Quality Matters: A Relational Approach to Transforming Coffee Production in Burundi

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Summary

We currently live in a world marked by increasing inequality, biodiversity loss, and climate change. A world that is made by relations resulting in suffering eco-systems, climate, and people. It is evident that these relations need to be different; driven by different goals, different norms, and different values. Yet, science has for a long time prioritized understanding the practical and objective outcomes, paying far less attention to the relations that manifest in specific outcomes such as increasing CO_2 emissions. Now social sciences have come to acknowledge that we need change in relations producing this world to be so fundamental, that we can call that process a transformation towards sustainability. The hypothesis is that fundamentally different relations could unfold in different outcomes, ones that align with sustainability and thriving. What is still unclear is *what* differences can make such a difference?

This thesis looks at the coffee sector, in dire need of transformative change due to the vulnerability of coffee to climate change, coupled with an unequal power distribution in the global value chain manifesting in low adaptive capacity among coffee farmers. More specifically, it is a case study of an intermediary actor transforming coffee production from commodity coffee to specialty coffee by working with farmers in two coffee producing areas in Burundi. It is a study of the relations that produce coffee, and how changes in these relations transform the space of coffee production. I explore what differences arise in the relations of coffee production and explore the spatial manifestations of these changing relations.

This study concludes that the quality of relations matters. The quality of relations can be assessed by focusing on the values that manifest in relations producing space. Meaning that when the quality of relations is marked by authority, disrespect and fear, the spatial outcomes manifest in neglected coffee land, low yielding trees, and low-quality coffee, which together reinforce the production of a global value chain with unequal power and wealth distribution. It is not surprising that actors are unwilling and unable to make the drastic changes necessary to fundamentally change the system of coffee production towards one that is compatible with a thriving humanity and nature. Successful adaptation in the coffee sector requires personal, systemic, and technical changes to transform coffee production towards thriving, not just surviving. This might sound utopian, but for coffee to adapt to climate change, we do not need to produce coffee differently, we need to produce ourselves and our relations differently.

List of Articles

1. A Relational Understanding of Land Use Choices by Smallholder Coffee Farmers in Burundi. (Under review). *Annals of the American Association of Geographers*.
2. Rosenberg, M.N., (2022). What matters? The role of values in transformations toward sustainability: a case study of coffee production in Burundi. Sustainability Science 17, 507–518. https://doi.org/10.1007/s11625-021-00974-3
3. Rosenberg, M.N., (2023). Transforming Burundian 'taste of place': from shunned in commercial blends to specialty coffee. *Norsk Geografisk Tidsskrift–Norwegian Journal of Geography.*
4. Integrating Practical, Political and Personal Spheres: A Holistic Approach to Climate Change Adaptation in The Coffee Sector. (Under review). *Climate Change and Development.*

Preface

The alarm cuts through the dark space filled with unrolling dreams. Underneath a warm blanket in snowy Oslo, I wiggle my toes and try to transfer the idea of movement to my eyes, arms, and legs. Only when I hold a warm ceramic cup with my drowsy hands and take that first sip of coffee does it feel like the neurons in my brain start firing and connecting. For every sip I take, thinking, moving, and relating to life becomes more enjoyable. This coffee cup is brewed using specialty coffee beans from one specific hill in Burundi, 2,200 meters above sea level and home to 822 coffee farmers. The hill is a stone's throw away from an indigenous rain forest that breathes a cool mist onto the coffee trees growing there. The slightly cooler micro-climate matures coffee cherries slower, resulting in hints of dark cherry that I get to experience in this morning cup. This coffee becomes a part of my body, my daily routine, and how I relate to my family at breakfast. This cup is one of approximately 1,4 billion cups of coffee consumed daily across the globe (ICO 2022). A cup of coffee can make difference in how we show up in the world.

Yet, while coffee plays a vital role in society, coffee farmers are throwing away increasing amounts of coffee cherries that are damaged by droughts, insects, or fungus due to climate change. Coffee farmers tend to lead precarious lives where the coffee income just covers the cost of production if

they are lucky. Coffee farmers are part of a global value chain that is governed in such a way that the power to make decisions and maintain most of the wealth is located among lead firms in the Global North. While there is an oversupply of commodity coffee globally, there is an increasing demand for specialty coffee that comes from an identified place with specific flavors that celebrate the properties of coffee as a fruit. Coffee is part of the relations making this world, including everything from our love for coffee, to increasing global demand, the histories of colonialism, the shifting reach of neoliberalism, micronutrients in the soil, coffee farmers' lived experiences, local bacteria, and global climate change. Coffee production is a space that is produced by ongoing relations, which are studied in this dissertation. This thesis is about understanding these relations, taking coffee as an entry point for exploring transformational processes. To have coffee, now and in the future, we must have a world that is able to produce coffee in ways that align with thriving, and not just surviving.

The research started with a simple question; how does transformation come about in an increasingly warmer and more unequal world? This question was based on a genuine concern for how we can make the necessary shifts quickly enough towards a more just and thriving world. I chose specialty coffee as a strategic topic for studying transformation due to the incommensurability between the growing desire for quality coffee, and the quality of relations producing coffee.

Initially I was curious about how this attention to quality in specialty coffee shifts the relational spaces that emerge. Is there a respect for this magic of balance in nature, or is there a desire to control it? How does that manifest spatially, and does it align with recommended climate change adaptation? I was curious whether specialty coffee is a result of actors taming a specific place into a flavor experience for consumers on the other side of the world. Then inspired by Massey (2005), I wondered if it was the other way around, that it was the place that tamed the flavor experience by the specific conditions of the place itself. Taking a relational approach, quality coffee production, in this study, is approached as a process that does not only produce quality coffee, but also trees, landscapes, insects, fungi, livelihoods, cultures, relationships, values, knowledge, capital, and climate change. They are co-arising – co productive of one another.

At a World of Coffee event in Gothenburg in 2015, for the purposes of a scoping study, I asked coffee producers from each producing country how climate change was impacting their work. They all confirmed that they were relating to drastic changes they could not cope with. What was surprising to me was that many responses were followed with "please come and research us". This led to a PhD research proposal and this study. Eventually, I chose to study an intermediary actor in Burundi, Mwiriwe Coffee (a pseudonym), not on their request, but because it seemed like an interesting and challenging case. A coup d'état had taken place in Burundi in 2015, and there were ongoing political

conflicts. Mwiriwe Coffee was working within this context, yet also interested in deliberately transforming coffee production. During 2016, the situation in Burundi settled enough to make this research an acceptable risk for both Mwiriwe Coffee, and myself. This thesis is therefore based on an ethnographic study of an intermediary coffee company that explicitly aimed to transform Burundian coffee growing communities in a changing climate.

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1. Introduction

1.1 Coffee matters

Coffee is essential for the well-being of many people on this planet in various ways. Millions of people cannot imagine a day without caffeine, one of the most consumed psychoactive substances in the world (Mitchell et al. 2014; Quadra et al. 2020). Coffee is more than a mere stimulant containing caffeine, though. People connect over a cup of coffee (Rodrigues et al. 2020). Coffee breaks are essential for the social and personal well-being of workers in emotionally taxing jobs for instance (Stroebaek 2013). For youth, coffee is important for socialization and is a symbol of their transition to adulthood (Rodrigues et al. 2020). However, coffee is important at another scale to producers whose livelihoods depend on it (Borrella et al. 2015; Daviron & Ponte 2005). So, what is in a cup of coffee? Where do we draw the line around the experience of drinking a Burundian cup of coffee? This question is the entry point to this thesis, viewing the cup of coffee as a space that weaves together the worlds of production, consumption, and the histories of becoming this

manifestation of space. Production of coffee is here considered a relational space, allowing us to explore the content and quality of those relations (Massey 2005; Murdoch 2006).

The future of coffee is facing three main predicaments. However, it is important to keep in mind that the future is open-ended (Massey 2005; Thrift 1996). The future is not defined by beliefs that it holds more of the same, and does not necessitate that we follow the same trajectories that got us here (Fazey et al. 2018a; Wittmayer et al. 2019). The first predicament is climate change. Current predictions show that the demand for coffee is expected to at least double by 2050, while the land suitable for growing Arabica coffee is expected to by decrease by half due to climate change (Ovalle-Rivera et al. 2015; Panhuysen & Pierrot 2018; WCR 2016). Coffee yield and quality is already falling with increasing drought, heavy rains, and pest and disease pressures due to rising temperatures (Bunn et al. 2015; Jaramillo et al. 2011; Ovalle-Rivera et al. 2015; Verburg et al. 2019). It is estimated that 60 per cent of the new areas viable for future coffee production is covered by forests, meaning that moving coffee cultivation here would come with deforestation (Killeen & Haper 2016; Panhuysen & Pierrot 2018). A rapid and just transformation of the coffee sector is therefore necessary to adapt to climate change without causing detrimental deforestation and biodiversity loss, while producing twice the amount of coffee on half the amount of land (Panhuysen & Pierrot 2020; Verburg et al. 2019; WCR 2016).

The second predicament is a coffee boom in the consuming North, and a coffee crisis in the producing South (Daviron & Ponte 2005). Coffee consumption is increasing by an average of two per cent per year, meaning a doubling to tripling of global consumption by 2050 (Panhuysen & Pierrot 2018).

> The current system of coffee production will not be able to meet the increasing demand in the coming decades. The minimum gap will be 60 million bags (a deficit higher than Brazil's current annual production), and without major efforts to adapt coffee production to climate change (Panhuysen & Pierrot 2018, p. 10).

One the one hand, importing countries retain the majority of profits, while on the other hand payments to producers rarely cover cost of production (Borrella et al. 2015; Daviron & Ponte 2005; Lenaghan et al. 2018; Panhuysen & Pierrot 2018). It is a concerning paradox that the growing demand is combined with decreasing supply by producers facing stagnant incomes and incurring costs of climate change.

This coffee paradox is often explained with the global value chain (GVC) of coffee being a buyer driven commodity chain dominated by lead firms based in the Global North, where the power and the ability to capture gains is concentrated (Daviron & Ponte 2005; Neilson & Pritchard 2009; Neilson & Wang 2019). On the other end of the chain, farmers produce coffee in poor rural agrarian communities where returns for their produce is low and unreliable in a volatile global coffee market (Bunn et al. 2014; Ovalle-Rivera et al. 2015; Neilson and Pritchard 2009; Coe 2012; Eakin et al. 2011). Coffee farmers who feel the consequences of climate change in coffee production the most, have the lowest adaptive capacity along the supply chain due to the double exposure of climate change and rural poverty (Eakin et al. 2011). At the other end of the chain, the coffee industry admits that the situation is so dire that "a wide variety of complex and system issues – environmental, social and economic – jeopardizes the future of coffee production" (Panhuysen & Pierrot 2018, p. 3).

The third predicament is that the low-quality coffee market has been saturated, while there has been a shortage of, and growing demand for, high quality specialty coffee since the turn of the century (Boaventura et al. 2018; Borrella et al. 2015; Daviron & Ponte 2005). It is argued that upgrading production to specialty coffee presents an opportunity for suitable coffee producing countries to retain more of the value within the GVC (Gereffi et al. 2014). The production of specialty coffee, however, requires physical (seedlings, soil, and fertilizers), technical (infrastructure, irrigation, and tools), social (networks, knowledge) and financial resources (investments, credit) (Daviron & Ponte 2005; Gereffi et al. 2014). This raises the question, can specialty coffee that depends on outstanding quality and traceability be produced under the current relations of coffee production? These relations include a changing climate, and GVC governance that manifests in marginalized coffee producers who are burdened with adaptation costs. The short answer to this question is no (Panhuysen & Pierrot 2018, 2020). A longer and more complex answer is presented in this thesis.

The point of departure is that these three predicaments are not separate problems, but relational problems that show what is currently valued in relations producing coffee. When increased sales, profits and market share are the dominant goals for lead firms in buyer driven value chains, it manifests in extractive relations of production that devalue human and natural resources (Panhuysen & Pierrot 2018, 2020). A report by the coffee sector states that "a future in which coffee production, livelihood aspirations and climate change impact are accounted for, requires radical and systemic changes in the coffee industry's business model. The transition implies a shift of focus from costs to values" (Panhuysen & Pierrot 2020, p. 22). The question is therefore not how to produce coffee, but how to shift relations that currently produce coffee, inequality, marginalization, climate change and vulnerability. "In the face of climate change, the onus is on us not only to act urgently,

but to act *differently*" (Eriksen 2022, p. 3). Yet, when looking at recommendations for how the coffee sector can adapt, we find an abundance of technical and managerial advice that aims to produce coffee differently, not to act differently. This thesis explores the differences that make a difference.

Adaptation measures identified for the coffee sector range from developing new resilient coffee varietals, to leaving coffee farming, changing land use practices, forest conservation, moving to higher altitudes with Arabica varietals, or relying more on Robusta coffee that can grow in warmer temperatures (Verburg et al. 2019; DaMatta et al. 2019; Rahn et al. 2014; Panhuysen and Pierrot 2018). However, the identified adaptation measures are centered towards the adaptation of the coffee tree itself, which are vital, but they neglect the relations producing coffee. Coffee production within a changing climate involves much more than adapting the production of the coffee tree, although it is that too; it includes understanding how to unleash the capacity of coffee farmers to imagine, enact and sustain significant process of change, which is an inherent part of the relations producing coffee (Vogel & O'Brien 2022). Adaptation to climate change is not a technical issue, but a relational issue because systemic distributional inequalities in the current relations of producing coffee are major barriers to climate change adaptation (Panhuysen & Pierrot 2020). Reconfiguring the relations involved in producing coffee is not a technical issue, which is why technical adaptation responses are likely to fail (Wise et al. 2014; Boaventura et al. 2018; Eriksen 2013; Panhuysen and Pierrot 2020). A result of which are continued calls for transformative change in the coffee sector unmatched by a more just and sustainable coffee production in practice (Verburg et al. 2019; Panhuysen and Pierrot 2018).

1.2 Transformations

Transformation refers to change fundamentally altering the function of a system (Pelling 2011; IPCC 2012). Not adapting to symptoms of a dysfunctional system but changing the very way the system is configured. There is no transformation without challenging the status quo (Pereira et al. 2020). Transformation is therefore no easy task due to the vested interests in maintaining the status quo, and cannot be achieved by continuing to separate social and environmental aspects of systems in need of transformations (Scoones et al. 2020; Shrivastava et al. 2020; Vogel & O'Brien 2022). The coffee sector is therefore illustrative of a wider discourse in research, policy and practice that separates social and ecological aspects of socio-economic systems as different entities (Verburg et al. 2019; Hertz, Garcia, and Schlüter 2020; Shrivastava et al. 2020). Despite transformation having become a buzzword, used as a metaphor to describe any change process, or even maintain the status quo (Feola 2015; Scoones et al. 2020; Vogel & O'Brien 2022), it is nevertheless a necessary

concept for understanding significant change processes and responding to complex challenges, such as climate change, biodiversity loss, and persistent inequalities that manifest in current coffee production spaces (Panhuysen & Pierrot 2018; Shrivastava et al. 2020; Vogel & O'Brien 2022; Ziervogel et al. 2016).

Transformational processes require capacity to both initiate and sustain fundamental change (Fazey et al. 2015; Feola 2015; Marshall et al. 2014; Vogel & O'Brien 2022). The capacity of systems such as resource industries (for example coffee) depend on the ability of *all* actors to undertake change (Marshall et al. 2014). This is in line with the repeated accentuation of transformational processes needing to happen across scales (Marshall et al. 2016; Moser & Ekstrom 2010; Salomaa & Juhola 2020; Sediri et al. 2020). However, the spatial inequality of power and wealth across the GVC of coffee leaves coffee farmers with few incentives, little capacity, and unwillingness to make the necessary changes (Verburg et al. 2019). Reports by the coffee industry show that among the 25 million coffee producers, most of whom are smallholder farmers, most do not have the means, incentives or expertise necessary to undertake the necessary fundamental changes to adapt to climate change (Panhuysen & Pierrot 2018; SCA 2018).

However, the necessary systemic and practical transformations start with the ability to imagine what alternative futures are possible (Vogel & O'Brien 2022; Moore & Milkoreit 2020). An increasing amount of scholarly work on transformations look towards the role of the personal sphere (Adger et al. 2011; Gosnell 2022; O'Brien & Sygna 2013). It includes the subjective dimensions, such as personal experiences (Gosnell 2022; Gosnell et al. 2019), values (Tschakert et al. 2016), beliefs (Scoville-Simonds 2018; Scoville-Simonds et al. 2020), worldviews (Hedlund-de Witt 2013) and meaning making (Hochachka 2019). These aspects of subjectivity are shown to be crucial for the ability to imagine, enact and sustain a process of becoming that aligns with a thriving and just world for people and nature (Gosnell 2022; Vogel & O'Brien 2022).

The research on how the global chain governance is experienced by coffee farmers is therefore a welcome contribution to understanding the capacities necessary for sustainability transformations of the coffee sector (Bilfield et al. 2020; Bose et al. 2016; Jimenez-Soto 2021; Lambert & Eise 2020). However, shade grown coffee farms, one example of sustainability efforts in the coffee sector, are marked by experiences of systemic violence, racism, poor living conditions, social segregation, and fear of snakes that come with increased biodiversity (Jimenez-Soto 2021). Others report that coffee farmers facing climate change feel a constant state of uncertainty and a threat to their livelihoods (Hochachka 2021; Lambert & Eise 2020). The ability to undertake fundamental change requires

technical and systemic transformations, but also need to include the subjective capacities for transformation that remain less explored in the coffee sector (Nadine Anne Marshall et al. 2014; Horcea-Milcu et al. 2018; Vogel and O'Brien 2022; Gosnell 2021). Indeed, there is a growing concern among interdisciplinary sustainability scientists that approaches separating the social and the ecological are inadequate to understand the challenges of climate change (Hertz et al. 2020; Walsh et al. 2020; West et al. 2020). Having said that, human geographers have long been bridging the social and ecological divide (Massey 1999; Murdoch 2006; Whatmore 2002).

I position this study within the relational strand of human geography. This strand attends to the interface between the social and natural world, instead of assuming a more separate existence of the two. The foundational premise is that relations are the primary entities of existence, meaning that no entity exists in isolation, but rather becomes what it is in unfolding relations between entities (Doel 1999; Hertz et al. 2020; Massey 2005; Murdoch 2006; Walsh et al. 2020; West et al. 2020). This shift in perspective reframes the challenge facing the coffee sector from climate change as an environmental problem to a relational challenge of how the space of coffee production is configured.

1.3 Case study selection

The rationale for choosing to study the process of upgrading coffee production to specialty coffee in Burundi is fivefold. First, specialty coffee is a rather recent trend, and research on its effects is limited. It has be shown that pivoting coffee production towards spatiality coffee reconfigures the distribution of power (Grabs & Ponte 2019), wealth (Borrella et al. 2015), and governance (Boaventura et al. 2018; Grabs & Carodenuto 2021; Grabs & Ponte 2019) of the GVC. However, research is needed to assess sustainability and development outcomes of coffee-producing regions transitioning to specialty coffee, as well as the socio-economic impacts for smallholders (Boaventura et al. 2018; Borrella et al. 2015).

Second, processes of transformation are less studied in the Global South (Pereira et al. 2020). Choosing a case study of a deliberate transformation in Burundi provides an empirical study of lived experiences of transformative change in the Global South, while being highly entangled with the Global North through a GVC. Third, Burundi is one of the most coffee dependent countries with up to 90 percent of their export income being derived from coffee, yet one of the least studies coffee producing countries (Chemura et al. 2021; Eakin et al. 2011; Hochachka 2023; Lenaghan et al. 2018; Moat et al. 2017). Fourth, the identified measures for adapting the coffee sector to climate change (Verburg et al. 2019), align with upgrading to quality coffee production (Daviron & Ponte 2005; Gereffi et al. 2014), making this a suitable study for adaptation measures, without it being the main focus on the ground.

Last, but not least, more research is needed to explore the role of intermediary actors for coffee production in a changing climate (Boaventura et al. 2018; Borrella et al. 2015; Hochachka 2023). "To fully transform coffee into a sustainable sector and tackle the complex challenges facing coffee producers, individual companies need to disregard competitive differences and genuinely engage and invest in collaborative investments at grassroots level" (Panhuysen & Pierrot 2018, p. 26). Intermediary actors play an increasingly central role here by reconfiguring relations of coffee production by collaborating across the GVC with coffee farmers in producing countries and specialty coffee roasters in countries of consumption (Borrella et al. 2015). They shorten the GVC by sidestepping large corporate actors and establish long-lasting relations with farmers where they are supposed to share the burdens facing the coffee sector collectively (Gereffi, Guinn, and Bamber 2014; Borrella, Mataix, and Carrasco-Gallego 2015). The findings show that small-holder farmers' income increased, and that the prices were less volatile due to long-term relations build between actors in the value chain, but that the distribution of power was still asymmetrical (Boaventura et al. 2018; Rueda & Lambin 2013). Therefore, in addition to technical and financial support to connect producers to the specialty coffee market, there is a need to for a closer collaboration between actors across the whole value chain to address the long-term ecological and economic sustainability issues in the coffee sector (Boaventura et al. 2018; Poole & Donovan 2014; Rueda & Lambin 2013).

I carried out long-term fieldwork in Burundi, where an identified intermediary actor facilitated a quality-oriented upgrade in coffee production, and where climate change was and continues to have an impact (Gereffi et al. 2014; Minani et al. 2013). During the fieldwork, I paid attention to material manifestations, systemic forces, as well as the personal experiences of- transformation through a relational lens. In combining practical, systemic, and personal domains, this work contributes to advance knowledge on how transformations towards sustainability can come about.

1.4 Research questions and articles

The overarching issue addressed in this thesis is that a rapid and just transformation is necessary for the coffee sector to produce a greater amount of coffee on less land area due to climate change, in order to ensure long term production and livelihoods. My research contributes to this through a case study of an intermediary coffee producer in Burundi, aiming to transform coffee production from commodity to specialty coffee. Two main research questions guide this study:

> RQ1: How do different types of interpersonal, political, and human-environment relations influence coffee production in Burundi?
>
> RQ 2: How can insights from Burundian coffee production enhance understandings of sustainability transformations?

Each of the four articles in this thesis contribute to answering the first research question in various ways: by drawing attention to how different types of relations manifest in land use choices (article 1), values (article 2), a 'taste of place' (article 3), and climate change adaptation (article 4). The second research question is addressed predominantly in this Kappe, as well as in article 2 by exploring the role of values for sustainability transformations, and in article 4 by analyzing climate change adaptation efforts through the Three Spheres of Transformation framework (O'Brien & Sygna 2013). All articles are empirically based, and single-authored. Table 1 presents an overview of the research questions and claims in each paper.

Article	**Research question**	**Knowledge gaps/framing**	**Central claims**	**Methods**
Article 1: A Relational Understanding of Land Use Choices by Smallholder Coffee Farmers in Burundi	How do farmers make land use choices?	There is a limited understanding of how and why people make the land use choices they do.	Land use choices are not rational, but relational choices. Land use choices are specific manifestations of the quality of relations producing space.	Participant observation, interviews, document analysis
Article 2: What matters? The role of values in transformations toward sustainability: a case study of coffee production in Burundi	What is the role of values in transformations towards sustainability?	The role of values is frequently mentioned as important for transformations towards sustainability without being fully understood.	Suggest approaching values as material-discursive practices, meaning that values are part of configuring the relations of socio-ecological systems and therefore its outcomes. By transforming relations that make this world moment by moment, values provide insights in the relational aspects of transformations.	Participant observation, interviews
Article 3: Transforming Burundian 'taste of place': from shunned in commercial blends to specialty coffee.	How is a 'taste of place' made?	The link between products, places and quality are not understood fully.	Making a taste of place was found to be done by taming the space of coffee into a consumable representation of place with material and symbolic quality attributes through material and discursive practices.	Ethnography, document analysis
Article 4: Integrating Practical, Political and Personal Spheres: A Holistic Approach to Climate Change Adaptation in The Coffee Sector	How can the coffee production adapt to climate change?	The recommended adaptation measures for the coffee sector are known, but the sufficient implementation is missing. Little research on the subjective lived experiences of coffee farmers in adaptation.	Successful adaptation to climate change requires both practical, systemic, and personal changes. Understanding challenges facing the coffee sector, as well as solutions need to incorporate all three spheres of transformation: personal, political, and practical.	Participant observation, photovoice, interviews.

Table 1: Overview of papers in this thesis.

'What is the object of change' is a central question in transformation literature (Feola 2005). In the case of coffee, the objects of change tend to be separated into coffee, the people working with coffee, or the global coffee value chain itself (Verburg et al. 2019). Approaching this through a relational perspective entails that *relations* are the object of change. This thesis therefore turns the focus towards specific relations producing space and defines space drawing on Massey's seminal work as a "product of interrelations; as constituted through interactions, from the immensity of the global to the intimately tiny. […] Space does not exist prior to identities/entities and their relations" (2005, p. 10). However, there is an oxymoron in this statement, as relations are never constant, but always shifting. Yet, relational human geography tends to present how everything comes together in one moment, and is criticized for saying nothing specific about place or space (Cresswell 2015; Harvey 1996; Jones 2009). Taking this warning seriously, I would like to show through this work how relations come to matter specifically, spatially. I therefore explore the quality of relations through which the space of coffee production is constructed.

1.5 Structure of the thesis

This thesis consists of six chapters, including this introduction, followed by four papers.

Chapter two presents the background for this study. Here I provide an overview of how climate change is impacting coffee production, before I introduce Burundi, and Mwiriwe Coffee as a case study.

Chapter three is the theoretical anchor of the thesis, starting with reviews of scholarly work on transformations, before the relational turn is introduced and transitions the text towards relational geography.

Chapter four describes the methods employed in this study. This chapter is extensive due to the relational perspective on research itself, and the ethnographic nature of this study. The limitations are addressed in the discussion on positionality, reflexivity, and ethics.

Chapter five presents a summary of the four papers in this thesis.

In chapter six, I respond to the research questions as a conclusion and point to avenues for future research.

2. Background

"Problems that appear in particular places are really particular manifestations of general problems"

(Massey 1994, p. 64)

Coffee is not one thing. It is shaped, formed, and made into a good through relations across scales (Appadurai 2012; Çalışkan & Callon 2009; Ouma 2015). In this background chapter, I present the characteristics of coffee, necessary to position this study paying particular attention to specialty coffee. Thereafter, the delicate relationship between climate change and coffee is elaborated on, before Burundi as a coffee producing nation is presented, providing an important context for understanding the complexity of challenges addressed in this thesis. Lastly, Mwiriwe Coffee is introduced briefly, setting the stage for richer details provided in Chapter 4: Methodology and Research Design.

2.1 What is coffee? History and global trends

Most coffee comes from two types of species, *Robusta* and *Arabica* (Bunn et al. 2015). This work focuses on Arabica coffee as it is known for higher quality compared to Robusta coffee, and therefore preferred in the specialty coffee sector. Arabica coffee is believed to stem from Ethiopia, the only producing country with a long history of coffee consumption rituals (Hirons et al. 2018). The rest of coffee history is highly entangled with colonialism, spanning between the beginning of the nineteenth century to 1980s, during which coffee cultivation was forced onto American and African countries (Daviron & Ponte 2005). Coffee carries the grave statistic of being the second crop, after sugar, in terms of the number of people that were transformed into slaves. Where slavery was not an option, forced labor was used (Daviron & Ponte 2005). Coffee has a dark history, which is important to keep in mind because the spaces of coffee production today include the histories of its becoming (Massey 2005).

The history of coffee production manifests today in a coffee paradox with a 'coffee crisis' in the producing countries, while there is a 'coffee boom' in the consuming countries at the same time (Daviron & Ponte 2005). More than 50 countries in the Global South produce about 90 per cent of the coffee, involving more than 25 million small-holder farmers (Borrella et al. 2015; Daviron & Ponte 2005). The value chain of coffee presented is in Figure 1 below, illustrating the activities that unfold in a coffee producing country, and a coffee consuming country. This is normally a GVC, representing the state of the coffee, as well as the distribution of activities carried out in coffee producing and consuming countries across the world (Borrella et al. 2015).

The main point is that the GVC of coffee is a buyer-driven supply chain dominated by lead firms in consuming countries in the Global North (Borrella et al. 2015; Grabs & Ponte 2019; Neilson & Pritchard 2009; Neilson & Wang 2019). Volatile coffee prices go up and down, while the costs of producing coffee (labor, fertilizer, pesticides, tools, seeds) are rising (Borrella et al. 2015). A recent report shows that only 10% of the revenues generated at the retail market stayed in the producing countries in 2015 (Panhuysen & Pierrot 2018). Furthermore, because the costs of social and environmental externalities are overlooked, the market price of coffee is found to be less than a 1/3 of the true coffee price. Another way to put it is that farmers have been producing coffee at a loss between 2006 and 2016 (Panhuysen & Pierrot 2018). Farmers are not earning enough to secure decent living conditions, let alone invest in their farms to adapt to climate change. Farmers are subsidizing the coffee consuming end of the chain at their own expense.

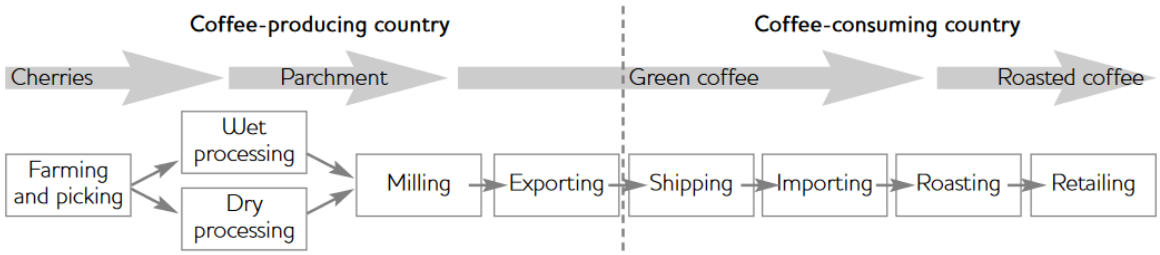

Figure 1: The value chain of coffee. Source: Borrella, Mataix, and Carrasco-Gallego 2015.

The quality attributes in coffee

With the low quality coffee market being saturated, and a shortage of high quality coffee, specialty coffee is the fastest growing segment of the coffee market (Borrella et al. 2015; Daviron & Ponte 2005). Since this study dives into specialty coffee, which is often misunderstood and misrepresented as fair trade or organic in academic literature (Bacon 2005; Ponte 2002), I need to position specialty coffee in the wider coffee market here.

A typology of three types of qualities applicable to coffee have been developed; material, symbolic and in-person service (Daviron & Ponte 2005). Material quality attributes are embedded in the product. These can in theory be objectively measured by human senses or technology. In coffee, these attributes include taste, aroma, and appearance. These are a believed to be a direct result of physical, chemical and biochemical processes (Daviron & Ponte 2005).

The symbolic quality attributes on the other hand cannot be measured by human senses or technological devices. They are either based on reputation, embedded in trademarks, the place of production, or sustainability labels (Rosenberg, Swilling, and Vermeulen 2018; Daviron and Ponte 2005). When it is reputation based, it relies on trust and relations built between actors in the value chain. The trademarks on the hand are only used with a legal framework. WTO and EU-laws, as well as the TRIPS-agreement regulate the use of certain place-based trademarks (Besky 2014; Defrancesco et al. 2012; Hughes 2006). Small-scale farmers are meant to generate extra value from the symbolic value of being a place-based product. The trademark regulates only the place of production, with a built-in assumption that the quality is guaranteed by the geography of production. Examples of place-based trademarks are however mostly employed in the Global North (Barham 2003; Cappeliez 2017; Demossier 2011; Hill 2022). Sustainability labels such as shade grown, fair trade or organic are awarded to products that meet specific criteria applied to the management of production, or the technical process. Such labels rely on third party inspections for certification, which are both bureaucratic and costly (Daviron & Ponte 2005). Symbolic attributes allow for the consumption of place through single origin coffee, or consumption of ethics through

certified coffees (Borrella et al. 2015; Daviron & Ponte 2005). This is explored in greater detail in paper two of this thesis.

The in-person service quality is relational and achieved at the point of coffee consumption. It includes interactions with other customers, and staff. For example, the experience of buying coffee at Starbucks includes a certain atmosphere, with the barista asking for your name, often spelling it wrong, then calling your name. In another café this may include the barista knowing your name and your drink before you order and telling you a story about how the origin and the flavor of the coffee are connected (Rosenberg, Swilling, and Vermeulen 2018; Daviron and Ponte 2005).

The three waves of coffee

Understanding specialty coffee requires an insight into the quality attributes presented above, and how these weave into the three waves of coffee historically.

During the first wave, the goal was cheap commodity coffee in large volumes, with no attention to quality, differentiation or consumer experience (Boaventura et al. 2018). The first wave of coffee was dominant between 1930 and 1960, but still present today. Despite no attention to quality, coffee was during this wave transformed from a rare luxury to a daily event at home. This was enabled by cheap bulk production of coffee for mass consumption, made easily available at the supermarkets. Large food corporations controlled the coffee market during this stage (Borrella et al. 2015). There was no traceability at this point, meaning that the consumer had no information about the origin of the coffee. The main objective was to provide coffee as cheaply as possible, and this came with distributional challenges along the GVC (Rosenberg, Swilling, and Vermeulen 2018; Borrella, Mataix, and Carrasco-Gallego 2015). The conditions of producing first wave coffee, and consumers becoming aware of the socio-ecological issues of coffee production is believed to have provoked the other waves as a response (Boaventura et al. 2018; Borrella et al. 2015).

The second coffee wave was marked by increasing consumer demand for quality and sustainability between 1960 and 1990, and still present today (Borrella et al. 2015). Actors started paying attention to material quality attributes with lighter roasts, but it was the symbolic and in-person qualities that was the primary driver of second wave with single origins and sustainability certifications. Starbucks, Nespresso, and Peet's coffee led this wave, and set the foundation for the third wave of coffee (Rosenberg, Swilling, and Vermeulen 2018; Borrella, Mataix, and Carrasco-Gallego 2015; Boaventura et al. 2018). The in-person service qualities at this stage introduced trained baristas and specific café ambiances that could be found across the globe in air-ports, cities and malls (Rosenberg, Swilling, and Vermeulen 2018). Single origin coffees were introduced, which started to shift certain market segments towards direct trade, shortening the value chain.

The symbolic qualities also responded to the sustainability demands from consumers, which were met with certifications according to ethical and environmental standards. Costly bureaucratic process of *standardization* with check lists of mainstream adaptation or monetary distributional measures were developed. Coffee certified as fair trade, rainforest alliance, or organic are a few well known examples (Borrella et al. 2015; Daviron & Ponte 2005). Certified coffees offer farmers access to higher returns via niche markets and has attempted to confront the reproduction of inequalities. Albeit useful to increase the income of some farmers to a minimum wage, it has failed to sufficiently alter the governance of the coffee value chain and therefore failed to redefine the lived environments of coffee producers, which has left a lingering skepticism over the effect of certification standards (Potts et al. 2014; Neilson and Pritchard 2009). The second wave paved the way for the third wave by starting to introduce the material quality attributes of coffee, and by bringing attention to the problematic aspects of coffee production (Fischer 2021; Fischer et al. 2021).

The third wave started around the 1990s and marks the transition of coffee into an artisanal product differentiated by origin, coffee variety, processing, roasting and brewing methods (Borrella et al. 2015). Specialty coffee is defined by its high material quality and *differentiation*, much like how fine wines are differentiated (Daviron and Ponte 2005; Gereffi, Guinn, and Bamber 2014). According to the specialty coffee industry itself, a coffee qualifies for specialty coffee by scoring 80 points or above according to an industry standard scoring sheet (See Figure 2 below). The material quality is experienced as clean flavor notes in the cup with acidity, balance, fragrance, aftertaste, uniformity, sweetness, and body (mouth feel). In order for the material quality attributes to qualify as specialty coffee, “all stages of the supply chain have to be improved: from growing, to harvesting, processing, trading, roasting, and brewing” (Borrella et al. 2015, p. 32). The symbolic and in-person quality is marked by increased professionalism by the barista and high levels of information about the origin of the coffee, including both geographical details and the sense of place (Rosenberg, Swilling, and Vermeulen 2018). Third wave coffee includes not only a high quality sensory experience, but also provide a uniqueness by involving the customers in the co-creation of the emotional experience of consuming coffee from a specific place (Boaventura et al. 2018). This is coffee for connoisseurs that enjoy a cup of coffee with hints of citrus, or a velvety mouthfeel with nutty and buttery flavor touches with knowledge of the micro-climate and the social life of the hill (Boaventura et al. 2018; Daviron & Ponte 2005). How the transformation from commodity (first wave) to specialty coffee (third wave) unfolds in Burundi is the focus of this thesis, which is explored through a relational lens.

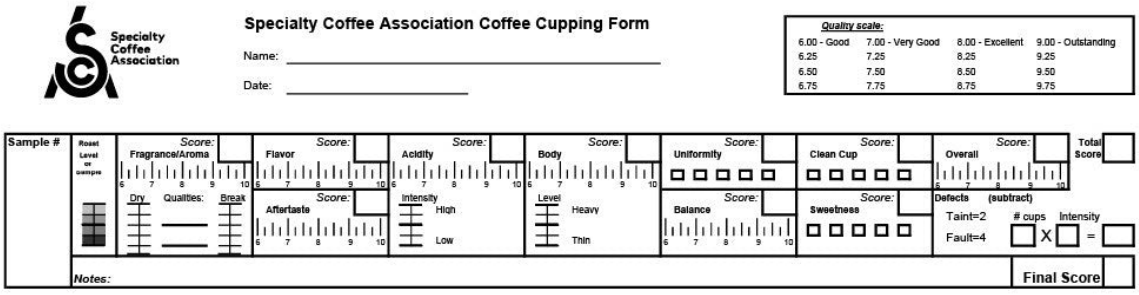

Figure 2: Scoring sheet used as an assessment tool to score the quality of coffee by cupping coffee.

How relations of production have shifted in third wave coffee

Third wave, specialty coffee is sold for a significantly higher price (Borrella et al. 2015; Fischer 2021; Gereffi et al. 2014). The average price paid to producers per kg for specialty coffee was USD 6.30, compared to USD 1.89 for commodity coffee in 2011 (Gereffi, Guinn, and Bamber 2014). A study of three third wave value chains shows that roasters and retailers still captured between 77 and 86 percent of the value, while farmer were left between 10 and 23 per cent (Borrella et al. 2015). However, because specialty coffee is sold for a higher price, the result is both a relative and an absolute increase of income for producers (Boaventura et al. 2018; Borrella et al. 2015). This thesis responds to the call for research that explores how quality coffee can transform relations to include producers beyond a relative redistribution of economic value (Boaventura et al. 2018; Borrella et al. 2015).

Third wave coffee relies on direct relationships between roasters and farmers that go beyond market transactions of direct trade (Boaventura et al. 2018; Borrella et al. 2015): “The supply chain for specialty coffee involves complex, relational linkages between roasters, traders, processors and growers” (Gereffi et al. 2014, p. 4). The relational nature of specialty coffee makes it a relevant study for understanding transformations initiated by intermediary actors from a relational perspective. Intermediary actors play a central role defined in the specialty coffee sector as “companies that connect smallholder’s production with specialty coffee roaster’s demand” (Borrella et al. 2015). Small producers do not have the capacity or volume to export direct, and rely on relationships with intermediaries (Boaventura et al. 2018). Intermediaries aim to have a close relationship with farmers to include them in the specialty coffee niche market, support them in improving the quality and reliability of coffee deliveries for suppliers (Borrella et al. 2015).

Several studies conclude that the relationship between small-holders and intermediary businesses was beneficial for both parts (Boaventura et al. 2018; Borrella et al. 2015). Connective businesses were found to reduce constraints around market access and provided more stability to small-holder farmers (Borrella et al. 2015). When productivity constraints were too big for small-scale farmers,

connective business and small-scale farmers were found to pull in other actors, addressing the constraints as a collective issue, and not the farmers' issue (Boaventura et al. 2018; Borrella et al. 2015). However, another study found the intermediaries to function as coyotes in Guatemala. Instead of establishing long-term and trustworthy relationships, they challenged the existing collaborative solidarity of cooperatives by only buying the best beans from some farmers (Fischer et al. 2021); "There are still difficulties in small producers achieving capabilities that lead them to develop a more symmetrical power relationship with intermediaries" (Boaventura et al. 2018, p. 264). It is evident that changes in coffee production relations need to be further examined in third wave coffee, which this thesis does.

Taking care of coffee trees to produce quality coffee is a process that involves relations among people, non-human species, and time. Specialty coffee depends on the attunement to nature, people, and place as a starting point. How are these specific flavors attached to place, and specific people, and relations thereof? These flavors are by specialty coffee actors perceived and presented as a result of specific conditions in specific places. Such as the balance between morning mist due to the slope facing this way, and the micronutrients in the soil due to the proximity to the rain forest. The attentiveness to what the coffee leaves tell, are they yellow and need nitrogen in the soil, or are they dry and need mulch to keep the moisture in the ground? What gives coffee sweetness, what gives coffee that crisp freshness, or the juiciness, or the blueberry tinge? The coffee cherry that is produced by each tree is unique, and keeping this uniqueness is the goal of specialty coffee. Maintaining that relational respect for the coffee bean along the whole process makes specialty coffee fascinating to study. This process is long, exhausting, and full of resistance.

2.3 Coffee and climate change

The equatorial belt that is suitable for cultivating coffee is highly impacted by climate change. Arabica coffee farmers produce a commodity that is highly climate sensitive requiring specific biophysical conditions of altitudes between 1,500-2,200 meters, steady temperatures within the range of 15°-24°C, and heavy seasonal rains. New areas are, however, becoming suitable with a warming climate (Gereffi, Guinn, and Bamber 2014; Daviron and Ponte 2005; Frank, Eakin, and López-Carr 2011; Bacon et al. 2014).

Coffee yield and quality is already diminished, caused by increased droughts, heavy rains, pest and disease pressures (Panhuysen & Pierrot 2018). Some countries are predicted to lose up to 50 per cent of the suitable land areas to climate change (Bunn et al. 2015). The way climate change impacts coffee production varies across continents Latin American countries in general are suffering from a fungal disease known as coffee leaf rust, and individual countries are experiencing changing weather

patterns, such as heavier rain and generally wetter conditions in Brazil (Avelino et al. 2015; Bunn et al. 2015; Ovalle-Rivera et al. 2015; Zullo et al. 2011). The African coffee producing countries are more prone to yield losses caused by increasing insect populations due to higher temperatures, compared to Latin American countries (Jaramillo et al. 2009, 2011).

Climate change is a vital element in the production of lived environments for smallholder coffee farmers. It requires adaptation that enables farmers to effectively adjust to prolonged droughts, changing patterns of heavy rains, unpredictable harvests, challenging conditions for drying green coffee parchment due to rain, new pests and diseases causing the quality and the price of coffee to decline (Taylor 2015; Gereffi, Guinn, and Bamber 2014). Specific land use intensification systems can, however, serve as mitigation and adaptation strategies to anticipated effects of climate change such as warmer temperatures and increased pest-population (Avelino et al. 2015; Rahn et al. 2013; Verburg et al. 2015).

Adaptation measures for the coffee sector have been identified and aim to lessen farmers vulnerabilities to droughts, changing rain patterns, temperature increases and pests (Eshetu et al. 2021; Jawo et al. 2022; Verburg et al. 2019). These include tree and shade systems, integrated pest management, new crop varieties, diversifying systems, soil and water conservation at plantation level, and forest conservation at landscape scales (Verburg et al. 2019; WCR 2016). In particular, afforestation, combined with improved farming practices, is shown to improve soil health, biodiversity, ecosystem services, coffee yield, and quality (Rahn et al. 2013; Bacon et al. 2014, Denu 2016, Buechley et al. 2015). Research also emphasizes that transformative adaptation requires long-term visions that strengthen small-holder farmers' capabilities by involving actors and policies across the value chain (Verburg et al. 2019). A recent study of adaptation strategies among coffee farmers in Guatemala found that prayer and personal convictions were ways to process emotions of uncertainty, worry and frustration in times of climate change (Hochachka 2021). These findings point to the necessity to include subjective capacities to support people's ability to navigate change, as outlined in the introduction and presented more detailed in the subsequent chapter on theoretical anchoring of this thesis.

Lastly, it is highlighted that implementation of practical adaption measures are bounded by financial and technical limitations of small-scale coffee producers (Hochachka 2021; Verburg et al. 2019). In addition to technical support for adaptation, adaptation requires a different financing model that allow farmers to make the necessary investment (Verburg et al. 2019). This is currently not possible with the price of coffee failing to cover the price of production without adaptation measures. Adaptation measures need to alter the root causes of the multiple challenges facing coffee farmers,

rather than to conform to climate change as inevitable (Hochachka 2021; Taylor 2015). As Panhuysen and Pierrot point out:

> The major challenge will be to consider a more fundamental shift in the business and trade model to move away from high yield sun-grown monocrop systems, to climate-smart coffee production addressing landscape conservation and climate resilience beyond the farm-level. … Although the coffee sector has the image of a frontrunner in sustainable agriculture, it is failing to create conditions needed for a viable and flourishing sustainable value chain. (2018, p. 30).

In summary, the current relations of coffee production are not compatible with successful implementation of identified adaptation measures in the coffee sector. A transformation of the coffee sector requires a fundamental shift in the current relations producing coffee. This is addressed in various ways throughout the four articles in this thesis.

2.4 Burundi as a coffee producer

Figure 3: Map of Burundi. Source: (The World Factbook 2021).

Burundi is a small landlocked country in the heart of Africa. It is among the least developed countries in the world, ranked 185th among 189 countries on the Human Development Index in 2018 (UNDP 2019). The combination of colonialism, coup d' états, civil war, and presidential assassinations have

left the country in a cycle of poverty and conflict for over five decades (Baghdadli et al. 2008; International Montary Fund 2012; Tchatchoua-Djomo et al. 2020). The cycles of violence have destroyed infrastructure, physical and social assets, and displaced people (International Montary Fund 2012). The recent electoral crisis by President Nkurunziza's third term ambitions and the failed coup d'état in 2015 marked a turn towards autocratization again (Vandeginste 2015), underlining how intractable the cycle of conflict and violence in Burundi has become (Jobbins & Ahitungiye 2015). Burundi continues to struggle with "an institutionalized system of corruption, social exclusion, impunity, unpredictability, a total lack of accountability and clientelism" (Uvin 2008, 109-10). The Burundian state has long been criticized for being ineffective at macro-economic management, oversized with a high debt ratio without results, and miss-use of public funds (Baghdadli et al. 2008). Such pungent instability is a significant risk factor for Burundian people (Baghdadli et al. 2008; Gates et al. 2012).

About 600,000 people in Burundi are defined as coffee farmers. For them, coffee is the only or main cash crop, and it supports over three million people in Burundi (Gereffi et al. 2014; Lenaghan et al. 2018; WB 2016). Producers in Burundi are divided into three groups: cooperatives, individual small-scale farmers that deliver their coffee to the nearest washing station for processing, and producers who collaborate with washings stations directly (Gereffi et al. 2014). This study focuses on farmers that deliver coffee to the washing stations of the intermediary connective business Mwiriwe Coffee, and farmers that collaborate directly with Mwiriwe Coffee.

The legal framework for national coffee production in Burundi limits coffee farmers to production of raw coffee cherries. Once farmers have grown and harvested their coffee, they hand over their coffee to a washing station for processing according to specific quality standards (ARFIC 2017). Burundian washing stations are either government or privately owned (Rosenberg 2017; Baghdadli, Harborne, and Rajadel 2008; Gereffi, Guinn, and Bamber 2014). Figure 4 below depicts the Burundian coffee value chain. Washing stations add value to the product by processing coffee cherries according to various standards, and export the coffee to buyers (Gereffi et al. 2014). Burundi's legal framework prevents farmers from adding value to their coffee and reiterates the already stark inequality in the GVC governance, and keeps most Burundian small-holder coffee farmers in poverty (Daviron & Ponte 2005; Neilson & Pritchard 2009). Furthermore, agricultural households are among the poorest in Burundi due to one of the highest population densities and one of the lowest economic growth rates in Africa, combined with insufficient food production (Baghdadli et al. 2008)

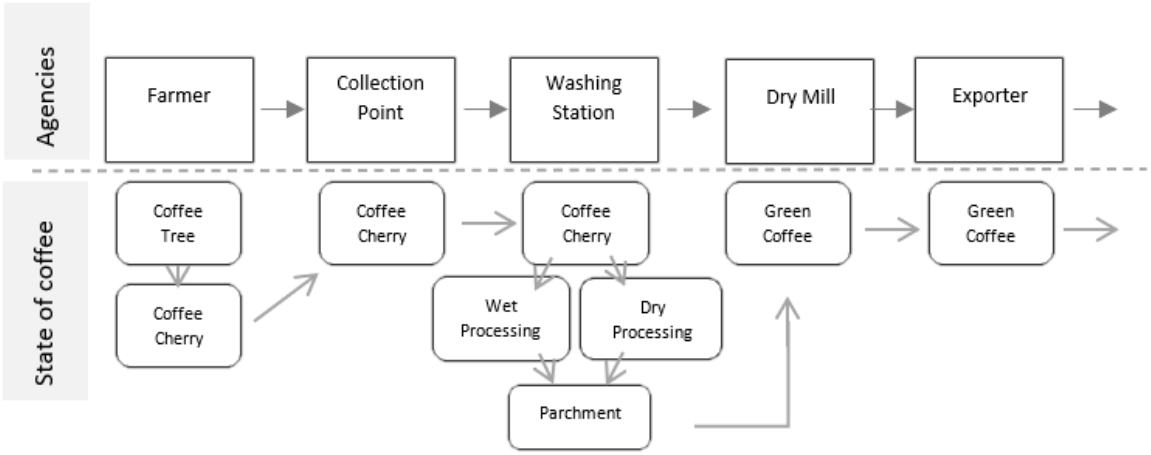

Figure 4: The coffee value chain in Burundi.

Burundi is the most coffee dependent country in the world, with coffee providing Burundi with 80-90 percent of its export revenue (Baghdadli et al. 2008; Gereffi et al. 2014; Ovalle-Rivera et al. 2015; Panhuysen & Pierrot 2018; World Bank 2016). The country has a long history of coffee production, dating back to colonial times, and was the 13th largest producer of exclusively Arabica coffee in the world in 2013 (Gereffi et al. 2014). However, as vital as coffee is for Burundi and its small-scale farmers, production has been declining due to poor returns, diminishing soil fertility, minimal inputs, and chronic financial, political and environmental uncertainty (Baghdadli et al. 2008; Gereffi et al. 2014; Lenaghan et al. 2018; World Bank 2016). Box 1 below present a brief narrative of how Burundian coffee farmers relate to coffee. In 2020, Burundi exported 255,000 bags of coffee, which is a meager 0.24 percent of the global Arabica exports (ICO 2021). A relational analysis of the low yields is covered in paper one.

Burundian coffee is predominantly traded in low-return commodity markets, with only four to seven percent of the coffee traded in specialty coffee markets (Gereffi et al. 2014; Lenaghan et al. 2018). However, Burundi has ideal biophysical conditions for producing coffee of exceptional quality with altitudes ranging between 1,500 and 2,000 meters above sea level (Gereffi et al. 2014). The potential to increase the annual production from 15,000 tons to 50,000 tons of high quality Arabica remains unrealized (World Bank 2016, p. 2). Considering the growing demand for specialty coffee, Burundi is argued to have a great competitive advantage in the GVC of specialty coffee (Gereffi et al. 2014; Lenaghan et al. 2018). Upgrading to specialty requires a range of technical, human, and financial capital to improve farm practices, harvesting procedures, primary processing, export preparation and storage in changing conditions due to climate change (Daviron and Ponte 2005; Gereffi, Guinn, and Bamber 2014). Many of these align with the recommended adaptation practices (Verburg et al.

2019), and thus Burundian coffee farmers transitioning to specialty coffee represent an interesting study of transformations in the coffee sector, covered in paper three and four.

BOX 1: Insight from the field

Coffee in Burundi is grown by small-holder farmers who were forced to grow this crop historically and have experienced a lock-in mechanism of coffee as their main income and they continue to grow it without knowing what it really is. During the fieldwork, I remember sorting coffee cherries into the cold dark night at the washing station. Farmers were wondering what coffee is. They wondered why mzungus (white people) are so crazy about it, working so hard for it, and paying such attention to detail. They wondered what it does for people who love it so much. They concluded that it must be a narcotic. This did not deviate far from the conversations I had with many farmers in their fields. They were wondering why we like coffee so much. Is it like beer, and it makes us chatty and happy? When I explained that it makes us awake, and focused mostly, they were shocked as to why we would want that. When I explained that I often met with friends or family to share a cup of coffee at a "coffee bar" and socialize, the confusion changed into an intrigue. Why socialize over something that makes you awake and focused? Most farmers had never tasted coffee and did not know that other countries produce coffee too. Many of the visits to farmers therefore included bringing brewed coffee, which was an interesting experience that quickly gathered a line of people from the whole hill. Some farmers loved it, but most thought it was strangely bitter and needed much milk and sugar to be enjoyed. This narrative is only to meant to provide an insight into the experience of how the relations of producing coffee manifest in Burundi.

2.5 Mwiriwe Coffee

Mwiriwe Coffee is an intermediary, connective business, established in 2013 in Burundi by a western family that had previously worked with specialty coffee to a limited extent. The aim was to establish relations with specialty coffee roasters in consuming countries, and Burundian small-scale coffee producers of commodity coffee. The founders who started and sustained Mwiriwe Coffee were explicit about wanting to transform Burundian coffee producing communities and wanted to put Burundi on the specialty coffee map by upgrading production to specialty coffee and ensuring increased livelihoods to farmers. They moved to Burundi and built two washing stations, funded by their own savings and faith-based philanthropy investors.

Mwiriwe Coffee had a head office in one of the major cities in Burundi, and two washing stations in different coffee producing areas. Mwiriwe Coffee hired local staff, developed an agronomical outreach program to increase coffee quality and yield, and worked actively with approximately 5,000 coffee farmers in the coffee growing areas of the two washing stations (presented in greater detail in chapter “4.3 Sample and participants”). Mwiriwe Coffee had received several Cup of Excellence awards and were witnessing an increase in yield and quality produced in collaboration with farmers. During field work in 2017, Mwiriwe Coffee had far more demand for coffee from buyers, than they managed to meet.

Being an intermediary actor, meant that they also hosted visiting roasters on buying trips to Burundi. During these visits, buyers, founders, and staff spent time together at the washing stations, and in the coffee producing hills with farmers. Buyer visits resulted in coffee purchases, and at times in social and environmental impact project investments. Buyers predominantly came from the Anglo-phone markets such as Australia, United States, and Europe. However, demand from South-East Asian markets was clearly increasing. Mwiriwe Coffee being a personal passion project for the founders, manifested in a relational approach to working with farmers, staff, and buyers. The line between private and personal aspects of doing business with Mwiriwe Coffee were often very blurred.

3. Theoretical Positioning

"Transformation is, at its heart, a deeply holistic, reflective, and relational process."

(Vogel & O'Brien 2022, p. 657)

The aim of this thesis is to contribute to an understanding of how the quality of relations producing space matters for sustainability transformations. I start by mapping out the literature on transformations, then pivot to describing the relational turn in social sciences, after which I connect insights from the transformations literature with strands from relational geography. The main aim of this chapter is to position this thesis within relational geography, and to describe the red thread of this work as the qualities of relations producing space.

3.1 Sustainability Transformations

Transformations are generally referred to as major changes in fundamental attributes of systems, both human and natural (Feola 2015; IPCC 2022). There is one definition of sustainability transformation that features frequently: a process of "fundamental changes in structural, functional, relational and cognitive aspects of socio-technical-ecological systems that lead to new patterns of

interactions and outcomes" (Patterson et al. 2017, p. 2). However, defining transformation as a fundamental shift can mask unjust processes of transformation that lead to unintended and undesirable consequences (Bennett et al. 2019; Blythe et al. 2018; Sediri et al. 2020; Zanotti et al. 2020). Transformational processes cannot be controlled and may negatively affect some groups (Blythe et al. 2018; Sediri et al. 2020). It has therefore been highlighted that *sustainable* transformations require attention to the *process* of transformation itself (Bennett et al. 2019; Grenni et al. 2020). Sustainability is often framed as a context specific construct, thus the process of making decisions matters just as much as the specific goal of transformations (Grenni et al. 2020). It has been suggested that sustainability transformations cannot be achieved without being *just* transformations (Bennett et al. 2019), and that transformational processes need to be co-defined by the actors involved in the process itself (Grenni et al. 2020; Pereira et al. 2020).

The large pool of perspectives on transformation (Bennett et al. 2019; Blythe et al. 2018; Grenni et al. 2020; Moore & Milkoreit 2020; Moriggi et al. 2020; Sediri et al. 2020; Shrivastava et al. 2020; Vogel & O'Brien 2022), and the frequent reviews of the transformation literature illuminate the gravity of needing to understand the concept of transformation (See Feola 2015; Salomaa & Juhola 2020; Scoones et al. 2020; Waddock 2020; Woroniecki et al. 2022).

With each report about the deteriorating state of our climate (IPCC 2022), biodiversity and eco-systems (IPBES 2019), the alarm bells ring louder for rapid and just transformations. There is a palpable urgency in the scientific drive to foster efforts of transformative change, underlining that this is the decade of opportunity to bend the curves before we reach irreversible tipping points (IPBES 2019; IPCC 2022; O'Brien 2021). "Nature can be conserved, restored and used sustainably while other global societal goals are simultaneously met through urgent and concerted efforts fostering transformative change" (IPBES 2019, p. 16). The message is that we need transformation now, we need it to be just, and it can be done.

Despite the increasing scholarly and policy-making effort on transformation, knowledge about transformations through studying *people's experiences* of transformations is limited (Fazey et al. 2018a; Woroniecki et al. 2022). However, empirical studies addressing transformations are on the rise (Eakin et al. 2016, 2019; Fazey et al. 2020; Marshall et al. 2014, 2016; Pereira et al. 2020; Wittmayer et al. 2019; Zanotti et al. 2020; Ziervogel et al. 2016). This thesis contributes to the call for more empirical studies on transformations by focusing on the experiences of transformation in Burundian coffee production.

Earlier empirical studies have focused on understanding transformational capacity attributes in individuals and societies as necessary for transformations to occur (Eakin et al. 2016, 2019; Marshall

et al. 2014, 2016; Ziervogel et al. 2016). Transformative capacities are defined differently in these studies but share the focus on actors' willingness and ability to undergo fundamental change processes. This is because the lack of transformational capacity was found to result in incremental adaptation, which is not sufficient according to transformations scholars (Eakin et al. 2016; Marshall et al. 2016). For example, a study found that farmers in Arizona made incremental adaptation choices, but that the capacity to perceive and implement choices that connect with necessary long term systemic changes was missing (Eakin et al. 2016). This has been followed up in more recent studies, which emphasize that any deliberate transformation process depends on people's capacity to imagine alternative futures as a prerequisite to inform transformative decision-making and actions (Fazey et al. 2020; Moore & Milkoreit 2020; Pereira et al. 2020; Wittmayer et al. 2019). The work on transformational capacities alludes to the important role of interior human dimensions for transformational processes to occur.

One element of transformational capacity tied to interior human dimensions is a strong attachment to place (Eakin et al. 2016, 2019; Grenni et al. 2020; Marshall et al. 2014, 2016). For instance, farmers in Arizona were more attached to the place than to their profession as farmers (Eakin et al. 2016). However, place attachments have also been viewed as potential barriers to transformational adaptation when there is a requirement for people to relocate (Kates et al. 2012; Marshall et al. 2014, 2016).

Transformation in practice is not a clear process from an undesirable state towards a desirable state of sustainability, but also includes subjective dimensions (Eakin et al. 2019; Pereira et al. 2020; Zanotti et al. 2020). Case studies of transformations that include subjective, or interior dimensions have been carried out and are, seemingly, on the rise (Gosnell 2022; Gosnell et al. 2019; Hochachka 2021; Marshall et al. 2014; Wittmayer et al. 2019). These case studies build on a longer history of research on the human dimensions in transformations by Carl Folke and colleagues (2011) from the Stockholm Resilience Center, integral theory that highlights the need to include people's interior dimensions (Esbjörn-Hargens 2005; Hochachka & O'Brien 20; Wilber 2005), and Donella Meadows seminal work on leverage points where the power to transcend paradigms is suggested as one of the most effective ways to intervene in a system (Meadows 1999). Paradigms are defined as "commonly agreed upon ways of perceiving the world based on linked assumptions which have been accepted into the mainstream" (Walsh et al. 2020, p. 74). How we perceive the world, and our role in it, is crucial to the ability to initiate and sustain transformative processes. The role of values, imagination, meaning making and the ability to transcend perspectives have been shown to play a crucial role in transformative processes (Hochachka 2019; Moore & Milkoreit 2020; Tschakert et al. 2016). This

thesis contributes specifically to further understand the role of values in sustainability transformations.

Transformational processes as fundamental processes of change are often uncomfortable (Pereira et al. 2020). This necessitates paying attention to people's subjective capacities to hold discomfort and, at the same time, imagine alternative futures (Fazey et al. 2020; Moore & Milkoreit 2020). Experiments of reconfiguring socio-ecological systems in transformative spaces were tested in five Global South countries (Pereira et al. 2020). Because transformative processes are uncomfortable, it is important that transformative spaces that enable dialogue, reflection and reflexive learning are safe enough – allowing participants to hold the discomfort, instead of avoiding it (Pereira et al. 2020). One of the studies testing such transformative spaces found that place attachments led to a loss of identity in the urban transformation of a wetland area in Xochimilco, Mexico (Eakin et al. 2019). However, the impacted population recognized the essential elements of their identity (such as resistance, solidarity and self-reliance) and this allowed for new opportunities to arise moving forward (Eakin et al. 2019). Holding discomfort and imagining alternative futures at the same time seems necessary for sustainability transformations. However, for transformations to be sustainable, they need to be just and inclusive, as earlier mentioned. This raises the critical question: whose discomfort and imagination should be included (Bennett et al. 2019; Moriggi et al. 2020; Pereira et al. 2020)?

What is in a name? That which we call transformations.

Researchers, policy makers, and development practitioners define and use the term transformation inconsistently and in a wide array of contexts. This has been highlighted as problematic (Feola 2015; Zanotti et al. 2020). New adaptation responses to a particular region or resource system may be considered transformational by some (Kates, Travis, and Wilbanks 2012; Marshall et al. 2012), but incremental by others (Eakin et al. 2016; O'Brien 2012). Examples involving fundamental changes to the core function of a socio-ecological system should qualify as transformation, but whether it is a 'sustainable transformation' or an 'incremental adaptation' for individuals and the community at large is often questioned (O'Brien 2012; Waddock 2020; Zanotti et al. 2020). Furthermore, there is an ongoing tension between terms such as resilience, adaptation and transformation in both research and practice (Zanotti et al. 2020).

To address this, several distinctions have been made in transformations literature such as; transformational adaptation (Hochachka 2021; IPCC 2022; Kates et al. 2012), social transformation (Stirling 2014), just transformation (Bennett et al. 2019), involuntary transformations (Woroniecki et al. 2022), transformability in resilience theory (Walker et al. 2004), and pathways of transformation (Westley et al. 2013). Some emphasize deliberative transformations (Hochachka 2021; O'Brien

2012), while others find transformation to be incidental (Parsons and Nalau 2016). In resilience literature, transformation definitions include non-linear fundamental shifts towards more resilient systems when existing ecological, economic, and social conditions make current systems untenable (Folke et al. 2010; Nelson, Adger, and Brown 2007; Westley et al. 2013). However, there is no agreement on the features that qualify a process as transformative (Waddock 2020).

There is an evident normative aspect to transformations that is worthy of attention (Bennett et al. 2019; Fazey et al. 2018b; Zanotti et al. 2020). Outcomes can be considered as transformational when there is a fundamental change in the way a system is configured (Fazey et al. 2018b; Feola 2015; Westley et al. 2011). Processes can be considered as transformational when they are co-constructed by the actors involved (Bennett et al. 2019; Grenni et al. 2020; Pereira et al. 2020). The content of a narrative can be considered transformational when it i) questions the current economic system, ii) communicates communal and relational values, and iii) presents a holistic view of humans (Wittmayer et al. 2019). This suggests that there are certain qualities that normative aspects of transformation are alluding to. For instance, transformed knowledge systems for the future are identified as more collaborative, open, diverse and egalitarian (Fazey et al. 2020). Others suggest that sustainability transformations require qualities such as "a) ethically informed practices, b) relational response-ability, and c) emotional awareness" (Moriggi et al. 2020, p. 281).

Sustainability transformations seem to include qualities such collaboration, holistic perspectives, ethical behaviour, egalitarian attitudes, relational capacities and emotional awareness. Building on these insights, this thesis draws attention to and acknowledges the work on relational qualities of transformational processes (Gram-Hanssen et al. 2022; Moriggi et al. 2020; O'Brien et al. 2023; Walsh et al. 2021).

Because transformations do not happen without challenging the status quo (Pereira et al. 2020), it is increasingly clear that shifting the research focus (and the ways of doing research) is necessary to understand social and political barriers to transforming our societies (Horcea-Milcu et al. 2019; Lahsen & Turnhout 2021; Shrivastava et al. 2020). It is acknowledged that no single knowledge system can induce the ambitious societal transformations necessary to deal with the complexity, wickedness and interconnectedness of the challenges facing our societies (Fazey et al. 2020; Shrivastava et al. 2020; Vogel & O'Brien 2022). To contribute further to the relational qualities of transformations, I now focus the relational turn in social sciences, and on relational geography as part of the theoretical positioning of this thesis.

3.2 The Relational Turn in Social Sciences

Every now and then scientific thought moves through "turns", characterized by different assumptions about what exists and how research should proceed (Hubbard 2005; Kuhn & Hacking 2012). The relational turn is one of the recent ones that aims to redefine research in humanities and social sciences (for a review, see West at al., 2020) and has been highlighted as promising for sustainability science (Boehme et al. 2022; Walsh et al. 2021; Wamsler et al. 2021).

Process philosophy by Alfred North Whitehead presented the tenants of relational thinking a century ago (Whitehead 1920, 1978). It posits that everything is constantly in a state of becoming. Whitehead's philosophy focuses on the idea that reality consists of unfolding processes and relations and that no entity exists in isolation (Whitehead 1920, 1978). However, relational perspectives have developed outside the Western Enlightenment thinking for millennia in indigenous knowledge systems and religious wisdom (Walsh et al. 2020). More recently, relational perspectives can be found in new materialism (Barad 2007; Coole & Frost 2010; Walsh et al. 2021) and in the acknowledgement of living and non-living matters such as animals and technology as co-constituting assemblages through Actor-Network-Theory and assemblage theory (DeLanda 2006; Latour 2007). Feminist scholars have also offered important accounts of the way subjectivity shapes scientific practice in relational work that stretches beyond limits of reflexivity (Barad 2007; England 1994; Haraway 1996; Walsh et al. 2020). The relational turn is about making this knowledge available and scientific for the modern western worldview (Jones 2009; Walsh et al. 2020).

So, what are the fundamental assumptions about how the world works from a relational paradigm? The premise is "that relations between entities are more fundamental than the entities themselves" (Wildman 2006 in Walsh et al. 2020, p. 3). It is therefore impossible to look at any entity in isolation because its existence only becomes in relation to all else. A relational ontology is therefore well known for transgressing many dualisms found in social sciences today; such as object/subject (Mansfield 2000), objective/subjective (Massey 2005), matter/meaning (Barad 2007), social/ecological (Hertz et al. 2020), nature/culture (Whatmore 2002), global/local (Massey 1994), individual/collective (Walsh et al. 2020), personal/scientific (Eriksen 2022), internal/external (Eriksen 2022), place/space (Doel 1999; Massey 2005), space/time (Massey 1994, 2005) and concrete/abstract (Doel 1999; Massey 2005).

3.3 Relational Geography

> "It is a world being made, through relations, and there lies the politics."
> (Massey 2005, p. 15)

This section presents a non-exhaustive summary of the tenets of relational geography. Human geography has engaged with relational perspectives for decades (Doel 1999; Massey 1994; Murdoch 2006; Thrift 1996). These perspectives are essential to understanding and addressing the research questions in this thesis and contribute to the aim of illuminating how the quality of relations *producing* space matters for sustainability transformations. Furthermore, relational geography intersects well with the three principles identified for effective transformations: "diverse knowledges, plural pathways and the essentially political nature of transformation" (Scoones et al. 2020, p. 71). However, in human geography, the relational approach is woven together with post-structuralism, deconstructive and post-modern perspectives, which come with their own ontological and epistemological framings that will be introduced now. I therefore want to focus here on the onto-epistemological positioning of relational space, followed by the attentiveness to change, before offering words of caution that will be reviewed and discussed briefly.

Thinking about space relationally was a distinctive turn and became a mantra of early twenty-first century writing in human geography (Doel 2009; Massey 2005; Murdoch 2006; Thrift 2004). It represents a geography of becoming (Doel 1999; Massey 2005). This body of work signifies a paradigm shift from absolute space (a container) and relative space (defined by relation to objects and processes), to dissolving boundaries between objects and space and rather paying attention to the interrelationships between spaces and objects (Jones 2009). It represents a shift from topographical knowledge to topological thinking; which "refers not to surfaces but to 'relations' and to the interactions between relations" (Murdoch 2006, p. 9). It is a non-Cartesian curiosity of the between-ness of joint action (Thrift 1996). Relational geography lets space take place (Doel 1999).

What is space then? "We recognize space as the product of interrelations; as constituted through interactions, from the immensity of the global to the intimately tiny" (Massey 2005, p. 10). These relations that produce space are understood as embedded practices (Massey 2005). Space is normally a noun, but in relational geography it is a vague term because it becomes a verb (Cresswell & Merriman 2011; Doel 1999). However, it not a verb as in 'to space' meaning 'to separate'. Rather space is considered a verb because it is conceptualized as a process, an event, a practice, which does not exist prior to the relations that constitute it (Massey 2005). Yet, space is not abstract but rather concrete because it manifests through practice (Doel 1999; Massey 2005; Thrift 1996). Vagueness is one of the criticisms against relational geography and, to address this, I provide an illustration of

how space is relational in this study however it is first important that I describe one more aspect of relational space.

One of the dualisms that relational geographers deal with is time and space - suggesting that temporal and spatial dimensions are inextricably interwoven (Jones 2009; Massey 1994, 2005; Thrift 1996). The crucial point here is to move away from thinking of space as a slice through time in which we can produce a momentary still image of how relations come together (Massey 2005). By doing so, Massey argues that we limit space to a timeless representation of a closed system, whereas space is a meeting of histories with open-ended futures (1994, 2005). Space – you – me – time – continually make each other. To make this more concrete:

> You are not just travelling *through* space or across it, you are altering it a little. Space and place emerge through active material practices. Moreover, this movement of yours is not just spatial, it is also temporal. The London you left just half an hour ago (as you speed through Cheddington) is not the London of now. It has already moved on.
> (Massey 2005, p. 118)

Space being a process of becoming, means it is never constant. This temporal dimension to relational space entails a useful attentiveness to change, to which I turn the focus towards in this thesis.

A cup of coffee is here considered as a relational space weaving together interactions across scales (Doel 1999; Massey 2005; Murdoch 2006; Thrift 1996). The coffee production (space) is in a continuous process of becoming that includes the history of becoming one of the most traded global commodities based on exploitation of people and nature with these historical traces still highly prominent in the space of coffee production today (Daviron & Ponte 2005). Colonialism (based on ideas of superiority, authority, control, exploitation, violence, oppression, and cruelty) transformed the landscapes of tropical countries over the past centuries and is still part of current coffee production (Daviron & Ponte 2005). A global commodity trade started by European colonial authorities moved a genetic variety of the Arabica Coffee tree (indigenous to Ethiopia) across the Atlantic Ocean. One of these consequences is the limited genetic diversity in Latin American coffees today, which causes a higher vulnerability to leaf rust in a changing climate (Avelino et al. 2015; Verburg et al. 2019).

Because entities are mutually constituted, relational geography prides itself on avoiding the pitfall of classical individualism and structuralism (Massey 2005). In relational geography there is no assumption that we can find underlying structures explaining why humans (e.g., coffee producers in a changing climate) behave in certain ways. The post-structuralist thought challenges the idea of underlying structures because cultural and social systems are seen as constantly changing, being negotiated and redefined by actors (Doel 1999; Murdoch 2006). Systems are rather open, dynamic

and fluid, rather than closed and structurally locked together (Massey 2005; Murdoch 2006). Globalization, capitalism, and neoliberalism are therefore not viewed as structures but as manifesting practices from specific relations. However, patterns of these practices repeating themselves are acknowledged, which creates norms and institutions that can feel like stagnant structures (Doel 1999; Massey 2005; Murdoch 2006).

Attentiveness to change

Because a relational world renders separation impossible, no object can be understood outside the relations of its production (Massey 2005). The focus is therefore turned away from understanding objects towards understanding relationships. From representing to resonating (Thrift 1996). From causal mechanism or underlying structures to processes (Walsh et al. 2020). From Cartesian and Newtonian certainty to non-representational knowledge (Thrift 1996; Walsh et al. 2020). Learning to become alert to difference and to trace the resulting trajectories of change is the way forward according to some geographers (Doel 2009; Massey 2005; Murdoch 2006). The attentiveness to change that has already been alluded also includes a lack of change or movement, which reflects geographies of power.

Because space is a process of becoming, it entails an unavoidable element of change (Massey 2005; Thrift 1996). The epistemology is therefore arguably about tracing the trajectories of change. This is highly relevant when considering transformations, which are processes of fundamental change.

> Human geographers, then, need to account for the relational spaces that *do* emerge, and they need to understand how particular spatial configurations are generated. But equally, some attention must be paid to spaces that *do not* emerge, to the sets of relations that fail to gain any kind of spatial coherence. (Murdoch 2006, p. 20 Original emphasis)

This quote alludes to an important point; that some actors initiate movement of spatial configurations, while others remain still (Cresswell 2015; Massey 2005; Murdoch 2006).

For instance, coffee cultivation is spatially 'fixed' due to the specific biophysical conditions necessary for the coffee tree to produce coffee cherries. While the coffee bean as a product is not fixed but allowed 'free' movement by the neoliberal trade practice. However, coffee farmers are spatially 'fixed' at the place of coffee cultivation. Spatial fixes of people are a manifestation of the neoliberal practice of spatial organization of labor for instance (Massey 2005). But only of certain people. Coffee roasters from the Global North travel to the producing countries in the Global South to taste and select coffees, whereas most producers from Burundi do not travel to consuming countries to approach or be approached by roasters. Buyers shop around to find the right coffee among a range of producers, while producers wait.

The coffee production space is closed for some actors, and open for others. It is in the relations of producing space that geographies of power emerge (Cresswell 2015; Massey 2005). Globalization and capitalism are practices manifesting from specific relations, and these relations need to be assessed and reconfigured, rather than taken for granted, which legitimizes their reinforcement (Massey 2005). Allowing imaginations to run with globalization and capitalism as the only form in which the world can move does not view the future as open-ended and does not allow for the plural pathways and trajectories of transformation to unfold (Callon 1998; Fazey et al. 2018a; Latour 2007; Massey 2005).

Once relations meet in space, through embedded practice, power-geometries emerge. Which relations construct spaces that open, and which construct spaces that close? Relations are double-edged and can facilitate access but (equally so) they can constrict and exclude (Massey 2005; Murdoch 2006; Thrift 1996). Globalization is, for example, not space reduced to distance, but a geography of power that manifests in the way spatial relations unfold (Massey 2005). Building on this, it is important to pay attention to the *content* of the relations through which space is constructed (Massey 2005). What is the content of the relations constructing space?

The argument in this thesis is that the quality of relations constructing space matters, aligning with relational human geography by emphasizing that the content of the relations matters (Massey 2005), and the work on the indigenous concept of right relations (Gram-Hanssen et al. 2022). The quality of relations has mostly been addressed through relational values, positioned outside human geography and in literature centered around ecosystem services (Chan et al. 2018). Relational values refer to what Chan et al. (2016, p. 1462) describe as “preferences, principles, and virtues associated with relationships, both interpersonal and as articulated by policies and social norms”. Relational values also emphasize that what matters most is the relationship itself, and this concept has been a recent and important contribution to research on biodiversity conservation and ecosystems (Chan et al. 2016; Allen et al. 2018; Ishihara 2018; Chan et al. 2018).

Recent work by human geographer Gram-Hanssen and colleagues (2022) shed light on precisely the content of relations constructing space, drawing on Indigenous knowledges. They suggest that ‘right relations’ mean “an obligation to live up to the responsibilities involved when taking part in a relationship – be it to other humans, other species, the land or the climate” (Gram-Hanssen et al. 2022, p. 673). I would like to draw attention to two aspects in this quote. Firstly, it accentuates the responsibility of being in a relationship stemming from an acknowledgement that humans are *fundamentally* entangled and vulnerable (Barad 2007; Eriksen 2022; Gram-Hanssen et al. 2022;

Moriggi et al. 2020). Furthermore, relational responsibility in this instance is not only an obligation, but an essential condition for building transformative capacity (Moriggi et al. 2020, p. 287). Yet, there is a "persistent Russian-doll geography of ethics, care and responsibility: from home, to local place, to nation" (Massey 2005, p. 186). The relational responsibility needs to move past its territorial proximity, and, for instance, across the vast spaces that the GVC of coffee entails.

The other aspect in 'right relations' highlights human and non-human nature as mutually constitutive and thus values more-than-human relations (Walsh et al. 2021). However, in human geography, the attention to non-human relations has predominantly been given to technology and science (Latour 1988, 2007). In this work, I would like to draw attention to the quality of human-relations by considering lived experiences and enacted values, while the non-human relations include coffee pests, nutrients in the soil, and insects to mention a few.

Relational caution and implications for transformations

A range of concerns with relational geography need to be considered before moving forward. The main the criticism of relational geography is the empirical problem (Cresswell 2015; Harvey 1996; Jones 2009). How can anything specific be said about relational space – when everything is thrown together momentarily (Cresswell 2015)? "Reduction of everything to fluxes and flows, and the consequent emphasis upon the transitoriness of all forms and positions has its limits and says nothing about nothing" (Harvey 1996, p. 495). When nothing can be separated due to ontological incommensurability with any dualism, how can we say anything specific in writing (Walsh et al. 2021; West et al. 2020)? Relational geography "lacks the widely applicable and observable material basis" (Jones 2009, p. 496), whereas it is argued that for sustainability transformations to be considered an empirical phenomenon, "it needs to have a dimension of time and space and it has to be observable" (Salomaa & Juhola 2020, p. 2). So how can the two co-exist in this study?

While it is important to present the material and observable, this research is a direct response to the call for including the non-observable elements and it does so by presenting the subjective lived experiences, emotions, and values. The unobservable matters for the observable because they are entangled ontologically. Yet, there are palpable tensions in between spaces that cannot be observed but only be known by embodied experience of doing research. A relational paradigm includes the researcher in active ways and accounts for the observer's role in shaping the knowledge. The main purpose is to resonate in a relational paradigm, rather than to represent (Thrift 1996). There is the shared human experience at the core of this work - one that cannot be achieved by separating the personal from the scientific (Eriksen 2022). There is no Cartesian or Newtonian certainty, which is a vulnerable and uncomfortable stance to take in science (Eriksen 2022; Massey 2005). Furthermore,

sometimes it is the absence of the material basis that is a finding itself, all of which will be covered in greater detail in the following Methodology chapter.

The criticism of relational geography that is most applicable to this thesis is that "relational thinking implies openness that often belies the lived-experience of many" (Jones 2009, p. 493). Contextual forces such a race, gender and location are important framings for opportunities and constraints (Allen 2012; Jones 2009). The lived experience of these contextual forces does not align with the open-endedness of relational space, especially when imagined potentials do not become actual practices (Jones 2009). The lived experiences of exclusion and poor living conditions among coffee farmers were evident in this study and in works by others (Jimenez-Soto 2021). Yet, relational geography pays specific attention to how the relations manifest in the ability to create or limit movement in space (Massey 2005; Murdoch 2006; Thrift 1996). Some relations, and therefore spaces, change while others perpetuate stagnation. Some produce openness, while others produce closure. By taking lived experiences into consideration, they do become part of the relations that produce space but ones that offer voices of powerlessness and confirm spaces of closure. The attention to power in the production of space addresses the criticism of relational openness contradicting the lived experiences of closure, and is one criticism that needs to be addressed carefully (see Allen 2004, Cochrane 2003, Cochrane & Arredondo 2005, Yeung 2005 for more).

There is also the issue with spatial relations of permanence, which relational thinkers are uncomfortable with (Harvey 1996; Jones 2009). A point clearly made by the seeming permanence of unequal power relations in the GVC of coffee (Grabs & Ponte 2019). However, insights from relational governance of global coffee value chains offers some hope for alternative futures (Borrella et al. 2015; Hochachka 2023). "All things considered potential does not necessarily become an actual" (Jones 2009, p. 493). If we do not even start with an imagination of a different potential - and accept capitalism, neoliberalism, and globalization as unavoidable forces - then what hope is there for transformative change? This is relevant for transformations – because it has been highlighted that the capacity to imagine alternative futures, with a sense of responsibility, is a prerequisite for transformative change (Milkoreit 2017; Moore & Milkoreit 2020; Moriggi et al. 2020; Thrift 1996). Thus, the permanence of spatial relations is temporary.

4. Methodology and Research Design

"Led by a new paradigm, scientists adopt new instruments and look in new places."

(Kuhn & Hacking 2012, p. 111)

This research has the objective of exploring how transformations towards sustainability in the coffee sector can be realized. The research itself, however, is not objective. Taking a relational approach comes with a set of onto-epistemological conditions. The ontological foundation has been introduced above, while the epistemological repercussions are presented in more detail here. Thereafter, I present the case study design and selection followed by an introduction of the methodology of ethnography. The participants in this study are then introduced, followed by the methods I employed. I then discuss ethical considerations, of which there are many. Towards the end of the chapter, I consider the assumptions and limitations of the study.

A relational approach to knowing in this study starts by explicitly avoiding the reduction of the complex relations of coffee production into the object of coffee. Overall, relational epistemology turns the focus away from objects to relationships, from structures to processes and from quantities

to qualities (Walsh et al. 2021). The relational paradigm, although well established in human geography, is a transdisciplinary field. This comes with mixing of knowledge making-practices, epistemic frictions, and disciplinary boundary crossing (Ahlborg & Nightingale 2021). Assemblage theory (DeLanda 2006), actor-network-theory (Latour 2007), systems theory (Preiser et al. 2018), feminist diffractive models (Haraway 1991, 1996), and integral theory (Esbjörn-Hargens 2010; Hochachka & O'Brien 20) are some examples that have informed my thinking and approach to this research.

Furthermore, relational epistemologies rely on empirical methods that account for subjectivity and its role in shaping scientific practice (Walsh et al. 2021, p. 79). "Something… must be wrong somewhere, if the only way to understand our own creative involvement in the world is by first taking ourselves out of it" (Ingold 1995: 58 in Whatmore 2002: 3). Within human geography, I have found inspiration in relational ways of knowing that do not assume a separation between humans and nature (Massey 2005; Whatmore 2002), and between research and the researchers in non-representational theory (Thrift 1996) and situated knowledges (Haraway 1996). What they all share, is a boundary crossing exercise that fundamentally challenges that Cartesian separation of mind and matter (Ahlborg & Nightingale 2021; Barad 2007; Haraway 1991). The goal is not to present a static representation of space, but to be attentive to changes in the content of relations through which space is constructed, and therefore the spatial outcomes/configurations (Massey 2005; Murdoch 2006). Being part of the relations that produce space is how I gain insights into the changes in relations producing coffee. The point of departure is therefore that I cannot be objective by taking myself out of the context, and neither is that the goal. Rather, I am part of the relations producing the spaces studied, and that is what I share in this work.

4.1 Methodologies

Case study design and timeline

A case study is defined as "an intensive study of a single unit for the purpose of understanding a larger class of similar units" (Gerring in Baxter 2010, p. 81). This is a qualitative case study of an intermediary actor transforming coffee production to specialty coffee in Burundi. It is a case study of a particular process of upgrading towards specialty coffee in a changing climate, in a particular place (Burundi), but about the larger phenomenon of transformation. However, "the boundaries between phenomenon and context are not clearly evident" (Yin 2009, p. 18). It is therefore both a case study of transformations, and about transformations that responds to a concrete problem of how the coffee sector can transform towards sustainability. This research contributes to the scholarly debate on transformations by providing an empirical case study of transformations from a relational perspective. Lastly, the investigation of how the shifting relations of coffee production manifest

spatially contributes to knowledge on the larger phenomenon of transformations toward sustainability.

The design of the case study was initially centered on selecting the case study that would enable me to explore how transformations towards specialty coffee configured relations of production. I began my project with a working hypothesis that the capacity of smallholder coffee farmers to adapt to climate change would be enhanced by transitioning to producing speciality coffee. The rationale behind this was that a quality product could not be produced under the current relations of production, and I wanted to explore how producing speciality coffee reconfigured the relations of production, if at all. I therefore needed to purposefully choose a unit of analysis that was undergoing the shift from commodity to speciality coffee.

The design of this study was collaborative with actors in the coffee sector and was a process that spanned a few years. My life partner working with specialty coffee meant that I had access to a network of actors within this sector. I set up meetings with several companies in Oslo to discuss possible research avenues. During these meetings, it became clear that research on how to transform the coffee sector was necessary based on the many reports of farmers struggling in a changing climate. I also became aware of the pull towards technical solutions such as new coffee varietals and changing farming practices. I noticed a prevalent assumption that small-holder farmers would make the necessary changes once they were informed about what to do. However, I wanted to pay attention to both practical and subjective dimensions of transformation, knowing that the latter is necessary, but often neglected. It was therefore important for me to find a case study that worked practically and paid attention to the personal sphere of change too.

In summary, this study is a case study of a GVC of an intermediary actor aiming to transform coffee production in Burundi. It is a case study of a transformative process as a phenomenon. The study was designed with multiple methods; namely, participant observation, qualitative interviews, photo-elicitation, and document analysis.

Case study selection

The case study was designed based on a scoping study prior to this PhD, building on relationships that were developed a decade ago. I will present a summary of this process here to introduce how this study unfolded.

During the scoping meetings with the specialty coffee sector in Oslo, it was recommended that I go to the global industry fair where I could interact directly with actors from producing countries. I therefore went to a World of Coffee event in Gothenburg in 2015, where producers from most

coffee producing countries were represented. During the interactions I had, it became evident that climate change was a challenge all producers faced. I was asked by producers from Panama, Costa Rica, and Columbia to come and do research in their spaces of coffee production. They hoped that this research would provide them with answers and hope in times of despair. They explained feeling like they were shooting in the dark, not knowing what to do with decreasing yields, and increasing pests due to climate change. I felt a strong sense of responsibility to do this research "right".

However, in Gothenburg, there was one intermediary actor based in Burundi that caught my attention by speaking about several challenges facing Burundi, and at the same time about deliberate transformation. Our paths had crossed earlier on the African continent in 2010 when the two founders were selling off their assets to move their family to Burundi and establish Mwiriwe Coffee there. At that time, I bought a French coffee press from them, and learned that they were packing up their life with no experience of running a business, how to process coffee or set up a washing station. Furthermore, they had no competence in French or Kirundi, the two main languages in Burundi. They did know how to cup and source good coffee, and they had seen a need and potential to upgrade Burundian coffee production to specialty coffee. They were explicit about wanting to transform Burundian coffee growing communities, while admitting that they did not necessarily know what that would look like, or how to do it. A seed of curiosity had been planted and kept growing at each global coffee event we both attended. Somehow, they stuck out.

My sister-in-law had started a PhD exploring sustainability in the coffee sector and was doing her research on the same quality coffee project from 2013 to 2017. Her research on the sustainability challenges in the Burundian coffee sector gave me insights into the company's activities in the years leading to my field work. She was also planning to start working for Mwiriwe Coffee, which was a process separate from my search for a case study. However, knowing people within the company helped with the scoping process (discussed in greater detail in the ethical considerations section of this chapter). There was something different about Mwiriwe Coffee, and I have always been drawn towards outliers. Pursuing them as a case study during the proposal writing process made sense, since I was interested in transformation.

After the scoping study in Gothenburg, I sent the first email to Mwiriwe Coffee having already started the proposal for this study. I introduced this study on the 9th of August 2015 in the following way:

> I am trying to study transformative processes. […] I focus mostly on climate change in a development context and found that speciality coffee is a perfect case study for that. Coffee is extremely climate sensitive, meaning that the sector will need to adapt, whilst smallholder coffee farmers have very low adaptive capacities. So, the question I would like to propose is how a

> process of upgrading the production to speciality coffee can include successful adaption measures in a development context? I am not talking about technical adjustments, not about being able to cope better with increased or new risks. I am talking about real transformations, about change that challenges the causes of risks and people's vulnerabilities in the first place, about change that empowers those who have been marginalized, about change that makes people proud of their own lives and gives them a sense of agency combined with a real opportunity for a brighter future. There are so many theories on transformations, but so few studies that document real life transformative processes.

This was then followed by what it would mean to do field work with participant observation, interviews, photo voice and document analysis. I also explicitly asked whether I could study Mwiriwe Coffee.

The response I received on the 3rd of November 2015 included:

> Love the email and passion and sorry for the non-response. I think the main delay and nonresponse is that we have no-idea what is going on in Burundi with safety.
>
> It is constant guns, bombs, grenades, attacks, and people being sent to prison for no reason.
>
> So, I think that you could add a tremendous amount of value to Mwiriwe.
>
> The deal is I'm not sure when you could safely do this. Right now, taking images in the hills is risky at best. We were threatened to be hacked into little pieces if we took any more images. So it is real.
>
> Any way….
>
> We could use you!
>
> Not this year.
>
> Can you wait a year and re-visit this?

We emailed each other every few months, but we could not plan anything specifically. I started this PhD study in March 2016 without a specific case study, but a desire to study Mwiriwe Coffee, and with the hope that the safety situation in Burundi would change.

I did the first round of preliminary fieldwork at another World of Coffee industry fair in Dublin in 2016. At that time, I had short term employment as an intern for a specialty coffee importer based in Oslo. The aim was to finally choose the specific GVC as a case for this study, and practice ethnographic participant observation methods before the main field work.

During the World of Coffee event in 2016, I met with Mwiriwe Coffee founders in person and discussed whether and how this research could be done. Safety was still an issue. Doing participant observation meant that I would take part in doing what Mwiriwe Coffee was doing. During our meeting in Dublin, we discussed what that could look like and decided that being an intern would make the most sense. I would gain insight into Mwiriwe Coffee by being part of their daily activities,

coping with challenges, finding, and implementing solutions in Burundi. However, it was not until September 2016 that we agreed to go ahead with this research and concluded that I could do field work from January to June 2017, which allowed me to experience the buildup to the coffee season and the coffee harvest itself. This study was therefore designed in collaboration with the case study participants. I chose Mwiriwe Coffee as a case because of my own long-lasting interest in Mwiriwe's deliberate attention to transformation, and not at the request of the company, or my sister-in-law. The intrigue of risk-taking also made it an attractive case study for me. It was therefore a targeted case study that would allow me to research potential transformations in a changing climate, in the coffee sector vulnerable to climate change, and in Burundi where little research was done (Gobo 2007). An overview of the timeline of the activities carried out in designing and conducting the research for this study is presented in Figure 5 below.

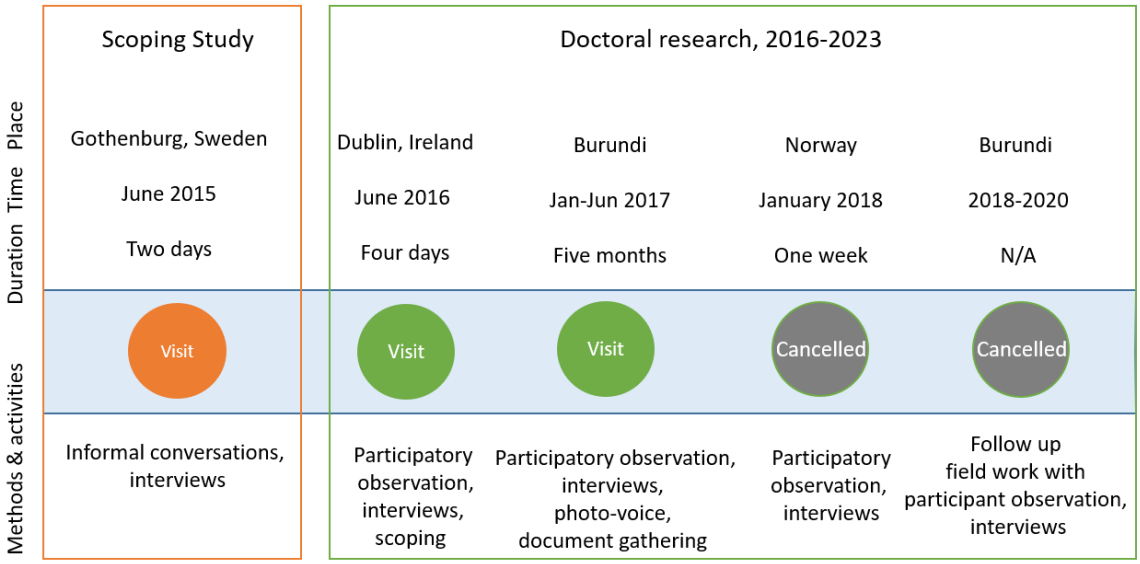

Figure 5: The timeline of designing and carrying out the research for this study.

I initially designed this study to include the whole value chain, from coffee production in a selected coffee origin, to the consumption of the very same coffee in Norway. I planned to do five months of field work in the defined place of production, followed by field work in Oslo, with short follow-up field work back in the place of coffee origin.

However, I had to alter the design of the study during this research for two reasons. Firstly, I assumed that I would only interact with the first half of the value chain in the coffee producing country, and that it would be necessary to do follow up research in Oslo. However, during field work in Burundi, coffee buyers and roasters visited, and I gained insights about the consuming end of the value chain. Secondly, the amount of data gathered was substantive, and I realized that carrying out

field work in Oslo would not add to an understanding of changing relations of coffee production that were of interest to me. The Oslo field work was therefore cancelled.

Upon returning from Burundi, I had to cancel the planned short follow up fieldwork in Burundi due to pregnancy and the birth of my first child in 2018. I planned to travel back with a young child in 2020, but the ongoing Covid19-pandemic meant those plans were cancelled too.

Ethnography

The goal of ethnographic research in anthropology was originally to plunge into a small native community for extensive periods of time, observe and understand how that particular population viewed life (Crang & Cook 2007a; Hammersley & Atkinson 2007). During the design phase, it seemed like a great idea to immerse myself, not into a small native community, but a new configuration of coffee production in Burundi and explore how the shifting relations manifested spatially. However, ethnography's history of being done by white, middle aged, heterosexual, and male scholars attempting to understand "the other" (England 1994) comes with certain baggage. This has luckily changed to some extent, although the critiques of embedded power dynamics in research regarding gender, class and race have nevertheless followed the ethnographic endeavor (Verne 2012; Watson and Till 2010). Some of these are addressed through a relational paradigm avoiding "othering" (Hovorka 2012), yet being a white, capable and, in comparison, a well-off female with the ability to leave when needed meant the embedded power dynamics were unavoidably present and will be addressed later in this chapter. Furthermore, despite this being a relational study, I was still repeatedly asked by reviewers of manuscripts for this thesis to group informants into categories by their position in the GVC and by their gender. In this study, I have attempted to do so meet these requirements without "othering".

Ethnography based on participant observation aims to reveal multiple truths of others' lives, rather than determining *the truth*. Ethnography is "the peculiar practice of representing the social reality of others through the analysis of one's own experience in the world of these others" (Van Maanen 2011, p. ix). The researcher should by no means attempt to be invisible, but rather, as a crucial part of the study, be sensitive to how one is treated by others (Dunn 2007; Mountz 2007a). A reaction to the researcher's presence during an event can be as valuable as the observed event itself (Emerson et al. 2011).

In an ethnographic study the aim is not representation, but rather rigor that can be achieved with a systematic approach by theoretical sampling, theoretical saturation, and theoretical adequacy (Crang & Cook 2007). In theoretical sampling the aim is to target the representation of the phenomenon within the population of particular interest to the study (Crang & Cook 2007; Gobo

2007). In this case, I was interested in sustainability transformations and therefore chose to study a company that explicitly aimed at transforming coffee farming communities.

Scholars use 'the field' as a concept, leaving readers with the impression that what the field is is obvious, self-explanatory, or implicit. However, it is not. It has become necessary to challenge the pure form of ethnography involving a researcher's immersion into a geographically demarcated field. In human geography, the field is multi-sited at best, or in the case of a GVC, it includes actors and processes in diverse parts of the world (Crang & Cook 2007). Where does the field of sugar end for instance (Mintz 1986)? With the importers, or tea drinkers in London, or the costumers of English shortbread in Germany? Where does the field end in workplace ethnography? These questions are raised with good reason by Cook and colleagues (2006; 2007). Both the field and the population studied are not static entities, which makes reaching the point of saturation a challenge in a more classical anthropological sense. With increasing mobility of people, goods and information, ethnographic studies are increasingly moving away from the more traditional approach of studying unknown objects in a limited geographical area over a lengthy period (Burawoy 2000; Delamont 2007; Verne 2012). More contemporary versions of ethnography aim to explore issues that take place in more than one field or site (Burawoy 2000; Dunn 2007).

Scholars in anthropology have been trained to master ethnography through years of graduate education (Marcus & Okely 2007). Transferring this particular method to another field without the essential training in it naturally comes with challenges of its own (Burawoy 2000; Delamont 2007). One of the first studies to reveal the potential of ethnography outside of anthropology was done in 1963, finding unanticipated tendencies among management staff stimulating unlawful work practices (Bensman & Gerver 1963). A human geographer cannot talk about work, one has to do the work itself (Dunn 2007). In a similar way, by doing the work, and being part of 'payday' to farmers, I discovered several insights that were of interest. One was the importance of paying farmers in envelopes with their names written on them, which the farmers considered to be an important and respectful act (covered in greater detail in article two).

Ethnography as a methodology allowed me to design the research to enable deep engagement with the case of interest, while also enabling me to be attentive to the details of change without knowing what direction this research would take. This is because ethnography is not one straightforward approach, with a specific recipe that will lead to data that can be analyzed and yield rigorous results.

The field in this case was the space of coffee production initiated by an intermediary actor. It therefore included the central office in the city and two washing stations in coffee growing areas. The field also included the trips to official government offices regulating coffee production, and

interactions with government officials on the road and in the coffee hills. The way Mwiriwe Coffee staff were treated by government officials became important data, for instance. The field also included relations between farmers and staff, me, government officials, trees, land, and forests to mention a few. The field also included coffee farmers' croplands that were up to 25 kilometers away from the washing station. The field in this case also included the relations between roasters and Mwiriwe Coffee, which unfolded both through physical visits to Burundi, and over social media and email. The field in this study was therefore defined by the ongoing relations with Mwiriwe Coffee. The general understanding was that a researcher should stay in the field until the point of saturation, where no new information is collected (Crang & Cook 2007; Emerson et al. 2011). This study was based on five months of fieldwork in Burundi in 2017 during a coffee harvest season. The planned follow up field work was cancelled as explained earlier.

4.2 The actors and selection of participants

This is a case study of Mwiriwe Coffee, an intermediary actor aiming to transform coffee production in Burundi, and the field is the ongoing relations with Mwiriwe coffee. The sample and participants of the study are defined by being in an ongoing relationship with Mwiriwe Coffee. However, doing participant observation meant that I interacted with anywhere between ten to hundreds of people in one day. The number of participants in this study is therefore hard to define, especially farmers, and government officials. Approximately 5,000 coffee farmers deliver coffee to Mwiriwe Coffee. I could not interact with all of them, but I did interact with many. However, there are some I interacted with more than others. Daily life during field work included interaction with police officers in roadblocks, with "hill chiefs" who function as the local representatives for farmers on a hill, and government officials with positions in the coffee sector. I interviewed two hill chiefs, while the government officials were part of participant observation only. This raised some ethical dilemmas of being unable to gain informed consent from government officials due to safety reasons. The data from government officials is therefore excluded due to this ethical dilemma that is discussed in more detail shortly. First, I present the key groups of participants based on their role in coffee production. The description of participants is based on the data coded using a dramaturgical approach. This narrative therefore aims to present a general picture based on interactions and conversations with the participants, so as to describe their experiences as closely as possible.

Coffee Farmers

The farmers in this study were predominantly small-scale farmers of food and cash crops. War, diseases, theft, poverty, climate change and infertile soils were the main challenges facing these coffee farmers. Growing coffee was their main strategy to tackle these challenges. The food they grew was mostly for self-subsistence, while some supplemented their income by selling the surplus,

if there was any. Coffee was the main cash crop, supplemented with tea, or brickmaking by a few farmers. Farmers depended on coffee income for meeting their basic needs such as food, seeds, clothing, tools, and upkeep of shelter. Coffee income was also vital for school fees, and important ceremonial expenses such as dowries and weddings. Coffee farmers were by law paid for their coffee once or twice a year by the owner of the washing station that processed their coffee. The total annual payment for an average coffee farming family with 60 coffee trees producing 800g of cherries per tree was between 9-14 USD in 2017. This is closer to a dollar a month rather than a dollar a day for a whole household, and subsequently far below any poverty line.

Junior Agronomists

The junior agronomists in this study were previously unemployed youth with a high school or university degree, living in the coffee communities surrounding the company's washing stations. They were trained as junior agronomists and worked on the outreach program of Mwiriwe Coffee. Many were from backgrounds that included loss, war, fleeing, poverty, and struggle. Some junior agronomists had been child soldiers, rebel fighters, and guards at refugee camps during school going age. Most of them carried massive and tender scars. Only two of the 26 junior agronomists I interviewed spoke of a good and happy life. During field visits to farmers, the junior agronomists taught agronomical practices to help increase coffee yield and quality, listened to farmers' concerns, and helped farmers with tasks in their coffee croplands. They knew the coffee trees and the struggles and dreams of the farmers on their hills very well.

Staff

The company staff fulfilled a range of roles such as washing station managers, operation managers, accountants, coffee quality control managers and agronomists. Eight of the ten staff members were Burundian nationals, while two were from other African countries. As for all Burundian nationals in this study, most of the staff members were very familiar with war and struggle. Most had higher education degrees acquired through tremendous persistence and multiple breaks in study due to war and employment throughout their education. The staff developed the outreach program to help farmers increase their quality and yield. They mostly worked with the founders and the junior agronomists, and at times directly with the farmers. One of them was my sister-in-law, and her position was operations manager.

Founders of Mwiriwe Coffee

The founders were a married couple who had temporarily worked with coffee prior to their Burundian venture. They saw tremendous potential and need in Burundi, moved there, and started Mwiriwe Coffee in 2013. The potential they saw was in Burundian coffee, which was being sold as a commodity coffee, that it could, with some effort, be crafted and sold as specialty coffee for a higher

price. Combined with a need for higher incomes by coffee farmers who lived in absolute poverty, Mwiriwe Coffee became a family (ad)venture for this married couple and their children.

Roasters/Buyers

Specialty coffee roasters and buyers traveled to Burundi from Europe, Australia, and the United States of America. They were all long-standing partners with Mwiriwe Coffee and came to Burundi during harvest to 1) taste and select coffees from the ongoing harvest; 2) assess the relations of production, and the quality of coffee; and 3) continue building the ongoing relation to Mwiriwe and Burundi as a taste of place. It was part of my work as an intern to take roasters to washing stations and the coffee hills, which allowed me to gain insights into what was of interest and importance to roasters buying coffee from Mwiriwe.

Hill Chiefs

Hill chiefs are the local representatives of each coffee hill. They were the point of contact between the local authorities and farmers on their hills. Each visit to a coffee hill had to be cleared with the hill chief the day before. Our contact was predominantly done via the junior agronomist who knew the hills they worked on and had ongoing relationships with the hill chiefs. I interviewed two hill chiefs by their request.

4.3 Methods

Although participant-observation is the main pillar of ethnography, a combination with other methods provides rigor (Adler & Adler 1998). Ethnographic fieldwork is often supplemented with other data collection methods such as informal conversations during daily interactions with informants, more structured interviews where the researcher follows up on issues observed, visual methods, and various documents (Delamont 2007; Watson & Till 2010). The methods employed in this study are participant observations, qualitative interviews, photovoice, and document analysis.

Participant observation

This thesis is a case study of ongoing relations with Mwiriwe Coffee, aiming to answer how shifting production to quality coffee manifests spatially, and what the implications are for climate change adaptation. As an ethnographer in the field, I had the following tasks: to gain access to the field, immerse myself into the social setting and write everything down (Emerson et al. 2011; Verne 2012). I have done participant observation by inserting myself into the coffee producer relationship I was researching and became part of the relationship itself. I was an intern, meaning working with Mwiriwe Coffee without a salary, which allowed me to explore the relations of coffee production from the inside. The main tasks I was given as an intern were 1) to be part of the story team, 2) help with visiting roasters, and 3) assess the potential for organic certification.

The study has employed participant observation, which involves open interaction with those observed in the study. It includes activities such as trying to do what the observed do, and interacting with them while they are doing what they normally do (Watson and Till 2010; Crang and Cook 2007; Delamont 2007). I therefore planted, pruned, and harvested coffee together with farmers. I attended and ran meetings with staff. During pay day for the farmers, I filled and handed out envelopes with farmers' payments. I joined junior agronomists during their field visits to coffee farmers and joined their activities at the washing station. During harvest, I worked at the washing station receiving, sorting, footing, and washing coffee. I joined the story team in the hills. During a petrol shortage, I searched for petrol in the strangest places at the strangest times. I was also present at dinners attended by the roasters and founders. In short, I was part of the relations producing Mwiriwe Coffee.

Being part of the story team entailed documenting and gathering stories of farmers, staff, junior agronomists, and founders. It also included documenting and experiencing the processing of coffee at the washing stations during peak harvest time. I contributed to content on social media and interacted with comments from consumers and roasters. One major part of my responsibilities was to develop hill-profiles, which entailed traveling to the coffee producing hills, getting to know some of the farmers on these hills and their challenges, interacting with the junior agronomists working on the respective hills, and developing an understanding of how they worked with the challenges facing coffee farmers. These interactions gave me insights into the unfolding relations of coffee production in detail, as part of my job at Mwiriwe Coffee. However, I played a dual role of being a researcher who needed to gain informed consent from the participants, and a representative for the company doing with a specific task at hand. These tensions too will be addressed in the ethical considerations section of this chapter.

Spending time with visiting roasters and taking them to visit the washing stations provided many opportunities for understanding their relations to coffee, and to Mwiriwe Coffee. Lastly, the task of assessing the potential for organic certification entailed mapping out the current modes of production, meeting with certifying parties, finding out the technical and bureaucratical requirements, as well as the financial costs. This was followed by running meetings with the founders and staff to assess whether organic certification would be beneficial to the farmers and Mwiriwe Coffee. I discussed the issue of chemical fertilizer versus organic farming with farmers extensively in between these meetings with the founders and the staff. The collective decision was made to avoid organic certification, but to move towards organic farming in relational ways built on trust, rather than by relying on bureaucracy. This decision was based on the relationship with farmers, and an understanding that when the government hands out free chemical fertilizer, farmers

will accept it. Chemical fertilizer represented modernization and prosperity to farmers, and there was no respectful way of preventing farmers from applying it to their fields. The task at hand was therefore a commitment to long-term attention to soil health and investing in the farmers' relation to the soil.

The tasks described above resulted in rich data on how the production of coffee was changing by shifting toward specialty coffee production. I gained deep insights into how people related to land, soil, micro-nutrients such as nitrogen, weather, climate, coffee, forests, their past and the future. I gained an understanding of how Mwiriwe Coffee handled the challenge of increasing the quality and yield of coffee grown by small-scale farmers in a changing climate. I was part of the team facing challenges and engaged in problem solving in collaboration with the farmers and the staff. I played an active part in collaborative conversations related to how we could solve unfolding challenges together. I am left with an embodied experience of collaboration that stretches across five months, which are insights I could have not gained through interviews with the participants.

Participant observation allowed me to gain insights into the unfolding processes of coffee production and transformation from being in the process, rather than talking about the process. This also allowed me to pick up on contradictions that I witnessed in between what Mwiriwe Coffee said, and what they did. I frequently confronted staff members and the founders with challenging questions. One aspect I questioned was the price Mwiriwe Coffee paid the farmers. While they paid a higher price than set by the government, farmers were still living in absolute poverty. I was wondering, how does it reflect the care values they so adamantly wanted to enact at all fronts? It took time and many, frequent interactions to understand how relational the price was – with people, with the bigger context of other farmers, and with competing actors. The price paid to farmers turned out to be a security issue, and we could only discuss it when there was no one else in the car, and when the windows were fully closed. When the price paid to farmers was so high that it was considered a threat by neighboring washing stations, some of which were government owned, physical threats towards Mwiriwe Coffee manifested. The founders were held up at gunpoint with their children, staff were threatened, and the washing stations were temporarily closed during one harvest. Mwiriwe Coffee had to find a balance of how much more they could pay compared to other washing stations per kilogram of coffee before they would risk getting shut down. They explained that they compensated for this by guiding farmers in how to increase their yield, and in doing so, increased the farmers' income beyond the price paid per kilogram. I would have never found out had I asked about this at the wrong time in the wrong place, but I already knew the sensitivity of the topic, that someone is always listening, and nothing is secret in Burundi. I had gained tacit knowledge due to participant observation. This example shows how relations come together

momentarily and shows how neoliberalism is part of the forces at play, but is not the only explanation for why farmers were getting paid what they were. Relational geography and ethnographic methods have provided me with deep insights into the unfolding relations of coffee production in Burundi.

Participant observation provided me with intriguing insights towards questions that I did not think of asking. The advocates of ethnography argue that the strength of participant observation is to uncover the untold (Dunn 2007; Watson and Kochore 2012; Mountz 2007; Geertz 1973). Cultures of interest are often unspoken, either intentionally or not (Geertz 1973). Some aspects might not be revealed in interviews or focus group discussions, while participant observation exposes the researcher to both what is taken for granted by the informants and what is not. The informants might be so accustomed to a culture, that they might not consider mentioning it, and the researcher may not ask about it. For instance, I did not anticipate that farmers would be so curious about what coffee is, stemming from a place of knowing very little to nothing about it. The questions asked by farmers about coffee revealed a complete detachment between coffee farmers and coffee. Understanding the unfolding relations of shifting to quality coffee production, also included understanding the shifting relation between farmers and the crop they had been growing for generations (addressed in greater detail in paper one).

Doing ethnographic research has been described as a lengthy, meticulous, and tiring process; and from my experience, it was. During the fieldwork, observations were accompanied by quick memos of a word or two on a note pad, or on the phone. Typically within 24 hours, the researcher should write extensive field notes when she/he/they has a moment for him/her/them self before the details slip away (Delamont 2007; Hammersley & Atkinson 2007). Depending on the setting, it might not always be pragmatically possible to find time in isolation to write down all the observations in detail. However, the field notes are core data and are an essential part of the process. Finding a balance between actively being in and out of the field is therefore crucial in order to produce a rigorous ethnographic study (Emerson et al. 2011). The long days in the field doing what Mwiriwe Coffee were doing, were followed by writing notes in the evening or early morning hours. Having enough time to write was especially difficult during peak harvest times, which included 20 hour working days. I then had to prioritize sleep and select which notes to write out extensively. However, I would make sure to follow some of these heavy periods by days of rest and writing, to provide as much detail and rigor as I could. Over 300 pages of ethnographic field notes were produced. In addition, some data that resulted from participant observation included minutes from meetings, notes from speeches (frequent in Burundi), and workshops run by Mwiriwe Coffee with farmers, junior agronomists, and staff.

Semi-structured interviews

Trying to understand how people assign meaning to their worlds included interrupting observations with questions to participants about their practices. Sometimes I carried out the informal conversations in the field; on other occasions I set up a time in a safe space for a longer period to deepen my understanding of their experiences and worldviews. For example, when I realized that Mwiriwe Coffee did not follow the classical neo-liberal model for price setting based on supply and demand, I asked one of the founders to sit outside with me and recorded the conversation about their thinking regarding pricing, supply, and demand. Other examples include the many instances of sudden shifts in regulations of the coffee sector. I then asked some of the staff if I could interview them about how this law impacted their activities and changed the relations of production. After coffee field visits, I would ask the main agronomist if s/he could explain the relation between the coffee tree, soil health, climate, and micro-nutrients. This was supplementary to observations that I did in the field where s/he engaged farmers in a discussion about how the coffee tree is part of the larger ecosystem. These short interviews provided rich insights, which were not planned or expected each time. When an opportunity for a deeper conversation unfolded, I had to act upon it. Whether these conversations were recorded, noted on paper, or jotted down in keywords after the conversation depended on assessments I made each time about the safety context of the conversation. None of the participants names feature in the recordings. Most of these impromptu interviews took five minutes, while some of the semi-structured interviews took up to two hours. The semi-structured interviews were developed for the specific person and interview. I therefore developed several interview guides, that are presented in the Appendixes section.

Often the interviews would include several people. For example, both founders at once, or a visiting roaster and a staff member, or the founders and staff, or a farmer and junior agronomist, or junior agronomist and staff. Table 2 below provides an overview of the participants that I interviewed with a recorder.

Position	**Number of informants**	**Gender**	**Number of recorded interviews**	**Focus group**
Farmers	34	20 f - 14 m	22	1 (n10)
Junior agronomists	26	7 f- 19 m	32	
Staff	10	1f - 9 m	21	
Founders	2	1f - 1 m	14	
Hill chiefs	2	0 f - 2 m	1	
Coffee buyers	12	1 f - 11 m	16	

Total	**86**	**30 f – 56 m**	**106**

Table 2: Overview of participants in recorded interviews.

I carried out one impromptu focus group discussion with 10 coffee farmers. A large group of farmers gathered at the washing station waiting to receive the fertilizer from the government. I asked a group of farmers if we could discuss the role of fertilizer together. I informed them that I was a researcher and asked for verbal consent. Then a group of ten farmers and I sat down on the grass and had a discussion. I was curious about how they relate to fertilizer, how they understand it in farming, why there is such a desire for an expensive chemical fertilizer, and how they relate to the delay of the fertilizer. This one focus group discussion provided valuable insights into how farmers related to soil, land, micro-nutrients, and farming.

Photovoice

Photovoice is a participatory photo-elicitation method that combines photography and storytelling to enable marginalized communities to express their lived experiences (Rose 2016). Participants are provided with cameras to capture images that reflect their perspectives on a particular topic of interest (Booth and Booth 2003; Berbés-Blázquez 2012; Wang and Burris 1994). Through facilitated interviews, participants share their photographs and narratives, leading to an affective dialogue and increased awareness of participants experiences (Rose 2016).

I used the photovoice method with three coffee farmers and two junior agronomists. This included handing out cameras to the participants and asking them to answer questions with pictures. I asked three different questions, asking one question a week. Each week, the participants and I reviewed the photos together in an individual interview setting, where each participant elaborated on why they chose to capture the specific pictures in response to the questions asked.

I chose this photo-elicitation method due to its suggested suitability for crossing cultural and linguistic barriers (Booth and Booth 2003; Berbés-Blázquez 2012; Wang and Burris 1994). Furthermore, I chose this method aiming to develop a deeper understanding for how coffee producers in Burundi make sense of their world by participants capturing their experiences, and later reflecting on these in photo-elicitation interviews. In addition, photo voice was supplementary to the other methods employed, providing visual data that allowed for richer and more visual results (which I later found difficult to use in conventional article-based publishing). Photo-elicitation can provide different insights into a social phenomenon than oral data. This, along with participant observation, allowed me to discover the unknown unknowns (Rose 2016).

Photo-elicitation can encourage emotional conversations that are more affective than an oral interview (Rose 2016). Although encouraging affect was partly the aim, I was surprised by the level of vulnerability in conversations with participants when discussing their photos. The photo-elicitation interviews resulted in a two-way dialogue where participants told me about their life, but also asked about the same topics in my life. For instance, I was asked how I plan for my own sudden death and ensure that my family is safe and taken care of? When was I allowed to do homework, and household chores as a child? How do we show respect towards elders in my culture? Do I drink beer and socialize with my friends? Photo-elicitation was not only an interview, but also a dialogue and a moment of connection.

Photo-elicitation, it is argued, empowers participants (Rose 2016). I am hesitant to use the word "empower" here, but what I did notice was that the participants felt invested in and proud of being part of this method. They said they felt that they really mattered because I trusted them with a camera, printed their pictures, and invested so many hours in understanding their point of view.

The photo-elicitation method is a lengthy process that requires planning, an initial briefing, printing of photos, and follow up interviews (Rose 2016). The planning process was done in continuous dialogue with the participants (Booth and Booth 2003). I chose to pose three questions, asking one question each week. The questions were developed in collaboration with a staff member and a junior agronomist. The questions were as follows: 1) How does a normal day look like in your life? 2) What is important to you? 3) What have you gained by working with Mwiriwe Coffee? I struggled with the framing of the third question sounding biased. However, due to the collaborative effort of phrasing the questions, it was decided that the best way to frame the questions for this project was in a way that was culturally and linguistically correct in Kirundi, and that would allow me to understand how the shift towards specialty coffee was experienced.

Farmers had never held a camera before, let alone printed pictures as a result. Farmers do not have mirrors, and many were therefore surprised to see how they look. The photo-elicitation process started with a workshop on how to use a camera. Then the participants were given the first question. I came back a week later to download the photographs onto a computer. As we looked through the photographs on a computer, I had an interview with them about why they chose to take the photographs they did take in response to the question. We met outside their home, in their house or at the washing station, depending on the desire of the participant. At the end of the interview, the participants got a new question, and a fully charged battery for their camera.

The idea behind asking "How does a normal day look like?" was that it would give me insight into land use practices, because all coffee farmers were both coffee and subsistence farmers. By

illustrating how their day looked, I would gain insights into how much time they spent on which land, what they did, and how they related to their land. The very open question was meant to let the participants practice taking photographs and provide a general overview of their days. However, these discussions provided knowledge that I would never have thought of asking. I got insights into gender and age dynamics, and into how many different and small pieces of land, scattered across several hills and valleys, the farmers' production was spread over, and therefore how farmers distribute their time across the different lands. In this way, I got to understand the gravity of their land use challenges more deeply. Furthermore, I could also nuance the knowledge I already had gained during participant observation. For instance, the way one farmer cared for her/his family and livestock illustrated that animals and people were equally important.

The two junior agronomists that were part of the photo-elicitation process also took photographs of their daily activities, which gave me great insights into how they related to farmers. For instance, I learned that they would often get a call from a farmer early in the morning, asking quality and land use questions, as well as how they would hasten to assist these farmers. I also heard of how, on their way to the washing station, they passed by coffee farmers picking coffee, and stopped to chat with each one. This they did in a relational way – not checking on them, but asking how they were doing, how the coffee was doing, and assisting them a little before they moved on. How they stayed at the washing station helping with processing until midnight, walk home under the stars, and start their next day my milking their cows at 05.30, then run to the farmers again.

The second question asked was "What is important to you?". What was noteworthy here, was that farmers did not capture images depicting coffee as important. It was land, especially the land in the valley, because it always had water. Then it was livestock, their church, and their family. It was celebrations of weddings and births. It was a great way to start discussing about what mattered to them and why. The junior agronomists had a slightly different angle. They focused on land, and family too, but they also really focused on their jobs, and how the skills they had accomplished and the trainings they had completed were important to them. The washing station, the community of the junior agronomists and the farming communities were also important. The point here is not to discuss results, but to highlight how many insights I gained from these pictures, and even more from the conversations about the pictures.

It felt uncomfortable to ask the third question: "What have you gained by working with Mwiriwe Coffee?" It was a leading and biased question, and it felt like I was prompting the participants to brag about the company. This question was, however, co-developed with the junior agronomists. I wanted to know what had changed for farmers who chose to deliver their coffee to Mwiriwe Coffee.

The junior agronomists argued strongly that in Kirundi, gain is not understood in a material sense but portrays the broader aspect of what comes out of a relationship. That argument aligned with the relational approach that I was intuitively following, and we therefore agreed to use this question. The participants took pictures of what they had learned – mostly these photographs were centered around the skills they had acquired. For farmers it was land use change and coffee farming practices, but they also showed the effects of these lessons in higher yields and quality through their pictures and stories. For junior agronomists they were proud of how much they had learned about coffee farming, community, leadership/collaboration, and coffee processing. They also took photographs that depicted the material gains from the increased coffee income, which was an interesting insight, both in terms of how fluctuating annual incomes were, but also in terms of what they chose to use their coffee income on, and therefore confirming how vital coffee was for their livelihoods. All the photographs taken included relational aspects of what they had gained. They had gained new relationships that were explained as both meaningful, respectful, and enriching in life. These relational aspects would not have been covered by the question of "what have you learned", and I was therefore pleased that we had a dialogue on how to frame the questions in situated ways.

Document analysis

During field work I gathered and did a close reading of official documents to gain a better understanding of the local governance of coffee production. This included local policies regulating coffee production such as "Fully washed and washed coffee production regulations", and "Burundi Coffee Regulatory Agency (ARFIC) regulation of sales". The data also included official communication notes from the government to Mwiriwe Coffee, letters sent to all washing stations, and temporary policies that were implemented during field work. These were highly sensitive and can therefore not be listed here. In addition, I was part of a WhatsApp group that was the main form of communication for the staff of Mwiriwe Coffee. Many of the conversations discussing the impact of the documents mentioned above became important data, which I elaborated on in my field notes.

Analysis and coding

The data analysis was shaped by this study being designed as a retroductive study. I did not have a specific theory, but was guided by an understanding of transformations being a relational process, acknowledging the inherent entanglement of humans and nature, as well as the interior and exterior dimensions (Ragin & Amoroso 2011). I explored an ongoing process of transformation by being attentive to details of change, then analyzed the evidence in depth while consulting various literatures and theories.

I spent a year analyzing the data from field notes, interviews, photovoice, and documents, trying to make sense of the transformations I took part in during fieldwork. The data was analyzed in Nvivo drawing on Saldaña's (2006) coding manual for qualitative research. The main code groups were *affective methods*, and *dramaturgical coding*. Affective methods used here were Emotions coding, Values coding, and Versus coding, while Dramaturgical coding allowed to explore intrapersonal and interpersonal experiences in case studies. Dramaturgical coding is especially recommended to field note data in which two or more participants interact in daily routines and are observed facing challenges, which was the case in this study (Saldaña 2016). A more detailed description of the overarching codes is presented in Table 3 below.

CODE	**DESCRIPTION**
	DRAMATURGICAL CODING
OBJ:	Participant-actor objectives, motives in the form of action verbs.
CON:	Conflicts or obstacles confronted by the participant actor which prevent him or her from achieving his or her objectives.
TAC:	Participant-actor tactics or strategies to deal with conflicts or obstacles and achieve his or her objectives.
ATT:	Participant-actor attitudes towards the setting, others, and the conflict.
EMO:	Emotions recalled or experienced by participant.
SUB:	Subtexts, the participant actors' unspoken thought or impression management, usually in the form of gerunds.
	VALUES CODING
VAL:	Reflect values.
	VERSUS CODING
VS:	Binary terms mentioned in direct conflict with one another. Coded as dichotomies.

Table 3: Main codes and their descriptions. Source: (Saldaña 2016).

I developed an extensive code book with many sub-codes and analytical memos during the fine coding. In addition to coding the data, I categorized the source of the data into actor groups: farmers, junior agronomists, staff, founders, buyers, and other actors. I did so not to separate as in

"othering", but to gain a deeper understanding of the relationships between the different groups, and the different challenges they faced, and how they coped with these in various ways. I will illustrate how I worked with the analysis with a few examples. The dramaturgical coding proved to be useful in mapping out the challenges, showing, for example, that climate change, poverty, and low coffee quality were major challenges for the participants. The analysis of the TAC: Tactics to deal with conflicts and obstacles revealed that these included activities that align with the recommended adaptation measures for climate change, such as "TAC: plant shade trees", "TAC: Integrated pest management", "TAC: intercropping", "TAC: ground cover", "TAC: mulching", etc. Furthermore, codes on Attitudes and Emotions provided insights into how coffee farmers felt about climate change, and the recommended adaptation practices.

Inferring what indicated a value from interviews and fieldnotes took four months. The analysis was done in three rounds. A codebook was developed based on Schwartz's list of universal values (Schwartz 1994, 2012), and an open-ended section for Lived Values (Graham et.al. 2013), and enacted values (Kluckhohn 1951). Important places, people, skills, attributes, activities, and experiences were of interest here. Statements with 'ought', 'should', 'it is important', 'I need', 'I like', 'I love' were coded as values at first (Graham et al. 2013; Kluckhohn 1951). Furthermore, Kluckholm (1951) suggested that ego-diminution showing up as guilt, shame and self-depreciation represents a value violation, and was coded as such. For instance, many farmers were often ashamed that they were not better dressed when we met, indicating that Appearance was potentially of value to them. The second round of coding entailed cleaning up the codes by merging similar ones and evaluating whether all quotes represented a value. Thereafter, the long list of Lived Values was organized according to the level of concreteness. In round three, distributions of values, and the relations between them were explored in various ways.

I realize that I first took a positivist realist approach to values as something that can be known, based on Schwartz's work (1994, 1996, 2012). However, I was warned about this approach, both epistemologically and methodologically, and eventually recognized that I would be reducing people to a set of stable values. When I realized that the ontological grounding of my values-driven research was shaky, I started to explore other approaches but, to be honest, I did not find anything that matched what I had seen in the data. Social constructivism, critical realism, and positivism all fell short. Only when I started to engage with Karen Barad's (2007) new materialism, and Doreen Massey's (2005) relational space, did the data analysis start falling into place.

4.4 Ethical considerations

The number of ethical considerations that need be addressed in this study are many, as earlier alluded to. Gaining access to and informed consent brings in power dimensions that need to be discussed. Thereafter, I present how this research is personal, and debate the role of my own reflexivity and positionality. Thereafter, I discuss some limitations that also are ethical considerations, such the role of translation and anonymity.

Positionality

One of the general strengths of ethnography that applies to both participant and non-participant approaches is the access to settings of interest. Ethnography is argued to be non-intrusive, and un-obstructive as it does not require direct interaction at the terms and conditions of the researcher, but rather the opposite (Adler & Adler 1998). However, I disagree with this, and feel more aligned with England (1994) and Rabinow (1977) who claim that ethnographic fieldwork is purposeful disruption of people's lives on a ranging scale. Participant observation does not necessarily have to be intrusive, but there are plenty of examples of how obstructive ethnographic participant observation can feel to the observed (Mountz 2007; Ouma 2015).

When discussing the reciprocity of power in participant observation, the ethical dilemma is that the "participation" referred to here is highly one-sided. It simply refers to the participation of the researcher in the lives of those who are observed. The observer actively observes the passively observed. However, there is another issue that also requires attention here. The access to the field(s) is granted by someone who represents the larger population of interest to the researcher (Crang & Cook 2007; Hammersley & Atkinson 2007; Ouma 2015). What power do the individual members of the population realistically have to refrain from being part of the study when they are part of the population that has been selected for by a researcher and granted access to by a 'superior' (Ouma 2015)? In ethnography, according to classic anthropology, the access to the field was granted by the chiefs, or the elders in the community. In economic geography however, the access is granted by a representative or non-representative leader in a company, a network, or organization (Mountz 2007; Ouma 2015). In this study, I was given access to the field by the founders of Mwiriwe Coffee. They informed the staff and farmers about my role as a researcher and an intern. I did, however, ask for informed consent from each staff member and farmers I interacted with directly. However, I question how realistic is it to assume that staff members and farmers that work for, or collaborate with Mwiriwe Coffee, could say no to be part of my study? Informing is not the same as asking for consent (Emerson et al. 2011). The question is whether the staff and farmers were limited to the informed part of "informed consent", while the consent part was rhetorical?

There are other issues with informed consent that need to be addressed here. Firstly, there were situations which made asking for informed consent dangerous, for example, in interactions with police and government officials regulating the coffee sector. When armed officers stopped informants and requested bribes, it was outright dangerous to inform them about the research. Informing about my role as a researcher would have put Mwiriwe Coffee, staff and farmers in danger. These encounters were felt in embodied ways with an increased heartbeat, shallow and rapid breathing, as well as increased sweating. There was no doubt that the situation was dangerous and that informing about the research would have increased the tension. Any action tied to Mwiriwe Coffee that could challenge the government, would come with a risk of being responded to with threats, legal, or financial repercussions. I therefore had the choice between people's safety and conducting research ethically.

When faced with such a choice, I had to choose the safety of the informants. This ethical dilemma is something I was unaware of, but learned about during field work, and I was not prepared for it. However, research is a living and breathing thing, which requires the researcher to be flexible to maneuver around the changes in the field (England 1994). I chose to not ask for informed consent from people that could put other informants at risk, and I also chose not to include descriptions of direct interactions as data. This means that people that were not asked for informed consent are not part of the data analyzed in this study. However, I have included my own embodied experiences and reports by staff and farmers as ways to present the sub-context of this research. It still left me wondering how doing research in dangerous situations can be done in ethical ways? This research has provided me with vital insights that would not have been gained had I not gone to a semi-dangerous place to do research. There are always trade-offs in doing research, but we need to be wary of getting to the point where vulnerable groups living in danger get little attention in research, because it is challenging to gain access, dangerous to do the research, and impossible to gain informed consent and therefore do research. Does that mean that violence is something we accept as power, and avoid in research?

With participants that were safe to inform about the research, I asked for verbal informed consent. Verbal consent was chosen as the most respectful way to interact with farmers who were predominantly illiterate. Permission for this was granted by NSD, attached in the Appendixes section. However, when informing about this research and asking for informed consent, I stumbled into another ethical conundrum. I was often unable to explain what research, being a researcher, and participating in research entailed. There is no word for research in Kirundi, and the highest university degree in Burundi is a master's degree. I could therefore not use words such as research, or PhD, because they would be foreign and alienating. In such situations, I described myself as

someone who was writing a university book and wanted to understand their lived experience of coffee production. That was at times the best practice to obtain informed consent.

It has been pointed out that the observed who do not interact directly with the researcher are, by virtue, participating in the study whether they like it or not (Emerson et al. 2011). I was observing hundreds of farmers listening to a speech by the founder, where I had no place to inform them about this research. Noticing how farmers reacted to content in the speech was valuable data, and part of paper two in this thesis. The researched do have some power to influence what they share with the researcher, but I would argue that this power is diminished in an ethnographic study. The researched can influence what information they share in oral interactions with the researcher to a larger extent. However, influencing what is observed is a much bigger challenge. This is a double-edged sword in ethnography. The ability to discover what is untold is the strength of the method and highly useful to human geography (Dunn 2007). Ethically on the other hand, it is a weakness that strips the power away from the participants. I would argue that it would be hard for the observed to influence what is observed. The ethnographer is looking for the untold story, for the human discourse in the field(s) (Geertz, 1973). Influencing that would require the informants to purposefully change the way they do things every day, to strategically manipulate the "untold" of interest to the researcher. The power in participant observation is by virtue highly skewed, no matter how much reflexivity the researcher can show, and no matter how much the power dynamics are continuously negotiated (England 1994; Watson & Till 2010).

Participant observation in this case included several groups of actors in a GVC. However, there are often conflicts between various groups, such as owners, managers, workers and trade union representatives (Ouma 2015). Ouma (2015) found himself in situations where he was blamed for representing a conflicting group and taking their side. One of the recurring challenges in ethnography following the participatory approach is positionality. This issue has been highlighted in all fields, human geography, anthropology, and sociology alike. Doing participant observation automatically entails mixing of roles (Ouma 2015). There were many times where I was not sure which role I was taking, the intern for Mwiriwe Coffee, or the researcher, or both? When visiting farmers in the hills, they would often ask about coffee prices, the timing of the payment, fertilizer and other issues that were outside the scope of my research. I had to respond with what I knew, and instead of choosing what role to take; researcher or Mwiriwe Coffee intern, it became evident with time that I was always both.

Furthermore, Ouma (2015) points to the dilemmas that arise in the field when informants ask for input from the researcher, as if the researcher is an expert on the field. In my case, I was asked to be

part of the story team and help with deciding whether Mwiriwe Coffee should go for organic certification or not. I therefore played an active part in making content and was part of vital decision-making. A researcher observing a context for long periods of time can be considered as "taking" when the researcher cannot contribute, especially during the time of crisis with knowledge developed in the field. There are both epistemological and ethical issues here. Ethically it can be considered as extractive research, which Mauss (2002) would argue does more harm than good. However, methodologically speaking, if the contribution in the interaction with the observed is made as a researcher with the researcher's knowledge, and not as a participant observer, it can be considered as action research. Action research brings about a whole new epistemological dimension into an ethnographic study and is often avoided by researchers. This again brings about the ethical issues of taking without giving back (Mauss 2002). The way the research in this study unfolded was highly impacted by my own role and positionality, but does not qualify as action research, as my intention was not to impact the outcome, but to understand the relations of coffee production by being part of the very same relations I was exploring.

Reflexivity can make us aware of power-laden relations in the field, but being aware does not make the power relations in any way disappear (England 1994; Rose 1997). The researcher is generally seen as the actor with the dominant power to observe the lives of the observed. Some would go as far as arguing that this power is symbolically violent due to the ability a researcher has to intrude into someone's everyday life. The researcher is also free to leave the field at the point of saturation, the researched are not (England 1994). I came, I was part of coffee producing relations, genuinely invested in the relationships I was part of, but then I left.

Research is personal

Given that an ethnographic study is a personal experience, the data can therefore never be detached from the personal experience of doing ethnography (Rabinow 1977; Emerson, Fretz, and Shaw 2011; Watson and Till 2010; Crang and Cook 2007; Geertz 1973). Separating myself a researcher from the world in which I have my being makes little sense when following the relational approach insisting on observing and thinking as part of the world (Barad 2007; Massey 2005; Whatmore 2002). However, there are some epistemological issues here founded in ontological frictions. Despite coming from a relational perspective, this work has to be defended in areas where there is a concern that the researcher develops bonds and relationships when in the field over a prolonged period; this is not surprising as researchers are human. Some argue that these relationships can become problematic when they cloud the researcher's ability to be objective, to the degree it is possible to be objective at all (Agar 1996; Mauss 2002). How can one research a context where one develops positive feelings of friendship towards certain informants, at the same

time as one develops negative feelings towards other informants ranging from frustration to hate (Agar 1996; Mauss 2002)? The recommendation is that the researcher should leave once that happens, but I did not, and used reflexivity instead. This is discussed below.

Some problematize that the researcher's positionality and identity might shift during an ethnographic study (Ouma 2015). While others argue that this is part of the valuable aspect of ethnography if one manages to capture this process in writing (Emerson et al. 2011). Carefully documenting how the identity and the positionality of the researcher shifts, what it is triggered by, how long it takes, what it is influenced by, and how it changes the perception of certain things in the field is immensely valuable. Ethnography is "as much about the culture of the student as they are of the studied" (Herbert 2000, p. 563). However, this naturally requires a great deal of reflexivity from the researcher (Emerson et al. 2011). See Box 2 below with reflections from field notes for insights into my own reflexivity, and how I chose to handle bias and the deeply personal aspects that this research included.

BOX 2: Insights into reflexivity reflections from field notes.

“There is an evident tension between the personal sphere and research as a domain, and I believe that it is a loss to view it that way. But I also don’t know how to work with it, without making it feel like a betrayal. The personal sphere is personal, but do we have methods that allow to work skillfully and respectfully with the personal sphere in a personal way?

I am at this moment entering into the warmth and trust circle of the family. This is where I should then leave, but I choose not to. Why do I feel like making this part of the research is betraying that trust? I guess this is where ethical dilemmas of research become evident again. Research is aimed at analyzing it neutrally, which I don’t think is possible anyway. Why can personal and research not go hand in hand? I think being personal is real and important to understand the world, which research really is about. Why can research not be sensitive enough to include the personal, without it being labelled as either unethical or biased?

Being in the personal sphere requires a certain level of vulnerability. And by describing/documenting the vulnerability shared with me in private, and a co-human, not as a researcher, I feel like I am cheating. It feels like I am pretending to be a co-human, which I am in that moment, but in the back of my mind I am trying to remember everything for the notetaking later, for the research. I did not inform her that this will be part of my research in this conversation, but she knows I am here as a researcher, and we have ten conversations daily. But I am not only a researcher – I am also that co-human. I share my vulnerabilities, but I will not use them in this research, my own vulnerabilities shared with her therefore feel like bait almost. But that is not who I am, it really is not, I am a human that tries to understand people at their core, that shares because I want to show that this is a safe space for sharing, where being vulnerable is ok, where it is not dangerous. And that is where I feel like I am cheating by making this part of my research, because I am using this vulnerability for something else later, not just for sharing in the moment and getting closer to another human.

As a researcher doing participant observation, can I ever just be a co-human when in the field? This is very confusing and challenging morally on several levels. I don’t like to feel like I am cheating or betraying people, people that I am growing closer to, people that I respect, would like to learn from, and who I consider as friends. Does that mean I cannot do the research on the deep personal level? But that would also be so sad and wrong, because of this close connection, I get access to a world no outsider or expert could enter. I think I just need to be respectful of the way I present it and communicate it. Respectful to the people and to the research, not compromising either. That will mean that I might have to kill some darlings when it comes to interesting findings, just because I cannot present them without compromising the identity and therefore respect for the people that let me into their inner circle.”

“The founder and I went for a little walk in the hills to shoot (photograph) something. We walked and talked, we sat and talked. I did not take any notes, that would have been completely out of place. Even writing notes about it now is also slightly uncomfortable because we were two vulnerable human beings that shared our stories, thoughts, and I would not like this to be part of my research. But I guess it is, however, when I reread this be sure to be so sensitive about it, and make sure I do not cross any ethical lines. When people open up, it is not always for research. However, this is part of the Mwiriwe story, part of the roots and the background of it, part of its struggles, and it deserves to be part of the story, just not by itself.”

The point is that I knew I crossed that recommended line of personal relationships. I did become close friends with some of the informants, founders, staff, and farmers alike. Our relationships became close and personal, where it was possible to be vulnerable with each other. However, what would have happened if I did choose to say 'neutral', as an 'outsider', something I still cannot fathom is possible. However, I could have aimed to keep a higher degree of detachment. What would that have done to these relationships? Practically, should I have said; no, stop! Let's not talk about that, it is too personal. Should I have left the field early? Should I have stopped sharing parts of myself that contributed to the connection? That would have entailed me having to change who I am and how I show up in this world. My own authenticity is what led to the development of the relationship, which led to insights that are so personal, that I as a researcher can reflect on and not share – not to hide data – but to respect the process fully. I am still telling the story that I was part of making and experiencing.

I was not neutral, I was not an observer, I was participating in the unfolding of a world in which we have our being (Barad 2007; Haraway 1996; Massey 2005). After all, I would argue that this was my task as a researcher; to notice and witness how the shifting relations unfolded in the specific coffee production, and what the quality of these relations were. I could not observe from the outside when I was an inherent part of the unfolding reality studied. This study provides data from this perspective, based on the ontological assumption that is impossible to ever be a neutral observer from the outside.

As a part of being a human researcher, I wholeheartedly joined the mission of transforming coffee communities by caring for the coffee and the people that grew coffee. For instance, how values as material-discursive practices were shaped and manifested is presented in paper two of this thesis. However, upon reflection, it was the embodied experience through participant observation that led to these insights, not just presented in interview data. About one month into the fieldwork, I gradually became part of the team entangled in 'togetherness' as unfolding a material-discursive practice. Having reflected on the meaning of 'togetherness', I decided it was something I could stand for in expression and action. Consequently, I did not experience apprehension towards the discursive practice of "together". Admitting that I cannot be neutral and employing reflexivity speaks to the power of these values. This, because I got to experience and participate in unfolding coffee production entangled with the shared values (as presented in paper 2). I reflected on what personal care towards nature and people entails, experienced what a strong force that can be, and how contagious it is. Instead of expected reflexive apprehension, I noticed how the shared values manifested in the way I participated in meetings, formulated emails, wrote WhatsApp messages, planned my weeks, and communicated with people. I socialized with farmers and responded that

"we cherish the relationship we have with you and will continue to work on finding a suitable solution together. We are grateful that you want to work with us" (while taking both roles; researcher and Mwiriwe Coffee intern). There was a difference between when I spoke of challenges and solutions practically, and when I was manifesting "together" in action. It was easier to do the latter. It changed the lived experience – I was not trying to convince people about a solution to a logically complex problem; we were instead in the process of becoming together by figuring out what coffee production ought to be and how we could get there.

Although I focused on the struggles faced by participants, and shared some critical reflections on power relations, my focus on sustainability transformations risks painting too rosy a picture of Mwiriwe Coffee. I did notice and reflect on critical aspects that could be explored further:

> I am also starting the see some gaps between the vision and reality. I do not think that they are trying to avoid the vision becoming reality, but that it is just so hard, and that they don't have all the necessary skills to do that. I expected things to be way more participatory, but it is not. It really is not. It is genuinely inclusive, but not participatory. The quality of the coffee is always priority number one, everything else is secondary. At the same time, the quality of the coffee is a platform through which to make a social and environmental impact. But it is not as rosy as it seems!
> (Field notes)

However, as I was exploring how transformative change unfolds, a critique of the coffee intermediary in and of itself did not become the focus, but rather how different types of relations influence coffee production, and sustainability transformations.

Anonymity

The anonymity proved to be a bigger hurdle than initially expected. I thought I could abstract the information enough to describe what I have found, without revealing the identity of the informants. That was naïve and flawed thinking, mainly because of two issues. First, I did not understand that nothing is secret in Burundi, and that it proved to be a dangerous place to share the wrong information. Second, there was a logical flaw in my reasoning; I was specifically targeting a unique case, a standout. The uniqueness of this case makes it possible to identify the actors. So, I was left with the choice of presenting a minimal amount of identifying information, which is why the locations of washing stations, and many other details are concealed. Not being able to present this research was, however, not a viable option in an attempt to defend a PhD.

Assumptions and limitations

My personal relation with one of the staff could be interpreted as a potential conflict of interest. My sister-in-law worked with Mwiriwe Coffee, also during the time of my fieldwork. However, I must underline that Mwiriwe Coffee was not chosen as a case study due to the ease of having contacts there, as earlier introduced. I contacted the founders directly and did not include this family member

during the process of the scoping study. The reason for this is that I wanted to choose the case based on research interests, and not due to personal contacts. During fieldwork, the family member was part of the staff, and therefore part of the participant observation. I interviewed her once, as I did all staff members. However, I deliberately focused more on other staff-members in the field due to the inherent risk of bias. I cannot exclude this person as they were there, and very much a part of the relations producing coffee, but I did not focus specifically on this person because they are family, rather on the contrary. I might have compensated too much by excluding this person's voice as 'too close to me'. The way I handled it was to not rely much on them for data in the field, and by avoiding making them a key informant.

Translation

The native and most spoken language among farmers, and junior agronomists was Kirundi. I therefore had to hire a research assistant who could translate into English. Due to budget constraints, a professional translator was not an option for a contract that would last a year. I advertised the position in Bujambura and interviewed interested candidates. I hired a person who had a higher university degree in psychology, was fluent in English, French and Kirundi. We worked closely together throughout the fieldwork, while s/he kept transcribing and translating the interviews after my departure. This person was not trained as a professional translator, which required a few weeks of figuring out how to work respectfully together. The translations being done by someone who is not a professionally trained translator is a limitation. There is no way I can quality check the work due to my own lack of French and Kirundi. However, this is not a discourse analysis, and the level of translation was sufficient for the work at hand. The recorded interviews were translated, but also the conversations in the field were translated on the go. When we attended a workshop with the junior agronomists, I took notes of the ongoing discussions. The research assistant translated, whispering in my ear, while I typed on my laptop. In such a situation, we cannot ask the meeting to pause to translate and write everything down, I wrote what the translator managed to pick up and translate while still listening to what was being said. Furthermore, some meetings lasted 6 hours, with no breaks for water, food, or toilet. That is the culture of meetings and hard work in Burundi. Breaks are a waste of time, and eating is a luxury. Knowing how hard it is to cognitively translate based on my own experience of nonstop translating of speeches from family parties in my multi-lingual family, it is safe to say that the quality of an ongoing translation for six hours without a break is compromised. And yet, that is just how this research had to be done, that was the situation and the choices we had to make along the way.

During the recorded interviews, the assistant could translate the responses with more time and attention. However, I did not record, or take notes during the ongoing field conversations as

recommended best practice for ethnographic fieldwork. I wrote the field notes based on my memory at the first possible opportunity. However, an ongoing translation entails a reduced quality translation that cannot be checked later. The transcription and translation of all 106 recorded interviews took about one year, due to limited supply of electricity in Burundi. After this employment opportunity, the research assistant acquired work at an international organization.

5. Summary of Articles

5.1 Article 1: A Relational Understanding of Land Use Choices by Smallholder Coffee Farmers in Burundi

The first article presents coffee production in Burundi as relational space. It focuses on the histories of becoming and lays the foundation for the subsequent articles. The rich data on the historically turbulent relations in the production of coffee required attention on its own, which is why Mwiriwe Coffee features minimally. The experiences of Burundian coffee farmer witnesses during the ethnographic field work, and the interviews with coffee farmers are therefore the main data sources in this paper.

In sharing the voices of coffee farmers, this paper contributes to land use science, and agricultural science grappling with a limited understanding of how people make land use choices. The paper reviews the academic literature, highlighting the tendency to focus on either individual (rational choice) or systemic (capitalist machinery) explanations for land use choices. However, land use choices are still not fully understood, and this paper therefore asks **how do farmers make land use choices?**

The article takes a relational approach by considering coffee production as a space, defined as a product of interrelations; "as constituted through interactions, from the immensity of the global to the intimately tiny. […] Space does not exist prior to identities/entities and their relations" (Massey 2005, p. 10). Drawing on seminal works in relational geography provides a deeper understanding of how land use choices are specific manifestations of relations producing space including both individual and systemic dimensions. It specifically draws attention to the qualities of relations producing space. For example, it illustrates how the relational qualities of authority and disrespect in coffee production unfold in land use choices of neglected coffee croplands. This paper suggests that land use choices are not rational, but relational choices, that can be understood by exploring the quality of relations producing the spaces of interest. By doing so, it provides an alternative narrative to the stagnant under-yielding African small-holder farmer dominating the discourses.

5.2 Article 2: What matters? The role of values in transformations toward sustainability: a case study of coffee production in Burundi.

The second paper considers the role of values in transformations towards sustainability. This is an empirical paper based on the ethnographic field work, with data produced by participant observation, interviews, photovoice, and document analysis. This article was a result of a long period of inductive data analysis exploring whether transformations in Burundian coffee production were taking place. The fundamentally new configurations of relations producing coffee in the challenging context of Burundi, with increased coffee volumes were considered as transformational, but the questions of why and how they were transformational still remained. The inductive analysis revealed that values played an important role in the transformation process but required a different engagement with the concept of values from a relational paradigm.

This paper therefore contributes to the wide literature on values in environmental research and provides a discussion on the active role of values in sustainability transformations that require a higher degree of dignity, equality, safety, and harmony in our relations to each other as people, and with nature. This article responds to the research question of; **What is the role of values in transformations towards sustainability?** This article was part of a special issue in Sustainability Science titled 'The "How" of Transformation: Integrative Approaches to Sustainability'.

Human values were found to be integral to the transformations witnessed in the Burundian coffee sector. Values of togetherness, care, dignity, and faith were dominant in reconfiguring the relations of coffee production, and the outcomes observed. This paper concludes that what people care about matters, not only in a subjective sense, but also materially, because enacted values manifest spatially and can therefore play a vital role in sustainability transformations. The values are suggested to be material-discursive practices and can be utilized to study the quality of relations producing coffee and other relational spaces.

5.3 Article 3: Transforming Burundian ‘taste of place’: from shunned in commercial blends to specialty coffee

The third paper included in this dissertation explores how the links between place, quality, and product are made. The rationale for this paper stems from the lived experience of transforming commodity coffee production towards specialty coffee in the field, unmatched by academic literature on two fronts. Firstly, specialty coffee tends to be misunderstood in coffee research (often as certified coffee), which was far from how specialty coffee actors worked with the term in practice. Secondly, I did not find scholarship on how places known for negative attributes were made into places known for quality. This resulted in a journey exploring the research on how places of quality were explained and theorized, especially in human geography, which involved engaging with consumption geographies. This paper responds to the research question of **How is a ‘taste of place’ made?**

Based on the ethnographic field work in Burundi, this paper finds that a "taste of place” was a process of place-making achieved by the material work of ensuring material quality attributes, and the discursive work of constructing a sense of place. A Burundian ‘taste of place’ was reconfigured by taming the space of coffee production into representation through material and symbolic quality attributes. This paper is therefore an empirical contribution illustrating how shifting relations of producing space unfolds on a material level in the quality of the coffee bean, which result in a sensory experience through the aroma and flavor of the coffee from a specific ‘taste of place’. Furthermore, it links to the previous by showcasing how the relational quality of producing space manifests in the quality of the coffee bean.

5.4 Article 4: Integrating Practical, Political and Personal Spheres: A Holistic Approach to Climate Change Adaptation in The Coffee Sector

The fourth paper is predominantly motivated by the coffee sector struggling with a limited implementation of the identified measures for adapting the coffee sector to climate change. This article responds to the research question of **how the coffee sector can adapt to climate change** by employing the Three Spheres of Transformation (O'Brien & Sygna 2013) as an analytical framework.

During field work, climate change impacts and adaptation to climate change became a backdrop in the set of multiple challenges facing coffee production in Burundi. However, employing a dramaturgical coding method during the data analysis lifted climate change to the foreground by illustrating that the recommended adaptation strategies for the coffee sector were predominantly implemented, without being the main aim of the actors in the study.

This article responds to the tendency to address climate change as an environmental problem, external to the human condition, a tendency that is considered problematic by transformation scholars. By employing a three spheres of transformation framework, this paper attends to the human, systemic and practical dimensions of change, as called for by transformation literature.

The findings show that adaptation requires changes in the practical sphere through behaviors and practices, in the political sphere through shifts in norms and governance systems defining practices, and in the personal sphere through subjective aspects such values and emotions of actors in the GVC studied. It is an empirical paper that showcases why technical adaptation measures are insufficient and shows how understanding the challenges and potential solutions related to climate change impacts can be approached more holistically.

The desire if for this article to be useful and actionable for the coffee sector itself, contributing to a relational way of working with climate change impacts, and with people across the whole value chain. However, this article also contributes to the academic discourse on climate change adaptation, and transformation by contributing to sought-after knowledge *about* transformations through studying people's experiences of transformations in a changing climate.

6. Conclusion

The aim of this research has been to explore how sustainability transformations can be realized in the coffee sector by focusing on two questions that unpack how different types of interpersonal, political, and human-environment relations influence coffee production in Burundi, and how these insights can enhance understandings of sustainability transformations.

The thesis began with a description of waking up to a cup of Burundian coffee. What has changed since the preface, is a deeper understanding of, and respect for the relations that manifest in the space of a cup of coffee. It is fascinating how this dark brew can hold so much in it. I now see that cup of coffee as holding the liquid coffee, but also holding the histories of its becoming. It holds unequal geographies of power. It holds climate change. It holds struggle. It holds people, their emotions, values; it includes trees, bugs, livestock, and large forces such as colonialism and capitalism. The main finding in this thesis is that coffee is produced by a certain quality of relations between entities.

This research was designed to explore how sustainability transformations can be spearheaded. By studying the relationships with Mwiriwe Coffee, an intermediary actor, aiming to transform coffee

production from commodity to speciality coffee, I gained insight into experiences of transformation. This thesis shows that when a small intermediary actor inserts itself into a space of coffee production in Burundi and relates to farmers, local government, land, coffee buyers, and trade systems, the space gets reconfigured. However, this is not a causal space where Mwiriwe Coffee has direct effect on outcomes, but a co-arising space, where the elements are co-productive of one another due to the way the relations are configured. Mwiriwe Coffee is only one of the elements, that cannot be seen in isolation, because they only become what they are in relation to all other elements, and at the same time unfolding the space of Burundian coffee production in specific ways.

This study shows how the outcomes observed were produced by the quality of relations producing coffee. When the space of coffee production was marked by authority and disrespect, the croplands were left unattended, manifesting in low yields, vulnerability to climate change impacts, and coffee farmers without transformational capacity to imagine, initiate, or sustain fundamental processes of change. However, when the relational space of coffee production was marked by care and dignity, the way coffee production was configured shifted, and the following outcomes were observed: 1) recommended adaptation measures were implemented, 2) the volume of coffee produced increased, 3) the quality of the coffee increased, 4) a 'taste of place' was established, putting Burundi on the speciality coffee map as a quality product, and 5) the governance of the GVC shifted towards relational governance implementing direct trade, and nested responsibilities for challenges previously faced by farmers alone. This thesis therefore adds to works that showcase how relational spaces unfold specifically, as called for in relational geography (Cresswell 2015; Harvey 1996; Jones 2009).

All four papers contribute to the main conclusion that the quality of relations producing space matters. Here, I build on Massey's (2005) suggestion that the content of the relations through which space is constructed matters and add a qualitative dimension to the content of these relations. These insights are not new, but rather acknowledge and support the emerging research on right-relations (Gram-Hanssen et al. 2022), relational notions of care (Moriggi et al. 2020), and relational values (Chan et al. 2016, 2018), emphasizing the importance of how relations are performed and translate into sustainability transformations (Moriggi et al. 2020; Walsh et al. 2021).

I suggest that values, as material-discursive practices, are ways we can acknowledge relational qualities both in content, and in process. Relational values have been said to refer to values that are relational in content, i.e., where the relationship itself matters (Chan, Gould, and Pascual 2018), while this study finds that values are relational in both content and process. Relational values in content are normative judgments, and they disregard other values evident in human-environment

relationships. In the case of Burundian coffee production, it neglects how coffee production was configured by relations performing authority and disrespect, manifesting in stagnant yields. From a relational perspective, the performativity of the coffee tree (yield) is an open-ended process that cannot be disentangled from the relational qualities of producing coffee experienced by farmers. Nothing that is relational is value neutral, and the content of values is produced iteratively through relations in process. All valuations are inherently relational because values arise in the space of encounter (Himes & Muraca 2018).

The attention to values contributes to knowledge on the interior human dimensions, while showing how these are linked to material outcomes in the ways space unfolds. Values of togetherness, care, dignity, and faith were found to be shared by the actors in this study. The enactment of these values shifted the configuration of how the space of coffee production unfolded. Values are therefore argued to be material-discursive practices that play an active role in shifting the functional and relational aspects of the system, necessary for sustainability transformations. Because sustainability aligns with values such as dignity, equality, safety, and harmony, paying attention to what values are dominant in current relations of producing spaces can reveal gaps between current and necessary values that align with sustainability transformations. An important part of this work is that values as material-discursive practices can be deliberately chosen and enacted to a higher degree than previously thought (Schwartz 1994) and are therefore important leverage points for systems change (Meadows 1999). This research shows that how we show up in this world, how we relate to ourselves, to others, and to nature matters. It matters because it is part of the relations making coffee, and equally making other spaces.

Sustainability transformations

It has been highlighted that for agriculturally based sectors, such as coffee, actors across the whole value chain need to have transformational capacities to imagine, initiate and sustain fundamental processes of change (Eakin et al. 2016; Marshall et al. 2014, 2016). Reviews made for the coffee sector itself, identify that the future of the coffee sector depends on the ability to transform towards a sustainable system of coffee production and consumption (Panhuysen & Pierrot 2018, 2020). However, this is unmatched in practice, and the status quo of unequal power dynamics and continued vulnerability among producers prevails (Panhuysen & Pierrot 2018, 2020; Verburg et al. 2019).

This thesis started with a desire to explore how we can make the necessary transformations towards a more just and thriving world unfold. The research I have done here has led to insights, based on a very specific and small case study, but that illuminate the *larger phenomenon* of transformations. It shows that sustainability transformations require firstly a holistic understanding of the challenges at

hand, be it climate change impacts, inequality, or coffee quality. Second, it requires an equally holistic approach to design and implement solutions.

By holistic, I lean on the Three Spheres of Transformation framework suggesting that sustainability outcomes can be achieved when working across practical, political, and personal spheres simultaneously (O'Brien & Sygna 2013). It aligns with a relational space defined by Massey (2005, p. 10) as a "product of interrelations; as constituted through interactions, from the immensity of the global to the intimately tiny", but makes it more specific by acknowledging the relations between material outcomes, systems, and subjective domains in the configuration of spaces.

Considering the challenges across the personal, political, and practical sphere, this study shows that farmers did not have the transformative capacity necessary to imagine, initiate, or sustain fundamental process of change. However, this study also shows that it was the ability to work across all the spheres simultaneously, both in understanding the challenges, and in finding solutions that enabled sustainable transformations observed. This includes co-designing sustainability transformations with people in ways that consider values, emotions, and lived experiences of actors. The need to approach transformative change as a care-based and ethically informed process that includes emotional awareness has been highlighted by others too (Moriggi et al. 2020). Thereafter, what are the necessary system shifts identified, and how can they be enacted right now? Lastly, what are the necessary practices that can be put in place that address the problem materially, that fundamentally alter the function of existing systems, and are grounded in values that align with sustainability transformations?

However, despite elements of a holistic approach to sustainability transformations applied, this study reveals that certain relations remained stagnant, maintaining closure. Relational geography is concerned with how relations come to create movement and/or limit movement in space (Massey 2005; Murdoch 2006; Thrift 1996). For instance, this study shows how the material quality of the coffee bean is produced by conditions that are spatially fixed, due to place-bound biophysical conditions necessary to produce certain quality attributes in coffee. Burundi has these ideal biophysical conditions (Lenaghan et al. 2018). The sensory quality experience of Burundian coffee that can be celebrated by consumers is spatially entangled by taming the space of coffee production into a 'taste of place'. However, the coffee bean brewed into a cup of coffee is no longer spatially fixed to the place of its production, but free to move and become part of spaces where coffee is consumed. The same does not apply to the farmers producing coffee, they remain spatially fixed to the place of coffee production. In this space, geographies of power emerge and become noticeable (Cresswell 2015; Massey 2005).

The distribution of power to genuinely impact goals and decisions across the GVC remain largely unchanged. In this study, the goals of the value chain were changed from purely profit driven, to include social and ecological thriving for all actors across the value chain, but by the founders of Mwiriwe Coffee. The coffee farmers in this study were part of collaborative process in exploring what matters to them, how coffee production ought to be, and how this can be achieved together. Coffee farmers being invited into transformative processes is a great start, but farmers still have a limited opportunity to impact the development trajectory of coffee production beyond the farm level, which continues to set limitations and show where the opportunities for transformative change lie. This highlights that need to specifically explore what qualities that are dominant in the relations that maintain the unequal distribution of power.

As highlighted in transformations literature, there is no transformation without challenging the status quo (Pereira et al. 2020). This evidently applies to the coffee sector as well. At the same time, this thesis shows that the status quo in the coffee sector may be challenged by creating alternative configurations of relations producing coffee. An avenue for future research is therefore to explore how sustainability transformations can be scaled. On the one hand, some argue that cases of transformative business can transform their own governance, but fail to transform the larger economic system driven by short-term and purely financial goals (Grabs & Ponte 2019; Waddock 2020). This aligns to a degree with the findings in this thesis, that a relational governance of coffee production was started, but that it did not sufficiently shift the power dynamics that maintain the status quo in the coffee sector. On the other hand, recent work draws attention to the tendency to underestimate the large scale impact of small-scale actions, such as found in this study (O'Brien et al. 2023). A new approach for scaling sustainability transformations can be further explored by considering how values can generate new patterns that repeat across scales (O'Brien et al. 2023).

This research is significant in that it sheds light on the importance of relationships and connections, and how they manifest spatially and materially. It emphasizes the importance of values and how they shape the way we configure unfolding spaces. However, the challenge lies in scaling these efforts beyond one coffee-producing region in Burundi. How can we expand and amplify initiatives grounded in values of care and dignity to transform spaces? This calls for future research to explore the scalability of care-based relationships as catalysts for sustainability transformations.

Just as with coffee, the *quality* of sustainability transformations depends on the quality of *relationships*.

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APPENDIXES

Interview guide for the founders:

1. The family is a major part of the Mwiriwe Coffee story. And every story has a start, where did you family story start?
2. Where is it at now? (beginning, middle, conclusion?).
3. What is the future narrative of your family?
4. What is the most important to you as a family? (what are your values?)
    a. How is it to try and lead a life according to those values?
5. How does that translate into work-life?
6. How did the establishment of Mwiriwe Coffee and the creation of the physical washing stations create new relationships?
7. Did you follow any guidelines, did you have a role-model project that you found inspiration and guidance in? What guided you along the way, establishing something quite new and different in a very foreign place.
8. And why did you do this? Why did you sell all your assets, uproot your family of five and move to a new and challenging place? Why did you start the process of this market making?

Interview guide for staff 1:

1. Let us start with about a story about you. If you were to tell someone this is the story of *name,* what would you tell? Or if you were to tell someone about the life of *name* as a story, how would you tell the story of *name*?
   Probe here.
2. How did Mwiriwe Coffee become part of your story?
3. Being part of Mwiriwe Coffee for x years now, how has that influenced you as a person?
4. What kind of change are u seeing in your community from your work?
5. How long do you think you will stay with Mwiriwe Coffee?
6. How do you get treated at Mwiriwe Coffee?
7. What is your vision?

Interview guide for staff 2:

1. What is your knowledge about coffee?
2. What do coffee farmers know about coffee?
3. What are the rules of operating the washing station?
4. Which actors contributed to the creation of the rules defining the operations at the washing station?
5. What standards do you have and follow? (For growing, picking, processing, storing, selling, shipping, etc.
6. How were these established, negotiated and managed?
7. What tools do you use to measure something in coffee? (TDS, cupping, anything to measure quality along the way)
8. Who knows how to works those tools? And who knows what they mean?
9. Who is allowed to use the tools?
10. How are the growing, harvesting and processing methods made? How are they practiced, maintained, contested, negotiated?
11. The experiments you make, how are they developed?
12. How often do you have to deal with people requesting fanta (a bribe)?
13. What is your role at Mwiriwe Coffee?
14. How did you end up working for Mwiriwe Coffee?

15. Is there is a distinction between the farmers who sell their coffee to Mwiriwe Coffee and not?
16. What did it require to build a collective identity of the Mwiriwe Washing Station on the ground. Who part took, what was their role? How was the identity developed? What is their identity now?
17. Quality and story are equally important for Mwiriwe Coffee. What is the story we try to tell of Mwiriwe Coffee? Is there a difference between that story and the real story of Mwiriwe Coffee?
18. How is the story crafted? And how is it maintained? Has the identity developed?
19. Has your identity developed?

20. What is transformation to you?
21. Are you seeing transformation around you? What are you part of transforming; Coffee, land, people, beliefs?
22. Have you notices changes in the environment?
23. How do you understand the changes?
24. How do you relate to them? Does it influence the way you do your work?

Interview guide for Junior Agronomists:

To someone who knows nothing about you, how would you tell them the story about you as a person?

(If probing necessary: where does your story start? What are the chapters of your story? Who are the main characters of your story? How do you envision your story continuing and ending?)

How far away from your hill have you ever travelled?

Which hill are you a junior agronomist for?

How long have you been a junior agronomist for this hill?

How you got the job as a junior agronomist?

About the sub-hill or hill:

1. What is the meaning of the hill/sub-hill?
2. The history of the hill/sub-hill?
3. What is the main village there? The centre…
4. What do people like to do in their free time on the hill?
5. What is most important to the people on the hill?
6. What do they dream of as a future for the hill?
7. What are people afraid of on the hill?
8. What does coffee mean for this hill?
9. What else grows there? What else do people sell there?
10. What are the agronomical challenges on this hill?
    a. How do you and the farmers work with the challenges?
11. Have you noticed any changes in the weather/climate in your lifetime?
12. Have you heard other people talking of changes?
13. How do we relate to these changes?
14. Can you describe life on the hill before Mwiriwe Coffee and after Mwiriwe Coffee started working there?
15. Is there a difference between farmers that sell their coffee to Mwiriwe Coffee and farmers that don't? Is yes, what is the difference?

16. How would describe the relationship between farmers and Mwiriwe Coffee?
17. How would you describe the relationship between you and Mwiriwe Coffee?

18. What are your tasks as a junior agronomist?
19. What is your job like as a junior agronomist?
20. What is challenging?
21. What is rewarding?
22. What do you enjoy the most about your job?
23. What is your vision as a junior agronomist?
24. What is most important to succeeded?

25. What do you know about coffee?
26. Can you tell us what you know about the antestia bug?
27. How do you work with fighting against the antestia bug?

28. What do you think happens to the coffee after the parchment has been packed in bags at the washing station? Can you explain each step from washing station to the someone drinking the coffee?
29. How do you think the price for coffee is decided?

Interview guide for farmers:

1. To someone who knows nothing about you, how would you tell them the story about you as a person? (If necessary: where does your story start? What are the chapters of your story? Who are the main characters of your story? How do you envision your story continuing and ending?). Probe here.
2. How long have you been a coffee farmer?
3. Can you tell me about your coffee farm? How many trees, the state of the farm, how much time you spend there, what you do?
4. What challenges are you facing in coffee farming?
5. How are you working to overcome these?
6. Where do you deliver your coffee?
7. Why did you choose to stop delivering coffee to x washing station and changed to Mwiriwe Coffee?
8. How is your relationship with Mwiriwe Coffee?
9. How do you see the future?
10. What is your vision of an ideal future?
11. What is in the way of achieving that ideal future?
30. Have you noticed any changes in the weather/climate in your lifetime?
31. Have you heard other people talking of changes?
32. How do we relate to these changes?
12. Is there anything else you would like to share?

Questions for hill visits:

Hill:

1. What is the meaning of the hill?
2. The history of the hill?
3. The culture of the hill?
4. What is the main village here? The centre…
5. How many families live here?
6. What does coffee mean for this hill?
7. How many people grow coffee here?
8. What else grows here? What else do people sell here?

Coffee farmers:

9. Who are the farmer friends?
    a. For how long?
    b. What is their experience of being farmer friends?
10. Who is the most productive farmer here?
    a. How did they become so productive?
11. Has being part of Mwiriwe Coffee changed the way they work with coffee?
    a. How?
    b. When did they start working with Mwiriwe Coffee?
12. What are the agronomical challenges on this hill?
    a. How do they deal with them?
13. Have you noticed any changes in the weather/climate in your lifetime?
    a. How do they tackle that?

Life:

1. What do people like to do in their free time?
2. What is the favourite type of food?

Junior Agronomists:

3. How long have you been a junior agronomist?
4. Are you from this community?
5. What are the agronomical challenges on this hill?
    a. How do they deal with them?
6. What is your job like?
7. What is challenging?
8. What is rewarding?

Ethical clearance

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TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 03.06.2016. Meldingen gjelder prosjektet:

48844	*The role of global value chains in transitions to sustainability*
Behandlingsansvarlig	*Universitetet i Oslo, ved institusjonens øverste leder*
Daglig ansvarlig	*Milda Jonusaite Nordbø*

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/meldeplikt/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, http://pvo.nsd.no/prosjekt.

Personvernombudet vil ved prosjektets avslutning, 30.12.2020, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Kjersti Haugstvedt

Hanne Johansen-Pekovic

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Vedlegg: Prosjektvurdering

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PART 2: ARTICLES

I

II

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SPECIAL FEATURE: ORIGINAL ARTICLE

The "How" of Transformation: Integrative Approaches to Sustainability

What matters? The role of values in transformations toward sustainability: a case study of coffee production in Burundi

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Abstract

This paper examines the role of values in transformations toward sustainability. Values, generally defined as what people deem to matter, are increasingly gaining interest in and outside of academia. For example, sustainability aligns with specific values such as dignity, equality, safety, and harmony for people and nature. However, current approaches to values are mind-matter dualistic, and therefore failing to honor the inherently dynamic relations of socio-ecological systems. Drawing on new materialism, I explore values as part of the relations that make this world and propose to consider values as material-discursive practices. Ethnographic fieldwork was done in 2017 with coffee producers in Burundi who aimed to transform production by caring for the coffee and people that grow it. Based on interviews and participatory observation, I present how values were integral to transforming the relational aspects of coffee production. In this study, values of togetherness, care, dignity, and faith were dominant and were found to reconfigure the socio-ecological system of coffee production. I argue that values are inseparable from, and hence co-productive of, the material world that we experience and play a vital role in sustainability transformations.

Keywords Values · Transformation · Sustainability · New-materialism · Coffee · Burundi

Introduction

"We want dignity and value for each individual; it is about grace and love in the community. (…) Team, we are all a team. Farmers are part of the team. I hope you understand that we are working for something bigger than yourself. You get to be part of something exciting". This speech was given by the founder of a company aiming to transform Burundi's coffee production. References to values permeate the speech to motivate and connect the staff ahead of a challenging coffee harvest. What do values mean for transformation?

Transformation is a process of fundamental change (Feola 2015). Yet, despite efforts to transform society toward sustainability, we are confronted by rising global temperatures, diminishing biodiversity, increased financial inequality, and reduced human well-being, not to mention a global pandemic (Shrivastava et al. 2020; Hochachka 2020). After years of separate scholarly attention to both transformations and sustainability, sustainability transformations have emerged as an integrated focus of research (Salomaa and Juhola 2020; Shrivastava et al. 2020). Although the natural sciences have historically dominated the social sciences and humanities in sustainability research, in recent years, the role of values, worldviews, and beliefs in global change processes has been highlighted (Shrivastava et al. 2020; Fazey et al. 2018; Patterson et al. 2017). These human dimensions are captured in definitions of sustainability transformations. For example, Patterson et al. (2017, p. 2) define sustainability transformations as "fundamental changes in structural, functional, relational, and cognitive aspects of socio–technical–ecological systems that lead to new patterns of interactions and outcomes" (Patterson et al. 2017, p. 2). Their definition draws attention to the fundamental role of relational dimensions in transformative change processes.

In this paper, I focus on the role of values to dive deeper into the relational aspects of transformation. Within the literature, values are presented either as barriers or leverage

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points for fundamental change processes. For instance, values motivated by conservation are found to contribute to resistance to climate change adaptation (Nielsen and Reenberg 2010; Kuruppu 2009; Curry et al. 2015), and values motivated by self-enhancement are negatively related to environmental concern and behavior (Schulz, Martin-Ortega, and Glenk 2018; Hicks et al. 2015; Poortinga et al. 2019). These studies refer to values as stable entities within the human mind and related to environmental attitudes and behavior. From this point of view, values are hard to change, making them a barrier to transformations (Nielsen and Reenberg 2010; Wolf, Allice, and Bell 2013). At the same time, recent publications on sustainability transformations recognize that values influence how humans relate to the environment and note that they can and need to change, both within and across generations (Shrivastava et al. 2020). Values are also suggested as powerful mechanisms of transformative change in the reconfigurations of social relations (Few et al. 2017). Such perspectives on values recognize that they can serve as leverage points for systems change, in particular when they contribute to new perspectives and paradigms (Meadows 1999; Fazey et al. 2018). Such notions contrast with the idea that values are stable and resistant to change.

So, what are values? Are values "held" by individuals and communities, and if so where? Are they stable, or can they change? It is problematic that the role of values is frequently mentioned as important for transformations without being fully understood (Patterson et al. 2017; Few et al. 2017; Blackburn 2018; Shrivastava et al. 2020). Answering these questions is necessary to determine whether values such as dignity, equality, safety, and harmony with people and nature can change within a generation ("The 2030 Agenda" 2015; Shrivastava et al. 2020; Patterson et al. 2017). Understanding the role of values in transformations toward sustainability requires a deeper engagement with the concept, exploring how values are a dynamic part of the unfolding evolution of social–ecological systems.

This paper examines the role of values in transformations toward sustainability. In joining the recent work on bridging the dichotomy between nature and society in sustainability transformations (Walsh, Böhme, and Wamsler 2020; West et al. 2020), I step away from an either/or perspective on values (i.e., as fixed or fluid), and instead engage with them as material-discursive practices of what people deem to matter. Rather than being stable subjective ideas or social constructions, values contribute to the emerging and ongoing ebb and flow of the material world. This focus draws on new materialism, a relational school of thought describing discourses and materiality as being mutually related (Barad 2007). New materialism provides us with ways of understanding how values can contribute to sustainability transformations and transcend rifts between dichotomies such as social–ecological and mind-matter (Walsh, Böhme, and Wamsler 2020; Ingold 2004).

While new conceptual understandings are important, sustainability transformations also need empirical studies to support them. Some claim that without these, sustainability transformations cannot be called an empirical phenomenon (Salomaa and Juhola 2020). Based on an empirical study of a specialty coffee company aiming to transform coffee farming in Burundi, I explore the role of values in sustainability transformations. In this study, I witnessed values forming collectively, not within a generation, but within a coffee harvest season. Based on this, I argue that values are not as fixed as assumed. This promising insight suggests that sustainability-related values can be put into practice by the current and future generations, and within a short time period. This finding supports the idea that values are material-discursive practices that configure the relations within socio-ecological coffee production systems.

I start by reviewing the dominant approaches to values and then present the concept of material-discursive practices, drawing on new materialism. Then I describe the case study setting and outline the ethnographic design and methodology. Next, I present how values are entangled with the materiality of coffee production, and I discuss what values as material-discursive practices entail and how they are part of unfolding transformation. Finally, I consider the implications of approaching values as material-discursive practices for sustainability transformations.

Theoretical approaches to values

The word "value" is so prevalent that it risks losing its value due to vague and all-encompassing use (Rohan 2000; Few et al. 2017). In the most general way, values refer to what individuals or groups deem to matter (Kenter et al. 2019; Schwartz 1994). However, the range of value definitions, theories, and frameworks is not surprising, considering the many disciplines that research values (for a recent systematic review, see Rawluk et al. 2019; Kenter et al. 2019). What is clear is that each discipline approaches values with different ontologies and epistemologies, leaving the term in a "messy" and an incommensurable place (Kenter et al. 2019). Out of the numerous approaches, I focus on two camps in which theoretical knowledge of values research has mostly diverged before suggesting an alternative. One approach considers values as individual and stable over time, while the other considers values as socially constructed and always shifting (Kenter et al. 2019).

Held values

Social psychology scholars tend to conceptualize values as being deeply held by individuals (Rawluk et al. 2019; Schwartz 1994). Values refer to subjective and prescriptive beliefs of whether behaviors or outcomes are desirable and serve as guiding principles (Rokeach 1973; Schwartz and Bilsky 1990). Values are thought of as pre-formed and somewhat stable. They can, therefore, be meaningfully isolated and elicited through self-reporting (Schwartz and Bilsky 1990). Individual values can also be aggregated to reveal shared values among groups of people or societies (Bardi and Schwartz 2003; Schwartz and Sagie 2000). Such notions from social psychology have increasingly been adopted interdisciplinarily by environmental social sciences; for example, to explain how disagreements on climate change adaptation strategies, ecosystem services, and water policies are rooted in conflicts between deeply held values (Schulz, Martin-Ortega, and Glenk 2018; Hicks et al. 2015; Poortinga et al. 2019). As such, they claim to reveal in-depth aspects of environmental conflicts (Ford et al. 2009; Ives and Kendal 2014). Conceptions of held values located within the individual mind have dominated values research since its infancy (Lovejoy 1950; Rokeach 1973). However, providing insights into subjectivities by reducing people to their values, as something that can be objectively known, has increasingly been questioned over the last 30 years. Such critiques target the foundational dualism of approaching the world as separate from humans (Walsh, Böhme, and Wamsler 2020; Mansfield 2000).

Constructed values

Constructivist scholars view values as embedded into larger social structures, cultures, and worldviews that are under constant construction (Irvine et al. 2016; Ives and Kidwell 2019). Values are assessments of how something ought to be, and they are defined through socially constructed discursive practices used to legitimize society (Harvey 1996). Within this perspective, individual values cannot be captured or meaningfully known because they are formed continuously in different situations and positioned outside the mind. This makes it meaningless to then talk of shared values based on aggregated individually "held" values (Irvine et al. 2016). For example, a study by Irvine et al. (2016) shows how shared values formed in response to a suggested change in public forest ownership. People identified the importance of forests for future generations and asserted that "these forests are ours" for the whole population's common good (Irvine et al. 2016, p. 188). These authors suggest that 'forest' values may not have existed *prior* to all the participants but were generated during the collective response provoked by the forest ownership change. Therefore, some values seem to form collectively and are different from what people may deem to matter in isolation (Irvine et al. 2016). The stark difference from the previous perspective is that values are never really individual or constant within the mind, but are instead in an ongoing process of being formed and re-formed in structures outside the mind. Both perspectives ascribe to a dualistic perspective of the world by positioning values within or outside the mind, without addressing the intrinsic relations between the entities.

Values as a material-discursive practice

One way to honor socio-ecological dynamics is by approaching values as an integral part of the whole. I do so by suggesting that values are material-discursive practices. Values as material-discursive practices have not been explored thoroughly in values research, but build on a long tradition of materialist approaches within social science (Haraway 1991; Pulido 2000; Parker 2016). For example, representational gender discourses are argued to have material real-world effects (England 2004). Gender is not only a discursive representation of the predominantly masculine–feminine binary, but has material consequences, for example, in how young girls construct and reproduce themselves and their households (Hyams 2003). Gender, race and class emerge throughout the entangled dynamics of discursive imaginations and material articulations (Massey 1994; Haraway 1991; Harvey 1996). Echoing the materialist perspective on gender, race, and class, I argue that it is worth considering values—ideas about what matters to people—as similar material-discursive practices.

Materialist approaches have developed over time, and new materialism has joined the field by offering a perspective where materiality and discursivity are fundamentally entangled rather than distinct entities that affect one another causally (Barad 2007). New materialism is concerned with matter in response to the growing realization that reality is much more entangled, and open-ended than previously assumed, and therefore full of possibilities (Barad 2007; West et al. 2020). New materialism is a relational perspective,[1] with parallels to process philosophy (Whitehead 1978), assemblage–network-theory (Latour 2007), and complex systems theory (Fischer and Riechers 2019). The common thread is that "relations between entities are more fundamental than the entities themselves" (Wildman 2006 in Walsh, Böhme, and Wamsler 2020, p. 3). This means that the primary objects of existence are continually unfolding processes and relations. No object can be understood outside its relation because the relation constitutes the object itself

[1] I use the word perspective when referring to ontology, epistemology and subsequent ethics and methodology to avoid complex jargon.

(Barad 2007; West et al. 2020; Walsh, Böhme, and Wamsler 2020).

Bringing in transformation again begs the question of what the object of transformation is (Feola 2015). If relations exist prior to all other entities, then relations ought to be the object of transformation. It is essential to underline that relations are not framed in a dualistic sense as in between mind-matter or human-nature, but an ongoing entangled becoming of the world and its socio-ecological systems. This is best explained with Barad's term intra-action, suggesting an ongoing relation between entities (2007). This differs from interaction, which presumes the existence of separate entities (such as values) or things (such as coffee) that interact. Instead, entities such as values come to be in the moment of their intra-action and do not exist independently beforehand (Barad 2007; Walsh, Böhme, and Wamsler 2020). Similar to how relations exist prior to all else, intra-action refers to this process of relations that constitute the entity itself.

Building on this, meaning and matter are not static and separate elements, but an entangled, ongoing becoming, simultaneously productive of one another (Barad 2007). Values are thus not separate entities but come to be in the continual intra-action of the relations that configure the becoming of socio-ecological systems. This means that values are not only determined by the context within which they arise but also configure the unfolding materiality moment by moment. While the individual integrity of humans is respected, their being in this world is fundamentally understood as constituted by relations of all kinds (Walsh, Böhme, and Wamsler 2020, p. 7). Values as material-discursive practices differ from held values located within the mind, upholding the dichotomy between humans and nature, and from constructivist approaches by shifting the attention from structures to processes and relations. Such a relational perspective can, therefore, help explore and integrate "inner" and "outer" dimensions of sustainability, rather than studying values within these separate dimensions themselves (Ives, Freeth, and Fischer 2020).

How can such relational and processual notions of values be operationalized empirically? Empirical work focuses not on things or entities, but on experiences of practices and relations (Walsh, Böhme, and Wamsler 2020; Barad 2007). In this case, the ongoing relations between the soil, the sugar in the coffee cherries, people, and values enact the particular socio-ecological systems of coffee production in Burundi. Coffee production is a socio-ecological system with dynamic relations and entanglements of the world. However, as has been rightfully pointed out by West and colleagues (2020), despite adhering to a relational perspective where everything is connected in the ongoing becoming through intra-action, one has to start using words that separate entities from one another in writing. The challenge remains to say anything meaningful about such relations in isolation, without reproducing the binaries of human-nature (West et al. 2020). However, it is through the specific intra-actions that socio-ecological systems such as coffee production in Burundi are reconfigured. It is of interest to see how these specificities unfold by describing the intra-action of coffee production relations and the values that emerge through them (Barad 2007, p. 140).

Setting and methods

Coffee production in Burundi

Burundi is a small East African country that is also among the least developed globally (UNDP 2019). The vast majority of Burundians have spent the last five decades in severe multidimensional poverty with recurring ethnic-based violence (Uvin 2009; UNDP 2019). The recent political unrest with a failed coup d' état in 2015 underlines how intractable the cycle of conflict and violence in Burundi has become (Jobbins and Ahitungiye 2015; Vandeginste 2015). The political instability has led to "an institutionalized system of corruption, social exclusion, impunity, unpredictability, a total lack of accountability and clientelism" (Uvin 2009, pp. 109–110). Such tendencies are also seen in the coffee sector, which Burundi depends on for as much as 80 percent of their foreign exchange earnings (Lenaghan, Clay, and Kamwenubusa 2018).

Coffee production in Burundi has experienced a steady decline since 1990, with a subsequent decline in income for coffee farmers, despite its financial importance. The state is known for continuing unnecessary regulatory restrictions, resulting in severe management constraints for private actors (Lenaghan, Clay, and Kamwenubusa 2018). One regulation is that farmers are not allowed to process coffee. Only government- or privately-owned washing stations are granted permits to process and export coffee. Therefore, the "coffee producer" is a relationship between a coffee farmer and the specific washing station they choose to work with[2] (Rosenberg 2017). The coffee producer entity, by definition being a relationship, makes it an interesting case study for exploring changes in a socio-ecological system in need of transformation from a relational perspective.

To summarize, Burundi has an ineffectively governed coffee sector, with declining production, few alternatives for export goods, and an institutionalized system of corruption. A recent report suggests that regulatory unpredictability and constraints retain state control of the increasingly unprofitable washing stations tied to the public sector (Lenaghan,

[2] In the rest of the paper, when I refer to a coffee producer, I refer to this relationship.

Clay, and Kamwenubusa 2018). Due to the political and security instabilities discussed, doing business in Burundi remains costly and risky (Baghdadli, Harborne, and Rajadel 2008). There is therefore an agreement between government officials, Burundian coffee institutions, and private actors that Burundi's coffee sector will continue to decline and fail to "reverse course to profitable and sustainable sector in the long-term" (Lenaghan, Clay, and Kamwenubusa 2018, p. 12). In other words, the coffee-dependent country is in dire need of transformation toward sustainability. What are the current movements to make this happen, and what role do values play in this needed transformation toward sustainability?

The main approach to transform the Burundian coffee sector is to realize the possible quality and productivity potential in transitioning from cheap commodity coffee to higher valued specialty coffee (IMF 2012; WB 2016; Lenaghan, Clay, and Kamwenubusa 2018). By increasing productivity, quality, and coffee prices, 600,000 households that depend on coffee for their livelihoods could be lifted out of poverty. The World Bank and the International Monetary Fund have repeatedly focused on: (1) pressuring governance practices, (2) ecological requirements in terms of upgrading land-use practices, (3) technical processing requirements, and (4) monetary incentives for transforming Burundian coffee to quality coffee (IMF 2012; WB 2016; Lenaghan, Clay, and Kamwenubusa 2018). However, none of the reports (IMF 2012), grants (WB 2016) or policy recommendations (Lenaghan, Clay, and Kamwenubusa 2018) mention any aspect of the dynamic social–ecological systems as inherently relational, nor consider any social aspects of transformations toward sustainability.

Study design

This study pays specific attention to values to compensate for the void of relational aspects in current approaches to transform the Burundian coffee sector. Since the primary object of transformation from a relational perspective is relations, I explore how values in the coffee producer relation reconfigure the socio-ecological system of coffee production. This study investigates the relationship between farmers collaborating with the washing stations of one particular specialty coffee company. I chose to study this company due to its explicit goal to transform coffee farming in Burundi toward quality coffee by caring for both the coffee and the farmers that grow it (Gobo 2007). An entrepreneurial Christian couple moved to Burundi in 2013 and started the company due to the potential and need they noticed during a visit a few years earlier. It is therefore a relevant setting to explore the role of values in deliberate transformations toward sustainability within multifaceted challenges, such as working with small-scale farmers growing climate-sensitive coffee in depleted soil and multidimensional poverty and dealing with internationally volatile prices, a hostile business environment, political instability, poor infrastructure, and lack of essential goods (Baghdadli, Harborne, and Rajadel 2008). Due to this study's inductive nature, values emerged as a central part of the deliberate transformation process during data analysis.

The empirical evidence is based on participant observation and interviews carried out in Burundi during fieldwork between January and June 2017. I conducted 106 interviews with farmers, staff, and founders. They are in focus because they are the main stakeholders in this coffee producer relationship. I worked with a research assistant fluent in Kirundi and English since all farmers and some staff members spoke Kirundi. During the recorded interviews, the assistant could translate the responses with more time and attention. However, I did not record or take notes during field conversations according to recommended best practices for ethnographic fieldwork. An ongoing translation entailed a reduced translation quality that could not be verified later. Such translation issues were addressed to the degree possible by recommended strategies for ethnographic research (Emerson, Fretz, and Shaw 2011).

The approximately 55 Burundian small-scale coffee farmers in this study navigate war, disease, theft, poverty, climate change, and infertile soils. Coffee is their primary and often only cash crop. The annual payment for an average coffee farming family equates to about one dollar a month for a whole family, far below any poverty line. The 36 specialty coffee company staff included in this study serve in roles such as washing station managers, accountants, and agronomists. Most of them live in communities surrounding the company's washing stations, where they listen to farmers' concerns and assist farmers with coffee-related tasks during field visits. I have anonymized the informants and setting due to the political and security pressures discussed, which could put informants at grave risk.

The primary data source is field notes from participant observation while working as an intern for the company. I specifically chose ethnographic research, focusing on relational materialities suggested to suit materialist social inquiry (Fox and Alldred 2015). For instance, the materiality of coffee is not separable from any other related entity, such as the intra-action between soil, climate, farmers, country, and company, or the values within which the specific coffee production is configured (Barad 2007). Such an approach to relational materiality shifts the attention from studying what things are to what things do (Fox and Alldred 2015) and is therefore suited to examine the role of values as material-discursive practices rather than stable entities.

Being an intern for a coffee company came with positionality challenges, as expected, following the ethnographic participatory approach (Delamont 2007). While reflexivity

can make us aware of the power-laden relations in the field, being aware does not make the power relations disappear (England 1994). Reflecting on the ethical dimensions of doing this work, I identified several potentially problematic aspects of my positionality, including the inability to obtain informed consent at all times and the friendships developed with informants. These issues were addressed through transparency and dialog to the extent possible yet highlight the inherently subjective and messy participatory research process.

Results

In the quest to understand the role of values in transformations toward sustainability, I present how values unfolded and were enacted. I have written this section in a personal tone, hoping to share the reality of coffee production in Burundi and to allow for a deeper appreciation for the emergence and importance of values in this context.

Challenges

I landed in Bujumbura, Burundi, on January 25th, 2017, eager to meet the people I was going to work with, get to know, and research. However, there were no people, cars, or messages waiting for me. Two company staff members arrived 30 min later, telling me in what felt like 100 km per hour English that they had just come from a meeting about a sudden change in law that was crippling the company. The government was banning collection points where farmers used to deliver their harvest of coffee close to home. Without such collection points, farmers are forced to carry backbreaking coffee bags directly to washing stations up to 25 km away. This walk was dangerous when slippery steep muddy paths stretched into hours of darkness. Soon, my days and months filled with nervous farmers telling me, "I am old, and I have a limp. It is tough for me to carry this far"; and the staff and founders grappling with how to compensate for the loss of collections points sourcing 40 percent of the company's coffee.

Uncertainty and unpredictability quickly became the constant rhythm of life. One law moved all USD business accounts to the national bank at an inflated exchange rate, and 33.7 percent of the company's capital dissipated overnight. Then extreme petrol shortages interfered with washing station operations that depended on 120 L of fuel daily for generators to process coffee. Cars lined up for days around petrol stations, only to get 10 L of fuel when they reached the pump. With no fuel, visiting farmers in far off hills, a vital part of this company's relational practice, was also at a standstill. Then there was the challenge of farming coffee in Burundi, a climate-sensitive crop in completely depleted soil and a changing climate. The Bourbon coffee trees grown in Burundi can yield five times more than the average Burundian coffee farmer producing a meager 800 gr of coffee per tree. The fertilizer, which could only be ordered through the government and was paid for three months prior, did not arrive until the end of harvest, when it no longer could affect yield or quality. Even though it was only my second day, it was clear that it would require outstanding motivation to pull the coffee producers through these challenges, let alone to transform coffee production toward sustainability.

Values unfolding

Ethnography allowed me to discover what mattered to coffee producers and the manner in which the harvest of 2017 came to be. During the first few days, the founders kept asking staff members and me what the theme of this year should be. "What is important to us this year? How can we produce coffee in a way that we believe it ought to be?" On a long drive to one of the washing stations, we again discussed themes for the year. Once we arrived, a series of speeches were held, an essential practice in Burundi. The founder held a speech mentioning several of the company's values:

> This company started with a vision to create an impact on one hill in Burundi. (…) It was not about making much money. We have a triple bottom line that is our vision and our foundation: 1) The first is the financial impact. Everyone needs to make a living; farmers, the team on the station, you, my family, US, and European coffee shops; that we can all make a living without taking advantage of anyone. 2) The second is social and environmental impact: that our neighboring farmers can send their children to school. That they can have better health, and that the environment becomes healthier. 3) The third is the kingdom's impact. It is the worldview following Jesus, which influences the decisions we make.

Then a staff member introduced himself with a speech starting with: "Thank you, God, thank you, team. You know me, I know you, and we know each other. Together!" The moment the staff member said "together," in synchronicity from different corners of the room, the founder, two staff members, and I turned to each other with eyes wide open and mouthed "together!" silently, nodded, and smiled. From that moment and onwards, I got to experience, observe, and partake in manifesting the value of "together" in practice. What is important here is that the togetherness value was formed due to a collective search for meaning and motivation.

Becoming with togetherness, care, dignity, and faith

The next few months were spent preparing for the upcoming harvest by producing coffee legally and with care for coffee farmers. It was a challenge that seemed impossible at times in Burundi, where the expected norm was to break the law and cover it up with corruption. The company approached finding a solution to outlawed collection points by holding frequent dialog-based meetings. I spent most days in meetings and visiting farmers in their fields, where togetherness saturated plans, actions, and conversations. Farmers shared their frustration that this law was taking them back to slavery. Staff and junior agronomists approached farmers responding, "We understand your concerns, and that is why we are here, to think of solutions *together*." Farmers expressed how much they appreciated the contact the company kept with farmers. One farmer said, "The issue is that the other washing station does not treat us well. If they give this other washing station a collection point license, but not you, we see that something is not right!" Farmers were torn by refusing to deliver to washing stations closer to them but also being physically unable to deliver to this company's washing station on their own. Another farmer continued, "If we deliver to another washing station, they [government] will say, 'Now we got you!'. We demand that we stay together and that we work together. We see this law as acting as a game." Togetherness had clearly become a part of the coffee producer relationship.

Togetherness fits into a broader set of values observed, such as faith, care, and dignity. For instance, I observed the significance of faith in how farmers, staff, and founders spoke and acted. The importance of faith was evident by dedicating one of the company's bottom lines to Christian values. The farmers spent each Sunday in church and explained that "in everything we do, we put God first and thank him for everything". While the staff often started interactions with farmers with prayer, "as usual we'd like to start our meeting by praying, so I invite one of you to pray for us and for the activities that we want to start". Despite belonging to different denominations of Christianity, farmers, staff, and founders evidently valued faith by referring to the importance of God and practicing prayer in most interactions. Considerations about faith values being part of broader worldviews are discussed by other researchers (Christie, Gunton, and Hejnowicz 2019; Ives and Kidwell 2019), but have to be left aside here due to length constraints. However, it is significant to note how the value of faith became a central part of this coffee producer relationship and the way it became integral to coffee production.

Care was another pronounced value oriented toward the well-being of others, albeit in different ways. Farmers expressed care toward the family and their immediate community. One farmer was proud to share that "each day, these three women go to one of their lands to farm together. It is a great thing to see people help each other." Another farmer said, "It is important to me that my son is caring for his siblings." I observed that references to care were often linked to survival in a wider context. However, as crucial as coffee was for farmers' income, care was not observed to be expressed toward coffee among most farmers. There was therefore a difference in the way staff and founders extended care values compared to farmers. Staff and founders spoke of care and enacted care toward family, the broader community of coffee farmers, and the environment, including the intertwined relation between coffee, the rain forest, and soil.

Care values showed up frequently in the speeches and actions of the company. For example, the founders kept reminding the staff during meetings that "We serve the farmers. The farmers do not serve us". The founders referred consistently to farmers as their neighbors and/or friends, and the company as a coffee farming family, team, and community. The staff confirmed that "everyone is working. We are working as we were a family. Even the boss is not treating the laborers as simple people." Two staff members pointed out that their approach to others had changed toward dignity, equality, and respect due to the experience of working with people who acted out such values. However, I quickly realized that there was a subtle difference between claimed care values and enacted care values, and that it was imperative for the company to enact care in all domains of contact with the farmers.

Transformational becoming

It was the experience of enacted care values that proved to be transformational in fundamentally changing the relational aspects of coffee production. For instance, the company refused to celebrate before the farmers could do the same and postponed the Christmas party for the staff until farmers had been paid, an act communicating care and equality. The list of such seemingly minor actions was many, but among the ones most mentioned by farmers were the following: first, thanking farmers for making an effort to deliver to their washing station was employed as a routine practice among staff. Second, the company paid farmers in sealed envelopes. Each envelope had the farmer's name, hill, farmer card number, total harvest, and price written on it. Despite most farmers being illiterate, they explained that "envelopes are important in our culture because it is something official and shows respect." Farmers reported that they had not experienced coffee production as a practice of respect, dignity, and care before. Farmers expressed how being thanked each time at the washing station and paid in envelopes was meaningful in reshaping their own experience of self-worth and dignity, which is here considered as fundamentally changing relational aspects of coffee production. One farmer reported

that: "The washing station is so far from our hill. There are stations closer, but going to yours has more advantages than others, and the [owners] are caring for farmers." Furthermore, farmers explained that reconfiguring what being a coffee farmer meant by experiencing coffee production with dignity and care motivated and incentivized them to take care of their coffee trees and improve their yield and quality, as called for in the transformation of the Burundian coffee sector.

The solution to the challenge of delivering coffee without collection points was formed collectively. Farmers and the company agreed to add a transport allowance to the price for each kilogram of coffee delivered, allowing farmers to pay for transport assistance or compensate for their added efforts. The season started, and the staff and founders wondered if farmers would come from as far as they said they would. Then an old farmer walked in from the most remote hill, with no coffee. He had heard a rumor that the founders were leaving and had come on behalf of many farmers wanting to double-check that their coffee would be accepted here. Farmers had organized themselves in groups and rented a bike for collective coffee transport. The old farmer told of an illegal roadblock checking that coffee cherries cannot pass the district border, despite the law allowing farmers to deliver to a washing station of their choosing. In response to this, the farmers planned to distract guards at the roadblock with a skit, allowing the coffee to pass unnoticed. They camouflaged the red coffee cherries with tomatoes on top, just in case. This farmer left again once he heard from staff that they support, encourage, and are grateful for farmers' efforts. The next day, the team nervously waited to see if farmers from this hill would make it safely. That they did. During the harvest season of 2017, the company produced 1093 tons of coffee, delivered by 4785 farmers. Nearly 2000 new farmers delivered coffee to the company's washing station in 2017, providing more than 17 per cent above project volume without collection points or petrol. Such results are analyzed as new outcomes, as called for by transformations toward sustainability.

Expression of values

References to the presented values were evident in the speeches, plans, and actions of the company. Explicit value expressions were so frequent that it was impossible to avoid relating to them. Below is a speech by the founder from when the company paid farmers a bonus in envelopes, with expressed values added in parentheses.

> I want you to know that we are working together with you. (togetherness)
> Last year the banks changed the rules.
> […]
> But, we said we could do this because of two things.
> Number one is we can trust in God, (faith)
> Together we can trust in God. (togetherness, faith)
> And the second thing; we have great coffee! So, we can push for a better price.
> […]
> Together we make quality coffee. Together! (togetherness)
> So, we took the coffee and the message, and we asked the people buying the coffee for more.
> Not so we could eat.
> But so together, we could share. (togetherness)
> And so today, even though it is not a big premium, we have something to share. (well-being of others)
> […]
> If we work together, we can overcome any challenge. (togetherness)
> Because together we have overcome the changes in the rules, (togetherness)
> And we can share the reward together. (togetherness)
> […]
> But we can only do this together. (togetherness)
> And we can only do this with God. (faith)
> So, I want to thank you for being together. (dignity and togetherness)

Looking at the crowd during this speech, I noticed that farmers and staff nodded, sighed, and placed their hands on their heart, indicating a sense of accord when the founder referred to values. In summary, despite limited fuel, finances, and no collection points, 2000 new farmers chose to walk long distances to deliver to this particular company, resulting in an unexpected increase in coffee volume produced. The values of togetherness, dignity, care, and faith were an entangled part of the coffee producer relations, enacting outcomes indicated by the increased number of farmers and coffee volume. And again, if relations are the primary objects of transformation that reconfigure socio-ecological systems of coffee production, then values clearly play a role in how these relations unfold. Furthermore, this study shows that values can be formed and chosen deliberately by the intentional search for the togetherness value, which was formed and enacted during the coffee season of 2017. The next section discusses the repercussions of these findings for the role of values in transformations toward sustainability.

Discussion: do values matter for transformations?

How material-discursive practices are transformative

This paper explores the role of values in transformations toward sustainability. The point of departure being the relational perspective of new-materialism (Barad 2007; Walsh, Böhme, and Wamsler 2020), entails adjusting the definition of sustainability to transformations as fundamental changes of relational aspects of socio-ecological systems that lead to new outcomes (drawn on Patterson et al. 2017, p 2). Here, the objects of transformation are considered the relations that exist prior to all else (Feola 2015; West et al. 2020; Barad 2007). To operationalize it empirically, these relations are limited to the socio-ecological system of coffee production in one specialty coffee company in Burundi. I find that values are part of the moment-by-moment relations that make this world. Values that are manifested through these relations define the patterns of intra-action and therefore the unfolding outcomes.

This paper suggests approaching values as material-discursive practices (Barad 2007). This means that values are part of configuring the relations that produce coffee and the world in specific ways (Barad 2007). For instance, farmers set out on slippery, muddy paths at night and found creative ways to transport up to 500 kg coffee bags as far as 25 km, bypassing other washing stations. The fact that nearly 2000 new farmers delivered coffee to the company's washing station in 2017 and produced 17 per cent above projected volume without collection points or petrol is considered a new outcome of the intra-active socio-ecological coffee production system, as called for by transformations toward sustainability (Patterson et al. 2017; Walsh, Böhme, and Wamsler 2020). These findings align with Barad's claim that "different material-discursive practices produce different material configurings of the world" (2007, p 184).

However, to qualify as transformations toward sustainability, they need to be achieved by fundamental change in the relational aspects of socio-ecological systems (Patterson et al. 2017; Barad 2007). I argue that values play the role of configuring the relations that make this world moment by moment, and in such, provide details of the relational aspects of transformations. People in this study continuously voiced values in conversations, speeches, and actions. By making them so explicit, they introduced and reproduced ideas about what mattered to people in this specific coffee producer relationship. The expressions of gratitude at the washing station and the payment in envelopes can be considered as the material-discursive practices of dignity and care. These lived experiences of being treated respectfully were part of reconfiguring farmers' reported sense of self-worth and dignity. Such simple acts of gratitude and respect can seem mundane yet were transformative for farmers who spoke of coffee farming feeling like slavery where they were treated more like animals than humans. The point is that the lived experience of producing coffee with the values of dignity was a different pattern of being from producing coffee without dignity. Being treated with care and dignity as humans changed the very experience of being a coffee farmer and is therefore considered a transformative becoming. The practices of togetherness, care, dignity, and faith shaped the unfolding relations by how the staff and founders ran the company, met with people, communicated, and practiced coffee production. It was a relational way of being, thinking, and acting (Walsh, Böhme, and Wamsler 2020). I find that the enactments of these values fundamentally changed the relational aspects of coffee production, as called for in transformations toward sustainability (Patterson et al. 2017).

How are values central to achieving desired sustainability outcomes, such as ensuring the quality of Burundian coffee (Lenaghan, Clay, and Kamwenubusa 2018)? For instance, whether farmers transported coffee via a road, or a path proved to be defining for the outcome of coffee production in several ways. Due to the unfolding dynamic between banned collection points, poverty, and the petrol shortage, the majority of coffee farmers harvested coffee during the day and carried their harvest on foot at night. The steep muddy paths were taken to produce coffee at a washing station entangled with values of togetherness, care, dignity, and faith. This long journey meant that coffee cherries got processed later, and time became an entangled part of the unfolding coffee production. The sugar in the coffee cherries started fermenting and the coffee's clean quality desired in the specialty coffee market started to fade, a challenge when the aim was to transform the Burundian coffee sector from commodity to specialty coffee (Lenaghan, Clay, and Kamwenubusa 2018; WB 2016).

Such processes of coffee production cannot be detached from values formed and manifested through the coffee producer relationship. Farmers walked and carried their coffee for a slightly better coffee price, but also to be treated with care, to be part of the collective becoming in a certain way. To experience becoming together, with dignity. This illustrates how the quality of the coffee is a manifestation of the dynamic relation between values, time, muddy paths, and sugar molecules. This shows how the relational aspects of values are central to the process of a coffee farmer carrying a bag of coffee to a washing station far away from their farm in Burundi in 2017. They were in the process of making

the world. As material-discursive practices, values play an active role in coffee production, both in the lived experience of coffee producers and in the material quality that coffee drinkers experience. Values are found to be both ideas of what people collectively deemed to matter and manifestations of the very same ideas in unfolding material articulations (Kenter et al. 2019; Barad 2007). Neglecting the role of values in sustainability-oriented practices would ignore the vital part of values in the relation that configures the socio-ecological systems meant to be transformed.

Values clearly play a crucial role in the transformation of the relations that intra-act and result in the socio-ecological system of coffee production in Burundi. Focusing on the technical and ecological aspects of transforming the Burundian coffee sector toward sustainability has resulted in coffee farmers without incentives to increase the productivity or quality of their coffee (Lenaghan, Clay, and Kamwenubusa 2018). Based on this study, I suggest that neglecting the dynamic socio-ecological aspects means neglecting the relationality of how the world unfolds (Shrivastava et al. 2020; West et al. 2020). This study has shown that values can reconfigure coffee production to result in increased collaboration, coffee volume, and retained quality despite grave material and managerial challenges. By paying attention to the role of values, we see how central values are to the relational aspects of coffee production, because coffee production is a relational process after all, like any socio-ecological system (West et al. 2020; Walsh, Böhme, and Wamsler 2020).

Value change

The argument so far is that values are central to the transformation of relations configuring the socio-ecological coffee production systems and their outcomes. However, I also find that values can and do change. The assertion that values can change requires revisiting the dominant value perspectives. The majority of values literature considers values as inherently separate from the material world by assuming that individuals hold values as entities in the mind (Rokeach 1973; Schwartz 1994). Held values are seen as barriers to sustainability transformations because they change slowly. Furthermore, held values can be identified and felt, but not necessarily acted upon it. They are then neither part of unfolding relations, material outcomes, nor transformational change (Everard, Reed, and Kenter 2016; Nielsen and Reenberg 2010). Dominant constructivist approaches, on the other hand, consider values as continually forming outside the mind in systemic structures (Kenter et al. 2019). However, both perspectives uphold the binary between the social and ecological by concentrating on entities rather than inherently dynamic unfolding relations of socio-ecological systems (West et al. 2020; Walsh, Böhme, and Wamsler 2020; Shrivastava et al. 2020).

Recent studies suggest that values can form over time during the socialization processes that allow people to interact and reflect on what matters to them (Everard, Reed, and Kenter 2016). This study has provided many examples of such socialization processes, but theoretically considers these as intra-actions rather than interactions. This difference requires nuancing the idea of forming values as separate entities, which does not align with the relational perspective of new materialism. If we approach the socialization process as a relational becoming where values are material-discursive practices, expressed, re-forming, and intra-acting within the unfolding material articulations, then values are part of the active articulation of the world in which we have our being. Values are of this world, rather than fixed entities in the mind, or fluid entities outside the mind upholding social structures.

This study has shown that the value of togetherness was deliberately searched for, formed collectively, and manifested in unfolding coffee production relations. This was initiated by the founders, but the search for meaning was a collective and intra-active process that included not only the perspectives from various people, but also the material constraints of the system. Togetherness was manifested as a material-discursive practice during a challenging coffee harvest spanning over six months, not during a generation. What is noteworthy in this study is also the manner in which values were formed and unfolded. The process was tolerant and inclusive by forming and manifesting shared values, rather than aiming to change values in specific ways. Tolerant and inclusive change processes are in line with how sustainability transformations ought to come about ("The 2030 Agenda" 2015; Ravenscroft 2019). The point here is that values can and do change as part of the ongoing relations configuring the world.

At the same time, it is worth mentioning that faith values had been central to most of the informants throughout life. Considering such constant faith values as material-discursive practices entails that these values are continuously chosen and maintained by individuals as they experience and enact their lives in ongoing socio-ecological systems. Yet, as material-discursive practices, there is no expectation that faith values will persist, but that they were observed as part of the way this coffee production unfolded. It is an open-ended approach to values that acknowledges the histories of becoming, without defining the future trajectories based on what came before the specific relational intra-actions.

The previous section asserts that the role of values is to transform relations, because everything that arises from these relations is transformed, being coffee or cognitive aspects of being human of this world. Building on this, I

further argue that the role of values is to transform the way in which these relations unfold by choosing what values to enact and prioritize. The intentional agent is purposefully undefined because it is inherently relational. It can be an individual, community, company, coffee producer relationship, government ministry, or a scientific advisory board. The relations constituting the agent can choose what values to manifest. Enacting values by voicing them and manifesting them in policies and actions can transform relations we have to each other, our co-workers, friends, enemies, strangers, nature, and the climate. It sounds easy, and yet it is not. It is a constant fight to choose equality, dignity, respect, and care, amid competition, authority, and power.

Conclusion: values matter for sustainability transformations

The central thesis of this paper is that what people care about matters in a material and spiritual sense. I argue that values are the differences that matter based on two main findings. First, values are material-discursive practices, meaning that they play the role of configuring the unfolding materiality, such as sustainability outcomes. Second, values can and do change, meaning that which values to intentionally manifest is a choice to a higher degree than previously thought. The repercussion of this combination is that we can and need to choose values such as dignity, equality, safety, and harmony for people and nature in our relations to one another and the world (Agenda 2030). Paying more attention to which values we prioritize can make sure that we deliberately choose and manifest values that are to a higher degree consistent with an equitable and sustainable world.

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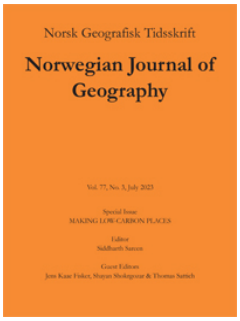

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Transforming Burundian “taste of place”: From shunned in commercial blends to specialty coffee

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Transforming Burundian "taste of place": From shunned in commercial blends to specialty coffee

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ABSTRACT

Human geography has a history of engaging with place-based-quality products through a variety of concepts such as terroir, geographical indicators (GIs), and fictive places. While the efforts necessary to construct a "taste of place" have been explored, it remains unclear how a "taste of place" is established, and by whom. The article explores how relations between quality, products, and places are produced on the ground. More specifically, it addresses the question of what it takes to reconfigure a "taste of place." Based on ethnographic fieldwork carried out in 2017 concerning a coffee producer in Burundi, the article shows how Burundian coffee was reconfigured from an inferior commodity coffee to a sought-after specialty coffee. The findings show that reconfiguring "a taste of place" requires both material and symbolic quality attributes. By underlining the importance of material quality attributes that are place-dependent, it provides a different angle to the discursive approach to "taste of place" in human geography. The author concludes that creating a "taste of place" requires taming space into a consumable representation of place through discursive *and* material practices.

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Introducing "taste of place"

The identities of some places and products, such as Champagne, Darjeeling, and parmesan, have become so intertwined that they are synonymous. The ways that the quality of agricultural products are shaped by the place of their production have been central to the study of wine (Demossier 2011; Hill 2022), cheese (Turbes et al. 2016), tequila (Bowen 2010), water (Jones 2009), beer (Bråtå 2017), and coffee (Smith 2018; Williams et al. 2022). However, just because a good is produced in a specific place does not classify it as having a positive quality. It is difficult to imagine products such as dried mushrooms or salt from areas associated with nuclear disaster being associated with quality.

The links between products, places, and quality have been addressed in the literature in two broad strands, one more practically focused and the other more theoretical. Some authors explore practical place-based concepts, such as terroir and geographical indications (GIs), and assert that links between places, products, and quality do exist (Barham 2003; Josling 2006; Pike 2009; Besky 2014). Discussions on whether GIs should be regulated dominate the literature (Barham 2003; Josling 2006; Defrancesco et al. 2012; Besky 2014; Hill 2022). A more theoretical engagement of links between products, places, and quality can be found in publications on geographies of consumption (e.g., Goodman et al. 2010; Mansvelt 2012). The central focus of this literature is how consumption constructs fictive places (Cook & Crang 1996; Overton & Murray 2016). The placeness of products is important in both strands of literature, but the actual *process of configuring/reconfiguring* the "taste of place" by producers is less prevalent in the literature.

Based on fieldwork in Burundi, this article examines how a "taste of place" was transformed there. Burundi seemed an unlikely place to be known for specialty coffee, the main reason being the high prevalence of a Potato Taste Defect (PTD) caused by local bacteria

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and pests (Hale et al. 2022). Burundian coffee is considered an "ugly duckling" among coffee origins, due to the coffee with the PTD tasting and smelling like raw potato in liquid form. Despite the risks of PTD, Burundi has ideal biophysical conditions for growing specialty coffee (Borrella et al. 2015; Lenaghan et al. 2018; Smith 2018). In this article, I document how a "taste of place" was reconfigured into signifying quality in a place known for negative quality attributes. The data were derived from ethnographic fieldwork in Burundi, where Mwiriwe[1] Coffee, which aimed to set Burundi on the specialty coffee map, was studied.

This research adds to what is known about the links between place, quality, and products, and specifically how a "taste of place" is configured/reconfigured. It raises questions about the view that a "taste of place" is a fictive place constructed by consumers, connoisseurs, and producers (Overton & Murray 2016). This article suggests that a relational approach allows for a better understanding of material and discursive aspects of place-making by producers (Massey 1994; 2005; Cresswell 2015).

The article is structured in the following way. First, a brief review of the literature addressing a "taste of place" is provided. Thereafter, Burundi is introduced as an origin of coffee, and the methods used to study coffee production in a few of the thousand Burundian coffee-producing hill sites. The presentation of the findings is divided into three sections, each of which addresses an important part of the global value chain: farm level, washing station, and buyers. Each section presents material and symbolic quality attributes found necessary to reconfigure Burundian coffee into a "taste of place." This is followed by a discussion of how taming the space of coffee production into a "taste of place" was achieved, including a reflection on spatial inequalities of power. Finally, the Conclusions section is presented.

Geographies of "taste of place"

The cultural concept of terroir is central in quests to understand how place defines the quality of agricultural products (Trubek 2009; Demossier 2011). The word terroir is so imbued in French culture that it cannot be translated meaningfully (Trubek 2009). This mysterious connection between terroir and "taste of place" is best portrayed by Trubek (2009, 6–8):

> In the act of tasting, when a bite of food or a sip of wine moves through the mouth and into the body, culture and nature become one […] If the taste is produced by place, how does it work? Can earth, air, sun, and water really make such a powerful imprint in my mouth?

Terroir has historically referred to specific climates, minerals in the soil, and physical geographies that result in specific tastes of agricultural products, such as wine (Gade 2004; Trubek 2009; Hill 2020; Overton & Murray 2021). For example, one study found that Cheddar cheeses made with milk from farms within a 5 km radius were grouped together, while cheeses made from milk originating from farther away were perceived as different (Turbes et al. 2016). This suggests that the flavor of a product is directly tied to a demarcated geographical location, a place with a concrete form (Cresswell 2015).

The human element, with local histories and specific agricultural and processing practices, was later acknowledged as central to terroir (Demossier 2011; Hill 2022; Williams et al. 2022). Today, terroir is no longer thought of as a timeless geographical location, but as a vibrant, constantly changing discursive spatial concept that links histories, practices, actors, and social organizations together (Demossier 2011; Overton & Murray 2021; Hill 2022; West 2022). Studies of New World wines that actively construct new places of quality have shown that the links between places, products, and quality are not intrinsic, but are discursively created (Murray & Overton 2011; Defrancesco et al. 2012; Overton & Murray 2014; Mathews & Brasher 2016; Parga-Dans & Alonso González 2017; Rytkönen et al. 2021).

Following on from the above discursive trajectory, a number of studies have engaged with terroir based on Lefebvre's social construction of space (Overton 2010; Murray & Overton 2011; Weiss 2011; Lefebvre 2013; Overton & Murray 2016; Bråtå 2017). One study, based on ethnographic evidence from pork production in North Carolina, revealed how the "taste of place" was constructed by chefs and consumers at farmers' markets (Weiss 2011). In a similar manner, studies of the process of fine wine qualification, realized in New Zealand wine markets, have shown how devices such as magazines, guides, and rankings have played a key role in co-constructing a global fine wine market (Rainer 2021). These studies have shown how the consuming end of the value chain, through the acts of discernment, were important discursive practices in constructing a "taste of place" (Weiss 2011; Overton & Murray 2021; Rainer 2021).

Terroir and a "taste of place" are deemed by some geographers to be social constructions to such an extent that they are suggested to be *fictive places* (Overton & Murray 2016). Fictive places are considered

[1]Mwiriwe is a pseudonym, meaning "Good afternoon" in Kirundi, the main language in Burundi.

a factor of production in of itself, used for capitalist accumulation and exchange. A fictive place is defined as follows:

> it builds on [a] material basis for land and social perceptions of place to construct a particular set of imputed values around a legally defined and bounded entity that acquires distinct economic value. This value is imaginary until it is made real by the purchase of a place-based commodity at a premium price by consumers: the 'consumption of space'. (Overton & Murray 2016, 806)

The definition of fictive places includes both material and discursive construction of places (Overton 2010; Murray & Overton 2011; Overton & Murray 2014; 2021; Bidwell et al. 2018). However, the limited range of products and places associated with "quality" highlights that the place-product link is not infinitely malleable. Thus, constructions of fictive places have been confined by factors that are not fully understood.

Quality products with a "taste of place" are increasingly in demand globally (West 2022). This is especially the case for coffee, for which the market share of specialty coffee from a single origin has been growing since the 1980s (Roseberry 2005; Bro & Clay 2017). Studies of geographies of consumption have shown that people pay more when more specific geographical information is provided (Pike 2009; Teuber 2010; Overton & Murray 2021). For example, a study conducted in New Zealand found higher prices associated with the more detailed place of origin and suggested that consumers perceived higher quality as a result (Overton & Murray 2021). However, the focus has been on the role of consumers in construction of space and place: "The relationship among consumption, space and place can indeed be a mystification since attention is often paid to *appearances*, rather than materiality, and both historical and contemporary analysis fails to capture the social forces that actually produce space" (Goodman et al. 2010, xii).

The efforts of producers that are necessary to create fictive places have been addressed previously (Ponte & Gibbon 2005; Pike 2009; Rainer 2021). One study asserts how the collaborative efforts between humans and yeast was central in establishing a regional expression of wine and qualifying the product as fine wine (Rainer 2021). Both material efforts (Rainer 2021) and discursive efforts (Weiss 2011; Overton & Murray 2021) have been found crucial for the construction of a "taste of place," but what is still unclear is how the relation between quality and a "taste of place" is established (Parga-Dans & Alonso González 2017; Rainer 2021). Since the actual process of *configuring a "taste of place"* on the ground is not fully understood, I focus on it in this article.

When working with a "taste of place," "local is not simply an existential condition of being in a place, it is a specific orientation to how space is produced" (Weiss 2011, 456). Space and place need to be distinguished in order to analyze the making of a "taste of place" by producers. In this article space is understood as a set of ongoing and interconnected relations producing coffee that includes global demand for specialty coffee, climate change, the local microflora, and actors across the whole value chain (Massey 1994; 2005). In this article, place refers to the locality of the specific Burundian hills[2] where coffee is produced, and where the sense of place is given meaning through subjective experiences (Cresswell 2015). Places, being both objective and subjective, require an analytical framework that looks at both at the material and the discursive aspects of place-making. A relational approach to space as material-discursive practices intersects well with the material and symbolic attributes of coffee, and in this article it makes up the analytical framework for the "taste of place."

What is special about specialty coffee?

It is useful to think of the making of specialty coffee as a process that honors coffee as a fruit. Rather than producing a standardized product, all processing is aimed at enhancing the unique quality of the fruit (L. Rosenberg et al. 2018). The Specialty Coffee Association (SCA) categorizes coffee as "specialty" when it scores 80–100 points (Table 1). Skilled cuppers use smell, taste, and sight to calculate the quality of the coffee (more points means higher quality). Cuppers are essential actors in qualifying coffee as specialty coffee and making the connection between the taste and place, similar to how sommeliers appraise quality in the wine industry.

Coffee has two types of qualities that are crucial to understand in the making of a "taste of place"—material and symbolic (Daviron & Ponte 2005). Material quality attributes are embedded in the product, which can be "objectively" measured using human senses (vision, taste, smell, hearing, touch) and/or technological devices (Daviron & Ponte 2005; L. Rosenberg et al. 2018). Symbolic quality attributes are trademarks, certifications, and geographical indicators, and they are

Table 1. SCA quality categories (source: Specialty Coffee Association 2003)

Score	Grade	Specialty quality (Yes/No)
90–100	Outstanding	Yes
85–89.99	Excellent	Yes
80–84.99	Very Good	Yes
<80.0	Below Specialty Quality	No

[2]In the Burundian context, a hill is a geopolitical unit, known as a *colline* in French.

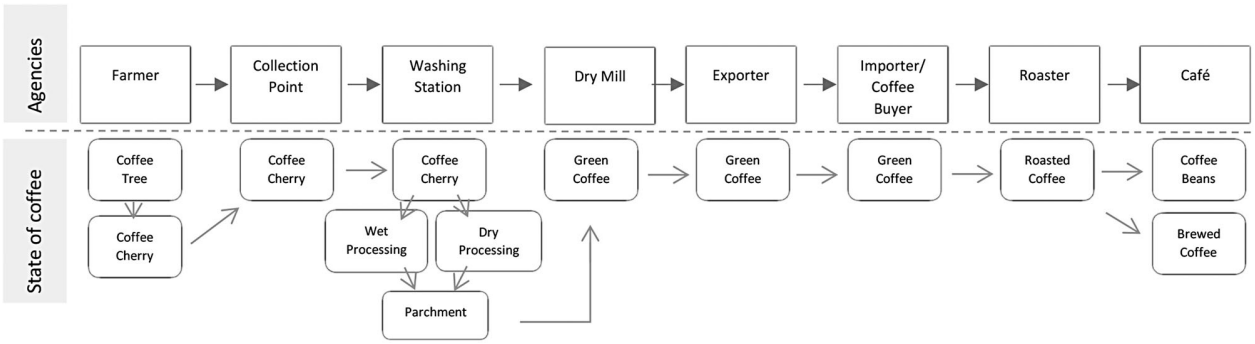

Fig. 1. The global value chain for specialty coffee in Burundi

detached from the material quality of the product. A "taste of place" is therefore a highly relevant symbolic quality allowing for the consumption of place (Daviron & Ponte 2005; L. Rosenberg et al. 2018).

An SCA cupping form is designed to evaluate the material quality attributes of aroma, flavor, aftertaste, acidity, body, uniformity, clean cup, balance, sweetness, and absence of defects. The SCA quality score is intended as a guarantee of the material quality attributes, as only coffee high in material quality scores above 80 points (L. Rosenberg et al. 2018). Symbolic qualities can be achieved without material quality attributes, such as fair trade, single-origin, or organically certified coffee (Daviron & Ponte 2005; L. Rosenberg et al. 2018). However, specialty coffee is contingent on outstanding material quality attributes that are assessed by cuppers.

What makes a material quality? The material quality attributes of coffee are place-bound and generated by inherent factors, such as (1) the genetic type of the coffee tree (e.g., *Coffea arabica*, *Coffea robusta*), (2) the cultivar (e.g., Bourbon, Typica, Geisha), (3) agro-climatic conditions (place-specific soil type, altitude, microclimate), and (4) external factors such as farm practices, bean harvesting procedures, primary processing method (washed or natural), export processing (milling), and handling and storage during the journey from origin to place of consumption (Daviron & Ponte 2005; Specialty Coffee Association 2022). These attributes of material quality are significant because they guide the material and discursive practices of making a "taste of place." Furthermore, the material quality needs to have minimal defects (maximum of five defects per 300 g of coffee), because specialty coffee should have clean distinctive flavors that can be traced to a specific regional terroir (Smith 2018). This means that the place-based symbolic quality of the coffee is directly entangled with the material quality in the specialty market segment.

Compared to most other agricultural products, coffee undergoes more processing by more actors along the value chain (Fig. 1) in the process of becoming a quality product (Williams et al. 2022). The making of specialty coffee is a complex process that includes both material and discursive place-making practices across spatial and power differentials to ensure material and symbolic quality attributes.

Burundi as a coffee producer

Coffee is immensely important to the Burundian economy, as 90% of the export income is derived from coffee, and 600,000 farming families depend on coffee for their livelihoods (Lenaghan et al. 2018). The Burundian coffee sector is highly regulated by the government, and public institutions ensure that laws are followed. The regulatory authority, which approves activities before they can commence, is Autorité de Régulation de la Filière Café (ARFIC). ARFIC regulates harvests, milling, sales, and export. These highly bureaucratic procedures shift annually (L. Rosenberg 2017). InterCafé Burundi, the interprofessional association for stakeholders in Burundi involved in producing and exporting coffee, aims to improve the quality and productivity of the coffee sector. ARFIC and InterCafé Burundi collaborate with the local administration in coffee growing districts to ensure that policies are maintained. These institutions determine the operation of any value chain for coffee in Burundi. They set the coffee prices and procedures for payments to farmers, financing conditions for coffee businesses, and controlling the distribution of fertilizer, as well as the export procedures. For example, Burundian coffee farmers are only allowed to grow the Bourbon coffee varietal and to deliver their coffee to a washing station for processing, which has to export the coffee as Burundian Bourbon. There are no other known attempts to protect the use of place or to put Burundian coffee on the specialty coffee map by state agencies.

Besides the economic significance of the crop, Burundi is a unique place to study the production of

specialty coffee and the making of a "taste of place." Arabica coffee requires growing conditions with annual mean temperatures in the range 18–21°C, with no frost, but with temperature variations between day and night (Wintgens & Zamarripa 2004). Burundi has biophysical conditions with ideal altitudes and temperatures for producing specialty quality coffee (World Bank 2016; Lenaghan et al. 2018; L. Rosenberg et al. 2018). These ideal conditions are, however, challenged by climate change, which is globally predicted to reduce areas suitable for growing *C. arabica* coffee by 50% by 2050 (Bunn et al. 2015; Ovalle-Rivera et al. 2015). Moreover, Burundi's challenge with climate change is the increased pest population that is directly linked to the PTD-related concerns of buyers (Jaramillo et al. 2011; Hale et al. 2022).

Burundi is known for a high frequency of PTD, which prevents Burundian coffee from qualifying for specialty coffee (Hale et al. 2022). Antestia bugs[3] damage the coffee cherry skin, allowing fungi and bacteria to enter and infect the coffee bean, resulting in a foul taste (Hale et al 2022). It is the relationship between the antestia bug and the bacterial and fungal cultures specific to Burundi and Rwanda that cause the PTD. For example, Kenya and Ethiopia have antestia bugs, but they do not have the PTD, due to different microflorae (Hale et al. 2022). In a way, the PTD is a "taste of place," but one that is not associated with quality, but rather the contrary. How, then, does the production of specialty coffee in Burundi navigate the making of material and symbolic qualities necessary for the coffee to qualify as specialty coffee? An exploration of this question is the focus for the remainder of this study. In addressing the question, this article aims to contribute to a better understanding of how the links between places, products, and quality are constructed, and how a "taste of place" is reconfigured.

Methods

This article is based on five months of ethnographic fieldwork in Burundi in 2017. Participant observation was carried out through an internship with a specialty coffee company, Mwiriwe Coffee. The company was an intermediary actor, meaning that it connected farmers with global buyers from high-value market segments of coffee (Borrella et al. 2015). Mwiriwe Coffee was started by two non-Burundian coffee professionals, when most Burundian coffee was sold as commodity coffee. The founders of Mwiriwe Coffee saw the potential to transform Burundian coffee into specialty coffee, due to ideal place-based biophysical conditions for producing specialty coffee and for increasing the well-being of coffee farmers living in poverty by linking them to the niche market with higher price points than they had received earlier. The transformation would represent a mix of business and philanthropy, putting Mwiriwe Coffee in the category of a not-only-for-profit enterprise (Höchstädter & Scheck 2015).

Both marketing and sales were done by the founders. The founders were actively engaged in establishing and maintaining long-lasting relationships with roasters/buyers, beyond a transactional business relation. The founders also invested large amounts of their time in telling the story of the Mwiriwe Coffee's journey in Burundi. In summary, Mwiriwe Coffee was a highly personal and relational venture with the aim of putting Burundi on the specialty coffee map and alleviate poverty in the process.

The company had two washing stations (coffee processing facilities), which received and processed coffee from nearly 5000 small-scale farmers at the time when the fieldwork was done in 2017. Burundian law ensured that farmers only grew and delivered raw coffee to the washing stations, thus making the relationship between farmers and washing stations crucial for understanding coffee production (L. Rosenberg 2017).

The study targeted a particular phenomenon of interest, both in taste and climate change adaptation (Crang & Cook 2007). Accordingly, the study was a case study of Mwiriwe Coffee and of actors in an ongoing relationship with Mwiriwe Coffee.

The study was designed as an ethnographic study with participant observation due to my interest in deliberate transformation. Participant observation enabled an intimate understanding of the coffee production process in Burundi, and how that locally anchored global value chain was entangled with actors across the globe. However, the method also included the risk of bias. The risks were dealt with by using triangulation of data relating to participants, data sources, and reflexivity (England 1994; Crang & Cook 2007). The supplementary methods selected were qualitative interviews, photo-elicitation, and document analysis. The latter included analysis of internal company documents, such as quality protocols, meeting minutes, emails, newsletters from roasters, and national coffee regulating documents. In this article, the names of the company, the hills where coffee was produced, and roasters have been changed to ensure anonymity.

[3]Genus: *Antestiopis*

Table 2. Interviews conducted in Burundi in 2017

Position	Participants	Gender f – female m – male	Recorded interviews
Farmers	34	20 f – 14 m	22
Junior agronomists	26	7 f – 19 m	32
Staff	10	1f – 9 m	21
Founders	2	1f – 1 m	14
Hill chiefs	2	0 f – 2 m	1
Coffee buyers	12	1 f – 11 m	16
Totals	86	30 f – 56 m	106

An overview of interviews and study participants is provided in Table 2. The interviews were conducted, recorded, and transcribed with the assistance of a translator, as many informants predominantly spoke Kirundi.

The analysis of the data was done using NVivo 12 in three coding cycles. During the first cycle, the data were themed inductively. Based on that, the second cycle organized the data into dramaturgical coding (objectives, conflicts, tactics, attitudes, emotions, subtexts), process coding, values coding, and concept coding (Saldaña 2016). The process coding was highly relevant for this article, as I could trace coffee processing from harvest to export. The dramaturgical coding resulted in specific codes, such as "objective: produce quality coffee" and "conflict: low-quality coffee." The most relevant code group comprised the tactic codes within dramaturgical coding, with tactics such as "teach farmers," "catch antestia bugs," "float coffee," and "tell the story." During the writing process, these codes were analyzed further, and organized into material and symbolic quality attributes.

Findings: constructing a Burundian "taste of place"

Mwiriwe Coffee established itself as a leading specialty coffee company through work on two fronts, namely *quality* and *story*, both of which were directly linked to material and symbolic attributes. They also align with material and discursive aspects of place-making. Mwiriwe started producing coffee a few years prior to 2017, when the coffee scored 84 points on the SCA scale, putting it in the "very good" specialty coffee category. However, despite qualifying as specialty coffee, it was often disqualified due to the frequency of defects.

Mwiriwe Coffee had a quality goal of 88 points, and had achieved a score of 87 points at the time when I did my fieldwork in 2017, meaning its coffee was an "Excellent" specialty coffee according to the SCA classification. Mwiriwe constructed a sense of place by actively sharing the experience of making Burundian coffee into specialty coffee on social media, and as such imbued the place of Burundian coffee production with meaning. One of the founders stated the following during a meeting with staff: "people are telling the story only because the quality is there. We need both these lenses [quality and story]. We cannot do the one without the other." The founders believed Mwiriwe's success depended on producing both material and symbolic quality attributes at origin simultaneously.

In the following main subsections I present three of the agencies along the value chain for coffee sold by Mwiriwe: (1) farm, (2) washing station, and (3) coffee buyers (three dark shaded boxes in Fig. 2). Material and symbolic quality attributes are presented within each agency.

Farm level

Material quality

Material quality attributes were produced at farm level, starting with ripe coffee cherries. The ideal sugar content in a ripe cherry in the range 18–22%. The chief agronomist at Mwiriwe stated: "It is OK from 14%, but we do not work with OK." Practices needed to shift from a once-off harvest of all cherries to selective

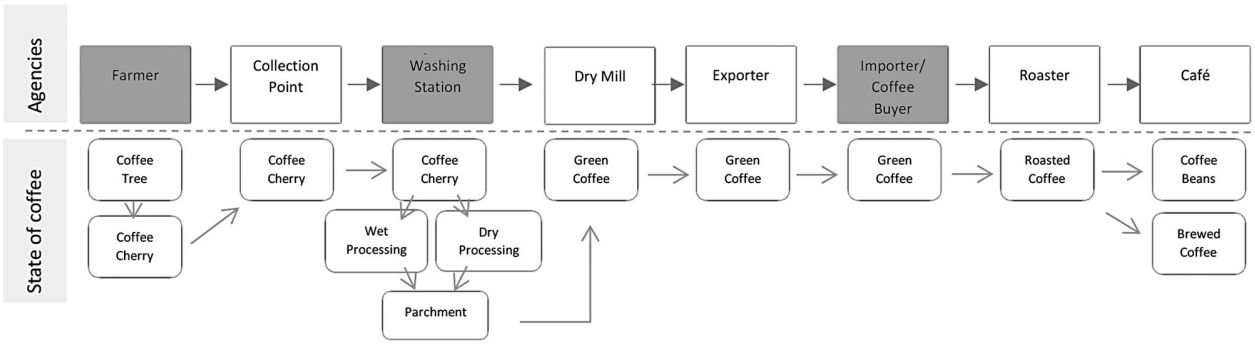

Fig. 2. Studied parts (three dark shaded boxes) of the global value chain for specialty coffee in Burundi

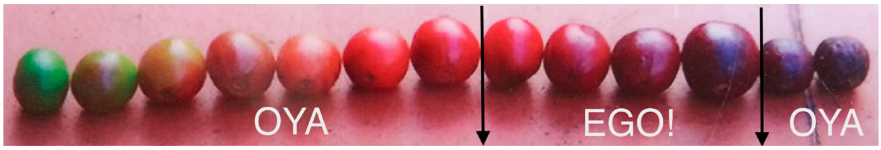

Fig. 3. Laminated harvest guide given to farmers (in Kirundi, *oya* means no, and *ego* means yes)

harvesting over the course of several months. Mwiriwe Coffee equipped farmers with laminated cards, as illustrated in Fig. 3. In addition, a range of embodied learning experiences was witnessed frequently. For instance, farmers saw the sugar content of cherries on a thermometer-like scale through a refractometer tool that staff carried with them. When tools were unavailable, I observed and agronomist handing a ripe cherry to a farmer and asking "What does this taste like?" to which the farmer responded "Sweet." The same farmer was then given a green cherry to taste and responded that it tasted bitter and laughed. These examples illustrate how collaborative embodied learning experiences to increase an understanding of material quality attributes were aimed at ensuring quality coffee being delivered to the washing station.

The precondition of using ripe coffee cherries in the production process in order for the coffee to qualify as a specialty coffee was challenged by climate change, which is linked to an increase of "coffee-loving" pests (Jaramillo et al. 2009; 2011). For example antestia bugs challenge the making of a positive "taste of place." The strategy employed by Mwiriwe Coffee was integrated pest management (IPM). The IPM strategy entailed visually locating (scouting) the insects and their eggs on the coffee trees, and then picking off and killing the insects by hand. According to one staff member, the method was a "mechanical way to work without affecting the environment." It required a significant amount of manual labor and a commitment to producing quality coffee (M. Rosenberg 2022).

Mwiriwe Coffee hired unemployed youths from local "coffee hills" and trained them as junior agronomists as a strategy to increase the coffee quality and reduce the population of antestia bugs. Junior agronomists served as outreach agents in the "coffee hills." They taught farmers about the sugar content in ripe cherries, how antestia bugs behaved, how they impacted coffee quality, and how they should be caught. During the daily scouting, the staff counted and recorded the number of insects caught. Shifts in farmers' land use and harvesting practices were witnessed during fieldwork. One farmer explained how internalized the practices had become: "my friend was dressed for church but saw an antestia bug on his tree and decided to stop immediately to catch it." Farmers were increasingly harvesting ripe cherries and catching antestia bugs.

Symbolic quality

Farmers' stories were utilized to produce symbolic quality attributes and to build a sense of place. Mwiriwe Coffee's story team went to the coffee growing areas and asked farmers whether they (the team members) could ask questions and take photographs to help to sell their coffee. In an informal interview setting, farmers were asked about the state of their coffee trees, their hopes, fears, and dreams. Curated portraits of farmers were captured. They were edited and published on Instagram, where most of the interaction with consumers and buyers took place. For example, a powerful head shot was accompanied by the caption: "John only knows how to read capital letters. When he was a boy, a lucky few got schooling once a week in Burundi. They only had time to learn capital letters." Having a story team in Burundi was an active investment into humanizing Burundian "taste of place," and it was an essential part of making symbolic quality attributes. Moreover, it was an intentional effort to make a sense of place.

Being part of the story team during fieldwork meant that I participated in curating farmers' stories. Farmers agreed to participate in the story team's survey, but the degree of informed and voluntary consent was at best questionable because of the unequal power distribution between coffee farmers (the providers of raw materials) and the company staff (the buyers of the raw materials). No matter how respectful and caring the interaction was, the power dimensions were unavoidable. However, I also witnessed a genuine desire from farmers to be heard and seen—something farmers said they had not previously experienced in coffee production. However, the way farmers' stories unfolded was extractive and had hints of colonial tones to it. Having acknowledged these problematic aspects, I question whether it is possible to avoid extractive stories completely when such a power imbalance exists. The interaction illustrates the point made by critical geographers that extractive stories are intimately linked with spatial inequalities of power (Massey 1994; Harvey 1996; Cresswell 2015).

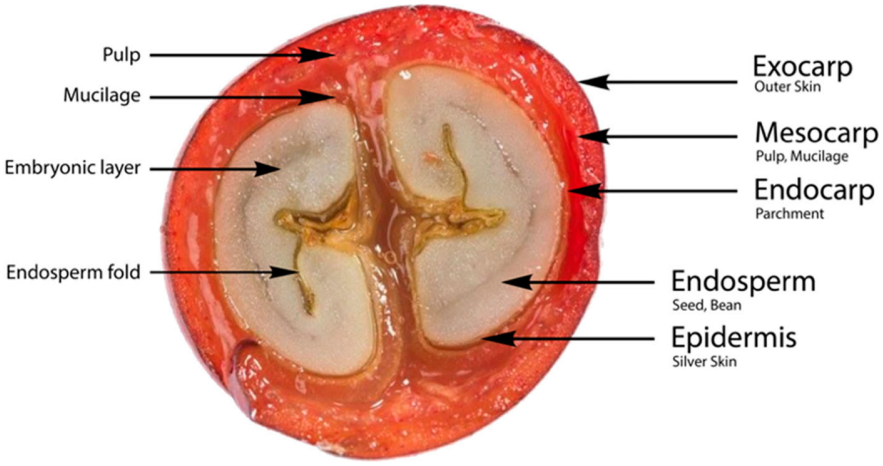

Fig. 4. The anatomy of the coffee cherry (reproduced, with permission, from Bastian et al. 2021)

Washing station

Material quality

Farmers brought coffee cherries to the washing station to be processed by either fully washed, natural, or honey methods. Only the fully washed method is discussed here. The fully washed method was designed to maintain the material quality attributes in the coffee cherry, whilst processing the cherry into a coffee bean. Each coffee cherry went through the following stages: floating, sorting, reception, pulping, fermentation, footing, washing, soaking, pre-drying, drying, and packing.

Overall, the fully washed method was designed based on four ideas regarding material quality attributes. First, separating coffee into micro-lots by place and date of production, allowed Mwiriwe to connect the material and symbolic quality attributes. Second, the damaged coffee cherries were removed at each stage, especially those bitten by antestia bugs. This was done to avoid a high frequency of defects that disqualified the coffee from the specialty category. The third aim was to separate the coffee cherry layers (Fig. 4). The three outer layers of the coffee cherry (outer skin, pulp, and mucilage) were gradually removed with careful control to ensure that the quality of the three inner layers (the seed/bean, silver skin, and parchment) remained intact. This was based on the idea that the inner layers absorb the flavors (material quality attribute) of the outer layers, while ensuring a clean cup (material quality attribute) by removing the three outer layers that cause fermentation. Fourth, the water level within the coffee bean was controlled to avoid losing flavor (material quality attribute) by overdrying, and to avoid fungus by underdrying. The ideal moisture level of 12% was ensured with use of a moisture meter and achieved by meticulous drying procedures. The analysis showed that the essence of capturing the "taste of place" happened at the washing station by locking the material quality attributes produced at the farm inside the coffee bean, which were protected by a layer of intact parchment.

Symbolic quality

Mwiriwe Coffee constructed a sense of place through insights into the daily production protocols of its washing stations in Burundi. The story team captured images of processing steps and shared stories of how quality was ensured. Stories about the material efforts ensuring material quality attributes to produce a clear representation of time and place underscore how the process is an active process of making a "taste of place," both materially and discursively.

Producing quality coffee in Burundi came with many challenges. From my data analysis I found that Mwiriwe Coffee's sharing of its struggles in producing coffee in Burundi built transparency and trust, which are crucial for the symbolic quality attributes and a sense of place (Daviron & Ponte 2005; Cresswell 2015). My field notes contained the following text for an Instagram post that was drafted together with one of the founders who was leading the Mwiriwe story team:

> Most of our coffee production happens at night and we need fuel to power our generators so that we can have lights and run our McKinnon (pulper). We need fuel to check on the production of our washing stations. We need fuel to operate as a company. For weeks now there has been an ongoing fuel crisis in Burundi. It has forced us to bend [direct] our energy towards conserving and sourcing fuel. We now choose between spending days in petrol lines [queues] with no guarantee of fuel, indulging in the illegal market with a double price point and a risk of getting fuel mixed with water, or corrupting our way through the system.

The data collected for this study show that some challenges qualified for the public eye, while others remained backstage and never saw the spotlight in becoming symbolic quality attributes. I considered that the rationale for censoring was twofold. First, the perceived threshold of tolerance of customers and buyers was considered. The gravity of farmers' hardships, power imbalances, price distributions, and certain quality overflows were, for instance, kept backstage. Second, many of the challenges were directly linked to the overbearing and unpredictable national governance of the coffee sector. Sharing the abundance of governance-related challenges was therefore censored to prevent putting farmers, staff, and the company at risk.

Buyers

Material quality

Buyers (roasters and importers) travelled to Burundi during harvesting, cupped the freshly processed coffee, and bought selected micro-lots on the spot. The natural limits to the amount of coffee that Burundian farmers could produce caused a limited supply of Mwiriwe Coffee. During fieldwork in 2017 I learned that roasters were becoming frustrated by coffee drinkers continually asking for Mwiriwe's coffee, not just any Burundian specialty coffee. Inquiries to Mwiriwe Coffee from new roasters with emails with comments such as "we have a hard time selling Burundian coffee, because it is not from you" were frequent. Due to larger demand than supply, Mwiriwe Coffee let long-standing partners choose and order coffee first.

The fact that specialty coffee buyers went to Burundi to choose and order coffee confirmed (by appraising material quality attributes through cupping coffees) that farmers and Mwiriwe's washing stations had succeeded in producing coffee classifying as specialty coffee. One buyer said he found "some incredible standouts from both Gama and Nuna [two hills], spreading everywhere from elegant citrus with sparkling acidity to deep papaya, strawberries and cream." It is worth noting the reference to flavors and acidity, which are two material quality attributes. Another buyer found favorites from the Gama and Masa hills, and he explained that he always looked for clear flavors in the cup. He expressed excitement about the fruitiness of the coffees from the aforementioned hills that was not covered by anything else: "It was clear fruit!" A clean cup is also a vital material attribute for specialty coffee. He brought Gama coffee lot harvested in 2016 lots with him and cupped it next to a Gama coffee lot from the 2017 harvest:

> It is surprisingly still amazing. The shelf life is beautiful, and that is because of the predrying and the slow drying you do. Some South American coffees just die after six months on the shelf because they dry the coffee straight on the concrete ground. The hot tar and sun bake the beans and crack the parchment. We like the parchment to be intact because the cell structure of the bean is then intact and full of flavor.

The buyer connected the material quality attributes in the cup and the shelf life of the coffee directly to the meticulous washing station procedures.

Symbolic quality

Mwiriwe sold its coffee as microlots. Each coffee bean in a microlot could be traced to a specific day and hill of production. This meant that the "taste of place" was not Burundi, but a specific hill, with its own microclimate, villages, people, and stories. Hill profiles were developed as tools to link the sense of place to the flavors experienced in the cup because of material quality attributes. The profiles were crafted by the story team based on visits to the hills.

Once a visit to a hill had been cleared with the hill chief, the story team would arrive at sunrise to capture the rhythm of life in beautiful light. Farmers were informed about the purpose of hill profiles and interviewed on the way to their fields. Details about challenges, history, culture, and the uniqueness of the hill were gathered. Later, data on location, altitude, number of farmers, coffee trees, and the flavor notes were gathered by interviewing staff. This information was edited into compelling stories in attempts to capture and convey the soul of the hill—the sense of place. The following is an excerpt from one such hill profile:

> Gama hill is a stone's throw away from the indigenous Kibira forest. The cool mist of the forest breathes daily into the coffee trees. This slightly cooler micro-climate makes the beans of Gama grow and mature slower, which sets the Gama cup apart.

As with symbolic quality attributes in general, the attributes described in the above quotation were not geographical indicators, but a sense of place and its connection to the material quality attributes.

The purpose of the hill profiles was to enable a relationship between buyers and the "taste of place." Buyers preferred to buyg coffee from the same hills year after year, so that they could consistently offer the flavor profile that their customers liked and convey the sense of place enabled by the ongoing relationship with the hill. Roasters said it was easier to sell specialty coffee with a story because "bearded people want to know"—a reference to "hipsters"

who featured in the growing demand for specialty coffee.

Discussion: taming space into a "taste of place" through material and discursive practices

How is a "taste of place" made? Producing specialty coffee in Burundi required ensuring the material quality attributes of the coffee cherry fruit. At farm level, the coffee cherry was a manifestation of the terroir (Trubek 2009; Demossier 2011; West 2022). Terroir is the foundation of the material quality of Mwiriwe Coffee, defined by the genetics of the *C. arabica* tree, the Bourbon cultivar, and the ideal agro-climatic conditions, which in Burundi include antestia bugs (Daviron & Ponte 2005; Hale et al. 2022). Thus, the coffee cherry is a material manifestation of relational spatial production through a sensory experience of flavor and mouth feel (Massey 2005; Trubek 2009).

The washing station was place-based and necessary to control the material quality attributes of coffee at each stage of processing (Daviron & Ponte 2005; L. Rosenberg et al. 2018). The material work of balancing the sugar content of the coffee cherries, the length of fermentation based on the temperatures at night, the harshness of the sun, and the moisture content of the coffee bean—all to make sure that the material quality attributes evolved in a controlled manner at the washing station designed to keep the material quality attributes fully intact and considered part of the terroir (L. Rosenberg et al. 2018; Williams et al. 2022).

Reconfiguring a "taste of place" in Burundi was a process of place-making achieved by the material work of ensuring material quality attributes, and the discursive work of constructing a sense of place. Prior to 2013, when Mwiriwe Coffee was founded, Burundian coffee was not only placeless commodity coffee, but also faceless. The curated stories of farmers' profiles, washing station processes, the challenges of producing coffee in Burundi, and hill profiles were tools employed specifically to construct a sense of place with lived human experiences of place. The Mwiriwe microlots were sold with not only geographical information, but also a sense of place. Producing a place-based product that signifies quality is therefore not simply done by producing a product in a specific place (Weiss 2011). Such unregulated symbolic attributes rely on trust and transparency (Daviron & Ponte 2005; L. Rosenberg et al. 2018), which were found to exist among buyers in the study.

The growing global demand for specialty coffee plays a central role in changing how relations in coffee production in Burundi unfolded (Massey 2005; Roseberry 2005; Bro & Clay 2017). Without the demand for specific flavor profiles from the same hills year after year, it is possible that Mwiriwe Coffee would not have existed the way that it did (i.e., at the time when the fieldwork was done). Thus far in this article, the premise of social construction of fictive places has been aligned with the consumption of place-based goods (Goodman et al. 2010; Overton & Murray 2016; 2021). Furthermore, the curatorship and censorship of stories that construct a sense of place assert that a "taste of place" is a fictive place, created by actors in the value chain (Overton & Murray 2016; 2021). However, in Burundi, the efforts necessary for the coffee cherry to qualify as a quality product from a "fictive place" required more than discursive practices of consumers and experts—they also required discursive practices by producers (Weiss 2011; Overton & Murray 2016; 2021). Moreover, the material efforts of producing material quality attributes that define a "taste of place" that were essential have been grossly underacknowledged in previous studies of "taste of place."

Fictive spaces and the role of power

It is the taming of space, materially and discursively, that makes a "taste of place." A "taste of place" depends on the place in its material form, but it is also about the ability to tame the relations of producing space, such as global demand, climate change, local terroir, local governance, and people's lived experiences into a place-based product deemed desirable by consumers. It is the material and discursive practices by specific relations producing space that result in both material and symbolic quality attributes (Daviron & Ponte 2005; Massey 2005; L. Rosenberg et al. 2018). The reflection on *who* was active in the making of "taste of place" reveals different geographies of power (Massey 1994; 2005; Cresswell 2015).

In Burundi, the state played regulatory role that also tamed relations of producing the "taste of place" in specific ways. For example, by legally detaching farmers from coffee processing at the washing stations, farmers were neither allowed to add value by processing, nor to maintain the quality of their own coffee beyond harvesting. The latter was necessary for coffee to qualify as specialty coffee, meaning that Burundian farmers' ability to be part of the quality market segment depended on whether the washing station in their proximity focused on either specialty or commodity coffee production. Due to the large number of state-owned washing stations (Lenaghan et al. 2018), it could be questioned whether the enforcement of the law prohibiting farmers

from processing coffee was a potential rent-seeking practice. Regardless of the intentions, the power that farmers had to shape the "taste of place" deliberately was highly limited.

However, the studied coffee farmers were essential for the making of Burundian "taste of place." Without farmers' land use and harvesting practices, Mwiriwe Coffee would simply not be possible. Without stories about farmers, such as humanizing coffee farmer John who could only read capital letters, Mwiriwe coffee would not have managed to build such a strong sense of place, with a savior touch to it. Despite the central role of coffee farmers in making both material and symbolic aspects of Burundian "taste of place," they had very little power to impact the flows that made Mwiriwe Coffee successful in the global coffee market. Without Mwiriwe Coffee's founders coming to Burundi from "outside' and enabling the process of reconstructing the "taste of place" through material and discursive practices, the farmers' coffee would not be in the global high-end niche market. Crafting a "taste of place" requires both material and symbolic quality attributes, both of which are entail a great deal of knowledge, skills, and technical tools. Coffee farmers are necessary inputs into the "taste of place" but unless they are extremely well resourced and connected, the making of "taste of place" is reserved for the privileged and connected. However, power is unequally distributed across the global political economy. For example, farmers in Burgundy, France, are able to craft their product into a "taste of place" (Hill 2020; 2022). In Burundi, both founders and farmers were essential for reconfiguring a "taste of place." However, the different roles played by farmers, and founders in producing Burundian specialty coffee revealed unequal practices of power, and reconfirmed the spatial inequalities of power (Massey 1994; Cresswell 2015).

Conclusions

A Burundian "taste of place" was reconfigured by taming the space of coffee production into representation through material and symbolic quality attributes. This article confirms that it is possible to establish a "taste of place" in a context not known for quality. However, it also acknowledges that places with biophysical conditions viable for producing products with high material quality attributes are limited, and increasingly so with climate change.

What does it take to establish a "taste of place"? The importance of material qualities on the ground is surprisingly sidelined in studies of the discursive production of "taste of place." The specificity of a Burundian "taste of place" included a crafted microlot of washed coffee from Gama hill, processed on a certain date. In addition, it was processed at a specific washing station with high standards for material quality set by Mwiriwe Coffee company, which worked with coffee farming communities in particular ways (e.g., by a story team, by community outreach by junior agronomists). This "taste of place" provided a differentiated experience for which buyers were willing to pay. However, the buyers were not paying a higher price for a specificity that could be captured by geographical indicators alone. They were paying for a coffee with high-quality material attributes, a trust-based relationship with the producers of the coffee, and to be part of the story of relations transforming the space of Burundian coffee production from the "ugly duckling" to a high-quality product in high demand. The study findings show that it takes *both* material and symbolic quality attributes to establish a "taste of place," and that both *can* be altered. This article reports a study of how that can be done successfully, but it also shows how difficult and resource-intensive such work is.

A "taste of place" is not something inherent somewhere, waiting to be discovered and shared with consumers longing for quality and connection to places in a sea of placeless and tasteless products. It is romanticism of locality made possible by the unequal geographies of power. A "taste of place" is actively made by relations weaving together the worlds of production and consumption in the space of one coffee cup. It includes material and discursive practices of place-making, of taming space into representation through material and symbolic quality attributes.

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