the same way, it will destroy, in this case, the environment.
- Climate change is "far away" in space and time from the action itself (for example eating a steak). It is hard to relate.
- Food is cheap, because the costs of climate damages is not included in the price.

According to Zaltman (2003), the choices consumers make originates from habits and other subconscious powers and are influenced by the social and material context. Additionally, Zaltman state that human emotions are strongly intertwined with reasoning processes (Zaltman 2003).

There is, however, a change going on in Denmark. During casual conversations with the people visiting a vegetarian and vegan food share in Aalborg, people mentioned that a vegan and vegetarian lifestyle is getting more common. Also, Aldi, a supermarket chain located all over Denmark, has increased their selection of organic and vegan/vegetarian food products.

During a conversation with a purchaser within Aldi, the purchaser mentioned that the vegan and vegetarian food is getting more popular in Denmark.

In a Danish radio show on DR P1, the journalists argue that there is a controversy going on about eating meat and that there are more vegans and vegetarians in Denmark than before. Chris Bjerknæs, the head of the Youth Danish People's Party (Danish: Dansk Folkeparti), consumes between 300 – 500-gram meat every day. He makes it a political statement to believe that people should eat what gives them pleasure, in this case a lot of meat. In his opinion meat is part of a Danish traditional meal. An opposing opinion is presented by Eske Bentsen, a student who did an experiment of not eating meat for one year. In the debate program, he explains how it was very hard in the beginning, as he wanted to eat meat all the time. However, after a while he experienced the less meat he ate, the less he missed it. The most difficult part of not eating meat was the social context, as people around him ate meat (DR P1 2017).

Although this change is happening, meat is still a dominant component in most Danish eating patterns. It will be a challenge to change to a more sustainable diet without altering the cultural norms and values. There are multiple studies, such as FAO (2013) on sustainable alternatives for meat.

1.4   ALTERNATIVES

One sustainable alternative for the current meat consumption is the practice of eating insects (Figure 1:7). According to the FAO (2013), authors of the report *"Edible insects. Future prospects for food and feed security"*, eating insects is a regular part of a diet for most people worldwide. However, in many western countries eating insects is still a taboo (FAO 2013).

Figure 1:7 Grasshoppers (Colourbox 2013)

There have been different developments on implementing insects into the western diets. *"Politiken"*, a Danish newspaper published an article on the practice of eating insects. The article state that there are industrial insect productions in France, Germany, and Belgium and one of the biggest supermarket chain in the Netherlands has an insect assortment in over 400 stores. Since June 2015, it is possible to buy organic frozen insects in Copenhagen, Denmark, produced in Belgium. According to the author, typically, the Danish people who buy insects are between 20 and 45 years and have travelled a lot and are enthusiastic about food from Thailand or Mexico. Often, the author describes these persons as highly educated and interested in food, ecology, and sustainability (Straka 2016).

There are multiple reasons to eat insects. FAO (2013) stated three reasons:

1. Health: Insects are healthy and nutritious and many insects have good fats, rich in protein, and high in iron, calcium, and zinc.
2. Environment: Insects emit fewer greenhouse gases than most livestock and it does not require much land.
3. Livelihoods: Insect harvesting is a low-tech investment and it offers opportunities for urban and rural people.

In December 2015, a cricket farm was founded in Copenhagen, where 4.500 crickets are raised to be eaten. A Danish cook, Rasmus Leck Fisher, has published a book called *"Insectivore"* where he presents meals with insects. Although eating insects becomes a more spoken subject in Denmark, the Danish tradition on food does not include insects. Therefore, it becomes difficult to expand the concept of food (Straka 2016).

Another sustainable alternative is artificial meat. The article *"What is artificial meat and what does it mean for the future meat industry?"* discusses three types of artificial meat: (1) Meat substitutes, mostly plant-based, (2) cultured meat, derived from tissue and cells which are grown in a laboratory setting, and (3) modified meat, derived from genetically modified organisms (Bonny, et al. 2014). Bonny et al. (2014), researchers from Murdoch University Australia and Clermont University USA, state how artificial meat products can support the reduction of greenhouse gas emissions. The researchers estimate that cultured meat can reduce land use by 99%, water usage by 90%, and 40% of energy consumption compared to meat produced by the animal agriculture., However, it might induce neophobia and technophobia to people (Bonny, et al. 2014).

Nevertheless, meat production regarding both human and animal welfare, health and sustainability are controversies which the meat industry is struggling with. There is, however, another perspective on the morality of eating meat.

1.5   *"TOWARD A MORAL CASE OF EATING MEAT"*

"Sierra Club", an influential environmental organisation founded in the United States of America, discusses the morality of eating meat. Jason Mark, an editor of Sierra Club, wrote the article *"Toward a moral case of eating meat"*. Mark (2017) explains that it is almost impossible to discover an argument on the morality of killing animals, because animals feel pain and can suffer in similar ways to humans. Thus, to find a moral argument for eating meat, one must accept and confront some level of animal suffering. The question asked is then: *"Might the suffering that animals experience in the course of being sacrificed for human food contribute to some other social good?"* Whereas his answer is a conditional yes, elaborated by:

"By eating animals, we can remind ourselves of our animal natures. That recognition of our corporeal reality—the fact that we are flesh and blood and bones and skin, each of us ever on the way to very likely an unpleasant end—can, like few other things, keep us connected to the living earth. Surely such a connection is vital in an age of increasing dislocation between human civilization and nonhuman nature. When we kill other animals for our sustenance—as long as we do so with careful moral consideration— it can reinforce our interdependence with other species, linking humans to the rest of nature. And that linkage is a social as well as a trans-species good."

Mark (2017) argues that it is very hard for most people to stop eating meat, probably because of the basic urges a human has. Nevertheless, a human can live without eating animals (Mark 2017). Although Mark (2017) would argue for moral meat eating, he explains that the industrialised animal agriculture is vicious. The animals are mistreated, which is intolerable. Additionally, the article stated that *"rather than drawing us closer to animals, industrialized meat further alienates us from those animals"* (Mark 2017). As Mark (2017) argues that getting meat from small local farms, which treat their animals with respect until the end-day comes would be moral meat, he states that it is impossible for everyone to eat ethically. The industrialised animal agriculture is making it impossible for small local farms to survive economically. Nevertheless, he believes that progress should start somewhere (Mark 2017).

Because of the amount of negative and critical responses to the article on social media, Steve Ma, a member of the Sierra Club Board of Directors, wrote a response on the article by Mark (2017). In Ma's article *"Some food for thought on 'Moral meat eating'"*, he tries to add another perspective on the subject by explaining the effect of knowing your core values. The core values are described as principles that guide human behaviour and action. With core values, people can experience 'right' from 'wrong'. Ma (2017) stated:

"If more people viewed their diet through the lens of their own core values, I expect that many people would cut down on their consumption of animal products or eliminate them entirely."

As Ma's intention was to reply on the article *"Toward a moral case for meat eating"*, Ma, although disagreeing with Mark's article, decided to write a different perspective on the subject instead (Ma 2017).

To dig further into the reason why people would choose a sustainable diet, it was found valuable to explore existing technologies and services which focus on aspects within a sustainable diet to avoid blind spots.

1.6 EXISTING TECHNOLOGIES AND SERVICES

There have been different services and technologies to inspire people to be healthier or having a more sustainable diet by having different perspectives. The documentary *"Cowspiracy: The sustainability secret"*(Figure 1:8) is a documentary which brought a lot of controversy as they state how agriculture is the biggest impact on the environment. They state:

"Animal agriculture is the leading cause of deforestation, water consumption and pollution, is responsible for more greenhouse gases than the transportation industry, and is a primary driver of rainforest destruction, species extinction, habitat loss, topsoil erosion, ocean "dead zones", and virtually every other environmental ill. Yet it goes on almost entirely unchallenged." (Andersen en Kuhn 2014)

Figure 1:8 Cowspiracy: The sustainability secret (Andersen en Kuhn 2014)

Besides this statement, the documentary encourages people to stop eating animal-based products and change to a plant-based diet. Also, a 30-Day Vegan Challenge is offered where they guide people to make a transition (Andersen en Kuhn 2014). The documentary also state:

"I think when people put their personal habits and desires aside they can see the reality of what we are doing to the planet and the necessary changes needed to live sustainably with 7.2 billion other humans." (Andersen en Kuhn 2014)

In an email correspondence with the crew of the documentary and the researcher, the crew mention that the only way to live sustainably is to adopt a vegan lifestyle. In addition to that, they try to lessen the carbon footprint in other ways as well, such as taking the bicycle, turning off lights when you leave the room, recycling, and eating more locally-produced and organic food.

Another example is from IDEO, a world-wide international enterprise, which had three design concepts to help children make healthier choices around exercise and food. The design concept had to encourage healthy habits by children. The first idea was called Top Chops, which is building upon the confidence of children by a hands-on cooking adventure. The second idea was called Daredevils, a device that measures the intensity of energy exercised. Children can challenge each other to reach their activity goals by wearing the device. The

third idea was called Presso, a set of kitchen tools that can slice and dice food in different ways. It helps children to feel being part of making their own healthy food (IDEO 2012).

The Danish Vegetarian Society (Danish: Dansk Vegetarisk Forening) also has the goal to inspire people to eat less meat. They have many information campaigns and activities which informs people about the advantages of eating less meat. According to the interview by email, a lot of people get inspired to see the possibility to eat less meat and more vegetables.

Although there are several services and technologies which had the goal to inspire people, sometimes it is not necessary to have the goal of inspiring or encouraging a person to change their eating habits. Social media and news channels have a great impact on people just by informing and discussing eating habits and the origins of food.

2. PROBLEM STATEMENT

Sustainable diets have become a necessity in Denmark, since the current diet from Danes are not considered sustainable (Det Etiske Råd 2016). Although multiple researchers have concluded how especially the consumption of animal-based products are highly unsustainable in the western world, it is still a major subject of controversy.

As a techno-anthropologist, technology and anthropology are both significant components of this study. Technology has a great impact in different settings and cultures, sometimes with unintended consequences. Anthropology has the ability to discover and identify human meaning, conditions, actions, and relations (Hylland Eriksen 2004). The aim of this study was to identify values in the eating pattern of Danish youth (youth between 18 and 30 years old) and set up requirements for developing a technology or service which inspires people to change to a sustainable diet.

To prevent possible unintended consequences within this technology or service, this study has been inspired by the theory of moralising technology by Peter-Paul Verbeek, a Dutch philosopher of technology (2011). The methodology for carrying out this study (research design, data collection, data analysis, and the design of requirements) has been inspired by the Grounded Theory by Barney Glaser and Anselm Strauss (1967), user-centred design approach (1986) and interaction design (2007). These theories will be further elaborated in Chapter 3 Theoretical Framework and Chapter 4 Methodology.

Problem statement

The aim leads to the following **main research question**:

How to make a sustainable diet more inspiring by a possible technology or service, so it will be in accordance with the values and motivations in the eating pattern of the Danish youth?

In order to gain enough knowledge to answer the main research question, the following **research questions** have been set up:

- *How did the concept of 'environmentally harmful' food products arise?*
- *Which foods are considered traditional within the Danish culture?*
- *What motivates people to change to a sustainable diet?*
- *What does not motivate people to change to a sustainable diet*
- *What are the goals, values and needs people have regarding their current diet?*
- *How can people be encouraged to change their habit?*
- *How can a possible technology support encouragement?*
- *What kind of technologies could support encouragement?*
- *What is required from technology to support encouragement?*

3. THEORETICAL FRAMEWORK

There is a close connection between this chapter and Chapter 4 Methodology, as different theories and approaches connect and are intertwined. Figure 3:1 shows the connection between the different applied theories and approaches used for the different steps of this study. The Figure highlights the theories described in this chapter.
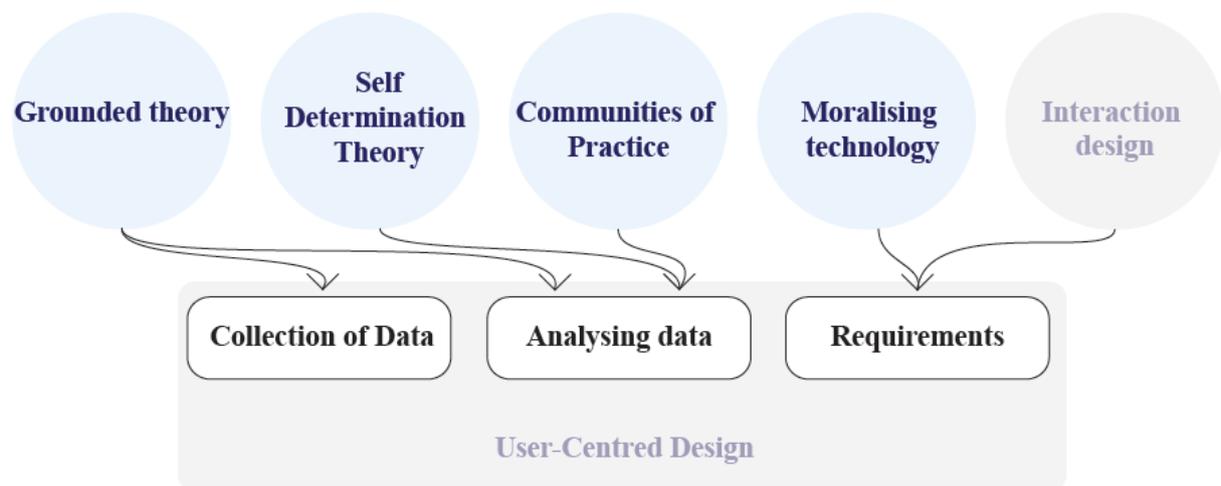
Figure 3:1 Connection between approaches and theories: Theory section

The Grounded Theory, developed by Glaser and Strauss in 1967, has been considered valuable in this study, as it supports the researcher in qualitative data analysis and the interpretation of the analysis (Sharp, Rogers and Preece 2007).

Due to the use of the Grounded Theory, additional analytical concepts have been explained in this Chapter. These analytical concepts were discovered during the collection of data and the data analysis. The theories support to open up the collection of data.

Grounded Theory is often used within interaction design and user-centred design. These approaches are explained in Chapter 4 Methodology.

As technology can play an active role in shaping culture and society, it is important that the requirements for the technology or service, that is the outcome of this study, will be produced with a sensitivity towards the notion of technology never being morally neutral. For that reason, the researcher has found inspiration in the work of Peter-Paul to get an understanding of how the design can affect the possible end-users of the technology or service (Verbeek 2008). By the term 'technology', current usage and modern 'science-based' technological devices which arose in the last century were meant (Verbeek 2005). As there is no actual technology yet, the theory of moralising technology works as an underlying principle and sensitivity guiding all steps of the study, but especially taken into consideration during the phase of establishing requirements.

3.1 GROUNDED THEORY

The aim of Grounded Theory is to develop a 'theory' emerged from systematic analysis and the interpretation of the empirical data. The 'theory' should grow out of the set of collected empirical data. The term 'theory' can be defined in many ways, including personal reflection, developed argument, and many more (Thomas and James 2006). Sharp, Rogers & Preece (2007), specialists in interaction design and human-computer interaction, define 'theory' as follows: *"A set of well-developed concepts related through statements of relationship, which together constitute an integrated framework that can be used to explain or predict phenomena."* (Sharp, Rogers and Preece 2007, 389)

In Grounded Theory, the data collection and the data analysis will be alternated, as the data analysis can identify categories which can lead to the need for further data collection. This is an iterative process, until the concept is well developed (Sharp, Rogers and Preece 2007).

Coding the collection of data is essential within the data analysis, as coding has the ability to give different categories in the empirical data. There are three types of coding within

Grounded Theory: (1) open coding, (2) axial coding, and (3) selective coding (Corbin and Strauss 1990).

1. *Open coding* is the process by reading through all the empirical data, by which labels can be created based on what has emerged from the data and can be broken down analytically. By comparing the data and looking for differences and similarities, the data can be categorised and subcategorised. These categories and subcategories can bring more insights during the next collection of data.

2. *Axial coding* seeks for relationships found between categories and subcategories. As a new set of data has been collected, a further development of categories continues.

3. *Selective coding* is identifying one core category by which all categories and subcategories are united. The core category characterises the main phenomenon within the study.

According to Sharp et al. (2007), there are three approaches which assists in identifying relevant categories within the collection of data. These approaches have been used as inspiration in this study. (1) Questioning the data can guide generating new ideas or examine the data in different ways. (2) Another approach is to analyse one specific word, phrase or sentence. Examining the meaning of an utterance in detail can trigger different perspectives and insights on the data. (3) The last approach is to analysis through comparisons and similarities. This analysis can bring alternative interpretations of the data (Sharp, Rogers and Preece 2007).

Since the Grounded Theory can identify different meanings within the analysis, additional analytical concepts have been used to explore other perspectives and insights. These analytical concepts have been shortly explained within this chapter and have been clarified further in Chapter 5 Analysis, Chapter 6 Establishing requirements and Chapter 7 Discussion.

3.2   ADDITIONAL ANALYTICAL CONCEPTS

Additional analytical concepts are of great importance within the process of data analysis, as they bring new interpretations, insights and experiences of the collected data. One additional analytical concept is the Self-Determination Theory developed by Richard Ryan and Edward Deci in 1985.The theory is supported by Beth Hennessey, a professor of psychology. Another

additional analytical concept is the theory of Communities of Practice by Etienne Wenger, an educational theorist.

3.2.1 SELF-DETERMINATION THEORY

The Self-Determination Theory has been considered useful as an analytical concept by the researcher, as the Self-Determination Theory distinguishes between different types of motivation that leads to a certain action based on different goals and reasons of people. During the data analysis, the researcher came to understand that there are multiple reasons why people move to change their dietary pattern. Motivated people are moved and energised to do something (Ryan and Deci 2000). Ryan and Deci (2000) differentiate between two types of motivation: intrinsic motivation and extrinsic motivation.

Intrinsic motivation can be described as doing something, because the action is genuinely interesting, fun or enjoyable (Ryan and Deci 2000). People moved by intrinsic motivation are typically driven by a sense of curiosity (Hennessey 2010). Intrinsic motivation has the ability to create creativity and a high-quality in learning. Especially children are often intrinsically motivated to do something, as social demands and a sense of responsibility take over later in life. Although children are mostly intrinsically motivated, this does not mean that intrinsic motivation is limited to childhood. It is, however, a very important kind of motivation, the activities driven by intrinsic motivation are the reward itself. Likewise, the activities provide people the satisfaction psychological needs (Ryan and Deci 2000).

Extrinsic motivation can be described as doing something, because someone aims for a goal outside the actual task (Hennessey 2010). According to the Self-Determination Theory, extrinsic motivation can also be driven by self-endorsement and a person's willingness (Ryan and Deci 2000). Ryan and Deci (2000) give the example of a student doing a task. Although the student is disinterested in the task, the student sees value of the task and thereby accepts doing it. It is important to understand the different forms of extrinsic motivation, as it can become an essential strategy within teaching. Although extrinsic motivation is often seen as being dependent, the Self-Determination Theory discusses how these different forms within extrinsic motivation can have different levels of autonomy (Ryan and Deci 2000). Ryan And Deci (2000) ask themselves the question, referring back to the example of the student: *"How to motivate students to value and self-regulate such activities, and without external pressure, to carry them out on their own."* (Ryan and Deci 2000, 60) Within the Self-Determination Theory, facilitating the internalisation and integration of the people's values and behavioural

control can be a way to describe the problem. With internalisation, Ryan and Deci (2000) mean the process of accepting a certain value or regulation. Integration in this sense means the process of transforming a regulation in people's own regulation in order to arise from their own sense of self (Ryan and Deci 2000).

Ryan and Deci (2000) developed a sub theory within the Self-Determination Theory, called the Organismic Integration Theory, which clarifies the different forms extrinsic motivation can have and the role internalisation and integration have within these forms. Figure 3:2 shows the different forms of extrinsic motivation.
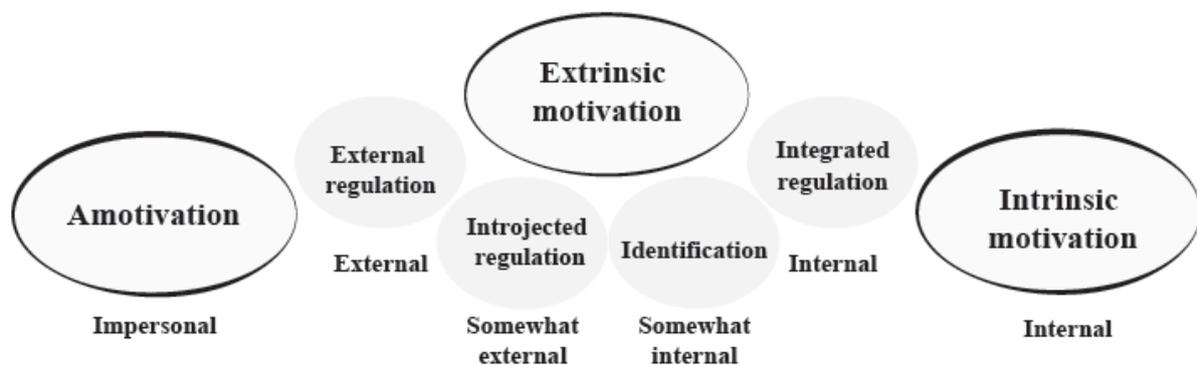
Figure 3:2 The Organismic Integration Theory (Ryan and Deci 2000)

Extrinsic motivation can be divided into four forms: (1) external regulation, (2) introjected regulation, (3) identification and (4) integrated regulation (Ryan and Deci 2000).

1. *External regulation* happens when people act to get a reward or to satisfy an external demand. This form of extrinsic motivation is often experienced as controlled and alienated and it is labelled as the least autonomous form.

2. *Introjected regulation* is the feeling of pressure to do something in order not to feel guilty or anxious. This form of extrinsic motivation is still controlling.

3. *Identification* is a more autonomous form of extrinsic motivation. This form identifies people with the importance of a certain behaviour and accepted the regulation.

4. *Integrated regulation* is the most autonomous form of extrinsic motivation and has many similarities with intrinsic motivation. Ryan and Deci (2000) describe it as follows: *"This occurs through self-examination and bringing new regulations into congruence with one's other values and needs. The more one internalizes the reasons for an action and assimilates them to the self, the more one's extrinsically motivated actions become self-determined."* (Ryan and Deci 2000, 62) This form of extrinsic

motivation does not belong to intrinsic motivation as the integrated regulation is done because of the given value of the outcome rather than curiosity-driven or enjoyable behaviour.

Besides showing the different forms of extrinsic motivation, the Figure also shows amotivation and intrinsic motivation. Ryan and Deci (2000) describe amotivation as behaviour which lacks an intention. The behaviour is not valued by the person nor give a desired outcome (Ryan and Deci 2000).

Although the researcher is not a psychologist and the methods for engaging with research subjects are taken from a user-centred design approach and ethnography, the Self-Determination Theory has been found relevant by the researcher, because the Self-Determination Theory gave insights in the different types of motivation. In this study, the Self-Determination Theory and its sub-theory have been used to get an understanding of the different types of motivation that were found in the empirical data.

3.2.2 COMMUNITIES OF PRACTICE

By analysing the empirical data, the researcher came to understand that communities are dependent on other communities to involve more people in their own community. For that reason, the theory of Communities of Practice has been taken into consideration. Wenger et al. (2002) explain Communities of Practice as follows:

"Communities of Practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis." – (Wenger, McDermott and Snyder 2002, 4)

People within a Community of Practice normally spend time together as this is valuable interaction for them. This does not necessarily mean that these people have to work together every single day. They find their interaction valuable, because they can share their situations, values, interests, and their needs. Communities of Practice exist everywhere. People are often in multiple Communities of Practice, for example at work or at home. Some Communities of Practice are more obvious than others, as some Communities of Practice have a name, while other Communities of Practice are practically invisible. Within a Community of Practice, people can have different roles. Some people participate occasionally in the community, whereas others are regular participants (Wenger, McDermott and Snyder 2002).

3.3 MORALISING TECHNOLOGY

Besides including the experience of the user into the design, ethical considerations are starting to be part of the design of technologies as well. Peter-Paul Verbeek argues how technologies can shape the moral actions and decisions of people, but also to shape the quality of life itself (Verbeek 2008). It is significant to include the morality of technology within this study, as technologies which have caused trouble could have been avoided by responsible decisions of the designers or engineers (Verbeek 2008). Using technologies will always shape human actions and decisions. Verbeek (2008), inspired by Bruno Latour and Don Ihde, describes this phenomenon as 'technological mediation', which means that technologies are able to mediate the experiences and actions of the users. In 2011, Verbeek states in his book *Moralizing Technology*:

"Take technologies away from our moral actions and decisions and the situation changes dramatically. Things can be seen as part of the moral community in the sense that they help to shape morality." (Verbeek 2011, 42)

Therefore, technologies can play a central role in moral decisions and actions. When thinking about morality, or seeing technology as a possible moral agent, it gets complicated. A moral agent requires a degree of freedom and the possession of intentionality. Verbeek (2008) describes that technology can have a certain form of intention in the form of 'to direct' from the Latin definition of 'intendere'. Technologies can direct humans into specific actions and decisions. Therefore, technology can contain some form of intention (Verbeek 2008). Technologies do not have some degree of freedom, as it does not involve the possession of a mind. For that reason, technology cannot be autonomous as humans. However, Verbeek (2011) states: *"Technologies play an important role in virtually every moral decision we make."* (Verbeek 2011, 59) For that reason, complete freedom is not required, as some degree of freedom can be sufficient to be morally responsible for certain actions or decisions (Verbeek 2011).

Thus, technology design is a moral activity, where designers play an active role in mediating the actions and experiences of people and technology. Therefore, it is necessary for the designers to make a prediction in the mediating role a technology will have in a future use context. This is essential, because technologies can have multiple unintended consequences which were unforeseen. Verbeek (2008) gives the example of the energy-saving light bulb which resulted in an increased energy consumption as it was used in places which were

formerly unlit. To manage the unpredictability of technological mediation, the link between the design and the future use context is important. However, a designer cannot be certain to predict all future use contexts and relevant mediations. Nevertheless, all designers can do is to include a sensitivity towards understanding the morality inherent in the social situations and contexts in which they are to intervene, and hereby try to be responsible for their mediating technologies (Verbeek 2008).

In this study, a user-centred design approach was applied to involve the users of the future technology or service into the research. By using the user-centred design approach, the unpredictability of a possible technology could be managed. Although this study will not design an actual technology or service yet, it is essential for the next step in the user-centred design process to manage the unpredictability of technology. For that reason, two scenario are made as part of exploring the context where the possible technology might be part of. The user-centred design approach and the scenario description will be described in Chapter 4 Methodology.

4. METHODOLOGY

As stated in Chapter 3 Theoretical Framework, the different theories and approaches are intertwined and connected. Figure 4:1 shows the connection between the different used theories and approaches used for the different steps of this study. The Figure highlights the approaches described in this chapter, which includes user-centred design and interaction design.
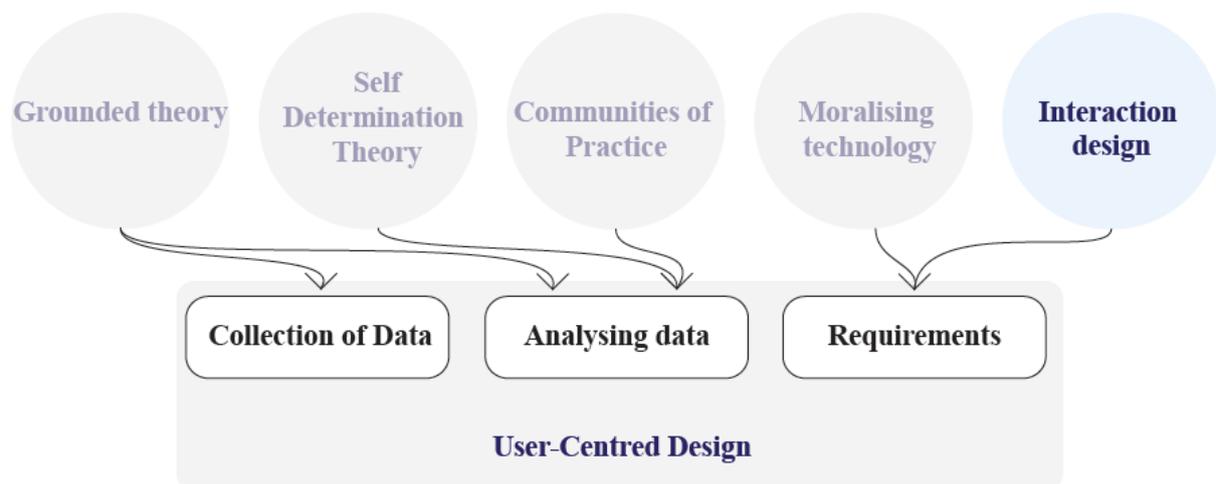
**Figure 4:1 Connection between approaches and theories**

A user-centred design approach was applied to gather information for this study. In a user-centred design approach, the user will be taken into account in every step when developing a product (Garrett 2011). The term user-centred design became widely used after the publication of the book *"User-Centered System Design: New Perspectives on Human-*

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Computer Interaction" by Donald Norman and Stephen Draper in 1986. Norman recognised that the needs and interests of the user is essential in the usability of a design (Abras, Maloney-Krichmar and Preece 2004).

User-centred design is an iterative and evaluation strategy that takes the needs of the end user into account and by involving the end users in the design and evaluation activities. User-centred design has four main iterative tasks, (1) understand and specify the context of use, (2) specify users' requirements, (3) produce design solutions to meet user requirements, and (4) evaluate the designs against requirements (Marcilly, Peute and Beuscart-Zephir 2016). See Figure 4:2 for the user-centred design process.
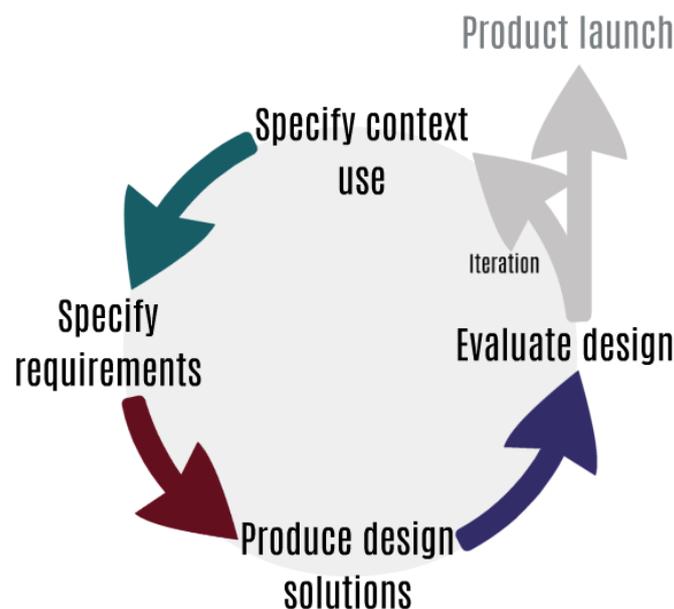
Figure 4:2 User-centred design approach (Marcilly, Peute and Beuscart-Zephir 2016)

The understanding and specification of the context of use was based on ethnographic research as it was based on the understanding of people's actions and the interaction with the world around them. Likewise, to observe the real environment of the people, their thoughts behind their choices and view of the world (Sharp, Rogers and Preece 2007). The understanding and specification of the context was specified to the users' requirements, which was the end goal of this study. However, according to Marcilly et al. (2016), occasionally it might be difficult to gather data from the representative group of users to apply the experiences and insight properly, as developers might not have enough time to grasp the users' behaviour properly.

Due to predestined time from the restrictions of Aalborg University, this study is limited to one semester. The research took place from February 2017 to June 2017.

4.1 INTERACTION DESIGN

The theory of interaction design empathises the need for a user-centred design approach in a development process. For that reason, it was used to understand the establishment of requirements (Sharp, Rogers and Preece 2007).

Sharp et al. (2007) explain interaction design as: *"Designing interactive products to support the way people communicate and interact in their everyday and working lives."* (Sharp, Rogers and Preece 2007, 8) Interaction design is described under several terms, including product design, and user-centred design. The focus of interaction design is mainly on how to design user experiences by using different methods, techniques and frameworks (Sharp, Rogers and Preece 2007).

Different consultancy companies have established themselves in responds to the growing demand for interaction design. IDEO designs products, services, and environments for other companies (Sharp, Rogers and Preece 2007). IKEA, designer of furniture and home accessories, requested help from IDEO to shape the design of the future kitchen. Figure 4:3 shows a part of the prototype made by IDEO. An investigation was done in collaboration with students from the universities in Lund, Sweden, and Eindhoven, the Netherlands, where attitudes of people and ideas about cooking and eating were explored (IDEO 2015).

Figure 4:3 Prototype of the future kitchen made by IDEO (IDEO 2015)

In this study, the data gathering will be used to understand the values and motivations among Danish youth connected to their eating pattern, and to establish the requirements.

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Requirements can change during the interaction design process, as it is an iterative process. However, it should not change in a radical way when it comes to the design part (Sharp, Rogers and Preece 2007). Sharp et al. (2007) describe a requirement as follows: *"A requirement is a statement about an intended product that specifies what it should do or how it should perform."* (Sharp, Rogers and Preece 2007, 476) Requirements can come in many different ways and one requirement can be more abstract than the other one. Nevertheless, a requirement should be made very precise. Sometimes, when a requirement is not concrete yet, further investigation at the user group is necessary to make the requirement concrete (Sharp, Rogers and Preece 2007).

In this study, the kind of requirements are based on the user experience goals and usability goals. Although these requirements are difficult to measure and abstract, an understanding of these requirements are important to learn more about the intended product (Sharp, Rogers and Preece 2007).

There are different techniques that are used to understand the goals and tasks of the user and requirements, such as: scenarios, use cases, essential use cases and a task analysis. In this study, two scenarios were made. According to Carrol (2000), a professor of Information Science and Technology, a scenario can be described as an informal narrative description (Carroll 2000). Sharp et al. (2007) explain scenarios as follows: *"It describes human activities or tasks in a story that allows exploration and discussion of contexts, needs, and requirements."* A scenario does not have to include a technological use to achieve a certain task. It concentrates on the goals of the users. Scenarios are able to focus on the human activity rather than the interaction with technology as it is about understanding why people do certain activities. While establishing requirements, it is important for scenarios to concentrate on the context, the user experience goals, the usability, and the tasks the user is doing as these dramatic and emotional elements gives a clearer view of understanding the context. Scenarios are not intended to give a full set of requirements, but often capture one perspective (Sharp, Rogers and Preece 2007).

There has been chosen for a scenario, because it gives a clear view of the goals of the future user without including the technological use yet. The scenarios are presented in Chapter 6 Establishing Requirements.

4.2 COLLECTION OF DATA

As animal-based products are considered unsustainable and part of a traditional and dominant element in the everyday diet in most western countries (Apostolidis and McLeay 2016, Macdiarmid, Douglas and Campbell 2015), this research took place in Denmark, Aalborg. Nevertheless, perspectives from people from different western countries have been taken into consideration as well as it is a worldwide problem. Different ethnographic methods were used to gather data to understand which requirements are needed for the development of a possible technology or service to inspire people to change to a sustainable diet. These methods include: *literature research*, *participatory observation* within local voluntary vegan/vegetarian food sharing, *expert interview* with the Danish Vegetarian Society and the maker of Alle Carte, and a *workshop* with people who recently changed their living situation. Table 4:1 shows an overview of which methods will give a clarification on the research questions. An overview of the fieldwork is shown in Appendix VI.

Table 4:1 Overview research questions and methods

Research question	Methods
How did the concept of 'environmentally harmful' food products arise?	Literature research (problem analysis)
Which foods are considered traditional within the Danish culture?	Casual conversations
What motivates people to change to a sustainable diet?	Participatory observation, workshop
What does not motivate people to change to a sustainable diet	Participatory observation, workshop, literature search (problem analysis)
What are the goals, values and needs people have regarding the current diet of people?	Participatory observation & workshop
How can people be encouraged to change their habit?	Expert interview & participatory observation
How can a possible technology support encouragement?	Workshop
What kind of technologies could support encouragement?	Literature research (problem analysis)
What is required from technology to support encouragement?	Literature research (theoretical framework)

Methodology

4.2.1 LITERATURE RESEARCH

The aim of literature research was to find information and knowledge about previous studies in this subject area. Before doing actual anthropological research and going into the 'field', it was necessary to delimit the study rigidly. It is difficult to read upon every single related topic. For that reason, it was required to choose literature according to presumed relevance (Hylland Eriksen 2004).

Additionally, it was needed to read upon literature from other societies as well, as it can sharpen the understanding and in some cases, in preparation for comparison (Hylland Eriksen 2004). The information search was done by academic search websites, such as Scopus, but also by books and documentaries.

4.2.2 PARTICIPATORY OBSERVATION

Participatory observation had been chosen as a method, because through participatory observation, experiencing activities and getting a feeling of the events are shaped (Spradley 1980). Within participatory observation, it is important to identify a social situation. Three elements can be recognised to understand a social situation: place, actors and activities (Spradley 1980). The following figure (Figure 4:4) shows the relation between the elements within a social situation.

Figure 4:4 Social situation (Spradley 1980)

The social situation of the participatory observation took place at a cultural activity centre called KUL Nordkraft, where people interested in vegan or vegetarian food have monthly gatherings and plant-based food sharing. KUL Nordkraft had been chosen to do the participatory observation, because it is a local community where locals gather to share their interest and values. The aim of the participatory observation was to understand the motivations behind the decision of having a (partly) plant-based diet and how these gatherings inspire people to change their lifestyle. This was done by participating in the gatherings and

activities, to observe the members within these gatherings and having casual conversations with them. This also meant that the researcher had to bring a vegan or vegetarian meal to share with everyone, as that is part of the event. As the researcher is a vegetarian, it might have been difficult to stay open-minded. Thomas Hylland Eriksen, a Norwegian anthropologist argues in his book, *"What is Anthropology?"*, that the ethnographer could suffer from homeblindness. This means that the ethnographer does fieldwork in a society which the ethnographer has full experience in. The problem with homeblindness is that some dimensions are taken for granted. To avoid this while doing fieldwork, it is important to see the study from afar before approaching and describing the study (Hylland Eriksen 2004).

Prior to the food share events, a meeting with the one in charge of the events was arranged to gather information, possible future options, and inform about the planned participatory observation.

The focus of the first food share event was concentrated on the atmosphere, the motivation of people going to the events, and what inspired people to have a (partly) plant-based diet or an interested person in plant-based food. Questions like *"Why are you interested in coming here?"*, *"Do you have people in your surroundings which have the same lifestyle as you?"* and *"What inspired you to stop eating animal-based products?"* were questions to keep in mind during the first food share event. The food share event also gave more information about where the people with a vegan or vegetarian lifestyle got their inspiration from. The second visit had one other focus area, as it was discovered how important culture is within a sustainable diet. The visit was more concentrated on what their diet means in their culture, as animal-based products are often a dominant component in the Danish diet. Questions like *"How acceptable is your diet within your circle of family and friends who do not share the same diet as you?"* and *"How is your connection with your culture since you changed your diet?"* were questions to keep in mind during the second event.

Table 4:2 shows the approximate number of people in the food share events. Field notes of the food share event were written the same day with the purpose of getting more details out of the fieldwork and not forgetting any of the information and experiences (Bernard 2011).

Table 4:2 Number of participants each observation

Date	Number of Participants
19/03/2017	10
23/04/2017	±30

4.2.3 EXPERT INTERVIEW

Besides doing participatory observations within a local vegan/vegetarian organisation, an (online) interview with experts was chosen to give an insight in factors which could encourage consumers to change to a sustainable diet. Multiple experts in the subject of inspiring people were contacted such as the makers of the American documentary *Cowspiracy: The sustainable secret*, The Danish Vegetarian Society in Denmark, and the maker of Alle Carte, a bot on the social media platform 'Facebook' focusing on vegan and vegetarian restaurants in Denmark.

An interview was considered valuable with these experts, because their focus is on giving more information and inspiration into changing to a sustainable diet

Although, an online interview with the makers of the documentary was not possible. They did, however, provided the researcher with more information (besides the information given in the documentary and website itself) about how to face this challenge. The Vegetarian Society in Denmark agreed to do an online interview by mail, as an interview over Skype or in person was not possible. For that reason, it was a structured interview. The maker of Alle Carte agreed to do a Skype interview, as an interview in person was not possible. The Skype interview was a semi-structured interview and was recorded. The interview guides for the Danish Vegetarian Society and Alle Carte can be found in Appendix III.

4.2.4 WORKSHOP

Individual workshops were done with people who recently changed their living situation and changed their own eating habits. This target group had been chosen, because the researcher came to understand in the first food share event that people more often changed their eating pattern when changing a living situation. In the article of Straka (2016) in *"Politiken"*, it is said how young people distance themselves from their parents and are more curious about new kinds of food. In this study, the focus had been on people between the age of 18 till 30. The people who participated in the workshop were chosen, as they were all students and between the age of 18 till 30. In total, six individual workshops were done with men only as it was not possible to gather women. This might have influenced the data as there might be a difference between men and women.

A creative group process was part of the project design, but it failed the pilot test. In the pilot test, the researcher recognised that a creative group process was not the right method to gain information on the values, motivations, and needs of people. For that reason, a workshop was

designed, based on the feedback from the pilot test, to discover the goals and needs people have regarding their diet and their thought on what a sustainable diet is. There was chosen for an individual workshop, as some of the questions might be personal and unwanted to be shared in a group. The participants were asked to agree with the workshop being recorded through a consent form. The consent form is located at Appendix V and the workshop guide is located at Appendix IV

4.2.5 THE ROLE OF THE RESEARCHER

As mentioned before, homeblindness could occur during participatory observation, as the researcher is taking part of in a vegan/vegetarian community while being a vegetarian as well. In a Danish radio show on DR P1, it was discussed how some vegans or vegetarians push 'meat eaters' to eat less meat, which is considered as annoying. At the other hand, vegans and vegetarians feel being blamed by 'meat eaters' (DR P1 2017). While doing ethnographic research, it was essential to be neutral and not been seen as a vegetarian who pushes people to be more sustainable or someone who feels blamed. For that reason, this issue was not being mentioned during workshops.

As the researcher is a foreigner in Denmark and not fluent in the Danish language yet, most ethnographic research had to be done in English. The online interview with the Danish vegetarian society was an exception, as they preferred to answer the questions in Danish. Spradley (1979) mentioned how different languages can express different realities (Spradley 1979). For that reason, the target group for the workshop were between the age of 18 and 30 years, as this group is often a student where speaking English is more common. However, it occurred occasionally that some words were not known in English, hence Danish was used instead. In the participatory observation, language was not an issue, as the main language was English.

4.2.6 CODING

Six themes were identified through coding the empirical data. Table 4:3 shows the different categories and subcategories which came out of the coding.

Table 4:3 Categorisation coding

No.	Category	Subcategories	Method
1.	Communities		Participatory observation, expert interviews
2.	Understanding of a sustainable diet		Workshop
3.	Values	Habit, taste, price, simplicity, health, nutrition	Workshop
4.	Motivation	Health reasons, social circle, environmental reasons	Expert interviews, participatory observation, workshop
5.	Amotivation	Apathy, mistrust	Workshop
6.	Traditional food versus daily eaten food		Workshop, expert interviews

4.3   ETHICAL CONSIDERATIONS

Permission was asked at the one in charge before doing participatory observation within the local voluntary vegan/vegetarian food share event. However, the participants within the food sharing never gave permission on using their experiences as it was not possible to know who would participate in the event. To accommodate the rules of confidentiality, there is full anonymity in the experiences.

The participants within the workshop had to sign a consent form where they agreed upon participating in the research and gave permission to sound record during the research. There is full anonymity in the experiences.

Within the expert interview over Skype, it was agreed beforehand of the interview to sound record the interview.

5. ANALYSIS

Before the event, I made hummus made out of chickpeas to share with the rest of the people coming to the event, as everyone should bring some vegan or vegetarian food to share. The hummus I brought was vegan. The event was shared on Facebook and is organised mostly every month on a Sunday between 16.00 and 20.00. I arrived a bit early, so no other people besides the one hosting was there yet. There was calm music on the background playing. The one hosting told me before that sometimes they have different themes, such as Halloween and Christmas, but this time there was no specific theme. Eventually, there was a total of ten people at the event, including myself and the host. There were three young men and seven young women, all men and four women were from outside Denmark. Everyone brought some food to share with the others. Most people made something homemade, whereas others brought some fruit or nuts. Although the food could be both vegan or vegetarian, all dishes were vegan, because people did not want to exclude others. From the ten people, three were vegan, two vegetarians and the rest flexitarians or very interested in vegan and vegetarian food. From the three Danish women, one was a vegan, one a vegetarian and one a flexitarian. The internationals were from places spread over Europe. The host expected more people to come, but a lot of people cancelled at the last moment, probably because of the bad weather. The host also told me that the event attracts mostly internationals in Aalborg, because it is a good place to meet new people.

When everyone arrived and heated up the food which is supposed to be eaten warm, everyone presented what they had brought. All food was placed at one big table in the middle of the

area like a buffet, so everyone could easily walk around it. Cutlery, plates, and cups were also placed on the table. It was a combination of sweet and savoury food, such as apple cupcakes, chocolate cake, spicy vegetables, fried vegetable snacks, salads, and bean dip with bread and nachos. After the presentation of each dish, everyone took some food and sat down at the other end of the room where the couches and tiny tables were standing. It was kind of like a 'living room' setting. Because we were with only ten people, this setting felt very cosy and comfortable, especially because we were all sitting in a circle. Some people knew each other before, but most people did not know each other. One girl proposed to do a little introduction round, while we were enjoying the food. People also told why they are at this event and their story of being interested in being a vegan/vegetarian or enjoying vegan/vegetarian food. After everyone's introduction, casual conversations with everyone were shared. Conversations about where to find delicious vegan or vegetarian food, good restaurants, but also political issues, trends, and interesting documentaries about veganism, such as 'Cowspiracy' and 'What the health' were shared. In the end, there were no leftovers. Some people stayed to chat and played games, while others left again. I left around 20.30 after I thanked the host for the evening. – **Field note from participatory observation 19/03/2017**

Figure 5:3 Different presented dishes at the event (Facebook 2017)

Figure 5:2 Someone scoping food at the event (Facebook 2017)

Figure 5:1 Deep fried vegetables at the event (Facebook 2017)

The analysis consists of a wide range of divers perspectives expressed by the people who participated in this study. These perspectives are based upon people who joined in the vegan and vegetarian food share event and people who participated in the workshop. The perspectives from the developer of Alle Carte and the Danish Vegetarian Society are also taken into account during the data analysis. The researcher came to understand the different perspectives in new ways. For instance, the environment plays a very active role in the choice of diet preferences for the people in the food share event, while this does not play any role for most workshop participants. Even though the researcher knew about the vegan and vegetarian food society, new insights were learned about the vegan and vegetarian society from listening

to the people in the food share event. The data analysis revealed the identification of six themes: (1) communities, (2) understanding of a sustainable diet, (3) values, (4) motivation, (5) amotivation, and (6) traditional food versus daily eaten food. The theme 'communities' is presenting the perspectives of the people in the food share event. This theme also presents the discovered values of people in the food share event. The theme 'understanding of a sustainable diet' presents the perspectives of the workshop participants on a sustainable diet. This is followed by the theme 'values', which presents the values of the workshop participants own diet. The theme 'motivation' shows both the motivations on changing a diet of the workshop participants and the people in the food share event. The theme 'amotivations' presents discouragement of the workshop participants towards changing to a sustainable diet. Lastly, the theme 'traditional food versus daily eaten food' is presented, which shows the difference between traditional Danish food, and daily eaten food. This is also based on the perspectives of the workshop participants. The analysis is structured by these themes.

5.1 COMMUNITIES

Someone brought food from when he went dumpster diving. I noticed how food waste is a big issue as well and a part of the common interest of the people who came to the event by talking to them. It seemed like there are different communities with a few different perspectives, but all support each other, like how the food wasting community and the vegan and vegetarian community is doing. There were also presentations planned about organic and vegan soap and about the refugee crisis in Greece. You could buy a soap as well and many people did that. After the presentations, people discussed the whole refugee crisis and what would be best to do. We also discussed political issues and how big it actually is in the decision of being a vegetarian or vegan for some people. Many people joined for the discussion, but also a lot of people left when they were finished eating. I stayed for the discussion. – **Field note from participatory observation 23/04/2017**

In Chapter 3 Theoretical Framework, the theory of Communities of Practice was explained. When trying to understand the people in the food share event, it is important to know what is valuable for them. The people in the food share event share an interest in vegan and vegetarian food. The food share event is an opportunity to share different recipes, to try a variety of vegan and vegetarian food, socialise, and to share insights and experiences about the common interest. According to Wenger et al. (2002), 'managing knowledge' is the

important part of a Community of Practice, not the community itself. Wenger et al. (2002) state that the key to a successful community is knowledge, as it might be difficult for a community to exist without focusing on critical areas (Wenger, McDermott and Snyder 2002). The vegan and vegetarian food share event is depending on people joining the event, as the people bring their knowledge of different kinds of food recipes and experiences. The people at the food share event share photos and the recipes on the social network 'Facebook', hence the recipes are available for everyone. Wenger et al. (2002) state that the knowledge within a Community of Practice is based on experiences and ongoing experiences from people within the community. The knowledge originates from long-standing communities which tried to understand and practice the knowledge for centuries (Wenger, McDermott and Snyder 2002). Wenger et al. (2002) explain: *"Though our experience of knowing is individual, knowledge is not."* – (Wenger, McDermott and Snyder 2002, 10)

Although the vegan and vegetarian food share event had their first event one year ago, it is linked to a bigger vegan and vegetarian community, such as The Danish Vegetarian Society which has existed for decades. The Danish Vegetarian Society encourages people who are interested in vegan or vegetarian food to join a local food club. According to Wenger et al. (2002), there can be disagreements and controversies, however, defining valid knowledge goes through a process of shared involvement by participating in these communities (Wenger, McDermott and Snyder 2002). The host of the food share event illustrated that the event goes through a new stage, since a lot of new people join the event, while other people left the event. The food share event attracts a lot of internationals situated in Aalborg, which the host described as valuable and desired, as the host tries to avoid too much 'Danish talk'. At the same time, many internationals located in Aalborg who are interested in the food share event are temporarily living in Aalborg. The host expressed that it is sometimes difficult to gather new people interested in the event, especially since most people are only available for a certain amount of time.

The researcher experienced that environmental issues, animal cruelty, and health were often discussed topics at the food share event and extremely valuable for the people attending. The people in the food share event described how you can have a vegan or vegetarian diet, without missing on essential vitamins, such as B12, which is often found in animal-based products. In relation to environmental issues, besides having a vegan or vegetarian diet, the people in the food share event expressed also the need to lower food waste and the importance of organic food as well.

In the expert interview with the developer of Alle Carte, the developer expressed the importance of the support of different communities for creating a new community. In the food share event the researcher experienced the usefulness of the invitation of the different communities about organic soap and the refugee crisis in Greece. Not only did the second food share event attract more people, it also gave the people from the organic soap and the refugee crisis in Greece an opportunity to show themselves and share their experiences.

Different perspectives on food were discovered during the workshops. The following two sections will give an insight in the perspectives of the workshop participants on a sustainable diet and their values.

5.2   UNDERSTANDING OF A SUSTAINABLE DIET

In the beginning of the workshop, the workshop participants were asked to express a sustainable diet in their own understanding. A diverse variety of sustainable diets were expressed by the workshop participants. The Figures 5:4 and 5:5 show two different illustrations expressed by two workshop participants.
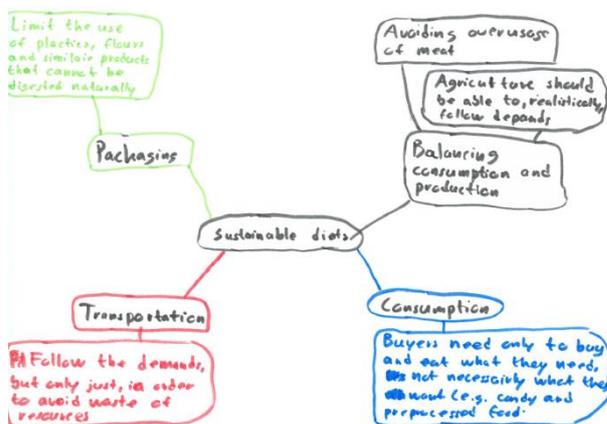
Figure 5:4 Illustration of a sustainable diet expressed by a workshop participant
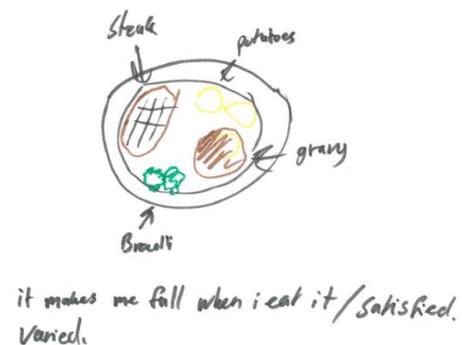
Figure 5:5 Illustration of a sustainable diet expressed by a workshop participant

The majority of the workshop participants considered the task difficult. One workshop participant took a long time for the task and expressed his experience of the task being hard. He also added: *"I think I might have messed it up a little, because this is about sustainable diets and I thought about the entire system of food."* Two other workshop participants expressed that they did not know, but tried to express their experience of a sustainable diet. One workshop participant in particular struggled with the task. On the question: *"What do you think if I say sustainability?"*, he answered:

Analysis

"A lot of different things. That is the thing, mostly the conflict from myself at least. [...] About how, at least from the ranks Danish government side, now critique from within. [...] But in sustainability there is a lot of controversy in the meat industry right now. [...] I kind of want to say, I mean, the diet we have may not be very sustainable as it is right now compared to the other one. It probably will be in terms of the focus that we have right now of society."

The workshop participant illustrated the complexity of defining a sustainable diet and sustainability in general. Although the task was considered difficult by the majority of the workshop participants, similarities between the definition of FAO (2012) of a sustainable diet were noticeable, as the sustainable diets of all the workshop participants included at least one of the six key components within a sustainable diet according to FAO (2012). The six key components in a sustainable diet according to FAO (2012) are: (1) well-being, health. (2) biodiversity, environment, climate, (3) equity, fair trade, (4) eco-friendly, local, seasonal foods, (5) cultural heritage and skills and (6) food and nutrient needs, food security, accessibility (FAO 2012). The definition of a sustainable diet by FAO (2012) is explained in Chapter 1 Problem Analysis.

As part of coding the empirical data, the definitions of a sustainable diet from the workshop participants were compared to the definition by FAO (2012) by the researcher. The majority of the workshop participants related the term sustainable or sustainability to the environment. The key component in a sustainable diet according to FAO (2012) of biodiversity, environment and climate was the main element in their understanding of a sustainable diet. One workshop participant mentioned:

"For example, the packaging, I know there is a lot of plastic. Stuff that cannot be digested, and it is used anyways. There are also the milk cartons, that can actually be digested. Easier to break down. Also, all the political things, with overproduction and overconsumption. Of course, not all, but especially meat."

The researcher came to understand that the workshop participant was well-aware of the effects that the meat production and consumption can bring along. Especially after the response on the explanation of the task: *"Write down which ingredients and products you mostly use and are important to you."*, the workshop participant said: *"Now the guilty part"*. This view on the meat production and consumption was shared by other workshop participants. As one workshop participant expressed: *"So, I mean, meat is not sustainable, so I will draw some broccoli. That symbolises healthy stuff"*. Vegetables and greens were often

related to a sustainable diet among the workshop participants. Another workshop participant mentioned: *"First I drew what sustainable was, the efficiency of greens that normal humans, ... I think it is 60 or 70 percent greens per meal at least."* The same workshop participant explained the use of insects in a diet. He stated: *"They give the protein from these. That is also a more sustainable way of getting different ..."*

Likewise, another workshop participant related a sustainable diet to the key component biodiversity, environment and climate. The workshop participant also related a sustainable diet to the consumption of meat and described how meat has a bad influence on the environment. Figure 5:6 shows the different aspects of a sustainable diet expressed by the workshop participant. This include the key components of biodiversity, environment and climate, but also parts of the key components of equity and fair trade and eco-friendly, local food, and seasonal food were expressed.
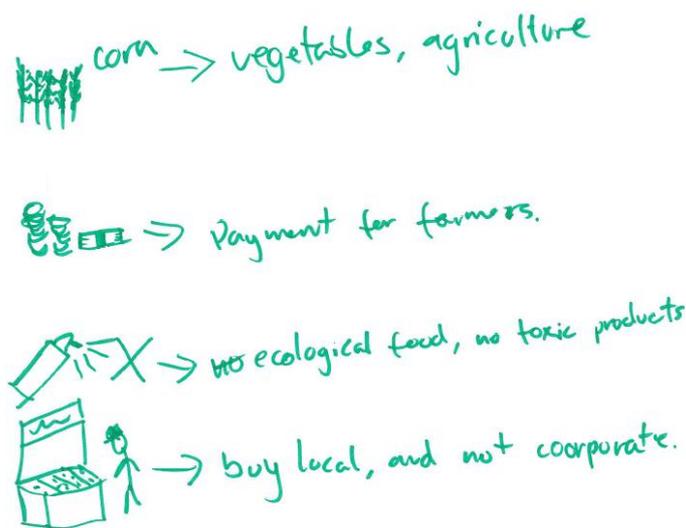
Figure 5:6 A sustainable diet according to a workshop participant

One definition of a sustainable diet expressed by a workshop participant included parts of the key components well-being and health, and food and nutrient needs, food security, accessibility. The workshop participant explained how a sustainable diet includes a healthy meal, which includes a low percentage of fat, full of omega 3 and vitamins. Another workshop participant related a sustainable diet to a balanced diet. He explained:

"I am just going to draw what I like having for dinner I guess. A plate, can't be hard to see. And a steak I guess. And potatoes. And then some kind of gravy. The typical Danish dinner. Yes. I think of this because it kind of makes me feel full and satisfied. And a varied meal. Have all these things together."

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The researcher came to understand that besides having the feeling of satisfaction, the workshop participant mentioned the typical Danish dinner. The workshop participant explained a sustainable diet by a dinner which he grew up with. The workshop participant expressed the importance of cultural heritage in his understanding of a sustainable diet. The illustration of the sustainable diet expressed by the workshop participant is shown in Figure 5:5, in the beginning of this theme. This understanding complies with one part of the key component cultural heritage and skills in the definition of a sustainable diet according to FAO (2012).

5.3 VALUES

After letting the workshop participants express their important and most used ingredients which they find valuable, they were asked to reflect upon their own diet and think about: *"Why do I eat what I eat?"* Six dominant values specific to the diet of the workshop participants emerged from the analysis: (1) habit, (2) taste, (3) price, (4), simplicity (5) health, and (6) nutrition. These different values have been compared with each other and categorised. The categorisation was based on the goals of the workshop participants regarding their own diet. Figure 5:7 shows the categorisation of the values.
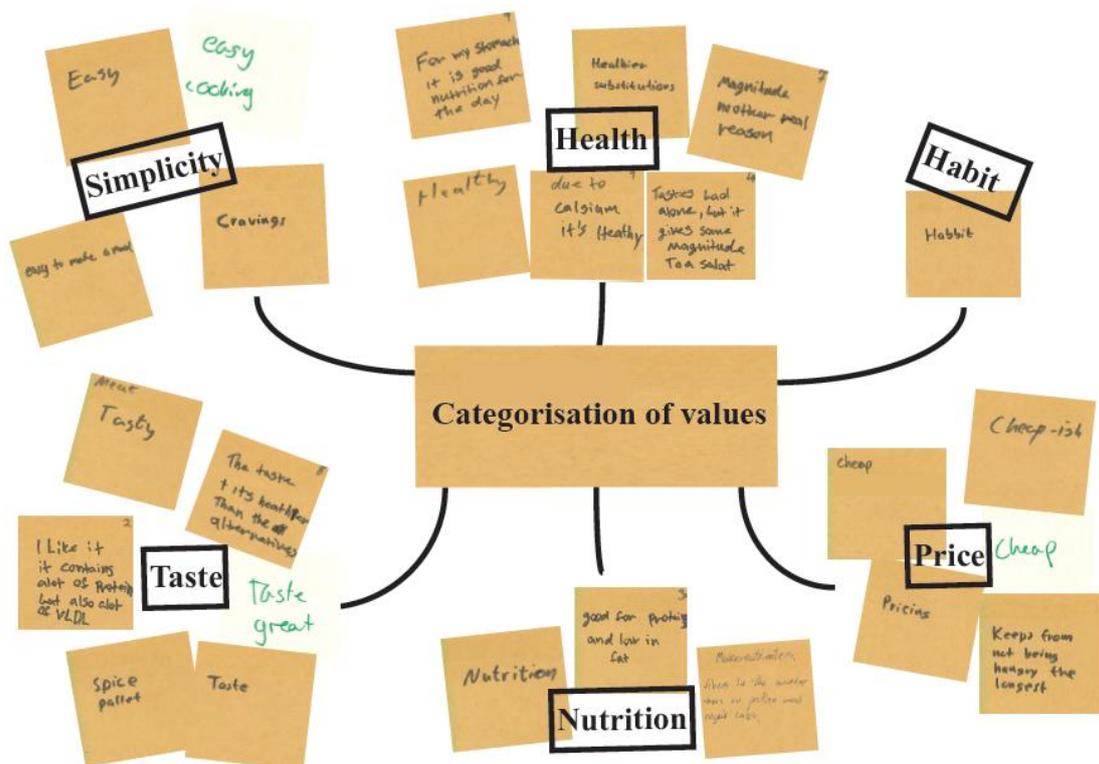

Figure 5:7 Categorisation of values

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Although the values are categorised in these six categories, the researcher came to recognise similarities between the categories. For instance, the workshop participants who make food out of habit, also find it simple to make the food. The values are structured by these categories.

5.3.1 HABIT

Although only one workshop participant in the workshop actually wrote down *"plain old habits"* on the question *"why do you eat what you eat?"*, it did not seem to be valuable for his diet as the workshop participant further explained: *"Some of them are basically plain old habits, especially meat and pasta. That has been a habit for me for way too long."* The workshop participant also expressed the habit of eating unhealthy snacks. He illustrated: *"This one, cravings. That is for some of the unhealthy stuff. Craving, but also the feeling for getting energy or something, especially energy drink and soda."*

The researcher experienced the importance of habit in the diet of the workshop participants by asking further questions in relation to their diet. As one workshop participant explained: *"... that is just something I grew up with, like leverpostej I guess. It's kind of bad probably, but those are the things that are high on my list."* The other workshop participants expressed similar responses, although not in regard of the asked question. The typical Danish rye bread and the liver paste were expressed to be important in the daily food consumption according to multiple workshop participants. The researcher came to understand that cultural food, such as the liver paste and rye bread, are often related to the habits of participants.

5.3.2 TASTE

As taste might seem as an obvious value, it is also a very important value, as the taste of the food was most often mentioned by the workshop participants. Striking is that the taste is often referred to meat products. As one workshop participant stated: *"Okay. The reason I eat meat, beef, and chicken is because it's tasty"* Other workshop participants basically stated: *"Because I like it."*

Besides that, for some workshop participants, the taste of their food is considered more important than healthy food. This was in a response on the questions which goal they consider most important. Another participant described the spice pallet as an important part of his diet, as this brings the taste to the food.

Analysis

5.3.3 PRICE

The prices of food were also considered as an important value. Most workshop participants considered cheap food above expensive food. Nevertheless, the majority of workshop participants considered meat as *"cheapish"*, as meat was considered as tasty, useful, and essential in different kind of dishes, even though meat is more expensive compared to other foods. As one workshop participant stated: *"It is rather simple. I eat meat, because it is a rather cheap ingredient and easy to make a meal from. There is some variety in some of them, so I can sort of mix and match between them."* Another workshop participant related the price to bread and oatmeal. He explained further: *"It keeps me from not being hungry the longest, especially the oatmeal and bread. It is not because I really like the taste of oatmeal, but it just keeps me from being hungry."* The researcher came to understand that the price of food is often related to other goals, such as taste, simplicity, and feeling satisfied for a long time.

5.3.4 SIMPLICITY

Another important value expressed by the workshop participants is the simplicity of making a meal. The majority of the workshop participants mentioned that they desire to easily prepare a meal without thinking too much about it. One of the workshop participants mentioned: *"And I guess because I am not very creative and I prefer not to think too much about my food."* Likewise, another workshop participant described: *"So, I prefer to eat meat, because I don't want to think about: Okay, how do I get protein and fat from other places?"* Both workshop participants express how the they do not have the desire to learn new ways of preparing a meal, as they basically prefer not to think about it. Another workshop participant also illustrated how it is easy to cook meals with meat as he is used to cook with meat.

As mentioned in the value **Price**, the costs of a meal also depends on the simplicity of making a meal, such as oatmeal and rye bread. Besides being cheap, the workshop participant also mentioned how it is very simple. This is also in relation of certain cravings which are considered as unhealthy, such as energy drinks, and junk food. The developer of Alle Carte mentioned how it is a challenge to find healthier options. He described: *"It is very easy to find food which is not good, which is unhealthy and sometimes it is very difficult or very expensive to find food which is healthy."*

5.3.5 HEALTH

The majority of the participants mentioned the importance of healthy food in their diet. However, the definition of health was explained and considered different by the different

workshop participants. A variety in the diet and a balanced diet were often mentioned by multiple workshop participants in relation to a healthy diet. Another workshop participant related a healthy diet to protein, low fat, zinc, and magnitude, which can be obtained by chicken, tomatoes, carrot, and zucchini. Vegetables were also considered healthy by another workshop participant. He mentioned: *"And then I guess I eat all the vegetables, because I try to stay healthy. Healthy stuff."* In relation to vegetables, another workshop participant mentioned how vegetables were a nice side dish. The researcher experienced that the workshop participants valued healthy food over unhealthy food which were desired from time to time. Although it was not mentioned, the researcher perceived that the workshop participants acted annoyed by having the craving for unhealthy snacks. A workshop participant stated: "*It is way too often very different snacks in the evening."*

5.3.6 NUTRITION

Health and nutrition are closely related with each other. Two workshop participants were very active in gaining more muscles. For that reason, these workshop participants considered nutrition as an important value in their diet. As one workshop participant mentioned:

"High in protein, because I train a lot, or four times a week. So that is why I go for protein. [...] And nutrition. If you want to train, you kind of know what minerals and kind of nutrition you are getting."

The other workshop participant stated:

"I just wrote down micro nutrition in the given case. Fibres in the morning, then the rest is just basically getting enough proteins and carbohydrates to increase muscles. That is basically it."

Another workshop participant mentioned the importance of nutritious food in relation to his stomach.

5.4 MOTIVATION

Both the workshop participants and the people in the vegan and vegetarian food share showed a variety of motivations towards changing to a different certain diet. This certain diet is not always meant as a sustainable diet, but mostly includes the key components within a sustainable diet. Motivations that described the motives of the people in the food share event

and the workshop participants included: (1) health reasons, (2) social circle, and (3) environmental reasons. These three motives were identified as motivational for the people in the food share event and the workshop participants as they moved or energised the person to change their dietary pattern.

The sub theory, Organismic Integration Theory, to the Self-Determination Theory by Ryan and Deci (2000) has been taken into consideration during this theme, as they describe the different kinds of motivations. These two theories are explained in Chapter 3 Theoretical Framework and are further discussed in Chapter 6 Establishing requirements and Chapter 7 Discussion.

5.4.1 HEALTH REASONS

The Danish Consumers Cooperative Society showed in their food pyramid what a healthy diet looks like in Danish terms. As mentioned in Chapter 1 Problem analysis, plant-based products have a higher prioritisation than animal-based products, especially red meat (FDB 2011). Both the workshop participants and the people in the food share event showed importance in a healthy diet, as both groups also expressed a healthy diet as a valuable aspect in their own current diet. The researcher came to recognise that health in general is both considered as a value and a motivation by both groups. As stated in the theme **Values**, a healthy diet does not always imply the same definition by the different people. Likewise, the definition of a healthy diet by the Danish Consumers Cooperative Society does not always correspond with the definition of a healthy diet by the different people included in this study.

The workshop participants expressed various motives to change to a healthy or healthier diet. For some workshop participants that change was a realisation over time, as for others it was a well-considered decision. The following quote shows an illustration of a realisation over time by a workshop participant:

Iris: "If you look at your diet, has it changed over time?"

Workshop participant: "Yes, it has."

Iris: "When?"

Workshop participant: "Especially during the last year, year and a half. My girlfriend and I sort of realised we ate too much candy and soda, sometimes four or five times during a week and we realised that it is not healthy."

The workshop participant expressed how he and his girlfriend wanted to change to a healthier diet by limiting their beverages and food with added sugars. Another workshop participant described how he suddenly changed his habit of drinking and smoking. As he expressed:

Iris:" A lot of alcohol?"

Workshop participant: "Yes, a lot of alcohol. I don't do that anymore at all. I also don't smoke anymore."

Iris: "Was there a reason why you changed?"

Workshop participant: "Yes, I changed my diet. [...] It actually changed dramatically, but I was drinking a lot. And I just said: Well, I think I have to think more about my health and I will stop. Pull yourself together. [...] I stopped smoking and drinking."

The workshop participant described how he suddenly changed his habit of drinking and smoking and 'pulled himself together'. These workshop participants show a coherence with the promoting sustainable diet in Nordic population by FAO (2016) explained in Chapter 1 Problem Analysis, which promotes the limitation of beverages and food with added sugars and alcohol (FAO 2016). The researcher came to understand how both workshop participants show a realisation of the importance to change to another diet and accept that, rather than changing their diet because they enjoy changing their diet.

Different health motives were mentioned by the people in the first vegan and vegetarian food share event attended by the researcher. These health motives were also a reason to go to the food share event. A young man in the food share event mentioned how especially meat causes problems within his intestines. He expressed that the food share event was an opportunity for him to learn new recipes that do not include animal-based products and are often considered as healthy due to the low amount of sugars, natural and organic resources, and the high amounts of vegetables. Another young woman in the food share event also expressed how the change to a vegan diet made her feel more energised and healthy. By asking her how she felt more energised and healthy, she did not know. She expressed it as a feeling. The researcher came to recognise how the young man in the food share event accepted his change to another diet and tried to learn new ways to handle it, whereas the young woman in the food share event enjoyed her change by feeling more energised.

Analysis

Two workshop participants changed their diet as it supported them in their psychical activities and current lifestyle. These workshop participants also mentioned the importance of nutrition in a diet, as nutritional food is needed to gain muscles. As one workshop participant expressed:

Iris: "Has your diet changed over the years?"

Workshop participant: "Yes."

Iris: "When and why?"

Workshop participant: "I train, and I train more. I mean, I need more of the different nutrients. Most people know that if you don't eat enough, not enough protein or carbs, it is difficult to produce muscles. So you kind of have to get over that at least, for my sake. And given that my goal is, since I started training, has been to put on muscles, it's a simple goal of getting enough of both for each day. [...] And then to try varied it as much as I can, but I am weak when it comes to that."

The researcher came to understand that in order for the workshop participant to do the psychical activity he wants to do, his diet changed. The other workshop participant stated: *"I eat more protein food and of course the protein powder, because it is hard and expensive to get the protein you need through normal food. So, the protein powder is a supplement for that."* For both workshop participants, their change in diet was to get fit and more energised by training a lot in the gym.

According to the developer of Alle Carte, Danes are very health conscious, especially considering psychical activity and food. This can also be seen in the quote below by a workshop participant, mentioning how processed foods are considered as unhealthy and unwanted.

"You hear a lot about the different kinds of things they add to your food. Like I heard some studies a while ago that said that a lot of food has an unnecessary amount of salt in it. And it is in the kind of food which shouldn't have salt in it. I think it's, I like to think that I eat healthy, maybe not overly healthy, but I like to know that it isn't crap that I put in my mouth."

The workshop participant desires to know what exactly he is eating ant that it is healthy food. It also shows that the workshop participant values unprocessed foods, for the sake of having a healthier diet, as unprocessed food do not give his desired outcome.

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5.4.2 SOCIAL CIRCLE

A link between a person's social circle, including friends, relatives etc., and a change of dietary pattern was recognised by the researcher as a motive. In the first food share event, people shared that they had similar diets and lifestyles as friends or family members. As mentioned in Chapter I Problem Analysis, in the Danish radio show on DR P1, Eske Bentsen stated how the social context is very important, as it makes it difficult if you have another diet (DR P1 2017).

The developer of Alle Carte stated that it supports to discuss the choice of a change in diet to make people around you understand this change. He expressed:

"The more you talk about it, the more people know about it. Sometimes people look at vegans or vegetarians as freaks or something, but once they understand what it is about and it is normally explained, they can really try to understand the context of it."

This statement is also supported by the Danish Vegetarian Society. They stated in the interview that it is important to discuss the topic of changing to a vegan or vegetarian diet in a positive manner.

One workshop participant expressed how a friend of him started to eat less meat, because it brings harm to the environment and climate. The workshop participant illustrated that the conversation with his friend made him more conscious about his own diet. Although the statement of meat brings harm to the environment and climate was unimaginable at first, it made him more aware. As he stated:

Workshop participant: "And something I have been made aware of recently is the meat production, it is not very sustainable. It costs a lot of energy for processing the meat. I don't want to say that it changed of how much I buy of it, but I am more aware of it now. So I guess in half a year I buy less meat."

Iris: "How did you get to know about this?"

Workshop participant: "I talked to a friend of mine who had dropped beef, because beef is very energy consuming. And first I was like, yea right. Then I started to think about it more."

The researcher came to understand that the workshop participant was not interested in his friend's diet. However, after his friend illustrated the motive behind his dietary change, the workshop participant understood his friend's choice to change.

Analysis

Both the workshop participants and the people in the food share event expressed how moving to another place or country influenced their dietary pattern, as they experienced a new social circle and through time less affected by their former social circle. As a workshop participant mentioned:

"I used to eat a lot of potatoes and bread, now I eat more like rice and spinach. Because I have been eating potatoes since I was young and it is very boring to move out and eat the same all the time. So just to mix things up, because you see stuff on television and mix the diet up and eat something else."

Another workshop participant illustrated likewise how moving out of his parents' home affected his eating pattern, as he tried new kinds of dishes and did so without considering close family members or friends. As the workshop participant stated:

"Since I moved from my parents' house, I might have changed my diet a little. They like a lot of varied dinners and meals throughout the whole week and month and I am more likely to make the same dish a multiple times a week. The variety is sort of decreased in that way I guess."

The researcher came to understand that both workshop participants were in some way controlled in the way that they were obligated to change their diet, as they were experiencing a new environment and were responsible for buying their own food by moving to their own place. However, they were autonomous in their decision of changing their diet. Especially the first workshop participant enjoyed his creation of a new dietary pattern, as he expressed his previous diet as 'very boring'.

The researcher experienced that the people in the food share event, especially the internationals, drastically changed their diet since they moved to Denmark. Several internationals in the food share event described how they did not eat meat or any animal-based products anymore, since the meat products are expensive in Denmark. They also mentioned how they are less influenced by family members or old friends. One young international woman in the food share event changed to a vegan diet after experiencing a vegetarian diet. She expressed how it made her feel more energised. The internationals in the food share event shared the experience that it is cheaper to be a vegetarian or vegan in Denmark than eating meat. The young international woman also mentioned that her mother

shows worrying signals to her as she stopped eating animal-based products. She described that it does not affect her, as she feels good about her dietary change.

5.4.3 ENVIRONMENTAL REASONS

The people in the first food share event expressed how much of an impact environmental reasons were to change to a vegetarian or vegan diet. However, this motive is often combined with other motives, like health reasons or less animal cruelty. A young Danish woman in the food share event illustrated how she mostly ate vegan or vegetarian food, because it was less harmful for the environment. Since she was the one who cooked at home, her husband and her child ate what she made. She described that her husband did not mind. The researcher came to understand that the young Danish woman in the food share event values the outcome of the impact her diet has.

The field note in the start of this chapter describes the setting of the first vegan and vegetarian food share event. During this food share event, the topic of environment was discussed while enjoying the shared food. A young Danish woman expressed that she noticed how more Danes were changing their eating habit to a more vegetarian and vegan diet, because animal-based products are more harmful for the environment. She also mentioned how animal welfare plays a role in the decision. The young Danish woman further explained that she sees some kind of movement in the Danish society where the issue of environmental harmful food is getting bigger and that people are getting more interested in it, especially girls. The other people who attended in the food share event also mentioned that they could notice a slight change.

During one of the workshops, a workshop participant mentioned something similar. In the workshop, the researcher explained a sustainable diet according to FAO (2012) to the workshop participant. After the explanation, the researcher asked the workshop participant to reflect upon it. The workshop participant expressed how there is a slow change going on in society about eating less meat. As he stated:

Workshop participant: "The cultural aspects in Denmark, they are eating a lot of meat. It is a cultural norm. This is harming everything else and the environment."

Iris: How do you think that will be in combination with a sustainable diet?

Workshop participant: If you said this five years ago, many people would have rejected it. But many people talk about food and local differences. People are more open minded now. So it is

slowly getting accepted. I think I have seen more people buying more ecological products. So I think it is getting there. We are not there at all yet."

The workshop participant also mentioned how knowledge on the effects which some food brings along was valuable. He expressed that he can recognise now that his diet has several consequences. However, this did not made him start changing a diet yet. As the workshop participant stated: *"... not that I started, but I have started thinking about it recently. I realised I over consumed a lot. This is definitely a problem."* The researcher came to understand that the workshop participant can see the importance of changing towards a more sustainable diet, as he described it as a problem.

Likewise, in the first food share event, the people mentioned how much impact documentaries about environment and health have on changing to another diet. A young Danish woman in the food share event described how she became a vegan after watching a documentary on the environment. Only in certain social occasions she accepts to eat vegetarian food, as this is easier and more acceptable. The researcher came to understand that the young Danish woman values the outcome of her diet, however there is some kind of social pressure for her to change to a vegetarian diet, as this is more acceptable and easier in her social circle than a vegan diet.

The developer of Alle Carte expressed that information about the impacts of certain foods is important. The developer described how certain documentaries, such as Cowspiracy: The Sustainability Secret, might affect people who are then willing to change their habits to have a more sustainable diet and lifestyle. Likewise, the Danish Vegetarian Society mentioned how certain campaigns supported people to change to a more sustainable diet. As the Danish Vegetarian Society stated:

"We have many information campaigns and activities which inform about the advantages to eat less meat. We hear from many that it helps. Many are being inspired to see that it is possible to eat more vegetables and eat less meat." (Translated from Danish)

5.5 AMOTIVATION

In the workshops, the researcher explained a sustainable diet according to FAO (2012) to the workshop participants, after letting the workshop participants express a sustainable diet in their own understanding. The sustainable diet of FAO (2012) is explained in Chapter 1 Problem Analysis. After the explanation of the sustainable diet according to FAO (2012), the researcher asked if there were important key components in this explanation and if the workshop participants 'made sense' of the explanation. Often, a conversation about the different key components followed. In these conversations, the researcher came to understand the importance of some of the key components to the workshop participants. However, at the same time, the workshop participants expressed reluctance and mistrust towards the key components of a sustainable diet according to FAO (2012).

In the conversations about the sustainable diet according to FAO (2012), a few participants illustrated that they saw the importance of this sustainable diet. However, the workshop participants were not motivated towards changing their own diet. The theme amotivation is structured by the following factors: (1) apathy and (2) mistrust.

5.5.1 APATHY

During one conversation with a workshop participant, the workshop participant expressed how he considers the key components well-being and health, and food and nutrient needs as important components, whereas he was not concerned about the other key components. As the workshop participant stated:

"Well, I would say it needs to be healthy and nutritious. And to be honest, I do not care about the others. I don't care about the environment, because I don't really have that much to say in regard to it. It never really bothered me that much."

The researcher came to understand that the workshop participant does not see value in buying food for the benefit of the environment or climate. Although, as stated in the theme **Understanding of sustainable diet**, several workshop participants considered the environment and climate as important components in a sustainable diet, it did not influence the eating pattern of these workshop participants. Another workshop participant mentioned how the environment is not an important factor when doing grocery shopping. As the workshop participant stated: *"I don't think that much about the environment, it's not in the top of my head when buying food."*

Analysis

Another key component of the sustainable diet according to FAO (2012) which was not considered as important by a workshop participant was the key component of cultural heritage and skills. The workshop participant mentioned:

Workshop participant: "I don't really care about the Danish culture."

Iris: "Is there a reason for that?"

Workshop participant: "I like to say, well yes. [...] So for me, culture is something that you can always fell off. You don't need to cherish the culture you necessarily have. You can just change it."

The workshop participant further explained how he enjoyed eating different kinds of food from all around the world. He also related the key component culture to the political parties of nationalists and patriots.

5.5.2 MISTRUST

Besides showing apathy for some key components in the sustainable diet of FAO (2012), several workshop participants expressed mistrust towards some of the key components. One workshop participant illustrated how he did not believe in the key component of eco-friendly, local, and seasonal foods. As the workshop participant described:

"I don't think that if you have local food that it is making it sustainable, because you can still have food grown in Thy (A city in North Jutland, Denmark)*, that is sprayed with pesticides and shit. And that is not very sustainable, but that is local. And then you can have farmers in Spain who just use knowledge passed down from generations. Of course, you have to get it to Denmark by trucks and stuff, but still, it's not filled with pesticides which ruin the earth."*

The researcher came to understand that the workshop participant differentiates between different aspects within the key component of eco-friendly, local, and seasonal foods in a sustainable diet. It is not clear for the workshop participant what is 'best' to choose as both seem to be important aspects within the key component of the sustainable diet according to FAO (2012). This uncertainty was expressed by another workshop participant as well. As the workshop participant stated:

"I don't care if my food is local. I just want my food to be healthy. If we grow the worst kind of food in Denmark, which we apparently do when it comes to vegetables, then I would like my vegetables from somewhere else."

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The researcher came to understand that this workshop participant does not trust the food production in vegetables, especially grown in Denmark. Locally grown food seem to be less important than organic grown food, as locally grown food has a reputation of being full of pesticides. Besides the concern about locally grown food being bad for health and full of pesticides, another workshop participant mentioned: *"Local and seasonal food might probably be good, but in a globalised world, that is going to be interesting."* The researcher came to understand that the workshop participant can see how local and seasonal food might be valuable. It seems that the workshop participants are aware of the different factors that make food sustainable and unsustainable and that the current food production and consumption is taking place is a globalised food economy.

The key component of equity and fair trade was another key component which was considered as an amotivational factor according to the workshop participants. Equity and fair trade caused mistrust due to different reasons. Several workshop participants expressed, however, that equity and fair trade is an important key component. As one workshop participant mentioned: *"In fair trade, if you are in the given case well-informed and know the different things, it will be fine. [...] But something like fair trade has been problematic."* The workshop participant further explained the disbelief in the criteria made for fair trade, as farmers are not having a fair treatment by multiple different companies.

Another workshop participant mentioned how the label of fair trade is resulting in people pretending to 'act good'. He explained it by the Danish saying *'pudse din glorie'*, which literally means *'polish your halo'*. The saying means to show the world that you are acting as a good person. The participant explained:

"When it comes down to the point, people don't really care. They tend to believe that they care, but they don't care at all. If you see someone with an Apple device, then they don't care, because Apple uses tribal labour for instance. So, does Samsung, but we still buy it. [...] But we still want something which is fair trade, because then I am helping somewhere or someone in a far country and it is not going to be partaken in those crimes, but no, you are doing it in other ways."

The researcher came to understand that the workshop participant not only mistrusts the label of fair trade, but also expressed ambiguities towards the consumption. The workshop participant's description seems like an ethical issue on what is morally correct to do and what is not.

Another workshop participant mentioned the complexity of the different definitions within a sustainable diet and how this might be different for everyone. As the workshop participant explained:

"...and health is just one of the most complicated things to talk about as a general thing, because everyone has their likely spread opinion on what is healthy and not. [...] So it feels weird. I mean, if I say that is a nice one and the next one says this is a nice one, but we have two total different ideas on the definitions about them."

The workshop participant expressed how many definitions nowadays are filled with 'buzzwords', which makes it hard to get an understanding of them. This made him mistrust his information. However, the workshop participant also mentioned how an understandable definition without the 'buzzwords' would support a better understanding of the definitions within a sustainable diet.

5.6   TRADITIONAL FOOD VERSUS DAILY EATEN FOOD

In Chapter 1 Problem Analysis, a traditional Danish dish was described. However, according to the workshop participants, the everyday dishes are very different. In Chapter 1 Problem Analysis, it was discovered how especially meat is part of a traditional Danish meal. The only similarity with daily eaten food and traditional Danish food is leverpostej (liver paste) and rugbrød (rye bread). The workshop participants often mentioned rice, pasta, minced meat and chicken as main ingredients. A workshop participant mentioned: *"Basically, I eat a lot of rice and pasta. [...] and then a lot of minced meat"* The workshop participant also stated that he eats a lot of rice and pasta, because other meals are more expensive. Likewise, another workshop participant described: *"Then rye bread typically for lunch and rice or pasta for dinner."*

Discovering the difference between a traditional Danish meal and daily eaten food by the workshop participants brought up the question: *"When are traditional Danish meals important?"* By having casual conversations with young Danes around Aalborg University, the researcher came to recognise how the traditional Danish dishes are related to Danish holidays, such as Christmas. Another reason for not eating the traditional food daily is that it takes too much time to make and are often more expensive.

Although this information might seem obvious, it is, however, important to understand the role of traditional Danish meals within the context of a sustainable diet and people's every day eating pattern. Although the traditional Danish meals are not included in the daily eaten food of the workshop participants, meat still is. Nevertheless, as described in the theme **Values** in this chapter, tradition is not a part of it.

6. ESTABLISHING REQUIREMENTS

The analysis of the empirical data gave input to the establishment of the requirements. The requirements for the possible technology or service should be in accordance with the values in the eating pattern of the Danish youth. Besides the input of the data analysis, literature studies are used to establish the requirements, as the requirements should be in correspondence with both the values of the future users and the key components of a sustainable diet. In addition, the theory of moralising technology by Peter-Paul Verbeek is applied to avoid future unintended consequences.

The data analysis gave insight in the two different groups, including the people in the vegan and vegetarian food share event and the workshop participants. The perspectives of both groups have been included in the establishment of the requirements, even though, the people in the food share event shared multiple values with a sustainable diet. The values of the workshop participants' current diet and the values of the people in the food share event, motivational and amotivational factors for changing to a sustainable diet, the understanding of a sustainable diet, the role of tradition and the role of communities are the themes which the researcher came to understand during the data analysis.

As the requirements activity is an iterative process and mostly abstract requirements were established, further research is necessary to establish a full set of stable requirements. The possible technology or service should be: (1) in accordance with the users' values, (2) morally responsible, and (3) motivational.

6.1   THE USERS' VALUES

As stated in Chapter 4 Methodology, a scenario gives an understanding of the goals and values of the future users. The scenario below gives an image of a person who is deciding on what to eat in the evening by a visit to the supermarket. The scenario is based upon the discovered values of the workshop participants and constructed by the researcher. The scenario is shown below:

"It is 17.00 PM and I am starting to feel hungry. I am planning on going to the supermarket, as I don't have any food for dinner at home. The closest discount supermarket is Rema1000, which I decide to go to. I don't want to cook for long, because I want to go to the gym later as well. As I arrive at the supermarket, I can see a long queue at the cash desk. The chicken is on discount, which probably means the expiration date is soon. That is okay, as I am planning on eating the chicken tonight and it will be a good source for nutrition. I will make some pasta-pesto tonight. I already have onion, garlic and pasta at home, so I only need the pesto and milk for in the morning. For lunch, I will take ryebread and leverpostej as I run out of that today and I really like it. This will be a cheap and easy dinner. The queue at the cash desk is not as long anymore. I am walking towards home again to prepare the dinner."

In Chapter 5 Analysis, the values were categorised in six different categories, namely: (1) habit, (2) taste, (3) price, (4) simplicity, (5) health, and (6) nutrition. Many of these values are related with each other.

Macdiarmid et al. (2015) state that pleasure and habits are controlling factors of eating behaviour and often related to meat. In the data analysis, it was also discovered how meat is related to cultural habits and a pleasurable taste. For that reason, the possible technology or service should be able to give the freedom of having the desired taste of the user and keep their cultural values. Although the freedom of choice is not always in correspondence with a sustainable diet, it is of great importance to include as a requirement to go towards a more sustainable diet.

Although meat is often used by the workshop participants, it is not always related to a cultural habit or a tradition, or even taste. The person in the scenario buys chicken as he relates chicken to nutrition and health. In the data analysis, the researcher came to understand that a *'healthy and nutritious'* diet is different for everyone and does not always correspond with the definition of the literature. A balanced diet was related to a healthy diet, both by the workshop participants and by the Danish food pyramid (FDB 2011). To be able to inspire the Danish

youth to eat more sustainable with a possible technology or service, the understanding of a healthy and nutritious diet needs to be consistent between the people and literature.

The person in the scenario prefers a cheap and easy meal. As price was found as an important factor by the workshop participants when buying food, but also by the international in the food share event, a requirement for inspiring people towards a sustainable diet should be in the same price range.

An easy meal according to the workshop participants was often based on the current knowledge of the person, which often does not correspond with the definition of a sustainable diet. The possible technology or service should be intuitive in the way it inspires people. The future users should be able to use the possible technology or service without prior or little knowledge.

6.2 MORALLY RESPONSIBLE

As discovered in Chapter 3 Theoretical Framework, the design of technology is a moral activity, where designers play an active role in mediating the actions and experiences of people and technology (Verbeek 2008). The possible technology or service should be morally responsible, as unintended consequences could appear which could be devastating for the original aim of the design. The user-centred design approach not only guided the study, it is also a necessary approach for further research, as the involvement of the user is unavoidable. To avoid unintended consequences, future prototypes should be tested with the users to discover the use of the future technology or service in the context.

6.3 MOTIVATIONAL

In the Self-Determination Theory, it is discussed how motivation can move people to do certain activities (Ryan and Deci 2000). In the data analysis, the researcher came to recognise that most people are internally motivated to move to a certain diet regarding the three main motivations (health reasons, social circle and environmental reasons). As the aim of the study is to make a sustainable diet more inspiring by a possible technology or service, the future users should be internally motivated to use the possible technology or service. It is necessary to be internally motivated, as this possesses a certain amount of freedom.

Although intrinsic motivation can be hold back by a sense of responsibility and social demands (Ryan and Deci 2000), it is a powerful sort of motivation. As stated in Chapter 3 Theoretical Framework, intrinsic motivation has the ability to generate creativity and a high-quality of learning. In the second scenario, an image is expressed of the influence of the social circle on someone. The scenario is based upon the experiences of the people in the food share event and constructed by the researcher. The second scenario is shown below:

"Tonight, I am meeting with my friends from high school for our yearly dinner. We are eating at the same restaurant as last year. The restaurant has a nice atmosphere, but sadly, it doesn't serve any vegan dishes which I would prefer. I don't want to bother my friends for going to another restaurant, so for tonight I will eat a vegetarian meal."

As a social demand, as seen in the scenario, is holding back intrinsic motivation, it is required that the possible technology or service is socially acceptable, and simultaneous creates curiosity and/or joy.

In Chapter 1 Problem Analysis, it was explained that a lack of willingness for change is still the most common pattern in most western societies (Graça, Calheiros and Oliveira 2015). However, internally extrinsic motivation is driven by willingness and indirect values, such as changing a diet due to environmental reasons. As stated in this chapter, the requirement: **the users' values**, it is required for the possible technology or service to be in correspondence with the values of the future users.

As the workshop participants had a lack of trust at several components of the sustainable diet according to FAO (2012), it is necessary for the possible technology or service to provide the user with trustworthy information which the user can relate to.

7. DISCUSSION

The analysis of the empirical data expands and deepen the understanding of the culture of the Danish youth and their values and motivations in relation to their eating patterns. One important finding was that the workshop participants generally had some understanding of the complexity of a sustainable diet, which is in contradiction with the literature stating that education is needed in the understanding of a sustainable diet.

The values of the workshop participants can be discussed, as it was discovered that an on-going trend of eating sustainable is getting popular among young women. However, women were not included among the participants in the workshop.

Another important finding is the discussion between a necessary change of dietary pattern and the freedom of choice people have regarding their diet. As diet change is an emotional and social issue, it is difficult to change (Graça, Calheiros and Oliveira 2015, Macdiarmid, Douglas and Campbell 2015). At the other hand, changing towards a more sustainable diet is necessary as the most current diets are harmful in many ways.

Environmental issues and the connection to animal-based products were frequently mentioned in the workshop. As stated in Chapter 4 Methodology, it was essential for the researcher to be seen as neutral and not as a vegetarian who pushes people to be more sustainable or someone who feels blamed. Although this was the case, there might still have been an influence of the researcher in another way.

Discussion

The analysis provide insight and knowledge regarding the motivation of both the people in the food share event and the workshop participants concerning their dietary pattern. The sub theory, Organismic Integration Theory, of the Self-Determination Theory by Ryan and Deci (2000) had been taken into consideration during the analysis to get insights into the different kinds of motivation of the people, such as intrinsic motivation and extrinsic motivation.

The last important finding is the issue of trustworthy information. In the analysis, the researcher came to understand that there is a lot of controversy about certain information on a sustainable diet, which makes it difficult for people to know what to believe and what not to believe. Not only uncertain information causes mistrust, also the way consumers are using certain products, such as fair trade products or ecological products, causes mistrust in the image of people.

7.1 EDUCATION VERSUS OWN KNOWLEDGE

According to Macdiarmid et al. (2015), the association between food and a harmful environment is missing. Education in the field of this matter is applied by different services, such as documentaries (Cowspiracy: The sustainability secret etc.), and by the Danish Vegetarian Society. In the findings, the researcher came to recognise that many workshop participants and people in the food share are aware of the effects that some food products bring, but for the workshop participants this was not a reason to stop consuming it. This can be supported by the findings of Macdiarmid et al. (2015). Macdiarmid et al. (2015) state that after presenting the effects of the meat consumption, there was still a resistance on the reduction of the consumption (Macdiarmid, Douglas and Campbell 2015). Although most workshop participants were aware of the effects, it might be that education is still an important factor to inspire people to a more sustainable diet. It can be discussed that the target group in this study includes the Danish youth which are part of a higher education. The exclusion of people with other educational backgrounds and other ages might have given different results and a need to raise more awareness of the association between diet and a harmful environment. Nevertheless, it can be discussed that the trend of a sustainable diet has already supported the awareness of the association between the eating pattern and sustainability, where the documentaries and information campaigns play an active role in.

7.2 THE TREND OF EATING SUSTAINABLE

An on-going trend of eating sustainable is getting more popular, especially among Danish girls according to a young woman in the vegan and vegetarian food share event and a workshop participant. Different reasons were given for that, including less animal cruelty, better environment, and health reasons. Although in the workshops a better environment was often linked to a sustainable diet, animal cruelty and health reasons were not. As stated in Chapter 4 Methodology, only men participated in the workshop. This might have influenced the findings as values from women might have been different compared to the values of men. However, in the article *"'He just has to like ham' – The centrality of meat in home and consumer studies"* by Bohm et al. (2015), researchers from university of Umeå in Sweden and the university of Vasa in Finland, the research did not show a clear gender difference among the Swedish students between 10 – 16 years old participating in their study about the centrality of meat. Although there were a few exceptions in the difference between boys and girls in the study, overall the centrality of meat was the same for both genders (Bohm, et al. 2015).

Though the study by Bohm et al. (2015) showed no particular gender difference, the study was specifically focused on the role of meat, whereas this study is focused on a sustainable diet. Nevertheless, there are similarities with the study as the link between meat and a sustainable diet is closely connected.

Strikingly is the fact that the study by Bohm et al. (2015) found a slight difference in the findings by the older girls included in the study, as the older girls were more concerned with the centrality of meat, as they cooked more frequently food for themselves than the younger girls (Bohm, et al. 2015). This could mean that, considering young women and men, there might be a gender difference, as the young woman in the food share event expressed. Although women were not included in the workshops, the experiences of the food share event were based on both genders.

To validate the values among the Danish youth, further research is necessary.

7.3 LIKING VS. NECESSITY

The Danish Council on Ethics already state the controversy between the necessity of a change in diet in contrast with the freedom of choice of the consumer to eat what the consumer

desires (Det Etiske Råd 2016). In the analysis, the researcher came to understand the importance of the value of the tastiness of food. Tasty food was often related to meat products. For that reason, it might be difficult to change to a sustainable diet without ignoring this important value of the workshop participants. The Danish Council on Ethics state that the consumer is not the only one to 'blame', as there are many factors influencing this issue as stated in Chapter 1 Problem Analysis (Det Etiske Råd 2016). Bohm et al. (2015) likewise state how this issue is subconscious and not only the consumer, but no one should be blamed as it is no one's 'fault'. Instead of seeing it as an obstacle, Bohm et al. (2015) state that it can be understood as evidence for power (Bohm, et al. 2015).

The value of freedom of choice in a diet from a person cannot just be ignored for the 'better world' as it is an emotional and social issue. In 1980, Claude Fischler, a French sociologist and anthropologist, explained the freedom of choice within a diet. He stated:

"The human omnivore uses his freedom of choice in a most peculiar way. One of his specific features is that he is amazingly particular - even finicky - about his food. Man feeds not only on proteins, fats, carbohydrates, but also on symbols, myths, fantasies. The selection of his foods is made not only according to physiological requirements, perceptual and cognitive mechanisms, but also on the basis of cultural and social representations which result in additional constraints on what can and cannot be eaten, what is liked and what is disliked. As Levi-Strauss puts it, things must be 'not only good to eat, but also good to think'"- (Fischler 1980, 937)

Hence, the diet of people can be seen as a symbol, myth or fantasy. Likewise, different studies show how especially meat is associated to masculinity (Bohm, et al. 2015, Macdiarmid, Douglas and Campbell 2015), even though this did not show in the study. However, Zaltman (2003) stated that 95 percent of the human brain activity is in the subconscious, which is not simple to reach an understanding of.

The contrast between the concept of freedom of choice and the necessity of a change in diet is a complicated matter, which can be discussed that it should be handled with care and understanding.

7.4 GUILT

The connection between a sustainable diet and lowering animal-based products were often made during the workshops. This also included a reflection upon the participants' own diet. Although a reflection upon the participant's own diet was requested by asking *"why do you eat what you eat?"*, the reflection of their own diet already started by the task *"write down which kind of products and ingredients are important in your diet."* Responses on the task were *"I am not very sustainable, so the first one is meat."* and *"Now the guilty part…"*. The researcher tried to avoid these kind of responses as these responses might inflict negativity regarding the subject. Although these responses were mentioned, the workshop sessions did not turn negative. After every workshop, feedback was asked, hence the researcher would know if there were parts which were experienced as negative. The feedback was positive or no feedback at all.

7.5 THEORY OF MOTIVATION

During the analysis of the empirical data, the researcher came to understand that there are different kinds of motivations why people are changing their dietary pattern, such as environmental reasons, or health reasons. Considering the theory, Organismic Integration Theory, of the Self-Determination Theory by Ryan and Deci (2000) became a useful tool to understand the concept of motivation and its different forms. The motivations of the people in the food share event and the workshop participants seem to give rise to a certain action internally. To Ryan and Deci (2000), this means that people are, intrinsically motivated or extrinsically motivated in the so-called form *integrated regulation*. Figure 7:1 shows the Organismic Integration Theory according to Ryan and Deci (2000) and highlights the internal forms of the motivation.
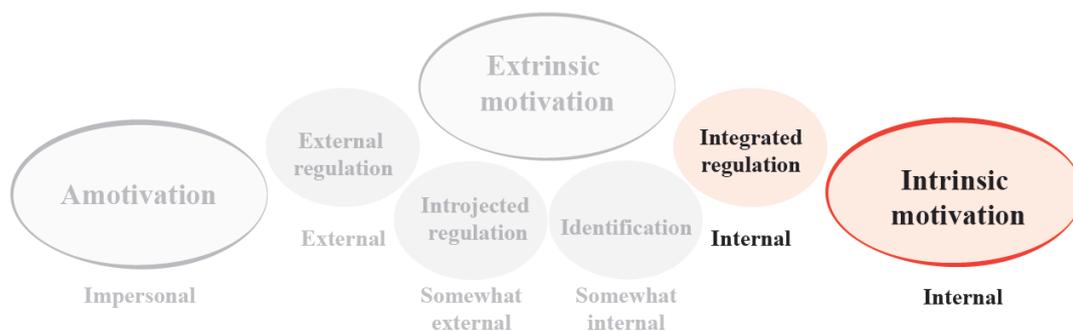
Figure 7:1 Organismic Integration Theory, internally motivated (Ryan and Deci 2000).

Internal motivation means that people are giving rise to a certain action, because they enjoy the action or if they value the action. It can be discussed that the people in the food share event and the workshop participants were internally motivated, as they either enjoyed their change in diet or saw value in their change of diet, which made them to change.

Although the theory of Ryan and Deci (2000) gives a clear definition of motivation, there might be other theories and definitions, which could have been more logical to use. Nevertheless, the analysis shows a coherence between the theory of Ryan and Deci (2000) and the discovered empirical data.

7.6   TRUST

Certain information did not move people to believe in it due to mistrust towards the information. The complexity of, for example, health has been huge, which also causes for different understandings on what is healthy and what is unhealthy. In the article by Macdiarmid et al. (2015), disbelief was also given as a reason for not changing a diet. In their research, the participants mostly referred to the constantly changing dietary advice, which brings confusion (Macdiarmid, Douglas and Campbell 2015). Also in casual conversations with young Danes, mistrust was related to a change to a sustainable diet being 'not good', as it could bring an economic disaster due to the change. The workshop participants tend to keep their own diet, as it is unclear on what to believe is true. Especially since a sustainable diet is related to different values of people. According to Macdiarmid et al. (2015), people want more evidence on the matter.

8. CONCLUSION

The aim of this study was to identify values in the eating pattern of Danish youth (youth between 18 and 30 years old) and set up requirements for developing a technology or service which inspires people to change to a sustainable diet. The aim led to the main research question:

How to make a sustainable diet more inspiring by a possible technology or service, so it will be in accordance with the values and motivations in the eating pattern of the Danish youth?

Three main requirements were found: (1) in accordance with the users' values, (2) morally responsible, and (3) motivational.

Different values were discovered in the eating pattern of the Danish youth, including: (cultural) habit, taste, price, health, simplicity and nutrition. Motivations to make a diet change were often related to health reasons, influence of the social circle and environmental reasons. Amotivations for not changing towards a more sustainable diet were distrust in information and people, and apathy towards some components within a sustainable diet. Hence, to make a sustainable diet more inspiring by a possible technology or service, the technology or service should:

- be able to give the freedom of having the desired taste of the user and keep their cultural values.

Conclusion

- be consistent with the understanding of a healthy and nutritious diet between the users and a sustainable diet.
- allow the user to be in the same price range.
- be intuitive and should not require prior or little knowledge to use it.
- be morally responsible and not have unintended consequences.
- be socially acceptable.
- create curiosity and/or joy.
- give trustworthy information.

9. FUTURE RESEARCH

Further research would be beneficial and needed to eventually develop and launch the intended technology or service. As this study focused on the specification of the context use and the development of abstract requirements according to the user-centred design approach, the next steps are to specify the requirements, produce design solutions, evaluating the design, and eventually launch the product (Marcilly, Peute and Beuscart-Zephir 2016), as explained in Chapter 4 Methodology. Iterations for these steps might be necessary to acquire the desired outcome. The next themes might be useful to keep in mind during the different steps of the user-centred design process.

9.1   TEST VALUES WITH THE USERS

As stated in Chapter 7 Discussion, the values of the eating pattern of women were not found during the workshops and the participatory observation. Although the study by Bohm et al. (2015) found no significant difference between young girls and boys, a slight different has been found among older girls (Bohm, et al. 2015). Further research to discover the values of the eating pattern of women might be valuable, since different requirements could be discovered.

9.2   CREATIVE PROCESSES

Idea generations and idea development are important elements in producing new design solutions. A crucial part of idea generation and idea development is creativity, as it is useful for adapting new changes. Creative thinking can generate new ideas and novel solutions to problems (Smith, Ward en Schumacker 1993). Although a creative process was part of the project design, it did not perform as intended. There are many approaches to give rise to creativity. One approach is the Creative Platform by Byrge and Hansen (2014), which consists out of six steps: (1) preparation, (2) red carpet, (3) presentation of the task, (4) generating and developing ideas, (5) academic and professional input, and (6) blue carpet (Byrge and Hansen 2014). Another approach is the Design Sprint by Google Ventures (GV). The Design Sprint is a five-day process to discover critical questions through design, prototyping, and testing the ideas with the users (Knapp, Zeratsky and Kowitz 2016). A creative process might be a useful tool to discover the essential information to design a new product.

9.3   MAPPING THE CONTROVERSY

The concept of sustainable eating was found as a trending topic, but also as a topic with a lot of controversy. To discover how this trend is moving, it would be interesting to discover the online trends by mapping the controversy.

9.4   COMMUNITIES OF PRACTICE IN THIS FIELD. HOW DOES IT WORK?

Although Communities of Practice is already described in this thesis, the exact role of the communities in the matter of sustainable eating patterns and the relation to other communities is unknown. It could be valuable to discover the role of the communities in relation to the values of people.

9.5   GAMIFICATION

As one of the requirements is *"The technology or service should create curiosity and/or joy."*, gamification could be an appealing concept to examine in the following research.

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APPENDICES

Appendices

I. List of Figures

II. List of Tables

III.   Interview guide expert interview: Vegetarforening

1. What goals does vegetarforening pursue?
2. What is the target group of vegetarforening?
    a. Why this group in particular?
3. Do you have the feeling that you encourage or inspire people to think more about their own diet and the consequences it can bring?
    a. How and why?
4. In your experience, why do people start changing their diet?
5. What is in your opinion the best way to inspire people to change diet?
6. Comments/suggestions/ideas

Interview guide expert interview: Alle Carte

1. Information about the service of Alle Carte
2. What inspired you to make the service?
3. What goals are you pursuing with the service?
4. What is the target group of Alle Carte?
    a. Why this group in particular?
5. Do you have the feeling your service inspires people to think about their diet?
    a. How and why?
6. What is the best way in your opinion to change a diet?
7. Comments/suggestions/ideas

Appendices

IV. **Workshop guide**

   1. Personal diet

      I.   Express a sustainable diet in your opinion on paper. What is included in this diet? Are there elements you find most important in here?

     II.   Present the sustainable diet.

    III.   Write down which kind of products and ingredients are important in your diet on post-its. Every product or ingredient is on a new post-it. Thinking about going to the supermarket, making food yourself, going to a restaurant, your main ingredient, product availability.

    IV.   Present the personal diet.

     V.   Why do you eat what you eat? Why are these products important to you? Write down on post-its.

    VI.   Present the post-its.

   VII. Has your diet changed over the years? When and why?

   2. A sustainable diet

      I.   Explaining a sustainable diet.

     II.   Do you think sustainable diets are important? Yes, why? No, why not?

   3. Evaluation

      I.   Further comments, feedback

V.   Consent Form

Consent Form

Project: Sustainable diets by Iris Scholten

I, _____ agree to participate in this research and give permission to sound record during the research.

You can withdraw your participation at any moment.

Name: _____

Date: _____

Appendices

VI. Overview fieldwork