



In a Double Bind

An Ethnography of Contemporary Dutch Dairy Farming

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Sarah: “So, it is quite a thing, being a dairy farmer these days, is it not?”

Dairy farmer Huib: “Yes” **chuckles** “But it is also really nice.”¹

¹ Interview, Huib, 21-03-2022.

Foreword and Acknowledgements

I believe my interest in agriculture developed during birthday parties. Probably the birthday parties of my dad, when he and his brother, my uncle, were having discussions about the expediency of new agricultural interventions. Both men have a background in agriculture –they are raised by a dairy farmer, my uncle took over the farm, and my dad used to be a pig farmer when I was young – and both have strong opinions about the sector. In the last couple of years, the discussions were often about the reformations in the Dutch dairy sector regarding more eco-friendly ways of farming. Overhearing those discussions made me realize there is always another side to the story. A side that might be worth exploring as an attempt to understand where the social turmoil and unrest from the dairy farmers are coming from. Therefore, this thesis is my attempt to understand the other side of the story, or in other words; my attempt to portray the story of the Dutch dairy farmer.

Conducting fieldwork among dairy farmers has been an eye-opening adventure for me. I have learned so much and I am grateful for that. Therefore, I want to thank all the participants who contributed to my research and who taught me, for example, what fodder cattle eat, how cattle is being milked, where the milk goes to before it enters the supermarket as commodity, the different types of soil, the features of the Dutch climate, how and why the Netherlands has become a so-called *dairy country*, and, most of all, how changes in this sector asks adaptability skills from farmers. So, thank you to the vet, fodder expert, students, teacher, farmhand, editor, farmer's funding specialist, real estate company, study clubs, the trade union, and interest groups for giving me helpful insights into this research topic. But most of all, thank you to the dairy farmers who were open to all questions and were so enthusiastic in showing me their farms. I enjoyed every visit, small talk, interview, brainstorm session, and photo or article you sent me. A special thank you to farmer Sjaak and his family for their enthusiasm in helping me. It has been really valuable.

Furthermore, I want to thank my friends and family for being patient and hearing me only talk about dairy farmers for the last couple of months. The informal discussions have been really useful during the writing process of this thesis. Also, thank you to the people who have read this thesis and helped me finish it in the last phase of the writing process. And lastly, I want to thank my supervisor Aditi Saraf for her always positive attitude towards my research. I appreciate your time and academic advice. Your guidance and enthusiasm have been really helpful.

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Introduction

It was one of my first days of fieldwork. On my way to visit my uncle's and cousin's farm located relatively in the middle of the Netherlands, I noticed the landscape changing in a second. I drove from the residential area to 'the land of the farmer' with its vast pastures and grazing cows, and in the distance the farm I was heading started to appear. The smell of cow dung entered the car. It made me think about my holiday two years ago in the north of the Netherlands. Although that area was far less densely populated, they both reminded me of the prominent role these pastures have in shaping the Dutch landscape, and, subsequently in shaping the Dutch economy. It finds its origins in post-war times. 'Never hunger again', was the national slogan after the Dutch famine of 1944 and the reasoning behind the rapid expansion and intensification of the Dutch agriculture, including the dairy sector (Van der Heide, Silvis and Heijman 2011). Both that holiday and the last few minutes of this drive confirmed my image of the Netherlands being a dairy country. A country that was proud of its agricultural sector with its large green plains and hardworking farmers who had a significant share in the contribution of contemporary Dutch culture.²

But nowadays this 'typical Dutch' picture is subjected to major changes, at least, that is what it seems like in public as well as the parliamentary debate. Animal welfare organisations, for example, often portray footage of livestock being neglected and abused. They demand better living conditions for cattle living on farms (Wakker Dier 2022). Environmental organisations refer to agriculture as one of the major polluters and call for more attention to the ecological harms agriculture generates, like the loss of biodiversity. Do we want to sustain the planet? We should, according to them, reduce the nitrogen emissions caused by farming practices and reduce the use of energy on farms since that sector has the biggest share in the contemporary environmental challenges (Milieudefensie 2022). Both examples put their interests in a good light by pointing toward the harms caused by another, in this case, the agricultural sector. They claim a podium and make their voice heard by Dutch society through approaching media, news broadcasts, newspapers, advertisements by bus stations, and so on. The more they raise their voice, the more their sound is heard, the more their interests are understood and shared by Dutch citizens, and the more it seems logical for the Dutch society to impose restrictions on agriculture. Don't we all want to sustain the planet?

However, in 2019 a dissenting voice arose during the Farmers' protests in the political

² Fieldnotes, visit Arie and Kees, 10-02-2022.

centre of the Netherlands; the Hague. All of a sudden, the farmers took the stage and raised their voices. Subsequently, they started to use more ways to share their interests. Farmers appeared more often on talk shows and some decided to use social media as a platform to speak up. It became clear that the social portrayal of harmful and unsustainable images of Dutch agriculture was not in line with the farmers' beliefs on this issue.



Figure 1. Dutch farmers demonstrated against the Dutch nitrogen policy on February 19th 2020. The cardboard sign says: “Be proud of the farmer.” (Photo by Caspar Huurdeman in “Boeren Trekken Weer Massaal Naar Den Haag: Nieuw Filerecord?” *De Limburger*, 18 February 2020).

These various voices are heard by Dutch politicians, and changes to solve these environmental problems are being discussed. Nobody knows what these changes contain or let alone when they will happen. But that the sector *will* change seems a form of certainty in these insecure times for Dutch dairy farmers. Therefore, riding through a somewhat romanticised image of the Dutch dairy landscape made me wonder how we, as a ‘typical dairy country’, went from the former idea of the hard-working farmer producing the food we eat on the pastures he/she maintains, to a time with political interventions such as halving livestock numbers and the possible expropriation of farmers’ lands. Or to put it otherwise: how could Dutch dairy farmers’ feelings of societal appreciation change so much that they currently feel the need to remind Dutch society to ‘be proud of the farmer’ [See Figure 1]?

This research describes the perspective on, and experiences of, the Dutch dairy farmer in this uncertain present - something that, according to the farmers themselves, is often not taken into account when we talk about sustainability, and through which the Dutch government's ambitions are not in line with practices happening on the ground and the reality of the Dutch dairy farmer.

The paradox between productivity and ecological sustainability

Anthropologists have studied the variety of coping mechanisms in farming practices worldwide, and have shown that farming is entwined with local demands and circumstances (Anderson 2004, 273; Okongwu and Mencher 2000, 116). Since societal and natural developments have evoked - and still evoke – the urgency for Dutch farmers to continuously adapt to be able to respond to societal demands, including anticipation of the economic market, one might wonder why today's changes in the Dutch dairy sector are evoking social turmoil. To understand this, I find it necessary to give some more context and illustrate the contradiction between several socio-economic demands through which dairy farmers experience the changes as unclear and contradictory.³ A dairy farmer, Sjaak, explained how he sees the changing agriculture:

“They [Dutch government] used the Hunger Winter's slogan ‘never hunger again’ to reform the agriculture completely. So they have changed agriculture with tremendous force and changed the landscape through fertilizers. Everything had to be more productive. But ten years later they already had surpluses. The government dumped those surpluses somewhere and reintroduced production restrictions. What I now see is that in fact Mr Timmermans [Dutch European Commissioner] is once again getting all the approval in Europe to reform agriculture. But now they want to reform it back to what it used to be, with the slogan ‘nitrogen’ as the big stick.”⁴

Here, Sjaak described relevant shifts in Dutch agriculture's focus. The Dutch Famine of 1944, which caused the Hunger Winter Sjaak was talking about, has been the moral motive behind the fast-growing agricultural sector in the Netherlands after the Second World War (Van der Heide, Silvis and Heijman 2011). Contextualized by the fast-growing population and consumer demands, the role of Dutch farmers has for a long period of time been determined by the

³ Interview, Julia, 22-03-2022.

⁴ Interview, Sjaak, 26-02-2022.

productivism approach: a market-driven perspective on the primary aim of the farmer in which production costs are minimized and commodity prices are low (Runhaar et al. 2020, 140). Sjaak explained: “A farmer who did not transform is now no longer a farmer. (...) The ones who were able to keep costs low could continue to farm.”⁵ Together with the favourable climate and fertile soils, high import of livestock feed, and a focus on agricultural innovations, it enabled the Netherlands to position itself as a major contributor to the international market in the provision of food. Particularly Dutch dairy farmers’ contribution to this is worth mentioning since they have the biggest share in this: they provide more than 9% of European Union dairy production (Van Grinsven et al. 2019, 2). The dairy sector encompasses about half of the total area used by agriculture and is about 30% of the Dutch total land surface (Runhaar et al. 2020, 140). Therefore, it has shaped the Netherlands physically and socio-economically as a *dairy country*.

However, in the last three decades, ecological sustainability has entered the public and political discourse, and has existed parallel next to the focus on economic growth. This happened in light of the growing awareness of ecological harms caused by farming practices. Currently, one of the most debated topics regarding ecological sustainability in the dairy sector is probably its relatively big share in the Netherlands’s total amount of nitrogen emissions (Melkveebedrijf 2022; Runhaar et al. 2020, 141). The nitrogen emissions are the result of urine and manure of dairy cows blending together through which ammonia originates; an inorganic compound of nitrogen and hydrogen. According to environmental organisations like *Milieudefensie*, these emissions are especially harmful to nature reserves since the deposition of these emissions in surrounding areas can decrease biodiversity and cause acidification of nature (Milieudefensie 2022). Figure 2 gives a simplified overview of the nitrogen cycle in livestock farming.

⁵ Phone call, Sjaak, 27-05-2022.

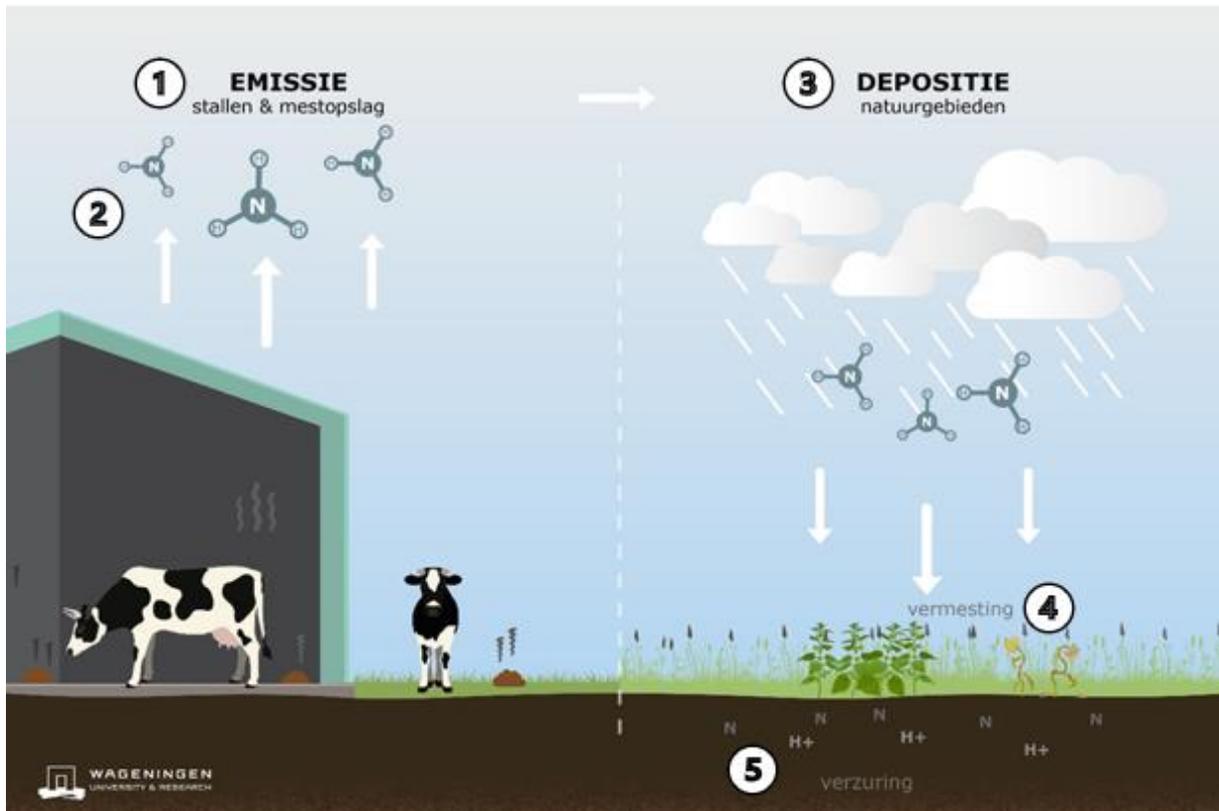


Figure 2. Nitrogen cycle in livestock farming (Wageningen University and Research. n.d. “Ammoniak” <https://www.wur.nl/nl/Dossiers/dossier/Ammoniak-1.htm>)

Translation:

1. Emissions: stables and manure storage
2. Nitrogen
3. Deposition: nature reserves
4. Eutrophication
5. Acidification

The Dutch dairy sector is furthermore known for its contribution to the greenhouse effect due to cattle’s methane production and CO₂ emissions (Van der Peet et al. 2018, 23). However, as part of the European Green Deal, the Netherlands strives “to be among the leading groups in Europe” regarding the transition towards a green economy, and has come up with a variety of national plans and restrictions (Rijksoverheid 2021, 10). The Dutch Nitrogen Reduction and Nature Improvement Act of 2021 aims a reduction of CO₂ and nitrogen emissions to improve water and soil quality, increase biodiversity, combat the greenhouse effect, and subsequently fit within European guidelines. On a more concrete and practical level, this entails restrictions in the dairy sector, such as less protein in animal feed that increases the release of ammonia and obligations in manure applications. But the government has also mentioned buying out arrangements to reduce the number of farms in vulnerable nature areas.

Currently, these agricultural restrictions are still being discussed by the Dutch government and it is not clear yet when and how these measurements are going to be

implemented and what this means for the dairy sector. However, what is clear for the dairy farmers is that these restrictions together will mean a shift in their business operations and revenue model. Farmer Ruud explains his feeling as follows: “There is a dark cloud over our heads. So, there are a lot of things coming our way.”⁶ The dairy farmers feel that their position in the world’s economic market is going to change, and so is their social position in the Netherlands.

These changes in European Union and Dutch policies have been characterized as a shift towards post-productivism, a new paradigm that strives for less artificial chemical processes and more natural processes that initialize more sustainable producing practices, which subsequently would benefit ecosystems and landscapes (Karimi et al. 2021, 5469). It is seen as a way to cope with ecological hazards (Ward et al. 2008, 118), and shapes the current social desired image of Dutch agriculture. However, it questions the logic of advanced capitalist economies that used to shape modern agriculture given that it would mean less intensive production and a change in business models (Karimi et al. 2021, 5469). As this research will show, dairy farmers do not perse oppose the mission to combat ecological hazards, and subsequently climate change, since they are highly aware of their livelihood’s collaboration with and dependence on nature and animals, and the farmers’ adaptability enables them to take on a new position in society. It is, however, interesting to see the variety of responses to this shift towards more eco-friendly ways of farming. The range is from farmers who are protesting against new policies to farmers whose visions are in line with the restrictions. Nevertheless, the overarching trend in these personal visions is that the farmers see this change as being the opposite of what was expected of their sector after the Second World War. Dairy farmer Huib explained his vision of the farmers’ current social position during an interview:

Huib: “The last years, there has simply been a focus on: ‘we need less.’ But they [Dutch government] themselves do not realize that there is a world population, and that population just keeps growing. All those people have to eat. And I think, being the Netherlands, you have an obligation to partly absorb that.”

Sarah: “Why is the Netherlands obligated to that?”

Huib: “Because the Netherlands has an extremely good climate for the agricultural sector. You have quite some rain, a maritime climate, and thus moisture. We have winters that are not too harsh, and we have summers that are not too hot either.

⁶ Interview, Ruud, 14-04-2022.

Look, if you go to France, for example, it is all quite dry and warm. Of course, you can still grow crops, but to produce milk... You just need a lot more land. For example, if you see a farm for sale in France, you need a hundred cows and hundred hectares of land, so that is one cow per hectare. Here in the Netherlands, you can have two cows on one hectare, so you have enough with half the land. If you go to Denmark, you have much shorter growing seasons, so you also have fewer yields from a hectare of land, which makes you less sustainable, I think. That is not a bad thing, but from that point of view I do think that the Netherlands has an obligation.”

Sarah: “A certain social obligation?”

Huib: “Yes, for the entire world actually.”⁷

Here, the complexity of the productivity versus sustainability paradox Huib finds himself caught becomes visible. On the one hand, Huib witnesses how the Dutch government is implementing new policies toward ecological sustainability, while on the other hand he feels the responsibility to sustain food production. Consequently, the dairy farmers find themselves trapped in an impossible condition to make the right move: if they develop their farms towards more ecologically sustainable farming, they see it as neglecting their social task to sustain food productivity.

The conflict situation between productivity and ecological sustainability positions this research in the discourse of *sustainability*. Anthropologists as well as other scholars have shown sustainability is not only defined in terms of ecological and environmental concerns, but also by social and economic interests (Blühorn 2009; Cleveland 1998; Solow 1991). Particularly within agriculture the complexity of these three elements becomes clear: its goal is the production of food for (growing) populations, it depends on environmental resources, and has economic reasons such as generating an income and responding to the economic market (Cleveland 1998; Netting 1993; Sarker 2017). That is why Robert Netting (1993), in his contribution to agricultural anthropology, highlights that within agriculture, what one defines as *sustainable*, and what it is that one wants to sustain, depends on subjective values and must be seen in social and cultural context. As this research shows, Dutch dairy farmers currently experience standing in the midst of diverse subjective societal values regarding sustainability within agriculture. In other words, this research finds itself in the paradox of productivity versus

⁷ Interview, Huib, 21-03-2022.

ecological sustainability. A paradox in which it seems like whatever the dairy farmers choose, they can never do it fully right.

The double bind

The anthropologist Gregory Bateson and his co-authors (1956) described a similar conflicting and oscillating situation farmer Huib described as a *double bind*. They originally used it to describe the origins of schizophrenia and post-traumatic stress disorder. Bateson described this theory more extensively in his book *Steps to an Ecology of Mind* (1972). Known for his focus on relationships and interconnectedness of humans and entities, as an approach to make sense of the world, he explained the double bind as a conflicting situation an individual might find him/herself caught when paradoxical messages are being imposed on him/her. The individual feels the need to make a choice between two equally valued injunctions, and it is not clear what the real message is. Therefore, feeling trapped in a double bind means making a choice or responding to a paradox in which one feels that the right choice cannot be made. Choosing one would mean neglecting the other. Consequently, it is experienced as “unresolvable sequences of experiences” (Bateson 1972, 206) that lacks stability and subsequently causes emotional distress and feelings of disorientation (Gibney 2006, 50).

This theory has been used more broadly and had been referred to outside the psychology-related disciplines as well. It has, for example, been used as a theoretical framework to uncover moral contradictions within transnational NGOs (Redfield 2012), and as a tool to outline the paradox between growth and sustainability and the role local concerns play in experiencing it as a double bind (Eriksen 2018). I use it here as a framework to explain contemporary Dutch dairy farming and the underlying reasons why dairy farmers experience their temporal reality as “being in a split.”⁸ I argue that referring to the double bind is a useful tool for uncovering the contradictions the dairy farmers currently experience since it helps to approach contemporary changes in Dutch agriculture from the perspective of the subordinate actor, in this case, the Dutch dairy farmer. The double bind theory sheds light on their reasoning behind their experiences, explains their current feelings and responses, and encourages this research to look into ways of dealing with the paradox between productivity and ecological sustainability. In other words, by using the double bind theory as a theoretical framework, this research gives an answer to the following research question:

⁸ Interview, Huib, 21-03-2022.

How do Dutch dairy farmers orient themselves in contemporary Dutch dairy farming that is organized by the paradox between productivity and ecological sustainability?

Therefore, this research contributes to a better understanding of the lived experiences of a double bind, with respect to the productivity versus sustainability debate. It gives insights into dairy farmers' experiences of being food producers within contemporary changing global capitalism, which is organized by national and global ecological sustainability challenges. By this, the research objective also contributes to a holistic understanding of the current public and political agricultural debate since it takes socio-economic dynamics into account that shape dairy farmers' orientations in the paradox. By describing dairy farmers' adaptability and response to the paradox, their use and contestation of different knowledge regimes, and the conflicting notions of time, this research presents how Dutch dairy farmers orient themselves within the paradoxicality of productivity and ecological sustainability that shapes contemporary Dutch dairy farming.

Facts and figures Dutch dairy farming

This research has been conducted among Dutch dairy farmers. The Dutch agricultural sector is one of the biggest in the European Union. Consequently, its share in the environmental harms that agriculture causes is also one of the biggest. Particularly the dairy farming sector evokes significant ecological disadvantages, according to environmentalists (Van Grinsven et al. 2019, 1). It is important to note that dairy comprises more than just cattle milk. The goat and sheep dairy sectors are also being criticized. However, the public debate is mainly about the role of dairy cows since that part of the dairy sector has the biggest share in the total amount of nitrogen emissions (Van Grinsven et al. 2019, 4). Hence, I have decided to focus on Dutch dairy cows farmers.

Dairy farming shapes the Dutch landscape in such a notable way that it is seen as characteristic of the Dutch culture (Moerkerken et al. 2021, 2). The sector encompasses about 65% of the total area used by agriculture and is about 30% of the Dutch total land surface (Runhaar et al. 2020, 140). Dairy farms were traditionally founded in the northern and western parts of the Netherlands due to clay soil that was particularly suitable for the growth of pasture and useful for dairy cows. However, nowadays the sector is spread all over the country because of agricultural developments like fertilizer.

A relevant change took place from 2000 to 2016, when the number of dairy farms

decreased from 29.400 to 17.900, while at the same time the average size of the farms increased from 57 to 98 cows (Moerkerken et al. 2021, 2). This number kept growing and in 2021 the average was 103 cows per farm. This shows the intensification process the Dutch dairy sector went through, as the ‘go big or go home’ idea resulted in a decrease of 15.251 dairy farms in total in 2021 (Wageningen University and Research 2022). Although there was an increase in the average amount of cows on a farm, the total amount of cows decreased due to the farms that stopped after 2016: in 2016 there were almost 1,7 million cows, and in 2021 this number decreased to approximately 1,5 million. The decrease in the number of dairy farms is the consequence of environmental restrictions like the phosphate reduction plan. This entailed a brake on the growing numbers of cattle in the Netherlands.

The Dutch dairy sector plays a significant role in the Dutch economy which can be explained by the relatively high export rates. Of all the milk the Netherlands processes, about 35% remains in the Netherlands and almost two-thirds are destined for export. Dutch dairy delivered an export value of 7.5 billion euros in 2020 (Nederlandse Zuivel Organisatie n.d.). In the coming years, it is expected that the world's demand for dairy products will increase. The Dutch dairy farmers perceive they play an important role in the supplies because of their capacities (Melkvee 2018). However, possible new environmental constraints are hampering the development of productivity among Member States of the European Union. This is expected to get stronger in the future (Wageningen University and Research 2019).

Methodology

Uncovering dairy farmers' orientations in contemporary Dutch dairy farming meant finding options to engage in their lives in such a way that it helped me to understand the farmers' conflicting position. Ethnographic research is a good way to obtain a holistic, bottom-up perspective of the experiences and perceptions of a certain reality (DeWalt and DeWalt 2011; LeCompte and Schensul 1999, 1). Therefore, I conducted three months of fieldwork, from February to May 2022, that organizes this ethnographic research. I gained access to the research population by making use of my own network. I have family members who are dairy farmers, and I contacted dairy farmers I still knew from the city I used to live in. Subsequently, to expand my network, I made use of the snowball effect, in which initial contacts have generated further contacts (O'Reilly 2012, 4). Besides that, I approached dairy farmers on social media platforms like Facebook and LinkedIn. I consciously contacted female as well as male dairy farmers from all over the Netherlands and of different ages: the age of the farmers ranged from 19 to 72 years.

Hereby, I ruled out a too one-sided perspective on the research topic. Subsequently, the dairy farmers helped me to get into contact with other relevant involved actors in the dairy sector, such as: a vet, an editor for an agricultural magazine, a farmer's funding specialist, students of an agricultural education program, a teacher of an agricultural education program, fodder specialist, and a real estate company. Those actors together have helped me to understand the complexity of dairy farmers' position by telling me the interests they have in the sector.

During the fieldwork, I made use of methodological triangulation that allowed me to gather data in multiple ways. First of all, I made use of participant observation. A few weeks after the start of the fieldwork, I noticed this method became the overarching way of obtaining a holistic image of dairy farming. Originally, participant observation is described as a research method that allows the ethnographer to "take part in the daily activities, rituals, interactions, and events of a group of people as one of the means of learning the explicit and tacit aspects of their life routines and their culture" (DeWalt and DeWalt 2011, 1). I have had typical 'fieldwork days' in which this method was practised. For example, I have visited around ten times a dairy farm, have been working on a farm, helped milk three hundred cows, enjoyed a glass of fresh milk on a biodynamic dairy farm, watched the cows entering the pasture for the first time this season, and witnessed a cattle show day. However, I noticed this method allowed me to look further and take other forms of data into account as well. Since the topic of my research is embedded in the public debate, I noticed that wherever I was, I was conducting fieldwork: reading the newspaper meant taking notes about new policy interventions, and doing groceries made me aware of retail's and consumers' demands regarding dairy products. Even walking down the street and seeing advertisements on shop windows made me realize that the popularized perspective on sustainability could cause a blind spot for the other side of the 'what do we want to sustain' story. All these moments have helped me to gain a better understanding of the dairy farmers' position in society and have served as a basis for the informal conversations and interviews. To organize the data I gathered from these moments, I took notes in a notebook. Once I had the opportunity, I elaborated my notes on my laptop and subsequently analysed them.

Secondly, I have had conversations with dairy farmers. These conversations have helped me to dig deeper into the farmers' perspectives and uncover the farmers' reasoning behind their experiences (O'Reilly 2012, 119-120). I conducted twenty-two semi-structured interviews with dairy farmers. Moreover, with five of the dairy farmers, I have had contact on a regular basis. This entailed WhatsApp contact about new policies, telephone conversations about news broadcast items, contact by e-mail, and small talks during the visits. In addition, I have had

eight interviews with the other mentioned relevant actors. I have recorded the interviews and subsequently transcribed them to be able to analyse them. All the conversations with my interlocutors were in Dutch. Therefore, the quotes I use in this thesis are translated into English.

Furthermore, I made use of additional research methods to fill in the gaps in the data that was gathered by participant observation and interviewing. I used document analysis and reviewed non-academic documents, policies, flyers and factsheets, farmer union publications, and news articles. These documents helped me to uncover, for example, the messages the farmers receive from the government. Through this, I could see the possible conflicting demands, and they helped me to see if, what, and how the farmers have reacted to these demands. For example, the reports of farmers' unions have uncovered the farmers' own perception of their position in society. Besides the document analysis to fill in the gaps, I have also looked at social media platforms like Facebook to uncover more directly the social turmoil and unrest among dairy farmers. Social media platforms can be useful since they illustrate the expression of attitudes and opinions (Branthwaite and Patterson 2011). That is why, in the thesis, a Facebook post of the Dutch Dairy Farmers Trade Union is portrayed to illustrate this social unrest.

Lastly, it is relevant to mention that I kept a log as well as a diary during the fieldwork. The log was a useful way to structure my activities and process, while the diary helped me to reflect upon my positionality in this research. In the end, I coded my data and analysed it to be able to use it for this thesis.

Positionality and ethics

The above-described methodological approach helped me to generate a valuable and reciprocal relationship with my research participants. However, in ethnographic research, the line between researcher and research participants can become thin. As O'Reilly (2012) highlights: "We feel with our participants, smile with them, perhaps even cry with them" (O'Reilly 2012, 99). This ethical issue might influence the interpretation of the data. Hence, it is important for researchers to be reflexive about their roles in the research. My family's background in agriculture played an important role in developing empathy for my research population - something I was not aware of until the fieldwork started. Therefore, my position in the research became somewhat complex and asks for an explanation.

My family has a background in agriculture. Among them, it is most relevant to mention that I have an uncle and cousin who are dairy farmers. Although my connection with them is

not that strong, it is good enough to notice the emotional distress that arises during informal conversations about agriculture's sustainability transition. Nevertheless, about four years ago I moved to Utrecht, a city known for its left-wing voters, progressive policies, and vegan residents. In my social bubble in Utrecht, most of the people would identify themselves with at least one of these categories, including myself: I would identify myself as a left-wing voter and I do not eat that much meat and dairy products since I believe that contributes to a more sustainable planet.

Therefore, at the beginning of the fieldwork, I felt a certain distance between the farmers and myself. They sometimes referred to certain groups of people, like vegans, city people, or left-wing voters, as individuals who were not even close to understanding the truth of their contemporary situation. And since I personally can identify to a certain degree with those groups, this resulted in some conversations being a bit awkward at times. However, the further I got into the fieldwork process, the more empathy I developed for the dairy farmers. I began to understand why my uncle would become so emotional when we were talking about sustainability issues within the dairy sector. I almost began to feel sorry for him and his changing livelihood for which he worked so hard to establish. Consequently, I developed strong connections with both sides of the story. It was interesting to notice that during informal conversations about my research topic with my friends from Utrecht as well as with my family, I experienced empathy for arguments on both sides of this supposed divide. This almost resulted in a minor identity crisis.

To overcome this issue, I decided to explain this minor identity crisis during conversations with my friends, family, and research participants. It is, nevertheless, part of the reason why I conduct this research and have these interests. I explained to the farmers I wanted to hear their perspectives to understand the full story of this agricultural sustainability transition. The current turmoil in the agricultural sector is there for a reason, and I want to know why and how. And since an 'outsider' showed interest in their visions and experiences, and because I showed my empathy for their position, they in turn developed sympathy for me and this research. That meant that after explaining my minor identity crisis, they were happy to show me their reality. Therefore, clarifying my own position in this research has contributed to my engagement with my interlocutors. As a result, I was able to ask critical questions when the farmers talked about for them normalized and farming-related topics.

Other ethical issues in this research concerned the privacy of my research participants. Because my research was among dairy farmers, I have had interviews at, and tours around, the dairy farmers' farms. Most of the time the farmer's house was attached to the farm, and I have

often been asked to come inside to have the interview in the house. Before I went inside, I was aware I would enter the personal space of my research participant. To be sure this was fine for the farmer, and to guarantee his/her privacy, I mentioned this awareness and waited for approval before entering the house.

Furthermore, it is important to mention that in the context of the researcher's ethical principles to do the participants no harm, I asked for their informed consent for participating in my research. Moreover, to guarantee anonymity and protect their identity, I have used fictitious names for my participants throughout the thesis.

Introducing dairy farmer Sjaak

Dairy farmer Sjaak plays a significant role throughout the thesis. Sjaak and his family have helped me relatively a lot in understanding the perspective of the dairy farmer in contemporary Dutch dairy farming. Sjaak was what one would call a *key informant* (Marshall 1996). Besides the small talks, interviews, WhatsApp conversations, the articles Sjaak sent me, and the visit to his farm, Sjaak and I have had several phone calls that have been eye-opening moments for me. Therefore, I start each chapter with a short description of a telephone conversation that serves as an introduction to the chapter's subject. That is why some background information about Sjaak and his family should be given.

Growing up on his father's farm, Sjaak was born to be a farmer. Together with his family, he has developed the farm into a well-running dairy farm. "When I got out of school we had thirty-five cows. My vision was to always take the opportunities to grow, because in my view that was the best way to remain a farmer," he explained to me. By the time he took over the farm from his father, he had about a hundred cows. Currently, Sjaak is milking about 300 cows every day. "I did not grow up with the idea to be better or bigger than someone else. But I saw the most opportunities for me and the farm with growing. And what happened here in this area where I grew up; there were thirteen dairy farmers during my youth and one by one you saw them leave. And the great thing is that we have been able to buy or rent the land from almost all those farmers. So they have helped us growing. Now we are the only ones left here," he continued. During the years he has run the farm, he witnessed several changes in Dutch agricultural policies. Those changes have left a mark on his business operations, and he sees it as a challenge to stay a farmer these days.⁹ A challenge he is willing to take, as will become clear in this thesis.

⁹ Interview, Sjaak, 26-02-2022.

Besides Sjaak, my other interlocuters have also contributed in valuable ways and together they have shown me the perspectives of the Dutch dairy farmer. I believe this research is best conveyed by referring to the conversations I have had with them. Hence, throughout the thesis, I portray quotes, visions, thoughts, and opinions of the dairy farmers to let their perspectives come forward.

Structure

This thesis describes contemporary Dutch dairy farming by looking at three overarching concepts that organize dairy farmers' orientation: adaptation, knowledge, and time. Divided into three chapters, yet interconnect with each other, I connect each concept to the ethnographic data I have gathered during the fieldwork.

The first chapter, *Adaptation*, takes a closer look at the different elements of the double bind and, therefore, gives the reader a detailed description of the paradoxical condition the Dutch dairy farmers feel trapped in. By describing how the farmers seek for new opportunities to sustain their livelihoods, this chapter shows the dairy farmers' adaptability in contemporary Dutch dairy farming. Their adaptations make them perceive a shift in their role in the Dutch society from being solely a food producer to serving socio-economic demands in diverse ways.

The second chapter, *Knowledge*, describes the farmers' reasoning behind their adaptations and shows how knowledge places a role in the experienced double bind. I refer to the farmers' knowledge, or *boerenverstand*, to explain how farmers renegotiate the prevailing perspective of dairy farming being unsustainable and, thereby, describe how they challenge the notion of having one reality that is solely based on scientific knowledge.

The third chapter, *Time*, describes dairy farmers' oecological and structural time reckoning techniques that organize their perspective on change within the dairy sector. It illustrates how two notions of time intertwine and together shape dairy farmers' conceptualization of time in terms of recurrence, progress, and development. However, the chapter also shows that the Dutch government aims to reform the sector by implementing restrictions and policies with a different understanding of change and time. As a result, the different temporal horizons of the dairy farmers and the Dutch government has evoked an impasse in expectations of agricultural development and change.

The thesis ends with a conclusion that summarizes the main findings, answers the research question, and discusses the limitations and suggestions for further research.

Chapter 1. Adaptation

On March 15th, I had a phone call with dairy farmer Sjaak. In my fieldnotes I wrote:

Just when I entered my house after a long walk to clear my mind, I got a phone call from Sjaak. Recently, new messages of possible restrictions in the agricultural sector have been announced by the government. Sjaak explained that along with the unclarity there already was, he started to feel insecure about the existence of his livelihood: “We are vulnerable.”¹⁰

Some days after that phone call, I found out that Sjaak experienced these calls with me as useful as I did given that he used them as guidelines for a presentation he gave for a farmer’s association. He shared his notes for this presentation with me, in which he more clearly explained the metaphor he used during our conversation about this threatened feeling:

“I do see a future for our company in the coming years. (...) However, I do feel that I am becoming very vulnerable as a farmer. Compare it to a lapwing that can only have its nest on the ground and cannot move it. In this situation, the lapwing is threatened from all sides and is robbed by crows, jackdaws, foxes, etcetera, all of whom themselves have nothing to lose.”¹¹

It is interesting to hear Sjaak using a lapwing as a metaphor for farmers. The lapwing is a protected meadow bird for which dairy farmers are economically encouraged by, among others, dairy cooperatives to make bird swamps in their pastures. Therefore, Sjaak said during the phone call: “The lapwing is already a scarce animal, but now it is also being made hard for him to survive. (...) They are all pecking at the farmer.” Sjaak comparing the lapwing’s living conditions to that of the farmers’ illustrates not only the insecure situation the dairy farmers are currently in, but also the need to create alternative ways to be protected and survive nowadays as a dairy farmer. This chapter illustrates Sjaak’s metaphor. It describes in more detail the lived experiences of the double bind theory of Bateson (1972), organized by the paradox between productivity and sustainability. I do so, by zooming into different elements of the double bind experience: the conflicting demands, emotional distress and instability, the consideration of how to approach the paradox, and, lastly, the creative response. Thereby, I illustrate how dairy farmers turn conflicting demands into a challenge that they are willing to take on due to what

¹⁰ Fieldnotes, phone call Sjaak, 15-03-2022.

¹¹ Fieldnotes, text Sjaak, 20-03-2022.

they describe as their “adaptability.”¹² Subsequently, I describe the farmers’ creative response to the paradoxical experience, as they are finding alternative possibilities to fit the desired societal image and sustain their livelihoods. By this, one can see not only the changing interpretation of agriculture the Dutch society has but also the shift in the social role the dairy farmers themselves perceive they can and should have in contemporary Dutch dairy farming.

The conflicting demands: “It is a tension field”

The threatened feeling Sjaak described is contextualised by conflicting socio-economic demands, including political messages, that generate an unclear and contradictory present for the dairy farmers. Dairy farmer Arie explained this: “Just when you have one thing on track, it has to be different again. That makes this work so difficult.”¹³ A clear example of this can be seen during the interviews. Farmers often referred to the confusion in 2015 when after about thirty years the dairy produce quota was abolished. This restriction had been used by the European Union to intervene in agriculture. The aim was to control rising milk production. However, Sjaak explained, “there would be many opportunities in the world market, so that quota needed to be abolished.”¹⁴ With the abolishment of the quota, it became possible to increase milk production and dairy farmers saw this as an opportunity to expand their farms. “The farmers were looking forward to seeing it [the quota] being abolished. And well, in 2013, 2014, and 2015 everyone was building [more stables]. And then those stables were filled with cattle as well,”¹⁵ described farmer Huib. Hence, the farmers think that the Dutch government should have foreseen an increase in livestock numbers. But, as Huib continued his description, they did not. As a result, it seemed as if the Dutch government was overwhelmed by the “dairy sector exploding.” Subsequently, due to the increased number of cattle producing phosphate, the Netherlands exceeded the Dutch phosphate ceiling set by the European Commission. In 2018, the Dutch government was forced to introduce a new restriction, which is still in use today: the phosphate rights. That meant that no more manure can be produced than the number of phosphate rights a dairy farmer possess. Nowadays, those rights are hard to obtain. It has put a limit again on the economic growth of the dairy farmers. So, a new kind of quota arose through which the government could have some control again over the dairy sector.

¹² Interview, Kees, 10-02-2022.

¹³ Interview, Arie, 10-02-2022.

¹⁴ Interview, Sjaak, 26-02-2022.

¹⁵ Interview, Huib, 21-03-2022.

“It is kind of like you have been in jail for thirty years, they let you go, and once you are twenty yards out, they shoot you.”¹⁶ – Farmer Piet’s experience of the introduction of the phosphate rights.

Here, one can see a specific oscillatory movement between the motivation to increase productivity and the subsequent urge for less intensive farming practices that demand ecological sustainability goals. A conflict in political interests, one could say. But this conflict is not the only one. With the national housing shortage in mind, the housing sector has its eyes on the space of the farmers and claims the urgent need to use agricultural land (Kok and Eichholtz 2022). The land the dairy farmers need if they want to undergo the transition towards more extensive or sustainable business operations, such as organic agriculture.

However, it is not just the government that imposes conflicting demands. Other actors have gotten involved as well and have started to express their interests. Environmental organisations such as Milieu Defensie argue for reformations in the agricultural sector as the means to solve the nitrogen problem (Milieudefensie 2022). In addition, animal welfare organisations like *Wakker Dier*, fight for an improvement of livestock’s living conditions, including more space for the animals and less intensified farming practices (Wakker Dier 2022). The fact that these visions receive support from Dutch citizens became visible during, for example, the climate marches that illustrate NGOs’ interests are in line with that of the Dutch public (Klimaatmars 2022). Consequently, some farmers feel almost unwanted in society, and it has resulted in sentiments like this expressed by farmer Piet: “Farmers are like hunted cattle.”¹⁷

Nevertheless, the economic market is giving opposite demands and as food producers, farmers have to respond to those economic market demands as well. The world’s demand for dairy products has increased in the last years and is expected to keep growing, according to the European Union Agricultural Outlook (European Union 2021). However, a trend report on Dutch consumer behaviour states that the market share of organically produced products in Dutch supermarkets is 3.26% in 2020 (Bionext 2020, 7). So, while the Dutch dairy sector is making its changes toward more eco-friendly ways of producing, the consumer is demanding the opposite. According to farmer Rick: “Consumer and citizen are sometimes very different entities.”¹⁸

Reacting to both the world market demands and society’s desire for more eco-friendly

¹⁶ Interview, Piet, 18-03-2022.

¹⁷ Interview, Piet, 18-03-2022.

¹⁸ Interview, Rick, 03-03-2022.

ways of farming has resulted in the continuously back and forth movement that shapes contemporary dairy farmers' livelihoods. Farmer Mats referred to the farmers' current condition as "a tension field, and as a farmer you are right in the middle of it."¹⁹ Here, Mats made a clear distinction between the farmers who are subordinate in this paradox and the different actors that produce it. In Bateson's (1972) description of the double bind, he highlights that the individual feeling trapped in the paradox, and the individual who has caused it, have a complex relationship that plays a prominent role in creating and continuing the paradox. Bateson makes a division between two roles: *the victim*; the one feeling trapped in a conflicting choice, and *the sender* of those messages and thus the one putting the victim in this condition. During my fieldwork, the dairy farmers described their position with characteristics that are in line with the victim's condition. Besides highlighting that they are the ones who need to adapt due to changing socio-economic demands and new policies, the farmers use more concrete terms that show they feel they are the victim of this paradox. For example, farmer Julia said: "They [Dutch government] make it so difficult for the farmers that the farmers eventually will stop."²⁰

The sender, on the other hand, would in this case be the diversity of interests that stir up the conflicting messages and organize the paradoxical condition, including lived conflicting experiences produced by the paradox. It becomes clear that the sender is not just one or two individual(s), as originally described in the double bind (Bateson 1972, 206), but rather all the actors together that demand conflicting outcomes from the dairy farmers. It explains why farmer Mats described his feeling as follows: "It is like a spider's web that you cannot get out of."²¹ In other words, the sender in this story entails the Dutch society, including citizens, consumers, NGOs like environmental organisations, and the government.

Bateson (1972) continues his explanation of the complex relationship between the victim and the sender. He states the victim feels the sender has a form of authority over him/her due to the victim's dependency on the sender. The dairy farmers depend on the Dutch society and are, for example, subjected to national politics. Thereby, the Dutch government's power becomes visible as political interventions can put the dairy farmers in the paradoxical condition. Farmer Klaas explained: "They just want to keep control of your business."²² This power forms the basis of the intense and complex relationship between the victim and the sender. It is felt as the victims aim to maintain the bond between him/her and the sender" (Gibney 2006, 50).

¹⁹ Interview, Mats, 08-03-2022.

²⁰ Interview, Julia, 22-03-2022.

²¹ Interview, Mats, 08-03-2022.

²² Interview, Klaas, 17-03-2022.

Therefore, the dairy farmers feel the pressure to understand the messages correctly – they have to get the communication right. To maintain this relationship, the dairy farmer feels pushed to make ‘the right choice’ – something which seems almost impossible regarding the variety of interests. Farmer Huib explained: “It is like being in a split. You know better yourself, but you cannot get them to turn around.”²³ This is in line with the victim being unable to communicate the unresolvable paradox he/he feels trapped in. Consequently, the paradox returns as an oscillation produced by the feeling of ever-changing wished outcomes of the involved senders.

The instability and emotional distress: “There are a lot of unclarities”

Farmer Klaas explained that this web of conflicting socio-economic demands produces unrest among dairy farmers: “There is no long term perspective anymore from the government these days. So I can say, ‘I am going to do that’, then you do that but in five years, they want something completely different all at once.”²⁴ And farmer Sjaak said: “The thing that is clear, is that there are a lot of unclarities.”²⁵ Drawing from Bateson (1972), emotional distress and feelings of instability are states of being that are caused when an individual feels trapped in a double bind. These characteristics of the double bind have become visible on a more concrete level in the Dutch society, like during the farmer’s protests in the Hague. But it became also clear by reading visions and opinions on social media platforms in which farmers share their unrest. An example of this is a post on the Facebook group of the Dutch Dairy Farmers Trade Union on January 18th 2022, just a few weeks after a new coalition agreement has been created by the Dutch government. The post said:

“TRADE UNIONS DEMAND CLARITY

With the new coalition agreement, the Rutte IV cabinet is causing so much unrest and uncertainty among (dairy) farmers in various regions that the four trade unions NMV, POV, NVP and NAV [agricultural trade unions] first want to make clear agreements with the ministers before they start all kinds of consultations (particularly on nitrogen) in the provinces.”

Subsequently, a letter is shared that is written by, among others, the trade union and directed to the Ministry of Agriculture, Nature and Food Quality. It expresses their distress and it demands

²³ Interview, Huib, 21-03-2022.

²⁴ Interview, Klaas, 17-03-2022.

²⁵ Interview, Sjaak, 26-02-2022.

for a clearer policy. The introduction of the letter states: "The new coalition agreement and the large pile of nitrogen reports from 2021 have not in the least brought clarity to the countryside. On the contrary, they cause great uncertainty and a lot of unrest among our farming families." This illustrates not only that the farmers want to express their thoughts about political interventions and discuss them with like-minded people from their sector, but also shows that they want to make this clear to the Dutch society.

However, in the last few years, the media has often placed farmers' expressions of emotional distress and concerns about unclear policies in a discourse of agricultural resistance against national climate politics. For example, an online article from July 10th 2020 in the Dutch newspaper *NRC* described demonstrating farmers in 2020 (NRC 2020). The introduction stated:

“Demonstrating farmers

Farmers take action. Again. Last year, they launched a massive campaign against plans to drastically reduce nitrogen emissions from agricultural companies, so that the requirements for European protected nature areas can be met. The protestors' anger is now focused on the government's plan to ban protein-rich concentrates for cows from the next autumn, a measure that should contribute to nitrogen reduction.”

It portrays farmers as angry citizens who stand up for their farming-related interests. Another, more recent article of the Dutch public broadcaster appeared on April 15th 2022 and described that farmers are walking away from conversations about the buyout arrangement. The headline stated: “Farmers suspend talks about buyout” (Olde Hanhof 2022). Looking at these statements in the media might generate the impression that the farmers are resisting more sustainable ways of farming, or that they are incapable of transforming. It would be in line with the idea that the victim in the double bind tries to escape the paradox by defending oneself against all demands (Bateson 1972, 210). However, according to the farmers, the media is portraying a one-sided, often negative image of the farmer. Farmer Klaas explained: “The media is framing it [this negative image]. (...) The media is just anti-agriculture. Quite a few positive reports have also been written. But you never read those.”²⁶ Furthermore, during the fieldwork, I noticed that expressing their emotional distress and disagreements does not mean that dairy farmers oppose the Dutch goal of combating ecological hazards. Nor are they trying to escape reality by ignoring the conflicting and threatening demands. On the contrary, the opposite of this resisting image seemed to be the case, as I have seen farmers trying to adapt to all receiving demands.

²⁶ Interview, Klaas, 17-03-2022.

The challenge: “Farming is like ecology”

Drawing on Bateson’s (1972) description of the double bind, the victim feels the need to respond to the paradox in an appropriate way while it is not clear what the right answer is. But instead of ignoring this paradox, Sjaak illustrated how he sees the overwhelming situation as a challenge:

“Compare the farm with the Rubik's Cube:

Plane 1: Long term economics;

2: Short term economics;

3: Consumers;

4. Personal circumstances;

5: Citizens and NGOs;

6. Regulations and interventions.

The trick is to always keep the cube in the right colours. How well are you able to adapt again and again across all those planes? Understandably, if you lose the skill and/or passion it becomes difficult.”²⁷

It is a challenge to continuously place the planes in the right way concerning the conflicting messages producing the paradox. During the fieldwork, I visited several farms. Those visits have helped me to see the entwining of farmers’ personal lives with their farms. Hence, I got the chance to uncover the deeply rooted social and personal dynamics underlying the farmer’s capacity to deal with the conflicting demands and to take on the challenge to solve the Rubik’s Cube.

While my initial aim was to see the farm and talk about topics related to the farm, I often got invited into the farmer’s house to which the farm was attached. Visiting a farm would thus mean entering a farmer’s personal space. A personal space that was relatively concrete and visibly shaped by the fact he/she is a farmer. For example, farmer Huib was drinking coffee during the interview that was poured into a cup with a tractor portrayed on it. It matched with the clock on the wall which had an image of cows on it. Furthermore, while walking through the house, I could often see a family picture that was taken on the farmer’s land with his/her cattle as background. Moreover, while I was having a conversation with the farmers at the kitchen table, their family members could enter the room. Subsequently, I met some farmers’

²⁷ Fieldnotes, text Sjaak, 20-03-2022.

partners who were often involved in some way in the farm's business as well. I even got a glass of fresh milk once to "get the full experience" of farmer Jet's life on her biodynamic farm.²⁸ Thus, the dairy farmers' livelihood is signified by their farm and subsequently their cattle. As the farmers themselves said: "Farming is a way of life,"²⁹ and: "Work and leisure are entwined: it is your cattle, your home, your life."³⁰ Maybe that explains why almost every dairy farmer I have spoken to has a cow or other dairy farming-related image as his/her social media or WhatsApp profile picture. It is probably the outcome of the "passion"³¹ they have for their profession. This 'farmers' passion' is by far the most mentioned characteristic dairy farmers think is necessary to have these days to continue farming. Farmer Huib explained this to me during an interview:

Huib: "I think it is kind of a real passion. You still have a headwind. So you have to persevere in your craft, so to speak, in order to keep on doing it."

Sarah: "So, if you do not have a passion for it [farming], you cannot exist?"

Huib: "No, those farmers have often already quit. Look, over the last years with all those rules, you have already kind of thinned out [the number of farmers], but you keep the farmers with passion."³²

Although Huib's explanation highlights the important role intrinsic motivation has in continuing farming nowadays, it does not clarify how this passion becomes an element of survival with regard to concrete practices and helps dairy farmers deal with the diverse interests, conflicting demands and threats. It explains neither how the dairy farmers acquired this passion nor how they maintained it. During those farm visits, however, the farmers told and showed me that the underlying explanation of this passion can be found in a core characteristic and skill of farmers:

During the tour around Sjaak's farm, it became clear to me that besides everyday practices that needed to be taken care of to sustain the cattle, like feeding, it is also the farmer's job to keep an overview of all manageable processes that are happening on the farm. For example, the farmers need to search out what fodder is best for their cows, something that can change over time and depends also on each cow's

²⁸ Fieldnotes, Jet, 23-03-2022.

²⁹ Interview, Rick, 03-03-2022.

³⁰ Interview, Sjaak, 26-02-2022.

³¹ Mentioned during interviews with several dairy farmers.

³² Interview, Huib, 21-03-2022.

individual needs. They need to have a close look at each cow individually to spot possible signs of illness. An ill cow could mean a decrease in the quality of milk but could also be a sign that the farmer should change some of his farming practices to sustain the health of their cattle. Moreover, the farmer needs to be aware of each cow's biological cycle to sustain milk production. But there are also practices concerning the environment. Think about keeping track of the changes in the land as well as the weather, because that would call for different farming practices. For example, the farmer knows when to mow the land and understands if and when the land is ready to start the grazing season.³³

It is the farmers' task to constantly anticipate nature's demands, including cattle's needs, to sustain their farm. Because of this everyday interaction with, and dependence on, ecology and animals, the farmers are well aware of the harms caused by them, which eventually can harm their livelihoods: "There is no farmer that would hurt his cattle on purpose,"³⁴ Sjaak said during an interview. A few weeks later when I visited him, he further explained that statement: "It is of no use to a farmer to treat his cattle badly." In addition, farmer Kjeld explained: "The difficult thing for the food producer is, however, that he produces with his environment. He needs the environment. So, the earth is literally and figuratively his means of production. You just have to deal with this responsibility."³⁵ However, right before he explained this to me, Kjeld highlighted another relevant aspect: "If you make something for which there is no support, you will ultimately be side-lined. That applies to every producer." Here, Kjeld sheds light on not only farmer's interaction with, and dependence on, nature's condition, but also on farmer's required anticipation skills regarding changing socio-economic demands. Farmer Huib explained this as: "We have to fit the image the citizen wants us to be."³⁶ It shows a farmer needs the capacity to adapt to changes to maintain his farming practices, and subsequently his farm. That explains why during a conversation farmer Steven described the nature of farming as follows: "Farming is like ecology: if you do not adapt, you will die."³⁷

Steven's view on farming is in line with Dutch agricultural historian Jan Bieleman's statement of seeing agriculture as *applied ecology* (2008, 15-16). Bieleman makes his statement

³³ Fieldnotes, visit Sjaak, 23-04-2022.

³⁴ Interview, Sjaak, 26-02-2022.

³⁵ Interview, Kjeld, 29-03-2022.

³⁶ Interview, Huib, 21-03-2022.

³⁷ Interview, Steven, 24-02-2022.

by referring to archaeologist Peter Reynolds's words in his influential book about ancient farming:

“Farming does not just happen, whether it is ancient, historic or modern. It is an extremely complex process requiring great skills in balancing the different component elements, inputs and outputs, gambling against the greatest uncertainty of them all, the climate, and managing to have sufficient reserves to survive the worst possible outcome” (Reynolds in Bieleman 2008, 16).

Here, applied ecology refers in particular to attempts to control processes related to nature. However, Steven's reference to farming as ecology is placed in the context of farmers' ongoing adaptation to socio-economic demands as well. He uses ecology to describe the core feature of farming concerning farmers' capacity to adapt. It is the reasoning behind the 'why' and 'how' dairy farmers are currently able to approach the unresolvable paradox as a challenge they want to take and explains why farmer Kees described farmers' role as: “We constantly have to adapt. As an entrepreneur, you can decide a lot of things for yourself. However, you need to have the courage to follow the demands of the consumer.”³⁸ Therefore, the adaptability of the farmers plays an important role in surviving nowadays as a farmer in contemporary Dutch dairy farming.

The creative response: “We also make electricity”

The dairy farmers want to take on the challenge to solve the ‘Rubik's Cube’ to survive in the ecology of socio-economic and nature's demands. However, farmer Arie mentioned a relevant requirement for the adaptation to happen. While he talked about his willingness to adapt to ecological sustainability-related restrictions, he added that “it needs to be workable.”³⁹ During my visit to farmer Kees, I noticed how this ‘workability’ comes into practice. While Kees showed me around his farm, I saw he already practised various more eco-friendly farming techniques. For example, he meets the requirement for sufficient grazing time. “It gives you so-called sustainability points, which provides a higher price for the milk you deliver,” he explained. This shows that one's adaptability in this sustainability transition is connected to economic spheres. That is why farmer Kees said earlier that day: “We are stuck in the system.” With ‘the system’ he referred to the agricultural sector being shaped by the neoliberal,

³⁸ Interview, Kees, 10-02-2022.

³⁹ Interview, Arie, 10-02-2022.

capitalistic market system, in which he sees it as a necessity to have intensified farming practices. Otherwise he would not be able to pay his costs. He explained:

“I would be fine with milking eighty cows less, but how am I going to pay my bank? How am I going to pay those fixed costs? A new revenue model must then be developed because the money has already been spent.”⁴⁰

An economic incentive like the ‘sustainability points’ increased Kees’s ability to fit the image society wants him to be. However, Kees expressed that if no other agricultural-related developments are possible on his farm, like an increase in the number of cattle, he would probably decide to invest in a solar park. He will have to, he said to me, since investing and developing with a focus on growing is part of sustaining the farm as a business in the neoliberal capitalistic system he finds himself stuck in. This shows that once part of the economic system, the farmer stays subjected to the paradigm of growth capitalism, which shows a limitation of their adaptability (Eriksen 2018, 426).

The farmers’ adaptation to societal demands as food producers is even more complex than I thought. This became clear to me during my visit to dairy farmer Guus. While we walked around his farm, he showed me the side activities he does concerning more sustainable entrepreneurship. While watching his bird swamp on his pasture, he sighed and said to me: “Yeah, I do think this is the farming of the future.”⁴¹ By ‘this’, he referred to the environmental or social-related side activities a farmer can, or in some eyes even should, practice to fulfil the socio-economic demands, like his bird swamp. In the last few years, farmers have started side activities for different reasons. This could be coming from personal interest, like farmer Ruud who is planning to start a care farm, but other farmers have told me explicitly their interests in nature-related practices. And there are also farmers who refer to these side activities as new, economic possibilities they need to take nowadays to sustain the farm. One example is farmer Gijs, who sees the current uncertainty and contraction as a platform for economic market opportunities:

“The reason I became a dairy farmer is partly because I see it as a great opportunity as an entrepreneur. (...) It offers many possibilities. But if you are talking about

⁴⁰ Interview and fieldnotes of visit, Kees, 10-02-2022.

⁴¹ Fieldnotes, visit Guus, 30-03-2022.

original farming, then I do not see that much perspective. I have to broaden myself as a farmer.”⁴²

Gijs explained that this means he is planning to spread the financial risk by starting secondary activities besides farming. And there are other kinds of examples in which dairy farmers currently aim to fulfil ecological as well as economic sustainability demands. They have, for example, collaborations with farmers who cultivate plants so that their land is used more efficiently.

As we walked further, Guus talked about his neighbour, also a farmer, who wanted to invest in a solar park in his pasture next to Guus’s bird swamp. While from my perspective it seemed like the business models of Guus and his neighbour were aligned, Guus saw it differently. Guus’s bird swamp would be disadvantaged with the coming of a solar park next to it given that it can mess up the favourable environment for the birds Guus aims to help. Therefore, Guus countered his neighbour’s plan since it could have thwarted his own eco-developments. The fact that farmer Guus opposed his neighbour’s eco-investment showed that the farmer’s adaptation is complex. In order to sustain your dairy farm today, and fit the desired image, a farmer should seek new opportunities to fit this sustainability image. For Guus, that meant being opposed to his neighbour’s eco-investment.

The dairy farmers have shown that they are finding alternative, workable ways to fit the image of a sustainable farm while also being economically sustainable. They are looking at possible different ways when increasing dairy productivity may not be possible. This response to the paradoxical experience can be related to another element of the double bind theory. Bateson argues that although the victim experiences emotional distress because of the unstable condition, “the total experience may promote *creativity*” (Bateson 1972, 278). Taking this element of the double bind into account can uncover creative realignments of the conflicting messages that might provide new possibilities (Cattelino 2010, 253). New possibilities that help the dairy farmer sustain his livelihood, as has become visible by my interlocutors. With the increased number of dairy farmers starting, among other things, solar parks, care farms, and ecological beneficial services like bird swamps, it becomes clear that nowadays ‘just’ being a dairy farmer with a focus on the production of milk is not sufficient enough to sustain one’s livelihood. Consequently, farmer Kjeld sees the role of the farmer in the Dutch society changing: “We do not just make food, we also make, for example, electricity.”⁴³ It illustrates

⁴² Interview, Gijs, 11-04-2022.

⁴³ Interview, Kjeld, 29-03-2022.

that the original interpretation of dairy farming is changing and that the paradoxical experience has caused a shift in how dairy farmers give meaning to their role in society: from contributing to society only in the form of being a food producer, to contributing to society by fulfilling more socio-economic demands depending on one's possibilities. The way the farmers are shaping their new interpretation of dairy farming is embedded in their expertise in the sector: they know which adaptations were 'workable' and which are not. Hence, the next chapter will elaborate on the concept of *knowledge* in contemporary Dutch dairy farming.

Chapter 2. Knowledge

The first time I spoke to farmer Sjaak was on a random Tuesday afternoon when I called him. My plan was to ask if he wanted to participate in my research. However, before I even realized it, the phone call turned into a spontaneous brainstorm in which Sjaak shared some of his thoughts with me. In my fieldnotes I wrote:

Sjaak and I had an interesting talk about how Sjaak thinks the Dutch citizens only see an unsustainable side of the dairy sector and not the positive aspects Sjaak wants them to see. By the raising of his voice, I could notice Sjaak was getting more and more emotional about this topic. It almost felt like Sjaak was convincing me to see the more sustainable side of the sector. It made me wonder: did I not see it right yet? Was there even a 'right' in this situation?⁴⁴

I have had these telephone brainstorm sessions with Sjaak often. Those sessions helped me in getting answers to questions I had and gaining new insights into my research topic. But while writing down the details of each conversation, including the changes in Sjaak's volume and tone of voice, I noticed that together these sessions most of all showed me the high level of intrinsic motivation Sjaak had in telling me his perspectives on research-related topics. Writing this down made me also realize that his enthusiasm was not unique. Other farmers showed me this level of engagement as well. Farmer Rick, for example, sent me articles about farmers claiming that the government uses wrong measurement instruments that lead to false interpretations of the realist extent of the nitrogen problem.

Apparently, the farmers wanted me to see their side of the story to fully understand what it is like being a dairy farmer these days. They wanted me to understand the farmer's perspective of the aspects of dairy farming that appeared in the media. But it made me wonder why the dairy farmers felt the need to inform me about their perspectives particularly when I was not even asking about it. It relates to an exchange I had with farmer Willem during a phone call on the 21st of February:

⁴⁴ Fieldnotes, phone call Sjaak, 15-02-2022.

Willem: “I hope you can show the truth for once.”

Silence

Sarah: “I hope so too.”⁴⁵

In what follows, I zoom into the dairy farmers ‘truth’ and illustrate how the notion of *knowledge* places a role in dairy farmer’s experience of the double bind. Social scientists have contributed in various relevant ways to the concept of knowledge, and have shown that knowledge and ‘knowing’ generates an individual’s perception of reality (Barth 2002; Latour and Woolgar 1979; Raedeke and Rikoon 1997; Santos 1992). Together, their studies refer to knowledge as “all the ways of understanding that we use to make up our experienced, grasped reality. (...) Thus a person’s stock of knowledge structures that person’s understood world and purposive ways of coping in it” (Barth 2002, 1). Furthermore, Fredrik Barth (2002) has put a focus on the social context of an individual and claims that knowledge is produced in the context of social relationships. I use this as theoretical background to show how Dutch dairy farmers’ double bind experience is produced by opposing perceptions of sustainability within dairy farming. I do so, by arguing that power places a central role in creating generally accepted knowledge that, subsequently, results in the prevailing perspective that the dairy sector is unsustainable. Nevertheless, farmers challenge the notion of having one ‘truth’, and thus one reality, by appealing to their farmers’ knowledge, or *boerenverstand*. I illustrate how their *boerenverstand*, which is embedded in practical as well as scientific knowledge, empowers them to determine for themselves which new agricultural developments are functioning and which are not. However, I also show how their *boerenverstand* has a blind spot what can be problematic for farmers’ conceptualization of sustainability.

Prevailing perspectives: “Citizens never get the complete picture”

According to the dairy farmers, the starting point for why society is currently mostly seeing the unsustainable side of the dairy sector is the decreased degree of involvement from citizens in the agricultural sector. Farmer Huib explained how he thinks citizens have lost their agency in constructing knowledge about agriculture by themselves:

“It is in itself very easy to say from The Hague [the Dutch government] that there should only be fewer cows because emissions have to be reduced. Because if a party

⁴⁵ Fieldnotes, phone call, Willem, 21-02-2022.

starts shouting, 'we will fly less' or 'flying will become more expensive', then all their voters will walk away. So, they take a weak sector, a smaller sector. That used to be less in the past, I think, because everyone knew someone who was an agricultural entrepreneur, but now that is just not the case anymore.”⁴⁶

And farmer Klaas said: “We are the minority. In the past, you had a lot of farmers, and in that past everyone had a farmer as a close relative. That is also decreasing.”⁴⁷ Therefore, in the eyes of the farmers, citizens have lost sight of the purpose and social value of agriculture in today's society, namely the sector's capacity to provide food supply. Consequently, farmer Rick argued that citizens think too easily about agriculture: “People think: ‘milk just comes from a carton.’”⁴⁸

Furthermore, the farmers have stressed the role NGOs and the media play in generating the unsustainable image of the dairy sector. They stated that NGOs gain public support by expressing their interests in the media – something the farmers do not see themselves doing because they are not used to stand up for themselves, explained Sjaak. In addition, farmer Ruud said:

“NGOs like Milieudefensie [for the environment] and Wakkerdier [for animal's rights], really want to shrink the sector. They just want to be in the spotlight and get sponsors. That is their revenue model. And it bothers me that people go along with it so easily.”⁴⁹

Although the farmers think it may only be a small percentage of the population that is opposed to agriculture, they argued that that percentage gets a lot of attention in the media. “And people are influenced by the media,”⁵⁰ stated Sjaak. Thereby, the farmers argued that NGOs' interests currently shape public debate about sustainability within their sector. Subsequently, they see how NGOs are able to put their ecological interests on the political agenda which, in its turn, reinforces the urge to transform the dairy sector.⁵¹ Farmer Mats described how he sees this:

“Citizens only hear in the media what is wrong [about the dairy sector]. The farmer sits there and looks at it. The citizens never get the complete picture.”⁵²

⁴⁶ Interview, Huib, 21-03-2022.

⁴⁷ Interview, Klaas, 17-03-2022.

⁴⁸ Interview, Rick, 03-03-2022.

⁴⁹ Interview, Ruud, 14-04-2022.

⁵⁰ Interview, Sjaak, 26-02-2022.

⁵¹ Interview, Frank, 14-03-2022.

⁵² Interview, Mats, 08-03-2022.

The farmers experience governmental interventions being made in a social environment that is influenced by NGOs interests, reinforced by the media, and subsequently adhered by the Dutch citizens. It is relevant to mention that NGOs' claims, as well as governmental policies, are, in general, substantiated by scientific arguments. For example, today's political interventions regarding nitrogen reductions are based on measurement models generated by Wageningen University and Research, a Dutch university and research institute known for its specialisation in agricultural research. The so-called *Critical deposition values for Nitrogen* are currently the guidelines for the government to decide if the nitrogen deposition in a certain area is too high and, thus, if restrictions need to be made for surrounding emitters, like farms (Wageningen University and Research 2021). The reliance on scientific knowledge is not uncommon in contemporary society since the use of science for the construction of facts, and subsequently the creation of a perception of reality, is seen as superior to other forms of knowledge construction, like practical knowledge systems (Thompson and Scoones 1994, 65). The validity criteria regarding sustainability in the dairy sector are, thereby, organized by society's general beliefs in scientific knowledge. That is why scientific knowledge forms the basis of political decisions.

In addition, the farmers have highlighted other societal aspects that, according to them, also shape the context in which policies are being made. Farmer Corrie added: "It seems like the government is tied to rules from Brussels [European government]. Brussels sets a ceiling."⁵³ Currently, to fit the European Union's standards, the Dutch government finds itself necessary to reduce the nitrogen emissions coming from the dairy sector. In addition, farmer Julia added another interest: "They just want more land available for the housing sector."⁵⁴ This perspective on the current restrictions explains why farmer Willem referred to situations in which he experienced the government searching for facts that work particularly in favour for their argument. He mentioned, for example, the manure surplus issue which was implemented to control the amount of manure produced by cattle on a farm:

"That manure surplus problem....It is simply being created. Because as soon as livestock farmers have innovated and they have come up with all kinds of solutions for manure processing to fit the standards, the scientists say 'we lower the standards', and then we have a surplus again."⁵⁵

⁵³ Interview, Corrie, 26-02-2022.

⁵⁴ Interview, Julia, 22-03-2022.

⁵⁵ Interview, Willem, 19-04-2022.

Willem experienced it as “the [Dutch] government want[ing] to maintain a problem to get rid of the farmers.” The farmers perceive the government’s search for evidence as a shift from ‘what are the facts?’, to ‘what would you like the facts to be?’ (Forsyth 1996, 377).

Here, I want to focus on the aspect of power in knowledge and subsequently in creating a prevailing perspective of the dairy sector being unsustainable. Referring back to Barth’s (2002) point about knowledge being produced by social relationships and thus its dependence on context, farmers’ perspective on the environment in which policies are currently made provide them an explanation of why certain perspectives on facts are adhered by Dutch society and why others are not. In addition, the role of power is reflected in the way the government, in combination with mainstream institutional scientists, can determine the standards that govern agricultural restrictions and can decide when the boundaries are crossed. Drawing on Forsyth (1996), it is therefore important to consider the power of perspectives within the construction of facts and knowledge. It is in line with philosopher Michel Foucault’s perspective on knowledge: “The criteria of what constitutes knowledge, what is to be excluded and who is designated as qualified to know involves acts of power” (Foucault, 1971 in Thompson and Scoones 1994, 63). Eriksen described such a similar capacity as *the power of definition*, by which he referred to the ability to make a certain version of reality authoritative (Eriksen 2017, 78). In this case, the Dutch government has the power to construct the boundaries by referring to facts that fit its political perspective. Thereby, the government has the means to produce a certain perception of reality. It is because of this form of power that farmer Rick feels that: “Citizens still see us as the big polluter.”⁵⁶

Subsequently, one can say that the actor with the power to make a certain perspective authoritative has also the power to place the dairy farmers in their current paradoxical condition. This relates to the power the sender has in generating a conflicting condition the victim feels trapped in (Bateson 1972). Since the farmers experience the power of definition lies by the government, media and NGOs, it clarifies how those actors are being perceived as the sender of the paradox and, furthermore, how their power of definition is central in producing the double bind experience for the victim; the dairy farmers (Bateson 1972; Eriksen 2017).

⁵⁶ Interview, Rick, 03-03-2022.

Dairy farmer's knowledge: using your *boerenverstand*

I wondered how the dairy farmers experienced this disempowered in their everyday lives. To the question: “Do you still feel you have full control over your farm?” most farmers answered they started to feel like they were losing it. Willem explained:

“You are still the boss of your own farm, but you have to have a certain .. how am I going to say this? **He sighs and is quiet for a second** If you want to supply meadow milk, for example, you can still do so but under certain conditions. But those conditions are determined by the dairy factory. Well, not just by the dairy factory, but also by *Wakkerdier* [animal rights organisation] and all those organizations that also think they have a say in it, even though they do not know much about it.”⁵⁷

It takes the thesis back to where it all started: the conflicting demands that cause an unstable situation for the dairy farmer. Although Chapter 1 has shown dairy farmers' adaptability and their ways of trying to fit the image society wants them to be, it still was not clear to me how the farmers know how to fill in this image. During my visit to farmer Guus, I got the chance to ask him how he dealt with this unclarity and vagueness. He answered: “You use your common sense, right?”⁵⁸ This “common sense” is something more farmers directly or indirectly referred to. For example, farmer Douwe explained how he tried to keep control over his livelihood:

“By doing the daily work. Some activities just need to be done. (...) By playing the game well. You just have to think about ‘who am I and what is it that I produce?’ (...) Think logically and wisely.”⁵⁹

It is interesting to take this reference to *common sense* into account when talking about Dutch farmers' orientations. This is, because there is a Dutch figure of speech that would be the Dutch way of saying ‘use your common sense’, being: use your *boerenverstand*. Both refer to practical knowledge and judgement for reasonable thinking (Cambridge University Press Dictionary 2022; Van Dale Woordenboek 2022). However, the literal translation of the Dutch figure of speech in English would be ‘farmer's knowledge.’ It made me wonder if the dairy farmers

⁵⁷ Interview, Willem, 19-04-2022.

⁵⁸ Fieldnotes, visit Guus, 30-03-2022.

⁵⁹ Interview, Douwe, 20-04-2022.

themselves perceive their common sense as a form of boerenverstand and thus as an exclusive form of knowledge solely constructed and used by farmers. And, moreover, if this figure of speech nowadays still makes sense, or if it no longer applies to contemporary dairy farming. I asked Willem:

Sarah: “What would you consider as boerenverstand?”

Willem: “Thinking down to earth.”

Sarah: “Do farmers still have a boerenverstand?”

Willem: “Yes, the farmers still have that.”

Reports and literature that refer to boerenverstand, mainly describe it as one’s ‘healthy consciousness’ that is used complementary to prevailing guidelines. Based on one’s boerenverstand, people make an exception to the rules they normally have to follow and decide for themselves what is reasonable and what is not (De Lange 2021). Therefore, to uncover how farmers’ knowledge is embedded in the paradoxical condition of the dairy farmers, I use ‘boerenverstand’ to see how dairy farmers construct their reality and how this challenges the current prevailing perspective of the dairy sector. Willem has highlighted an important component of his boerenverstand by continuing the conversation:

“And why [do farmers still have boerenverstand]? Because every day, they still stand with their feet in the dung or in the mud. They experience it [farming] in practice. But we are simply ruled by, for the largest majority, people who are so far removed from practice that they do not understand it at all.”⁶⁰

Here, Willem, together with earlier statements of Guus and Douwe, sheds light on the role farmers’ practical knowledge places in orienting themselves in their conflicting situations. Their present as well as their future might be insecure and unclear. Nevertheless, what is certain is the expertise they have in farming practices. As a form of applied ecology, Bieleman (2008, 15-16) stresses farmers’ expertise in their land, soil, cattle, water, climate, and so on. The farmers do know when the grass will grow and when the cows can go outside. When they need to milk their cattle and what fodder their cows are supposed to get. Thus, embedded in their everyday practices and expertise, their boerenverstand organizes farmers’ daily orientation in

⁶⁰ Interview, Willem, 19-04-2022.

contemporary dairy farming. It functions as a guideline for their everyday decision-making and gives them a form of authority in the near future, as the following chapter will show.

The farmers themselves referring to their practical knowledge as the way they try to keep control shows a degree of power their *boerenverstand* gives them in their current conflicting present. They stressed they are the ones knowing what works in their sector and what does not. Farmer Huib, for example, referred to a restriction in spreading manure in the summer:

“Every farmer knows that when it is 30-32 degrees, you should not be spreading manure because of the bright sun. But now there has to be a policy about this. I do not think that is necessary at all. But yet, when they [Dutch government] want to do it, they do. I really think those are silly rules.”⁶¹

Moreover, Willem explained how having this *boerenverstand* as a farmer distinguishes him from policymakers who are, according to him, using solely theoretical knowledge in creating a perception of agriculture: “Theory wants to dictate the rules of practice nowadays. That does not work because they have no idea what *in practice* means.”⁶²

More farmers have made a distinction between their practical knowledge about farming and theoretical knowledge based on scientific research that currently organizes agricultural policies. Some farmers have even started to question the construction of the facts solely based on scientific knowledge since it is not in line with their *boerenverstand*. For example, I asked farmer Klaas’s opinion about the functionality of a recent agricultural development called low-emission floors. This invention is based on scientific theory constructed by a Dutch research institute called Wageningen University and Research (WUR): “No it does not work. Sure, it worked somehow for a bit, but with something like that the circumstances should always be the same. But on a farm, the circumstances are never the same.” In addition, Klaas stressed his distrust in the WUR based on another aspect:

“Because at the WUR it is simply: who pays, who determines. That is just how it works. Do you want a research? Fine, then you get a research. What has the WUR ever brought me? Nothing at all.”⁶³

⁶¹ Interview, Huib, 21-03-2022.

⁶² Interview, Willem, 19-04-2022.

⁶³ Interview, Klaas, 17-03-2022.

Klaas questioned the objectivity of scientific knowledge coming from official research institutes since the facts based on that knowledge are in his eyes determined by the one who pays for the construction of it, in this case the Dutch government.

However, the point I want to make is not about farmers' critique on science as such since they value scientific knowledge in a way as well. There are, for example, farmers who have used scientific research and theoretical knowledge as means to counter the facts governmental policies are based on. For an example I refer back to the Critical Deposition Values the Dutch government uses as a model to determine the allowed extent of nitrogen deposition. In reaction to this model, an agricultural magazine called *Nieuwe Oogst* stated on February 19th 2022:

“Researchers: 'Critical Deposition Values [CDV] unsuitable for nature conservation.' (...) The researchers conclude that the CDV cannot be used for environmental policies. The CDV should be much better researched based on field research and measurements” (Van Der Wal 2022).

The article shows that farmers are stressing the wrongness of facts used by the Dutch government by referring to the invalidity of the used measurements. Farmer Rick has also referred to this measuring instrument and stated: “It just does not make sense.”⁶⁴ By using scientific research models themselves to criticize the current prevailing facts, the farmers show that their concerns regarding agricultural policy construction are about the policies missing practical insights. Kjeld, who is a dairy farmer but also an editor for an agricultural magazine, explained this to me. In his articles he uses claims and facts from scientific research to build his argument:

“I think it is too easy to say that we have to do everything on gut feeling. We do need science. (...) A farmer sees everything happening under his fingers. And it sees whether something works or not. A scientist has to approach this from a more theoretical point of view. I think they can strengthen each other.”⁶⁵

That means that it is not necessarily the case the farmers are opposed to science and scientific research. It rather shows that their boerenverstand challenges the notion of only using scientific knowledge coming from official research institutes to generate facts and subsequently agricultural policies. A combination of the two knowledge systems might create possible

⁶⁴ Interview, Rick, 03-03-2022.

⁶⁵ Interview, Kjeld, 29-03-2022.

innovations that contribute towards more sustainable farming and thereby help them to respond to the conflicting socio-economic demands.

Farmers challenging the prevailing knowledge construction in Dutch society caught my attention during the fieldwork. I noticed the high degree of commitment the farmers have to demonstrate their perspectives. There are, for example, farmers who have followed an educational course to be able to give tours to pupils. Others give open days on their farms for neighbours. There are also farmers who seek options on the internet, like Rick who makes vlogs to “tell the consumer [their] story.”⁶⁶ All of this is to counter negative publicity regarding the unsustainability of their practices.

Thus, boerenverstand is used by farmers to determine what works and what does not work in dairy farming. A protocol that challenges the solely use of theoretical knowledge and emphasizes farmers’ on-the-ground farming experiences. Thereby, boerenverstand is exclusively constructed and used by farmers to determine if prevailing societal perspective of dairy farming is acceptable or not. In other words, farmers’ boerenverstand is the means to orient yourself as a dairy farmer and to keep on going in contemporary conflicting times. By this, their boerenverstand gives the farmers more than just practical guidelines for what to do when. It also empowers them to manage the paradoxical messages and define their own perception of reality regarding dairy farming.

Boerenverstand for constructing a reality: “What is sustainable?”

Taking boerenverstand as a background to farmers’ reasoning into account, it is interesting to see farmers’ perception of sustainability within dairy farming. Drawing on Netting (1993), what is seen as sustainable within agriculture depends on one’s social context as well as subjective values. Although most farmers take the ecological harm seriously and do not claim dairy farming has no ecological damage at all, there are also farmers who argued that the sector can be seen as sustainable. For example, farmer Lina explained: “Humans cannot do anything with grass. Cows produce food humans can consume. And the cow's dung makes grass grow again.”⁶⁷ In addition, an animal feed expert explained to me: “Grass is a fantastic product that can make high-quality feed, which in its turn can convert well into milk. I cannot think of a more sustainable project.”⁶⁸ The emphasise on sustaining the unique food cattle produces for humans, in this case milk, shows that farmers’ view on sustainability is embedded in an

⁶⁶ Interview, Rick, 03-03-2022.

⁶⁷ Interview, Lina, 26-02-2022.

⁶⁸ Interview, Henk, 24-03-2022.

economic, and more precisely, in the productivism approach on agriculture (Runhaar et al. 2020, 140). It is not unexpected that dairy farmers refer to their production when they talk about the sustainability side of their sector. As Sarker (2017) describes, the ultimate goal of agriculture is the production of food *for* people, which is made possible by the production processes practised *by* people. This agricultural goal places a relevant role in shaping farmers' social values and the context by which their perception of sustainability within agriculture is constructed (Netting 1993). Consequently, the farmers have used this agricultural goal to legitimize their farming practices by comparing it to other, in their eyes, unsustainable sectors like the aviation:

“Look, a country can do without airplanes. Then a country would still be able to run. But food stays a basic need, that shows the importance of it [farming].” – Farmer Huib.⁶⁹

The same goes for the farmers' critique on the import of foreign products, which includes food as well but also other supplies. Farmers have argued that it is the dependence on other countries' industries that the Dutch government should re-evaluate, rather than the Dutch agriculture, since the transport of those products costs a lot of energy. For example, farmer Piet said: “We do not make face masks ourselves. They come from China. (...) If you make them here, you do not need a plane.”⁷⁰

However, in both attempts to legitimize their dairy farming practices by pointing toward 'other' industries, the farmers referred to aspects of the economic system to which they themselves are connected as well. The largest part of the Dutch dairy products is used for export, and they depend on the import of, among other things, feed for their cattle (Nederlandse Zuivel Organisatie n.d). They criticize and separate aspects that are inextricably linked to the same system; capitalist food production. The system of which they themselves are part as well. It shows the first signs of a blind spot in their boerenverstand: a reasoning they thought was in line with their interests, but turns out to be not and causes implications in their conceptualization of sustainability.

This 'blind spot' can be explored further by looking at the farmer's context which influences the process of boerenverstand construction. To illustrate this, I use an exchange I had with Sjaak on the 26th of February:

⁶⁹ Interview, Huib, 21-03-2022.

⁷⁰ Interview, Piet, 18-03-2022.

“The government says; in ten years, all dairy farmers must be ‘land-bound’. This [land-bound agriculture] means that you [dairy farmer] must be able to dispose of all manure on your own land. But, I buy the pulp of beet from an arable farmer who grows sugar beets. The sugar is removed and the mug remains, which is very good cow feed. Our cows get this pulp instead of concentrates from, for example, a distant country. In turn, our manure goes back to that arable farmer to stimulate the growth of those beets. When you say, the dairy farmer must be land-bound, this means there is no longer any manure for that arable farmer. Farmers would then have to buy fertilizer. Do you know how much natural gas is needed to make fertilizer? Then, what is sustainable?”⁷¹

Here, Sjaak referred to a recently implemented agricultural policy about land-bound farming. It is part of the government’s plans to control the amount of manure application on land, and is an attempt to reduce the nitrogen emissions coming from farmland. The policy is based on the advice of the so-called Fertilizers Act Experts Committee. This committee was established at the request of the Dutch government and is part of the Wageningen University of Research (Wageningen University and Research n.d.). It is seen by the government as a way to stimulate more sustainable farming practices because it fits the idea of reusing outcomes and reducing the use of extern obtained inputs. Nevertheless, it was in conflict with Sjaak’s way of reusing his outcomes and residual products.

However, some weeks later, I was reading about this policy myself on governmental websites and it turned out that this policy was actually in line with what Sjaak had in mind regarding the exchange of cattle’s feed and manure with neighbour farmers. In the land-bound policy, collaborations with surrounding farmers are allowed and even stimulated (Ministerie van Landbouw, Natuur en Voedselkwaliteit 2020). I decided to point out to Sjaak that a collaboration was covered in this land-bound policy as well. He texted me the following back:

“Very good, Sarah. Fair hearing. Can you send me the document in which this collaboration is described? Till recently, I do not think there has been much clarity about this yet. And as long as there is no workable collaboration described, I experience this land-bound policy as a fallacy to limit livestock farming.”⁷²

⁷¹ Interview, Sjaak, 26-02-2022.

⁷² Text message, Sjaak, 26-06-2022.

Reasoning on behalf of his boerenverstand, Sjaak interpreted the land-bounded policy without having all the information about it. He heard about the new agricultural policy, was aware of the government constructing their policies on scientific insights, and interpreted it as inconsistent with his practices. Based on this, he judged the sustainability perception of the Dutch government. Even once he was aware the collaboration with other farmers is part of the policy, he questioned its functioning since there was no “workable collaboration described.”

However, the “fair hearing” Sjaak referred to, shows that he was open to altering his perception. By reading the document, Sjaak was willing to reconsider his perception of the policy and subsequently his judgment on the government's approach to sustainability. This shows that boerenverstand does indeed not completely reject theoretical knowledge, but it also illustrates that a farmer's boerenverstand is not static and rather a fluid knowledge concept open for renegotiation. Although farmers can rely on their boerenverstand for their everyday orientations, it is also something they reconsider when it is being contested. Me pointing out to Sjaak made him rethink his judgement. I wonder if farmer Piet, who thought about the land-bound policy in the same way as Sjaak did, has had this reconsideration as well. Therefore, what boerenverstand ‘entails’ differs among farmers given that their sources, being for example practical experiences or social contacts, might generate other insights. It explains why there is quite some diversity in farmers’ visions of the government’s sustainability approach within agriculture: the range is from farmers who protest against new policy interventions to farmers who accept these interventions since their context has led them to see, for example, the advantage the land-bound policy can have for farmer and environment. Moreover, the context-dependence of boerenverstand sheds light on the temporal dimension of this knowledge system. After all, ‘knowing’ how to orient oneself towards a future depends on one’s understating of time. Hence, the next chapter elaborates on the notions of time in contemporary dairy farming.

Chapter 3. Time

On March 5th, I had another phone call with farmer Sjaak. In my fieldnotes I wrote:

It was a random Saturday morning when dairy farmer Sjaak called. He wanted to give me the contact details of other dairy farmers who wanted to participate in my research. However, just like the other phone calls, the conversation ended in a discussion about how the government is currently handling the nitrogen crisis: “It almost seems like the Dutch government thinks the farmers have a big red button on their farms. And if they push it, they directly have fewer cows, and debts are gone. But that is just not how it works, you know? It takes years.”⁷³

Sjaak’s perception of the way the Dutch government wants to reform the dairy sector, and thus his livelihood, sheds light on the role the notion of *time* has within a double bind experience. Different temporal horizons of the dairy farmers and the Dutch government evoke an impasse in expectations of agricultural development and change. This chapter describes this impasse by looking at the dairy farmers’ understanding of time. I start with a vignette about ‘milking time’: a biological recurrent, yet a technological intensified event that I witnessed during my visit by Sjaak. I use this specific event to illustrate how within contemporary dairy farming *oecological time* – a short term, environmental-based notion of time – and *structural time* – a long term, social, and progressive notion of time – intertwine and shape dairy farmers’ conceptualization of time in terms of recurrence, progress, and development. I describe how these time concepts organize farmers long term perception of workable change and development within dairy farming and, subsequently, how this clashes with the government’s short term interventions.

“Milking time”

“Heee hoh, there we go” sounded a loud voice from the cowshed that was attached to the milking parlour where a farmhand and I were standing. It was late in the afternoon and thus time to milk the cows, an activity Sjaak wanted me to experience today: “You are still there when we are milking today, right?” he explicitly asked me when he welcomed me on his farm earlier that day. And here I was, waiting for the activity to start. A second “Heee hoh” made the first cow walk to one of the twenty-four milking boxes that, together with the lower placed

⁷³ Fieldnotes, phone call Sjaak, 05-03-2022.

walking area, where the farmhand and I were standing, shaped the milking parlour [See Figure 3]. In just a few minutes all boxes were filled with cows. Standing side by side, they started to eat the fodder presented in front of them. This ensured that their udders are faced toward the parlour, which made it easier to reach the milk unit. The parlour was about twenty meters long, enclosed with fences, and filled with tubes and small milking units, each being a different element of the larger milking machine. Just when I wanted to explain to the farmhand that I did not have any idea how this works, Sjaaks' daughter Lina walked from the cowshed into the milking parlour. It was her voice that made the cows move. I have been guided by Lina all day so far, so I waited for her to tell me what to do. "We are first going to disinfect the udders, and then we place the teat cup liners." I carefully watched Lina doing the routine. From the speed with which she flawlessly repeated the steps on the twenty-three following cows, one could tell this is a daily activity for her.

In the meantime, on the other side of the milking parlour, a new pair of cows were ready to be milked. Lina closely watched me repeating her steps, while at the same time she kept an overview of the whole milking process. That meant, among other things, letting the finished cows move back into the cowshed again, making sure the opposite row is filled before the current one is finished, and checking each cow individually to see any differences that could mean a deviation. For Lina, this coordination seemed not a hard task since she had also time to make jokes with the farmhand and me. Lina's management ensured that the milking process went efficient. Once I understood the routine, she divided the tasks and together with the farmhand we milked about three hundred cows. "So, this is what you do every day?" I asked Lina. "Yeah, often it is. But it depends on who is here to help," she replied while placing the teat cup liners underneath a cow. When I asked my follow-up question about how much time the milking activity usually takes, she answered: "About three hours, and we have to do it twice a day." She was quiet for a moment but then continued: "Thus, when you think about it, that means six hours per day. And then you have to do all those other tasks as well." Now it was me being quiet for a moment to let her words sink in while I watched the milk of the cow in front of me slide through the tubes, on its way to the milk bulk tank where it is stored before it becomes the commodity that connects the dairy farmers with the economic market.⁷⁴

⁷⁴ Fieldnotes, visit Sjaak, 23-04-2022.

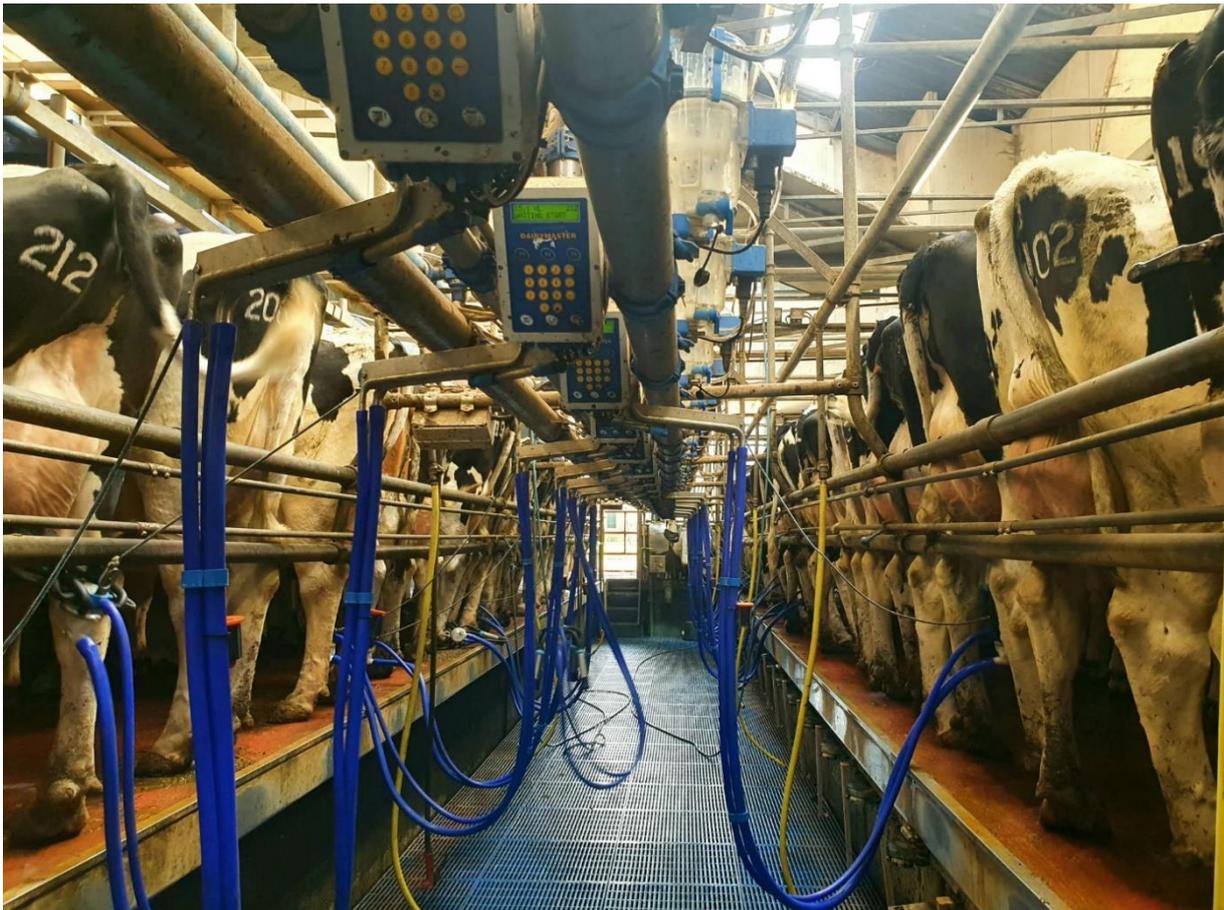


Figure 3. The milking parlour (Photo by author).

Milking illustrates several relevant aspects in relation to time in contemporary dairy farming. During my fieldwork, I particularly noticed the two ‘time reckoning’ techniques that Evans-Pritchard (1940) uncovered in his account of the Nuer: *oecological* and *structural* time. Oecological time reckoning concerns the relations of men with their physical environment (Evans-Pritchard 1939, 189). It describes the Nuer’s perception of time by choosing returning events in their environmental surroundings as a point of reference to structure their activities and decide when what needs to be done. Therefore, oecological time reckoning is particularly identified when people refer to returning activities that represent environmental or biological cycles and thus help to make sense of time by seeing its seasonal rhythms (Munn 1992, 96).

Besides this relatively short term notion of time that is organized by an annual cycle, Evans-Pritchard also describes a more long term notion of time: with structural time reckoning he refers to the Nuer’s understanding of time based on their reflections of one another in the social structure, for example, relations in lineages and with ancestors (Evans-Pritchard 1940, 94). All the time concepts are social since they are man-made and they are of sufficient importance to people to be conceptualized and put in relation to each other. Nevertheless, Evans-Pritchard argues that people’s time perception based on their reflections of their physical

environment is of a different order than people's reflection of their relations with groups of people. Hence, structural time has also been referred to as "social time" (Gell 1998, 10). It reflects people's temporal orientation by comparing the moral movements between people. Thus, structural time is a linear and progressive notion of time, and oecological time is only progressive within the annual cycle (Evans-Pritchard 1939, 190).

As an overarching view of temporal orientations, I use Evans-Pritchard's division in time notions as a guideline to uncover and describe dairy farmers' perceptions of time that structure their orientations in contemporary Dutch dairy farming.

Oecological time: "I have to milk tomorrow morning"

From the moment I arrived on the farm, it became clear that Sjaak wanted me to see the milking activity. This everyday farming practice organizes farmers' daily structure. When I, for example, wanted to meet with a dairy farmer, it was often not possible to be there around milking time. In general, farmers milk twice a day, and in most cases this is early in the morning and right before the evening starts. The milking activity is an intensified activity based on the biological process of the cow giving milk: after all, the cow gives milk because she calves and her calf needs milk. It is a recurring event and therefore shapes the daily structure of farmers. They use it as a point of reference in time and as an explanation for certain decisions. An example could be drawn from the cattle show I visited on the 8th of April in Beilen in the north of the Netherlands. Besides the award ceremony for 'most beautiful cow', the event was also meant as an evening for farmers to meet each other, catch up, and have a drink together. Although the farmers appreciated the informal get-together, many announced their early leave by referring to their farming obligations the next day and most of them explained: "I have to milk tomorrow morning."

There are more recurrent activities related to biological or environmental rhythms. Every day, for example, the cows and calves need to be fed. However, what fodder the calves get and how much, depends on their individual development and thus changes over time. Another example is that farmers need to mow their grassland. In general, this needs to be done about five times a year. Farmer Steven told me that this is done "when there is enough grass." "And when would that be? How does the farmer decide there is enough grass and it is ready to be mowed?" I asked him. Steven explained that it depends on the soil conditions: "The weather and soil need to be dry because water decreases the quality of the grass."⁷⁵ It reminded me of

⁷⁵ Informal conversation, Steven, 30-06-2022.

what farmer Kees said to me about the start of the grazing season: “The cows go outside around the end of April, just when the land is ready for it.”⁷⁶ Those activities need to be done at specific times in order to run the farm efficiently. Therefore, the dairy farmers’ perception of time is based on the environmental rhythms that organize the farmers’ activity throughout the year. This way of organizing one’s activities by using environmental processes as reference points is in line with an oecological notion of time (Evans-Pritchard 1940, 95). Making sense of time and temporal movement by staying in line with nature’s needs helps them decide what needs to be done and when it needs to be done.

The farmers using this oecological time reckoning technique is not uncommon since those activities are shaping the dairy farmers' food production process. It is, however, relevant to note that this oecological notion of time contributes to the construction of their *boerenverstand*. This is, because their practical knowledge about environmental returning circumstances and events, and corresponding farming activities, make sure the farmers know what works and what does not at a specific moment in the annual cycle. The changing soil condition, for example, asks for specific farming activities. And the farmers are well aware of their expertise, as Huib showed: “A farmer understands that he should not fertilize in the winter, because the soil is too cold so the plant does not absorb anything, so it will wash out.”⁷⁷

Because the daily, monthly, and seasonal events repeat themselves, the farmers have at any point in the annual cycle the conceptual knowledge of what lies in front of them (Evans-Pritchard 1939, 190). Them using this short term time reckoning is, thus, shaping their temporal orientations through which they obtain a form of certainty in unclear times: whatever the new policies and restrictions might be, and whenever they will be enacted, their *boerenverstand* tells them the annual cycle will not change. The grass will still grow in the spring and every day their cattle still need their fodder. It might be different in ten years, but tomorrow, over a month, and in the coming season, the farmers know what they need to do. And they are the ones with the expertise to act accordingly. In other words: the oecological time reckoning enables them to predict and orient themselves towards the near future. As a result, it gives the farmers a form of temporal agency in contemporary conflicting times.

Thus, the dairy farmers’ short term time reckoning is shaped by conceptualizations of environmental recurrent changes. The chosen points of reference are valuable moments in the annual cycle, which means that time does not have the same value throughout the year (Evans-Pritchard 1940, 102-104). Milking time is such a moment in time with value. Huib explained

⁷⁶ Fieldnotes, visit Kees, 10-02-2022

⁷⁷ Interview, Huib, 21-03-2022.

that the milking activity is one of the things he likes most about being a dairy farmer: “It is the reward for the work you do,” he said to me during the tour around his farm, “the outcome, the result, and thus the reason you are doing it.” With ‘it’ Huib referred to ‘dairy farming’ and everything that comes with practising it to, eventually, have milk as an outcome. Nevertheless, this ‘outcome’ and his ‘reason for dairy farming’ find their origin in economic principles. This means there is a direct connection between the short term, oecological notion of time and a different notion of time organized by socio-economic structures.

Structural time: “Farmers think in generations”

During milking time at Sjaak’s farm, I noticed that milking is besides this oecological time-based activity also a moment in time that reflects a different, long term notion of time, namely a linear one. Linear time contains the perception of time as being progressive, and it refers to the temporal aspects of succession (Munn 1992, 101). The intensified milking practice, due to agricultural innovations like high protein nutrition for cattle and new milking machines, find their origin in the rise of a capitalist mode of production. It has put a focus on capital accumulation and has shaped the economic market principles in the sign of development, growth, and profit. The linear time notion can thus be understood in terms of development over time, with a focus on anticipating possibilities of the present to create outcomes in the future (Bear 2016; Guyer 2007).

Since contemporary agriculture is part of the capitalistic food system, it is subjected to such a linear and progressive notion of time as well. “My vision was: always use the opportunities to grow, because in my opinion that gave the best chance to remain a farmer,”⁷⁸ explained Sjaak. He connects the linear notion of time to the productivism approach that has organized Dutch agriculture for a long period of time and has put a significant focus on growth and development (Runhaar et al. 2020, 140). On a concrete level, this linear capitalistic notion of time is reflected in the three hundred cows that in contemporary dairy farming can be milked in a relatively short time, and what takes place twice a day. In addition, the farmers have told me about cattle giving more milk than they used to do back in the days when their parents ran the farm. They referred to “a good and strong cow” when that cow's milk production was higher than the norm.⁷⁹ And given that a higher milk production generates a higher income for the dairy farmer, the progressive development of cattle’s milk production is seen as a positive

⁷⁸ Interview, Sjaak, 26-02-2022.

⁷⁹ Fieldnotes, cattle show, 08-04-2022.

aspect of contemporary dairy farming. Therefore, in the farmers' eyes, making progress over time by expanding their farm and aiming for higher milk production was the means to sustain their future as dairy farmers.

To illustrate more clearly how different notions of time intertwine in contemporary dairy farming, I refer back to the 'milking time' I witnessed. The milk sliding through the tubes towards the bulk tank is the moment that starts farmers' connection with the economic market. It marks farmers' role as not only food producers, but also as food entrepreneurs, as they have called themselves.⁸⁰ Referring back to what Huib said: "It is the reward for the work you do," literally since it is the moment that connects biological-referenced time to the moment the dairy farmers commodity is produced. Thereby, technological innovations for increased productivity change oecological time to be less environmental-based since biological processes are artificially influenced. The same can be said about dairy cows being inseminated throughout the whole year. Naturally seeing, cows would in general only get pregnant in the spring and would not calve as many times in their lives as currently is the case.⁸¹ Therefore, in contemporary dairy farming, oecological time has been intertwined with a capitalistic, linear time understanding, which reshapes the biological or environmental rhythms of dairy farming.

Furthermore, during the conversations I have had with the farmers, they often began by giving a brief historical overview of their farms and referred to recent changes or new ambitions regarding the development of their farms. In those stories, the farmers used specific farm-related events as a point of reference to make sense of the movement of time. For example, they refer to "when I took the farm over from my parents" or "when I built my second stable." Subsequently, they used those moments as punctuative moments in time and compared them to their position in the present: "My grandfather had about nine cows. My father has doubled the number of cows three or four times in his career. (...) Now we have 135 cows,"⁸² said Huib while he proudly told me about his farm's development over the last couple of years. And farmer Jet explained it as: "Farmers think in generations."⁸³ They want to sustain and develop their farms not only for themselves but also because they want to give their children the possibility to take over the farm, just like their parents did for them. This way of perceiving time can be related to what Evans-Pritchard described as structural time: the farmers reckon time by reflecting upon their own movement and development and compare their present status

⁸⁰ Several interviews with participants.

⁸¹ Informal conversation, Steven, 30-06-2022.

⁸² Interview, Huib, 21-03-2022.

⁸³ Fieldnotes, Jet, 23-03-2022.

with former statuses of related or comparable groups of people (Evans-Pritchard 1940, 95). It shows that dairy farmers' perception of time is based on the social structural arrangements in contemporary dairy farming, and those arrangements were for a long period of time organized by a linear, capitalistic notion of time. Therefore, dairy farmers' long term time reckoning is conceptualized in terms of progress and development.

Change: "It all has to be done quickly"

The farmers have told me about how, till recently, the linear and progressive notion of time has shaped their business operations in terms of higher productivity and economic growth. I consciously said 'till recently' since it is currently being challenged by the Dutch government's plans that aim to reform the dairy sector towards more ecological sustainable dairy farming. 'Sustainable farming' asks for a different approach to farmers' economic growth and development business model. This "new economic logic," as it has been referred to, entails a shift from a telos of growth to one of stability, economic as well as ecological (Ringel 2020, 88). Hence, development within agriculture should be understood by time concepts like enduring and maintenance, as it calls for a circular notion of time (Ringel 2019, 3).

Nevertheless, although the farmers are subjected to the government's sustainability transition, I noticed that they were still using their structural, linear time-reckoning technique to make sense of the present. For example, farmers who are practising more eco-friendly ways of farming are being referred to as "farmers that are ahead of others." And farmers who are doing less concerning ecological sustainability "need to move with the times."⁸⁴ So, besides reflecting on the development between the present and the past, or a wished future, they use structural time reckoning also to order temporalities. This hierarchy of temporalities is used as a reference point for reflecting their social position within society. It shows that even within the sustainability transition, that puts a limit on their productivity, farmers' conceptualization of time still encompasses features of progress and development. But now in terms of evolving toward society's desires for ecological sustainability.

Furthermore, there is an interesting aspect about this sustainability transition of the dairy sector and the way it is being approached differently by the Dutch government and the dairy farmers. The idea of 'reforming' entails a politics of change. In his research about the sustainability transition of an industrialized town, Ringel (2020) emphasizes the problem of conceptualizing sustainability in terms of reforming and change: "On this understanding, only

⁸⁴ Fieldnotes, visit Guus, 30-03-2022.

change entails hope for betterment” (Ringel 2020, 90). That would mean that only by ‘making a difference’, and thus creating a different situation than the current one, ‘sustainability’ would be achieved. From that point of view, the reformation plans of the government are embedded in a linear, progressive understanding of time.

This linear, progressive approach to the sector’s transition is problematic since it clashes not only with sustainability’s more circular and maintenance notion of time but also with the farmers’ perception of workable change within agriculture. The latter calls for some more explanation for which I refer to the farmers’ reaction to policy interventions: “A ten-year plan for a policy from the government is a big deal, but ten years for a farmer is nothing,”⁸⁵ explained Guus. “Suddenly, it all has to be done quickly,”⁸⁶ added Kjeld. From the farmers' perspective, the government aims for sustainable development by making changes and adaptations in the short term. However, reasoning on behalf of their boerenverstand, the farmers know that these ‘quick fixes’ will not work in practice. This is because, from their oecological understanding of time, the farmers' perspective on the short term is already been set with environmental recurrent events. Therefore, reforming practices in the short term is not always possible: “We do not have fewer cows overnight,”⁸⁷ explained Sjaak. Thus, in the short term, their cows still need to be fed and milked, and their land still needs to be mowed. Moreover, progress and development are placed in farmers’ structural and long term notion of time. Hence, the farmers approach ‘change’ and ‘reformation’ in contemporary dairy farming from a long term understanding of time. As a result, the government’s and dairy farmers’ different notions of time have evoked an impasse in visions of, and approaches to, change in contemporary Dutch dairy farming. An impasse that contributes to the maintenance of the farmers’ double bind experience since neither options – short or long term fixes for sustainability – seem to result in both a desired and a workable outcome.

⁸⁵ Fieldnotes, visit Guus, 30-03-2022.

⁸⁶ Interview, Kjeld, 29-03-2022.

⁸⁷ Fieldnotes, phone call Sjaak, 05-03-2022.

Conclusion

This thesis has provided an ethnographic account of contemporary Dutch dairy farming. I have shown how Dutch dairy farmers currently face a paradoxical situation caused by conflicting socio-economic demands. Bateson described such a similar situation as a *double bind*: a conflicting situation an individual might find him/herself caught when paradoxical messages are being imposed on him/her. The individual feels the need to make a choice between two equally valued injunctions but it is not clear what the real message is (Bateson 1972). This thesis has built its argumentation around Bateson's theory through which I uncovered Dutch dairy farmers' orientations in the double bind between productivity and ecological sustainability. By zooming into the lived experiences of their current paradoxical position in Dutch society, I have given insights into dairy farmers' experiences of being food producers within contemporary changing global capitalism, which is organized by national and global ecological sustainability challenges. I have done so, by looking at three overarching themes that shape dairy farmers' orientations in contemporary Dutch dairy farming: the farmers' adaptability, use of knowledge, and notions of time.

I began by taking a closer look at the on-the-ground experiences of a double bind and gave a description of the different elements organizing dairy farmers' paradox. The diverse involved actors, like the Dutch government, environmental and animal welfare organisations, the Dutch citizens, and the consumers on the world's market, express different interests that are in conflict with each other. This has caused emotional distress, unrest, and instability among dairy farmers regarding their farms' futures. Nevertheless, in line with Bieleman's (2008) notion of seeing farming as a form of applied ecology, the farmers have shown me that farming is like ecology: the dependence on nature as well as socio-economic demands shape its ever-changing character. To sustain one's livelihood nowadays calls for farmers' capacity to adapt. Based on that, the dairy farmers turn the current conflicting situation into a challenge that they are willing to take on. Subsequently, as a creative response to the paradoxical experience, the farmers are finding alternative possibilities to fit the desired image of the Dutch society and sustain their livelihoods. It explains why not only the Dutch government but the farmers themselves as well perceive a shift in the social role dairy farmers can and should have in contemporary Dutch dairy farming.

However, their capacity to adapt is embedded in their knowledge construction and usage. I have used the concept of *boerenverstand* to describe farmers' exclusive expertise in dairy farming that is based on on-the-ground experiences as complementary to agricultural

knowledge constructed by science. This gives the farmers unique insights into the functioning of policy interventions and new agricultural innovations, which helps them to orient themselves in the current conflicting present. Due to what Eriksen (2017) calls ‘the power of definition’, the Dutch government has the power to determine a prevailing perspective of dairy farming, one that is substantiated with scientific argumentation and currently portrays the dairy sector mainly as unsustainable, according to the farmers. However, reasoning on behalf of their boerenverstand, the dairy farmers stress a more sustainable perspective of the sector, one that is based on agriculture’s social values and context: sustaining food production (Netting 1993; Sarker 2017). Therefore, boerenverstand challenges the prevailing perspective of dairy farming being unsustainable and negotiates the notion of having one reality constructed solely by scientific knowledge coming from official research institutes.

Furthermore, I have shown the temporal dimensions that underly the dairy farmers’ boerenverstand and additional ways of orientation. I have particularly looked at two notions of time that shape dairy farmers’ understanding of time and organize their perspective on change within the dairy sector. Within contemporary dairy farming *oecological time*, an environmental-based notion of time, and *structural time*, a social and progressive notion of time, shape respectively dairy farmers’ short term and long term orientations towards the future (Evans-Pritchard 1940). Nevertheless, due to technological intensified practices for economic purposes, the two notions of time intertwine and together shape dairy farmers’ conceptualization of time in terms of recurrence, progress, and development. In this understanding, workable change and development in the dairy sector only succeed in the structural, long term notion of time. However, the Dutch government aims to reform the sector by implementing restrictions and policies in the short term. As a result, the different temporal horizons of the dairy farmers and the Dutch government has evoked an impasse in expectations of agricultural development and change. An impasse that reinforces the double bind since neither options seem to result in both a desired and a workable outcome.

So, by describing dairy farmers’ adaptability and creative response to the paradox, use of their boerenverstand, and their understandings of time and change, this research described how Dutch dairy farmers orient themselves in the double bind between productivity and ecological sustainability that shapes contemporary Dutch dairy farming. I discussed how within the three concepts – adaptation, knowledge, and time – dairy farmers try to sustain their livelihoods in uncertain times, and thereby try to manage the experience of a double bind (Bateson 1972). It has provided an explanation for the current turmoil regarding the dairy

sector's sustainability transition and, furthermore, has contributed to a better understanding of the socio-economic dynamics underlying contemporary Dutch dairy farming.

A final note

This research has been conducted in times of social unrest and turmoil within the Dutch society due to ongoing changes in agricultural policy interventions. That means that the research's context was of constant change as well. As a result, it has been a challenge to find a balance between societal and academic relevance. However, within anthropology, one is well aware of the interconnectedness of societal and scientific relevance since researching underlying social structures can contribute to a better understating of the 'why' and 'how' of social phenomena in contemporary societies. Nevertheless, seeing it from the societal relevance perspective, I suggest further research should be done on the more practical implications regarding the policy interventions in order to succeed in the dairy sector's sustainability transition.

Moreover, from the scientific point of view, I suggest further research should be done on representations of the past in the present and how this is used for orientations toward the future. I do this suggestion because in my research I have noticed dairy farmers refer to events that happened in the past to legitimize the continuing of their farming practices. Therefore, the past plays a significant role in the farmers' orientations. Unfortunately, there was no room for further discussion on the topic of, for example, collective memory within dairy farmers' orientations, and the past has had too little attention in this research. Therefore, I suggest taking this aspect into account when doing research about Dutch dairy farming or Dutch agriculture in general.

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