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# Brewing a Better Future: A Multi-Level Perspective on the Co-Production of the Specialty Coffee Imaginary among Coffee Producers in Northern Thailand[1]

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## Abstract

In recent years, an increasing number of coffee farmers in the Northern highlands are starting to produce specialty coffee. The objective of the research is to add to the understanding of specialty coffee's impact on the global coffee value chain in general, and on Thai coffee farmers in particular. Building on qualitative empirical research, Northern Thai coffee farmers' responses to this emerging specialty coffee segment are analyzed using the multi-level perspective (MLP) as an analytical framework through the lens of sociotechnical imaginaries. It is found that they are motivated by improved income, but also see specialty coffee as a source of pride, and a way to sustainability, as well as meeting a changing lifestyle trend. To do so, they are using new knowledge to change their way of production, innovating farm management and processing, and using new forms of marketing and organization. They are facing several challenges: a lack of knowledge about specialty coffee, a volatile market with powerful competitors, a regulatory framework perceived as not supporting specialty coffee development, and lack of sustainability. By adopting international knowledge and standards of specialty coffee, but adding local cultural context, practices, and value to their products, they are co-producing a specialty coffee imaginary of socio-economic progress and cultural recognition that is driving this sociotechnical transition. Risks need to be mitigated to continue the trajectory. In addition to the empirical contributions, this study also adds to the theoretical understanding of sociotechnical transitions by linking MLP with sociotechnical imaginaries, highlighting the role of agency.

**Keywords** Sociotechnical Imaginaries, Co-production, Multi-level-perspective, Sociotechnical Transitions, Specialty Coffee

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## 1. Introduction

Coffee – this intriguing beverage with its fatigue-battling caffeine contents and rich and complex aromas has since its discovery, presumably somewhere in Southeast Africa (Herrera & Lambot, 2017), taken over the world. It is now one of the most consumed beverages in the world. Millions are turning to this strange brew of the roasted seed of a tropical shrub with the botanic name *Coffea* every day for a caffeine kick that gets them through the day and helps them finish the tasks that today's society throws at them. Up to 80% of the world population uses caffeine daily, making it the most consumed psychoactive drug (Weinberg & Bealer, 2000). And alongside tea, which also contains caffeine, coffee is the main vehicle through which this energizing drug is administered. Every one of the 2.25 billion cups of coffee consumed per day (ibid.) sits at the end of a long chain of production and trade, stretching over different continents, affecting the livelihoods of many people along the way.

However, production and consumption of coffee are largely separated between the Global North and the South (Fischer, 2017), with the most consumption happening in the Global North, where production is not possible due to coffee needing specific tropical conditions and altitudes to grow, and the production predominantly happening in the Global South. The unequal distribution of wealth along the value chain of coffee creates persisting poverty issues among coffee producers (Boaventura, Abdalla, Araújo, & Arakelian, 2018; Daviron & Ponte, 2005; Utrilla-Catalan, Rodríguez-Rivero, Narvaez, Díaz-Barcos, Blanco, & Galeano, 2022). Other external factors, such as climate change, are further threatening the long-term viability of the current way of production on a global scale (Bunn, Läderach, Ovalle Rivera, & Kirschke, 2015; Ovalle-Rivera, Läderach, Bunn, Obersteiner, & Schroth, 2015). Despite decade-long development efforts, sustainability and poverty alleviation remain critical development issues that need to be addresses (Daviron & Ponte, 2005). A more recent trend within the coffee market, termed *specialty coffee* has emerged in coffee consuming countries, claiming to address some of these development challenges. By focusing on origin-specific flavor characteristics, production differentiation and storytelling, specialty coffee aims to separate itself from mainstream coffee production. This former niche market has in recent years been drastically growing, affecting producers who are adapting to meet the changing consumer demand.

This trend can also be observed in Thailand, where coffee production was introduced and subsequently extended since 1969 by government and royal development initiatives as part of opium replacement programs for ethnic 'hill tribe' communities in the northern highlands (Angkasith, 2002). Fueled by an increasing demand for locally produced coffee, more and more coffee producers

are now switching to specialty coffee production. The coffee production in Thailand can therefore be considered as *transitioning*.

A popular model to analyze sociotechnical transition processes is the Multi-Level-Perspective (MLP) (Geels, 2002). While this model presents a robust analytical framework for understanding the different levels or scales of society and how they are influencing the dynamics of sociotechnical transitions, it is being criticized for underemphasizing the role of agency and individual perception (Avelino & Wittmayer, 2016). For this paper, this will be addresses by linking MLP with the concept of *sociotechnical imaginaries* (Jasanoff, 2015), taking the visions, values and perceptions of Thai coffee producers at its heart of the analysis. This paper addresses an empirical gap in the literature about specialty coffee production in Thailand by exploring how Thai coffee producers are responding to the specialty coffee trend in study period September 2023 to January 2024. It also contributes theoretically by linking MLP with sociotechnical imaginaries, arguing that emphasizing agency in transition processes provides a more comprehensive understanding about the dynamics at play.

## 2. Literature Review

In the following section the current literature about the global value chain of coffee and the role of specialty coffee will be presented.

### *2.1 Coffee: From Commodity to Specialty*

The final product of coffee – the brewed beverage – sits at the end of a long value chain. Coffee production encompasses the farming, harvesting, processing, drying, milling, storing, and selling; the final product for most coffee producers being called green coffee. Although there several coffee species, only *Coffea Arabica* and *Coffea Canephora* (commonly known as *Robusta*) are economically significant and therefore cultivated in significant numbers. Arabica is generally highly regarded for its taste qualities. However, it requires higher altitudes, has higher demands for specific climatic and other environmental growing conditions, is more easily susceptible to pests and diseases, and produces lower yields than Robusta (Wrigley, 1988). Robusta is mainly used for processed coffee products, like instant coffee, or as part of coffee blends, while Arabica is used for general coffee brewing purposes. Several sub-varieties of both coffee species exist with different demanding growing conditions and expressions of flavor in the final product.

Even though the global coffee market is one of the biggest agri-food markets in the world and as such generally lucrative, its economic value is unequally distributed. Producers receive only a minor share of the global value chain of coffee (Boaventura et al., 2018; Utrilla-Catalan et al., 2022). Daviron and Ponte call it *the coffee paradox* that despite the boom of coffee, as well as

sustainability initiatives, changing consumption patterns and decades of development attempts, coffee producing countries are still regularly experiencing market crises and producers continuously receiving low prices with dramatic effects on the livelihoods of coffee farmers (Daviron & Ponte, 2005).

Besides its socioeconomic issues, the coffee sector also faces severe challenges due to climate change. A large body of studies predicts that with increasing global warming, *C. Arabica* growing regions will subsequently be pushed to higher altitudes (Bunn et al., 2015; Ovalle-Rivera et al., 2015). According to these studies, the lower altitudes will become too warm to grow Arabica, the economically more important coffee species, drastically reducing the potential area for its cultivation, reducing the expected production yields. Furthermore, the warmer temperatures also increase the susceptibility of coffee plants to suffer from Coffee Leaf Rust, further challenging consistent yields (Torres Castillo, Melchor-Martínez, Ochoa Sierra, Ramirez-Mendoza, Parra-Saldívar, & Iqbal, 2020). The low genetic variability of *Arabica* is threatening species diversity and at risk for potentially new or mutating diseases (Scalabrin et al., 2020). There is evidence that coffee farmers are already experiencing the adverse effects of climate change (Davis, Gole, Baena, & Moat, 2012).

Observers generally consider the *commodification* of coffee to be responsible for both the persisting economic marginalization of the small-scale coffee producers (Talbot, 2004) and unsustainable farming practices (Bracken, Burgess, & Girkin, 2023; Siles, Cerdán, & Staver, 2022). Commodification describes the transformation of a natural product into an exchangeable, tradeable good – a commodity – entailing a certain way of producing, marketing, and trading. It has generally failed to satisfactory address the issues ascribed to the coffee market. Initiatives like fairtrade certification have attempted to address the shortcomings of the market, resulting however in mixed results (Jena & Grote, 2022), or even negative effects on household income (Ruben & Fort, 2012). A high volume of certified coffee produce is meeting a low demand, decreasing the price premiums (Grabs, 2020). A key problem that Talbot identifies with most certification schemes is that they are leaning on the C Price, referring to the market price of certain mass-produced coffees defined by their trading based on future contracts. The C Price is considered the benchmark for global coffee prices, but it is criticized as highly fluctuating and generally too low (Talbot, 2004). Since the trade liberalization in the 1990s, large transnational companies located in the Global North have dominated the value chain, concentrating value in the North (Daviron & Ponte, 2005).

A more recent trend within the coffee market has tried to distinct itself from the commodity coffee market. While the commodity coffee market focuses on large quantities, low prices and uniformity and consistency of production in order to make coffee a tradeable good (Talbot, 2004), *specialty coffee* aims to highlight distinct flavor characteristics depending on the *terroir* of the origin of

production. Terroir refers to the growing environment that influences flavor development, such as elevation, location, soil, microclimate, fertilization, sun expose, shading as well as agricultural practices and techniques (Pappo et al., 2023). While the majority of the coffee globally consumed is still sold as blends of coffee from different, mostly undisclosed origins, the specialty coffee sector focuses on so called *single-origins* that can either be specified as coming from a single country, region, or even a *micro-lot* on a farm. Some form of geographical indication is therefore a key interest of specialty coffee (Teuber, 2010). This is accompanied by coffee roasters communicating origin information as well as flavor indicators to end-consumers. With specialty coffee, roasters and producers increasingly engage and decide on prices via *direct trade* (Guimarães, dos Santos, Leme, & Azevedo, 2020), circumventing the commodity market with its C Price attachment. It is expressed by also a drastic diversification of customers for green coffee producers, especially due to the increasing number of micro-roasteries and cafés directly buying from producers. It is estimated that this specific segment of the coffee market now accounts for almost 50% of the total value, although it only makes up for roughly 20% of the global production, demonstrating its significance (Rafael, 2020). The most widely accepted guidelines and standards for specialty coffee quality are developed and provided by the Specialty Coffee Association (SCA). This non-profit membership-based organization, formed in 2017 by the merging of the US American SCAA, founded in 1982, and its European pendant, founded in 1998, is developing tools and protocols for quality evaluation, as well as providing an education and certification system. It is considered as having a key role in defining industry standards. Especially their Cupping Protocol for sensory quality evaluation is considered an industry standard, widely used by coffee producers and consumer alike (Feria-Morales, 2002; The Specialty Coffee Association, 2020). According to SCA protocol, a coffee is considered specialty grade if it achieves a score of 80 or higher out of 100.

The trend for specialty coffee, also called the *third wave of coffee*, is fueled by shifting consumer demand, increasingly asserting value to unique flavor profiles, storytelling and transparency, with a willingness to pay extra for that (Ufer, Lin, & Ortega, 2019; Ut-tha, Lee, & Chung, 2021). Specialty coffee and its distinct consumption patterns are therefore perceived as a drastic shift in the value chain from an exchange pattern, where value is mainly defined by the consumers, to a pattern of *co-creation*, where producers and consumer both contribute to the value of the coffee by their respective input, and in doing so are negotiating the value (Boaventura et al., 2018). Boaventura et al. argue, that producers and consumer are getting closer to each other through transparent communication of information about the impact of the factors contributing to the origin-specific sensory profile of the coffee. Consumers are gaining knowledge about these factors and are interested in innovation, collaborating in the

development of the sector by exchanging preferences and ideas. Therefore, the power distance in the value chain is reduced, resulting in a more equal distribution of value creation between consumers and producers.

Others are viewing the impact of specialty coffee on value re-distribution along its global value chain more critical. Fischer argues that specialty coffee builds on *imaginative value*; and while farmers remain in control of their terroir and production, the power of value creation lies at those who define quality (Fischer, 2017). He argues, coffee roasters and retailers imagine and thereby construct standards for measurements for coffee quality, as well as romanticizing a certain artisanry of production on the coffee farming level, while coffee producers are forced to imagine and anticipate the taste of the consumers at the other end of the value chain. According to him, the current prices for green coffee depend not on objectifiable quality criteria, but social capital, i.e. the power over symbolic value in other parts of the value chain, which many small-scale farmers are lacking (Fischer, 2021). Therefore, they are excluded from accessing the highest values and economic benefits that this market creates. End-consumers would often assume that the high prices they have to pay for specialty coffee would ensure ethical social and environmental conditions, which would not reflect reality (Fischer, 2023).

On the other hand, looking at experiences from the ground, several studies suggest improvements in socio-economic conditions for coffee producers. Schuit et al. have found that specialty coffee has positive impacts on both household income as well as environmental issues, such as forest conservation, in Ethiopia (Schuit et al., 2021). The authors however also pinpoint to regionally disparate resources among their studies areas, where some coffee farmers do not have access to the higher value specialty market. They also criticize a lack of peer-reviewed studies of the effects of specialty coffee on profitability for the farmers. In another example, Rosenberg has observed how Burundian coffee was reconfigured from an inferior commodity product mainly used in coffee blends, to a distinct origin-specific product (Rosenberg, 2023). He argues, that both symbolic and material quality attributes need to be addressed when creating a 'taste of place' that can boost the value of the product. According to Rosenberg, the coffee quality is the *"material manifestation of relational spatial production through a sensory experience of flavor and mouth feel"* (Rosenberg, 2023, p. 264), referring to how the terroir of production and controlling all material attributes during the different stages of production is influencing the sensory quality of coffee. It however does not translate into higher prices if it is not accompanied by discursive work, utilizing storytelling and creating trust and transparency to create symbolic value. According to the literature, small-scale farmers may face challenges to access the specialty market segment due to a lack of material and or symbolic resources. However, these can be addressed by introducing intermediary bodies without disturbing the direct

trade between producers and consumer (Borrella, Mataix, & Carrasco-Gallego, 2015). Borella et al. have analyzed different connective businesses working to reduce transactional costs and productive restraints of small-scale farmer to access higher value marker segments and have found that these are beneficial for both parties (ibid.). This direct trade is another important factor in bringing producers and consumers closer in the value chain, and an integral part of today's specialty coffee segment (Guimarães et al., 2020).

The existing literature about specialty coffee and its potential in re-shaping the global value chain of coffee is indecisive. While experiences from the ground hint towards livelihood improvements, reflected by theoretical discussions about value co-creation shifting power within the value chain towards producers, other are perceiving this dynamic a lot more critical. The research that is presented in this paper will contribute to a better understanding of the role of coffee producers in this co-creation process. It takes the Thai coffee producing sector as a context for the theoretical considerations. The Thai context will be introduced in the following section.

### *2.2 Context: Thai Coffee Production*

Coffee farming was introduced in Thailand at the end of the 1960s and subsequently extended in the 1970s and 1980s through government and Royal development initiatives aimed at providing alternative livelihood practices for predominantly ethnic 'hill tribe' communities in the mountainous regions of Thailand's North, incentivizing them to replace opium production and slash-and-burn agricultural practices that had resulted in severe deforestation. Fueled by the "Crop Replacement and Community Development Project", jointly exercised by UN and the Thai government between 1972 and 1979 through the strategic set-up of Royal Agricultural Research Stations in those indigenous communities, coffee cultivation was extended significantly during that time (Angkasith, 2002). Arabica production in Thailand increased drastically between 1990 and 2015 (Angkasith, 2002; Ut-tha et al., 2021). The introduction of the Arabica variety *Catimor* in 1974 allowed more successful extensions due to its suitability to the regional climate and terroir, promising higher yields and higher resistance against droughts and heat, as well as pests and diseases (Angkasith 2002). Arabica production predominantly takes place in the North, with Chiang Rai and Chiang Mai provinces together accounting for 70% of the country's cultivated land area for Arabica production and more than 75% of the production yield (Table 1). The context of these Northern coffee farmers with predominantly indigenous ethnic identities is therefore distinctively different to Robusta producers in the South and can be linked to the greater topic of continuing political and economic marginalization, and struggles for cultural recognition (Morton, 2023). The people in the northern highlands have been perceived as forest-destroyers, drug producers, and insurgents, and have been

made subject to development efforts through the Thai state (Wu, 2022). They have been termed 'hill tribes' to distinct them from the central Thai population. It has shaped a somewhat derogatory image of these communities, neglecting cultural differences between communities, and making them subject of development efforts for many decades. The research therefore focuses on Arabica producers in the northern highlands.

**Table 1: Coffee Arabica Production in Thailand 2022, the four most producing provinces.**

| Region | coffee Species | Cultivated Area (rai) | Cultivated Area (ha) | Production yield (tons) |
|---|---|---|---|---|
| Thailand (whole country) | *Arabica* | *123,096* | *19,695* | *9,135* |
| | *Robusta* | *119,369* | *19,099* | *9,554* |
| Chiang Rai Province | *Arabica* | *53,588* | *8,574* | *3,185* |
| | *Robusta* | *303* | *48* | *12* |
| Chiang Mai Province | *Arabica* | *32,688* | *5,230* | *3,790* |
| | *Robusta* | *0* | *0* | *0* |
| Mae Hong Son | *Arabica* | *8,823* | *1,412* | *685* |
| | *Robusta* | *65* | *10* | *2* |
| Nan | *Arabica* | *11,073* | *1,772* | *604* |
| | *Robusta* | *1,499* | *240* | *78* |

**Source:** Summarized data, adapted from Office of Agricultural Economics, Ministry of Agriculture and Cooperatives 2023 (Office of Agricultural Economics, 2023)

Due to long-term low profit, price fluctuations, and urbanization trends, in recent years, the total Arabica coffee production increase has halted and even slightly reversed (Angkasith, 2002). At the same time, domestic demand has drastically increased in recent years. In 2022, the demand for green coffee in Thailand exceeded the domestic production by five times (Chaovanapoonphol, Singvejsakul, & Wiboonpongse, 2023). The domestic market is also the most important for Thai coffee farmers, with protective tariffs on importing green coffee of 90% incentivizing domestic production to fulfill the demand. The global specialty coffee trend has also arrived in Thailand, where it is meeting a changing lifestyle and a burgeoning scene of independent roasteries and cafes (Azavedo & Gogatz, 2021).

Studies about the specialty coffee segment and coffee production in Thailand in general are relatively limited, and mostly concerned with technical aspects of coffee. However, some recent studies address the value chain from a few different perspectives. Gegographical indication seems to also be a key concern for academics looking at the Thai coffee sector. Lila¬vanichakul has looked at DoiChaang Coffee and its successful marketing of regional identity

(Lilavanichakul, 2019). In a similar way, Suksomboon addressed the challenges of geographical indication when looking at the different registration systems that exist globally (Suksomboon, 2023). Taking DoiTung Coffee as a case study, she emphasized the potential for value-growth of origin-specific coffee, but a critical need for protection of the geo¬graphic identication to ensure trust and transparency. Both studies are dealing with coffee enterprises with significant institutional support, as they are part of development projects under state and/or royal patronage. And interestingly, besides geographical identi¬cation, both are adopting measures to address the specialty coffee segment by ensuring certain quality criteria, sustainability measures and communication models. Other studies address independent coffee producers. One case study from Northern Thailand shows how a specialty coffee farmer has integrated sustainable farming practices into his farm management, and how he engages with the market to achieve higher prices (Arayawut, 2020). Similarly, in Thailand's Nan province coffee production was linked by Kunsiri¬punyo and Sathirakul to other development approaches, such as tourism, showing how by taking a value-chain approach and with government support of community enterprises, synergies can be created to boost regional income and even reversing urbanization trends (Kunsiripunyo & Sathirakul, 2021). Creating these locally integrated value chains, promoting local production and local consumption, on the one hand contributes to the symbolic value of the territory with potential of geographic identity. However, Pong¬kijvorasin and McGreevy point out that this origin-specific value and attributed quality of coffee is perceived differently between the local residents on the one side and outsiders like tourist or urban consumers on the other sides (Pongkijvorasin & McGreevy, 2021). They point towards these different perceptions of value and quality; local coffee producers may risk not being able to take advantage of the growing specialty coffee segment. While facing similar challenges, there seems to be drastic differences in Thai coffee farmers ability to act in the specialty coffee segment. Talerngsri-Teerasuwannajak & Pongkijvorasin describe how some farmers in Nan province are selling beans for low prices to intermediaries because of weak bargaining power (Talerngsri-Teerasuwannajak & Pongkijvorasin, 2021). These are mainly serving the traditional coffee market. On the other side, some farmers are already growing rare Arabica species such as *Java* and *Gesha*, which are highly sought after in the specialty coffee segment. They are selling their coffee to local farmers' groups and social enterprises that run processing facilities and are achieving much higher income while using fewer chemical fertilizers and pesticides.

The insights from the Thai context reflect the general academic debates of how specialty coffee contributes to value creation and value distribution in general. While empirical studies suggest opportunities for higher household income as well improved sustainability through the adoption of specialty coffee,

it is unclear how Thai coffee producers are en-gaging with the notion of specialty coffee, how they are perceiving the opportunities and challenges, and how they are contributing to the co-creation of value. This research builds on this literature gap and explore how Thai coffee producers are responding to the promises and challenges of specialty coffee. By conceptualizing the specialty coffee trend as a *sociotechnical imaginary* that Thai coffee producers are engaging with, this paper will contribute to understanding of the potential impacts of specialty coffee on value creation and distribution.

## 3. Research Purpose and Research Questions

The purpose of the research is to empirically explore how coffee producers in the Northern highlands in Thailand are perceiving the specialty coffee trend, what hopes and opportunities they are connecting with it, and what challenges they are facing. This allows to identify potential risks as well as leverage points for support that can inform policymakers or development agents, as well as actors within the industry. The research also adds to the theoretical understanding of value creation and distribution along the global coffee value chain, and the role of the specialty coffee in re-shaping its function. More generally, it also adds to the theoretical understanding of sociotechnical transition processes by highlighting the understudied role of agency within them, and specifically the MLP analytical framework.

This leads to the following research questions.

- How are Northern Thai coffee producers responding to specialty coffee trend?
- How are they perceiving challenges and opportunities?
- How are Thai coffee farmers imagining the future coffee sector development?
- How are they acting upon the specialty coffee trend?

In the following section, the conceptual framework for the analysis will be laid out.

## 4. Conceptual Framework

The process of specialty coffee emerging as an increasingly dominant market segment is for this research conceptualized as a *sociotechnical transition process*. As a complex topic, performed across different scales from the global to the local, the Multi-Level-Perspective (MLP) as popular model for describing these transition processes is the adopted as a general framework (Geels, 2002).

According to MLP, a transition process describes the change from one relatively stable state of a sociotechnical system, called regime, into a new stable state. The framework highlights the interplay of three analytical levels in transition processes: The *regime* consists of a set of material attributes (e.g.

technology), institutions and organizations, and immaterial attributes, such as the norms and rules that guide perceptions and actions (Geels, 2002). These attributes are keeping it dynamically stable, as they are historically established and performed by a broad community of actors and groups with aligned activities (Geels & Schot, 2007). The *niche* level consists of actors or small networks of actors who develop and test radical sociotechnical innovations (Geels, 2002). They are performed at least to some extent outside the realm of the sociotechnical regime. Niches are similar in structure to the regime, as both have the character of organizational fields, meaning a community of interacting groups sharing certain rules and coordinating action, but differ in size and stability (Geels & Schot, 2007) The *landscape* level refers to macro-level trends and changes exogenous to the regime, such as climate change, the situation of the international economy, political ideological trends, etc. In the account of MLP, landscape attributes are generally beyond the direct sphere of influence of regime or niche actors, but may put pressure on the regime, potentially destabilizing its components (Geels, 2002) and leading to a *dealignment* of its system attributes. This de¬stabilization may create a *window of opportunity*, where niche innovations, that under the stable regime had little chance to break through but respond to the landscape pressure and correspond with certain de-aligned properties of the regime, may incorporate into a new configuration of sociotechnical attributes and relations, creating another stable regime. This phase is referred to as *realignment* (Geels & Schot, 2007).

While the MLP offers a comprehensive look into the complex processes of change, some critique it for its underemphasis of actor's *agency* (Avelino & Wittmayer, 2016). This will be addressed by linking MLP with a concept derived from Science & Technology Studies, conceptualizing imagination as the driving force of innovation, and therefore transition processes. Sociotechnical imaginaries as per Jasanoff are *"collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advance in science and technology."* (Jasanoff, 2015, p. 6). The global specialty coffee trend can therefore be conceptualized as a sociotechnical imaginary. It is collectively performed by a large number of consumers, roasters, producers who share similar ideas and values about coffee. It is institutionally stabilized, not only by the myriad of consumer-producer relations, but especially by industry organizations like the SCA, producing standards, guidelines, and protocols, and providing an education system based on that. It is also publicly performed through the outlets of the SCA, but also marketing communication of producers and consumers.

Similar to how the MLP describes the sociotechnical regime as dynamically stable, sociotechnical imaginaries dynamically undergo different phases; they emerge, stabilize and are being contested. They draw on the social

construction of knowledge and highlight how different visions about how society ought to be are being negotiated, discussed, materialize, or rejected (Jasanoff & Kim, 2013). Looking at visions and perceptions through the lens of sociotechnical imaginaries captures them not as mere fantasies, but as grounded and resulting in material effects. Sociotechnical imaginaries therefore link the personal experience, perception and imagination with the collective performance of reality. When discussing the empirical findings, it will be argued that they are the ideal conceptual link to MLP as the linking element between all three levels of the MLP, putting agency of the actors at the centre.

## 5. Methodology and Methods

The research framework builds on a constructivist understanding of the world and therefore calls for a qualitative research approach. Qualitative Content Analysis (QCA) by Kuckartz was adopted as a general framework for the research process (Kuckartz, 2019). The preparation, organization and analysis of the data was aided using MAXQDA software (Kuckartz & Rädiker, 2019). Extensive pre-liminary fieldwork work starting in September 2023 (Caine, Davison, & Stewart, 2009) guided both the development of the research topic, providing insights into the context of the coffee production in Thailand, as well as the sampling. The author visited the Thailand National Aeropress Championship from 15-17th September 2023, Thailand Coffee Hub from 4-10th October and Thailand Coffee Fest from 15-17th December 2023, as well as several smaller coffee events, cafés and roasteries in Bangkok and had conversations with key actors in the industry. The sampling followed the idea of conceptualizing a network of actors with recognized expertise and competence in their field, as well as a certain level of authority within knowledge production and debate, as a *techno-epistemic network* (Ballo, 2015). Through purposive and snowball sampling, key actors within the specialty coffee producer techno-epistemic network were identified. Selection criteria were experience in specialty coffee production, as well as public visibility, for example through presence at national or regional coffee conventions or competitions, engagement with the coffee community through public institutions or social media channels, especially Instagram and Facebook, and successful marketing of their coffee products as specialty coffee. Excluded were producers of only commercial grade coffee and coffee products, or producers without public visibility. While these excluded actors certainly are part of the co-production of (specialty) coffee imaginaries, it can be argued that the core of the techno-epistemic network has more influence on knowledge co-production, and as frontline actors they are also holding a role model function for other coffee farmers, who are potentially following in their footsteps. Due to the natural constraints of the research process, these key actors were therefore considered the most efficient starting

point into the empirical exploration of knowledge co-production within the sociotechnical transition process of specialty coffee development in Thailand, defining the scope of this research.

Due to the resource constraints, the data collection only focused on Chiang Mai and Chiang Rai provinces as the main Arabica growing regions, together accounting for around 70% of total production in Thailand. During field research from December 2023 to January 2024, ten different specialty coffee producers located across seven different villages have been selected. The scales of production ranged from 2-3 mt per year to almost 1000 mt per year, with most of producing between 4-8 mt per year. The duration of involvement with (specialty) coffee ranged from 27 years to only 2 years, with most producers engaging with specialty coffee for 4-6 years. Some of the selected producers are considered as specialty coffee pioneers by others, while others are considered as relative newcomers, which nonetheless had some degree of impact on the specialty coffee market, for example by scoring high in national competitions. A total of 13 semi-structured interviews were conducted. The interviews followed an interview guideline with questions about the perceptions about the challenges and opportunities of doing specialty coffee, the significance of specialty coffee, and visions about its future development. The questions were formulated relatively open to give participants the opportunity to set own priorities. When the interviewees did not speak English, a translator was present. The interviews were transcribed, coded, and analyzed using MAXQDA software. Coding followed an inductive approach, allowing themes to emerge from the data. For the analysis, especially themes that repeatedly emerged were discussed (theoretical saturation) (Kuckartz & Rädiker, 2019). This, as well as the use of the software for organization and coding of interview data ensured consistency and quality of the data preparation.

As the interview participants acted as key informants and experts in their field, some of their information, like their role and affiliation, will remain visible within this presentation of the research (Ellersgaard, Ditlevsen, & Larsen, 2021). Due to the sensitivity of the topic, the participants however remain anonymous. The following table illustrates the affiliation of the interview participants.

**Table 2: Interview participants, one representative of each coffee producing company (four representatives of DoiTung Coffee as the largest producer**

| Company | Location | Province | Production year 2023, in tons | |
|---|---|---|---|---|
| | | | total | specialty grade |
| Khun Chang Khian Community Enterprise Group (The KCEG) | Baan Khun Chang Khian | Chiang Mai | 50 | 2-3 |
| Nine One Coffee | Mae Ton Luang, Thepsadej | Chiang Mai | 6 | 1-2 |
| First Valley Coffee | Mae Ton Luang, Thepsadej | Chiang Mai | 7 | 5-7 |
| Phupha Estate | Mae Ton Luang, Thepsadej | Chiang Mai | 4 | 4 |
| Toki Coffee Estate | Baan Khun Mae Ruam, Galyani Vadhana | Chiang Mai | 2 | 1-2 |
| Sirinya Farm | Mae Suai, Doi Chang | Chiang Rai | 20 | 12 |
| Yayo Farm | Mae Suai, Doi Chang | Chiang Rai | 10 | 2 |
| Ma Family Farm | Pang Khon | Chiang Rai | 10 | 3 |
| Phu Chee Duen Community Group | Wiang Kaen | Chiang Rai | 20 | 2-3 |
| DoiTung Coffee | Mae Fah Luang | Chiang Rai | 200-1000 | 2-4 |
| Specialty Coffee Association Thailand (SCATH) | Bangkok | Bangkok | | |

**Source:** Data collected during field work by the author.

It is important to note that the selection of the participants does not represent all coffee producers in Thailand, but they form a techno-epistemic group of specialty coffee producers. Although niche actors, they are some of the most successful and visible actors in their field possessing a certain level of knowledge and position within the market. While they do not represent all possible perceptions and opinions about specialty coffee, they have a more powerful role in shaping the perceptions of other industry actors due to their influence.

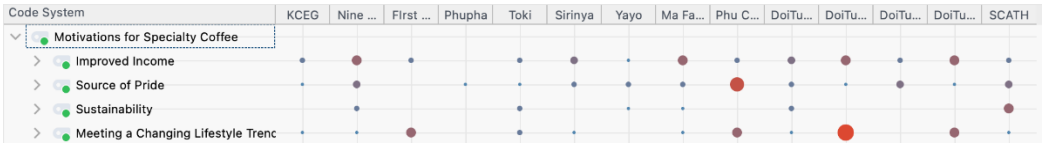
## 6. Results

The following themes emerged from the analysis in the interviews. They will in this section be presented at first, before being analyzed in the following section. This allows the voices and perceptions of the interview participants to be presented, before being made subject to analysis. A visualization of the

coding theme will be presented, for each theme. The dots in each frame represent the coding frequency. As this research focuses on qualitative analysis, this will only be addressed with minor attention.

### *6.1 Motivations for Specialty Coffee*

**Figure 1: Coding System for 'Motivations for Specialty Coffee' derived from MAXQDA**




**Source:** Screenshot from MAXQDA

***Improved Income***

Switching to Specialty Coffee is perceived as a way to generate more income, because it adds value to the coffee product. The added value of specialty production is across all interview participants stated as one of the main reasons to switch to specialty coffee. Small producers find it difficult to compete with the big companies in the commercial market segment, so they are switching to specialty coffee. For small scale producers, *"specialty coffee is the way of the survival of the coffee farmers in Thailand."* (MaFamily: Pos. 93). The interviewees think that only large companies can compete with commercial grade coffee, so they need to operate in a niche, which they say is focusing on quality instead of quantity of production.

While the commercial coffee market is expected to not be growing in Thailand, referring to limited land area and challenging topography making profitable large scale coffee production impossible, the specialty coffee segment is by all interviewees expected to continue to grow in the future and as the better and more suitable way of coffee production in Thailand.

The profit for specialty coffee producers is believed to be higher, but also the farmers and the pickers receive higher prices for specialty coffee. The prices for fresh coffee cherries were reported to be fluctuating drastically in the recent years, going up to 40 THB/kg last year on average. During the field research period, prices for fresh cherries ranging between 20 – 30 THB were observed which is still higher than a few years ago. Specialty coffee producers reported to pay an additional incentive of at least an additional 2 THB for the higher quality they require.

***Source of Pride***

While improved income seems like an almost trivial motivation, interview respondents also mentioned other dimensions of pride that go beyond financial dimensions.

> *"Because usually when we talk about these tribes or villagers, they are not always proud if you ask where they're from. But this new generation, they became like, okay, I want to go back to my home city, to my home village, and I want to make a name to it. So it's like a sense of pride a little. That's one thing. And also to make that happen, it has to be specialty. It has to be prestige on that."* (SCATH: Pos. 10).

Most coffee farmers in Thailand identify as belonging to one of the ethnic hill tribes. For a long time, these communities felt economically, culturally and politically marginalized. In the past, they were subject to development efforts that introduced coffee, but they did not have a choice and it did not result in drastically improved livelihoods. It was therefore not a source of pride. But now with specialty coffee, more farmers are becoming independent producers instead of selling their fresh cherries to big companies. Because the coffee in the communities now is growing in the forests, which was one of the incentives of the Royal Development Projects in the first place, the communities still have little other choices for economic activities. This has led to de-population of younger generation, who were looking to have a career. With specialty coffee, they can now stay or even return to the villages with a perspective to become successful. In addition, many are dreaming of contributing to an increasing recognition of Thai coffee in the international marker. And by connecting their coffee products with information about its origin, where it comes from, how it is produced and by whom, they are hoping to create visibility and recognition for their cultural identity.

***Sustainability***

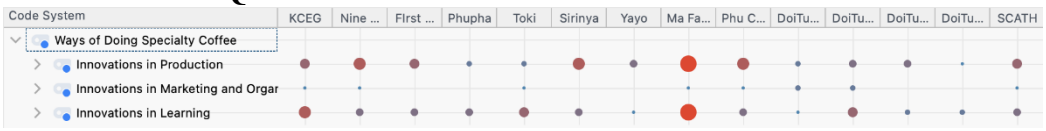
Coffee is seen as a way to protect forests by the respondents. Because Arabica needs shade to grow, especially to produce high quality specialty coffee, more and more coffee producers are switching to shade grown practices. Existing coffee plantations in the forest that were abandoned are now taken care of again in conjunction with protecting the trees. Specialty coffee is therefore perceived as giving an incentive to not cut down the trees for other cultivation. Farmers are even planning to change vegetable farms to coffee and plant forest on these patches. Besides intrinsic values and the perceived effect on quality, the forest is also seen as a way to mitigate the effects of climate change. The interviewees all viewed specialty coffee as a more sustainable way of producing coffee, and in many ways even more sustainable than other crops.

***Meeting a changing lifestyle trend***

The coffee farmer interviewed all mentioned that they are responding to a changing demand of specialty coffee, where the consumer trend is to drink more lightly roasted coffee. And for light roasted coffee, the quality of the green beans is viewed to be more important than for darker roasted coffee. They assert health risk to darker roasted coffee and instant coffee products. Besides health reasons, they are also asserting the changing consumer trend to a changing lifestyle, where consumer value story as part of the experience of drinking coffee more. The coffee producers find motivation in meeting this changing demand.

### *6.2 Ways of Doing Specialty Coffee*

**Figure 2: Coding System for 'Ways of Doing Specialty Coffee' derived from MAXQDA**




**Source:** Screenshot from MAXQDA

Generally, all interview partner defined specialty coffee as taking quality as the core category of consideration. *"She mentioned that for specialty coffee it's equally important along the value chain. So it's not that you have the very good cherry from farm, but then you have a very poor processing, then it would lead to specialty coffee. So it's very important to pay attention on every single stage of the value chain for specialty coffee."* (DoiTung 2: Pos. 31). For producers, this influences their production, their marketing behavior, and their ways of learning. In general, coffee producers are separating their products into different lots, dividing them by the location of the farm, variety or applied processing technique.

***Innovations in Production***

All coffee producers have highlighted that specialty coffee production starts at the farm level. Farm management is perceived as the first step to increase quality, and shade grown coffee (agroforestry) considered a key condition for producing specialty coffee. Special attention is also given to the harvesting, where ripeness of cherries is considered a key criterion for coffee quality. Additionally, all coffee farms visited are adding other processing techniques than the washed process, that is most common in commercial coffee production, to their product ranges. This ranges from *Natural* or *Honey Processed* coffees to *Anaerobic or Yeast Fermented* coffees. Taking control of the processing has for many coffee farmers been the first step into the specialty coffee segment, separating their product from commercial grade and adjusting the flavor of the coffee cherries from their existing plantations.

However, processing is perceived as not enough to reach the highest value segments of the specialty coffee segment. As the interviewed coffee producers reported, the specialty segment rewards single variety products, but most are working with mixed variety plantations or Catimor varieties. These are perceived as not sufficient to reach the highest market segment. Certain varieties, especially Gesha and Java are more sought after, which is why many farmers are replacing their existing mixed variety plantations with single variety trees of these varieties, which are however said to be more demanding and challenging to grow. Some coffee farmers are therefore even experimenting with grafting, using stocks of varieties with perceived high quality, such as Gesha, on root systems of Catimor or even Robusta to combine the robustness of these plants with the flavor quality of the Arabica variety.

***Innovations in Marketing***

Entering the specialty coffee segment with more diverse products that differentiate in flavor profile and origin also results in the producers utilizing more diverse distribution channels and new marketing strategies. They are promoting their products themselves at conventions or exhibitions. Also, DoiTung held an auction of their special lots, each lot being sold to the highest bidder. In general, all coffee farmers have highlighted the close relation to their customers. The producers also view connecting information and story to their products as an important new strategy.

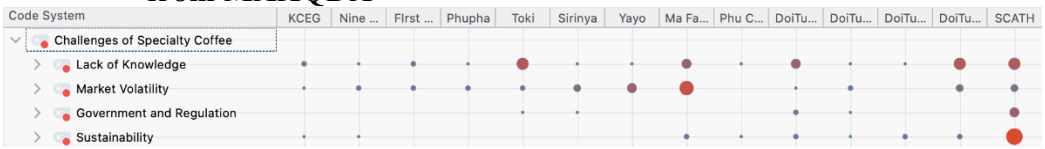
***Innovations in Learning***

As the production differs quite significantly, it requires coffee producers to learn about specialty coffee if they want to switch from commercial. Many producers have responded that they have first learned about specialty coffee from the internet. Other interviewees have described how they have learned from other coffee producer with more experience, with a few individuals holding kex roles. Another important source of learning mentioned is building on experience and experimenting. For this experimenting, feedback becomes more important. The interviewees highlighted the importance of the close collaboration with their customers who give them feedback, but especially feedback from coffee grading competitions was mentioned a lot. These competitions are hosted by a few different organizations, and producers can send their coffee to be graded by a jury of judges following SCA guidelines. A good ranking in these competitions is perceived as an important marketing factor. Many coffee farmers are also talking about receiving SCA certified education. They have either already taken part in courses or are planning to.

### *6.3 Challenges of Doing Specialty Coffee*

As the previous sections have demonstrated, shifting to specialty coffee production is perceived as a significant change for Thai coffee producers. This entails several challenges that will be presented in the following.

**Figure 3: Coding System for 'Challenges of Doing Specialty Coffee' derived from MAXQDA**




**Source:** Screenshot from MAXQDA

#### *Lack of knowledge*

The challenges mentioned the most by the participants was a lack of knowledge. In the view of the interviewees, many coffee producers do not know about specialty coffee and its opportunities. This is mainly viewed an issue of the old generation, that is not willing to learn, while the new generation is adapting. Access to knowledge is perceived as another challenge, with SCA certified education viewed as very expensive. All producers have also claimed that the government and research stations are not providing meaningful knowledge to any of them. They are therefore calling for a more open arena or platforms for knowledge exchange and collaboration. This lack or inconsistency of knowledge is also perceived to risk trust along the value chain, because it creates inconsistent products, limiting quality perception of Thai specialty coffee. This in turn creates market access issues.

#### *Market Volatility*

Thai coffee is perceived as very expensive compared to other coffee producing countries even by the producers, especially regarding the quality of the products. One reason that many of the producers have given is that due to the recent rise of demand for domestically produced coffee, big companies are competing with specialty coffee producers over buying fresh cherries, increasing the prices. Some coffee producers even speculate that the big companies are purposefully interfering with the prices to stop the diversification of producers.

While all producers have highlighted that they are happy that farmers are receiving good prices, they also argue that the price is too high and farmers having a good standard of living already. The current pricing would reduce the effectiveness of their financial incentives that are aimed to encourage farmers to invest in and work on quality improvements on the farm level. The high price for comparatively low quality is also reducing access to selling on the international market. This combined with perceived high investment costs is

challenging the further development of Thailand's specialty coffee segment. While education, processing and drying already require significant investments for producers, the changing of their plantations from mixed varieties or Catimor to higher values varieties, such as Gesha, is even more costly, and the return of these investment is perceived as not clear. Anticipating the future development of the specialty coffee sector and making these investment decisions, where financial resource are scarce anyway, is perceived as one of the big challenges.

***Government and Regulations***

The challenges mentioned above are also influenced by regulatory measures. Most coffee producers interviewed seemed reluctant to address regulatory issues, and instead highlighted challenges that they could address on their own. However, especially the president of SCATH and the manager at DoiTung mentioned how the current regulatory system affects the specialty coffee producers.

The high import tariffs on green coffee of 90% are in the perception of the coffee producers resulting in skewed prices. The high taxation would in fact result in a lot of smuggling and corruption. Through this practice, the current tariffs are viewed as only benefitting big companies or the ones who are using illegal business practices. The current scheme is perceived to limit the availability of coffee and increase the price in the local market. They suggest lowering the import tariffs, so that more legally imported coffee for a reasonable price can fulfill the demand for commercial grade coffee. Another limitation is that importing and planting seedlings of coffee varieties is technically illegal. All farmers have however started to grow other coffee varieties. Because it is happening illegally, it however results in transparency and traceability issues that might harm trust within the value chain. In general, the regulatory system is perceived as not aligned with the needs and reality of the specialty coffee segment.

An especially sensitive theme that emerged was issues with land ownership. As mentioned in the previous section, most coffee producers belong to one of the ethnic hill tribes, and most of them do not hold official land ownership titles. Because coffee is planted in forest, which is protected under Thai law, it limits the freedom of activity of the producers. Their coffee growing activities are currently being tolerated, but some are also afraid that this might change in the future.

> *"If you own the land, you have one type of paper. Like here you if you own it, you have this ownership paper. You can sell it. You can exchange it. They have a market price, for example. But the other ones that the hill tribes or people in those area have, it's a paper saying that you are allowed to make a living in this piece of land. You don't own it, but you are allowed. So this paper is also being traded around*

> *the area for doing all these processing plants and also doing the farming. But this paper, the risks is that this paper is saying that you are allowed, so the government can just say you're not allowed anymore."* (SCATH: Pos. 69-74)

***Sustainability***

Climate Change is perceived as a big challenge, already affecting coffee producers with increasing irregular rainfall resulting in draughts and flooding and increasing pests and diseases. The area suitable for Arabica cultivation in Thailand is feared to decrease. Coffee farmers ability to adapt is perceived as limited. And as mentioned in a previous section, agroforestry is perceived as a way to mitigate the effects of climate change by creating more resilient micro-climates.

While many coffee producers view specialty coffee production as a sustainable practice, the president of SCATH has mentioned an increasing issue about waste management. The increasing number of small scall producers processing coffee themselves in conjunction with a lack of knowledge is perceived to create environmental pollution. While also the larger producers are perceived as lacking in this regard, the diversification of producers increases the complexity of navigating these environmental harms of the coffee production. While none one of the coffee producers mentioned this challenge in the interviews, a lack of waste management could be observed on many of the coffee farms.

Many of the producers interviewed have reported that they are planning to increase their production and cultivation area to meet the demand. While some have claimed they are planning to convert barren land or vegetable farms into coffee agroforestry plantations, some also plan to plant more coffee in forest. This might adversely affect the forest ecosystems. Also, the clearing of coffee plantations in forests that were abandoned for many years introduces human activities into natural ecosystems.

## 7. Analysis

To provide a deeper analysis, these imaginaries will be linked with the Multi-Level-Perspective.

This dominant coffee *regime* consists of only a few big companies producing coffee, buying fresh cherries from coffee farmers for prices that in many cases did not result in satisfactory livelihoods. Many coffee plantations that were started decades ago were left abandoned. The big producers favored volume of production over quality. Coffee farmers were therefore dependent on the prices that the big companies dictated. The protective tariffs aimed at promoting domestic production and fair prices for farmer are so high that many ways to avoid them are exploited. This stretches from tariff-free quotas that are

granted to large-scale importers to corruption, smuggling and other forms of illegal misconduct. This skews the prices and is resulting in an imbalanced market, where market power remains with the big companies.

This production regime does not encourage farmers to know or learn about coffee production too much. The current high prices that all producers are paying for fresh cherries is also perceived as limiting the financial incentives for farmers to invest in improving the quality of their coffee cherries. In the last decades, little attention has been paid to the genetic composition of the cultivated Arabica varieties. Washed processing is most commonly used, because it is the easiest way to produce consistent results on a large scale. In the current regime, uniformity of production is prioritized over differentiation and uniqueness of the products. In general, this regime can be termed as *commodity* or *commercial coffee regime*.

However, more recently this regime has started to destabilize. The main l*andscape pressures* on the current coffee growing regime perceived by the Thai coffee producers are Climate Change, adversely affecting production yield and consistency, and persisting economic and cultural marginalization of indigenous ethnic communities in the highlands. The com¬mercial coffee regime is not perceived as providing adequate solutions to these landscape pressures. Commercial coffee production did not result in sufficient socio-economic perspectives for the coffee producers but is still one of the few practices available in these areas. The changing landscape also provided a new enabling environment. The global trend for specialty coffee, developments of standards and guidelines as well as terminology in other countries converges with changing lifestyle habits of Thai coffee consumers, in¬creasing¬ly preferring lighter roasted coffee with unique flavor profiles. A reason behind this is the widespread availability of information through the internet, as well as the global spread of trends through social media. The destabilization of the regime in conjunction with changing enabling environments allowed for niche developments to emerge, creating a *window of opportunity* for coffee producers to switch to specialty coffee production.

In the *niches*, different ways of production were experimented since a long time in Thailand. Nine One Coffee for example started in 1997 trying to differentiate its practices from the main¬stream market by focusing on quality development. With the opening of the window of opportunity, more and more coffee producers are switching their production to specialty coffee. Operating with limited financial resources, most coffee producers have initially started with taking the processing into their own hand. Instead of selling their fresh cherries to other producers, they are experimenting with Natural or Honey processing, or developing even more exotic processing, utilizing controlled fermentation or the use of microorganisms. More recently, farmers are experimenting with separating coffee varieties. They are doing this by either

separating the harvesting on their farms by visually differentiating coffee varieties in their mixed variety plantations, or by setting up new plantations of single Arabica varieties that are perceived as having a higher value, such as Gesha and Java. New ways of marketing are employed, favoring direct relations to independent customers such as micro-roasteries, and showcasing their products in conventions or competitions. These coffee grading competitions are not just perceived as an innovative way of marketing, where high ranks are resulting in market recognition, but also as a valuable source of feedback for knowledge generating. Other sources of knowledge for niche developments are an increasing number of coffee schools and other courses taught using SCA guidelines and standards.

The trend for specialty coffee can therefore be conceptualized as a *sociotechnical transition process* that is currently in the process or re-aligning with the current coffee regime. This also is also captured by the growing market share of specialty coffee, and by the imaginary of the interview participants who are expecting this development to continue in the future. However, there a few risks that could potentially disrupt the transition process. The lack of knowledge about specialty coffee production is a major source of these risks. It contributes both to inconsistencies of production and mislabeling of products, risking trust between producers and customers, as well as to environmental harm due to the lack of waste management. Due to an increasing number of small-scale producers adopting processing techniques themselves, these problems might accelerate. While specialty coffee producers are imagining their way of production as more sustainable, leading to the protection of forests, the further diversification of coffee producers may in fact result in more environmental pollution through increasing waste from coffee processing. Also, an extension of coffee plantations into forests in order to increase the production of specialty coffee may have impacts on forest ecosystems that previously were absent from human economic activity.

In conjunction with the land ownership issues, this poses a threat to coffee farmers in indigenous ethnic communities. While they are being tolerated to grow coffee in forest areas by the government now, this tolerance could be revoked by the government if the environmental effects are continuing and perceived as problematic. The absence of full land titles is putting them at risk to lose the permission to produce coffee in these forests, threatening their livelihood practice to be taken away from them. These risks should be mitigated in order to promote the continuation of the transitioning of the coffee sector that is perceived to contribute to livelihood improvements and sustainability. Suggestions on how these risks can be mitigated will be given in the concluding section.

The analysis also provides insight into how Thai coffee producers are engaging with the specialty coffee imaginary. Knowledge was perceived as one

of the key challenges by the coffee producers contributing to its successful development. Here, mainly cupping protocols, sensory evaluation and other industry norms and guidelines developed by the SCA are mentioned. These international standards are increasingly replacing local, ancestral and traditional forms of knowledge about coffee that are perceived as inadequate to meet the demands of the specialty coffee segment. The formation of Thailand's SCA in 2015 also demonstrates the increasing institutional consolidation of specialty coffee techniques and practices. However, producers are also adding their local knowledge and cultural context to their products, utilizing traditional resource management and transporting stories of their origins to the consumers through their coffee.

Referring to the struggle to compete with their mixed variety or Catimor plantations in competitions with other varieties, the participants suggest rethinking the quality definitions of the specialty coffee imaginary. And by instead highlighting stories of the origin, how specialty is a source of economic perspective for marginalized communities, of cultural identity and recognition, they are asserting a different kind of value to their product. At least on the Thai domestic level, the Thai coffee producers are therefore actively engaging in the co-production of the specialty coffee imaginary, adopting some of its international elements and adding local context, effectively co-producing it. It is to be analyzed if this local co-production also affects the evolution of the global specialty coffee imaginary.

## 8. Discussion

The analysis has shown the complexity of the perceptions of Thai coffee producers responding to the specialty coffee trend. They are engaging with the global specialty coffee imaginary, adopting standards, protocols, and guidelines, but also adding local context, and in doing so are *co-producing* this imaginary. This demonstrates that they are also actively participating in the negations of attributing symbolic value to their products. It supports the claim that specialty coffee can in fact shift the distribution of value, as argued by Boaventura et al. (Boaventura et al., 2018), away from big companies, and towards the specialty producers interacting directly with their customers. The power over the creation of symbolic value is also perceived as key in addressing the inequalities of the global value chain by Fischer (Fischer, 2021). The producers are taking control over the value attribution over their products, promoting their agency. While this is perceived by the producers as protecting their cultural identity, providing them a livelihood perspective in their indigenous lands, it marks a shift from traditional knowledge and practices towards adopting industry set standards and understandings of quality as the leading value-defining variable in the specialty coffee sector. However, the contestations observed among the Thai coffee

producers about the dominant imaginary of quality of specialty coffee shows their practices of co-production. They are adding immaterial dimensions of quality to the technical, material dimensions of the SCA guidelines, trying to shape a different understanding of specialty coffee quality. The underemphasis of these quality dimensions by the SCA is also highlighted and criticized by Quiñones-Ruiz (Quiñones-Ruiz, 2020).

In the broader discussion about coffee production in Thailand, the role of agency becomes even more significant. Since the introduction of coffee through government strategies and Royal Development Project initiatives, coffee farmers in ethnic hill-tribe communities were *subjects of* development. The introduction of coffee farming initially restrained their agency, limiting their freedom of choice for economic activity, and resulted in persistent economic and cultural marginalization. The specialty coffee trend can now finally make it work. Beyond the economic dimensions, it is the broadening of agency itself that is the driving force behind the Thai specialty coffee imaginary. It is the *ability* to be independently responsible for their own livelihood that is motivating an increasing number of small-scale farmers to engage with this growing market segment. It makes them *agents of development*. This reflects contestations of Thailand's rural development approach in general. While the initial extension projects of coffee-production are following a top-down approach, Thai rural development strategies have been described as having become subsequently more participatory (Missingham, 2000). Recent Thai rural development strategies are praised for their inclusivity and participatory nature (Kelly, Yutthaphonphinit, Seubsman, & Sleigh, 2012). However, at least in the case of coffee farming a true agency-based development approach is still missing. This is reflected in the continuing issue of insecure land rights among indigenous communities and the regulatory restrictions on farming and business practices of specialty coffee producers. This therefore links to broader debates about development studies, where often institutional or structural change is favored over practices and approaches that embrace and empower the independence of people in processes of change (Garikipati & Olsen, 2008). According to Bastiaensen et al., promoting people's agency however is one of the most effective vehicle for transformative change and should therefore be focused on more (Bastiaensen, De Herdt, & D'Exelle, 2005). In the Thai context, it also links to continuing struggles for political and cultural recognition of these politically and economically marginalized indigenous communities. Specialty coffee production can be viewed as a means of action to reshape the identification of these communities both as protectors of the forest, as well as culturally equal members of Thai society (Morton, 2023; Santasombat, 2010). With their ability to connect local and cultural knowledge and context to specialty coffee products, they are gaining control over symbolic value creation,

reshaping the persistent and somewhat derogatory imaginary of these 'hill tribe' communities within Thai society.

The use of MLP as a framework in conjunction with sociotechnical imaginaries as a theo-retical lens has been proven helpful to emphasize the role of agency within socio¬technical transition processes, adequately addressing the theoretical shortcoming of MLP identified by Avelino & Wittmayer (Avelino & Wittmayer, 2016). They criticize an ambiguity of attempts to include power dimensions into transition process research, and a need to focus on the distributed agency happening within transition processes for both the theoretical understanding of them, as well as their application through transition governance. They offer the Multi-actor Perspective (MaP) as an additional tool in transition research, putting question *who* the actors exercising power within transition process in focus. While this addresses one part of the identified shortcomings, it neglects the act of innovation. It can be argued that in transition research, *who and what* need to be asked simultaneously, i.e. who is acting in the transition process based on what goals, motives and ideas. Sociotechnical imaginaries allow a deep understanding of what the motivations, perceptions and underlying values of actors within transition processes are.

## 9. Conclusions

This paper has empirically explored how Thai specialty coffee producers are imagining their motivation, the challenges they are facing, and the way they are doing specialty coffee. Key findings are that coffee farmers are motivated to switch to producing specialty coffee not only by improved income, but also the sustainability of the production and by a sense of pride that is expected by selling and marketing specialty coffee products. They are taking quality of their products into the focus by improving farm management, using innovative processing and separating varieties, but also by finding new ways of marketing, for example by joining competitions, exhibitions, and conventions. However, coffee farmers are facing several challenges, most notably a lack of knowledge, a volatile market with fluctuating prices and limited marker power of small-scale producers, a regulatory framework that restricts the decision-making freedom of specialty coffee producers and provides only limited security, and sustainability, where climate change is threatening the long-term viability of production. By adopting elements of the global specialty coffee imaginary, but adding local context, they are co-producing the global imaginary. In doing so, they are also co-creating symbolic value, potentially re-shifting the power balance of the global value chain. The driving force behind the specialty coffee transition process is the broadened agency of coffee producers, who perceive it as a perspective for marginalized communities, promising better income and sustainability, and reshaping their cultural recognition within Thai society.

To mitigate the risks that were identified to potentially interrupt the transition process, the following measures are suggested: More knowledge-sharing and collaboration should be encouraged, for example by setting up an existing or new organization with the resources to act as a knowledge sharing platform that ensures low-threshold access to learning and education about coffee production. This not only contributes to mitigating potential environmental harm, but also contributes to the development of uniform standards, promoting trustworthy within the industry. It would also contribute to balance a potentially growing inequality between specialty coffee producers in Thailand. Special attention should be given to Climate Change and its mitigation, providing support to farmers to adapt to the changing climatic conditions. Both the Specialty Coffee Association as well as the existing network of development centers and research stations could act as a starting point for these measures, but need to be equipped with the resources to meet the demands of the specialty coffee producers.

Also, the regulatory framework needs adjustments to meet the needs of the specialty coffee producers. The current rules and regulations are not connected to the reality on the ground; for example, the ban on importing and distributing genetically traceable coffee varieties is not being followed on the ground and is limiting coffee producers' abilities to meet the demand of both the domestic and international market. The land ownership issue of the indigenous highland communities should be addressed to provide long-term stability and economic perspective. In general, the regulatory framework should provide an enabling environment for Thai coffee producers to act independently in order to meet the demands of the specialty coffee producers instead of restricting autonomous decision-making. However, clear environmental regulations need to be formulated to create equal terms for all market actors and protect the environment.

Beyond the empirical findings, the paper provided valuable insights into linking MLP as an analytical framework with sociotechnical imaginaries as analytical lens. The combination allows both for systematic insights into complex sociotechnical systems while also putting individual perception and experience at the heart of the analysis, emphasizing agency.

## 10. Shortcomings and Future Research

This research was conducted by a singular researcher, the author, as part of a master's thesis. Due to the financial and time resource constraints, the analytical approach used for this study is narrow. Potential quality assurance methods that can be applied in larger researcher teams, like inter-coder reliability, could not be applied. Therefore, a more exploratory methodological and analytical approach were used. This opens the way for further research.

Additionally, this study is based on interviews about the perception of a limited group of actors that hold a similar position among Thai coffee producers, forming a techno-epistemic network. The influence of this techno-epistemic group on the co-production of the specialty coffee imaginary is the research scope. Although they hold key roles in shaping the imaginaries of many other coffee producer due to their prominence and visibility, they do not represent the perceptions of either very small-scale farmers or the large industrial coffee producers. Future research should therefore address these scopes and incorporate the findings with the results of this study. Additionally, more detailed research about the reform of the regulatory system is necessary to suggest a more practicable taxation and tariff system. Future research should also look into the role of the agricultural research stations within the current and further development efforts. The particularly sensitive issue of land ownership should be addressed more deeply and carefully.

The analysis also strongly focused on similarities, highlighting the shared contributions to the co-production of the specialty coffee imaginaries. In doing so, it was strictly qualitative and exploratory. Differences in perceptions based on the different profiles of the interview participants, e.g. scale, duration of involvement, market position, tenure in the industry or other relevant factors were largely neglected. A more quantitative approach in future research could highlight intra-network differences of power, and as such contributions to co-production of the specialty coffee imaginary in Thailand.

The linking of the MLP framework with sociotechnical imaginaries has proven a meaningful approach to understanding and highlighting the agency dimension of sociotechnical transition processes. Further attention needs to be laid onto the theoretical linking and its practical analytical application.

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