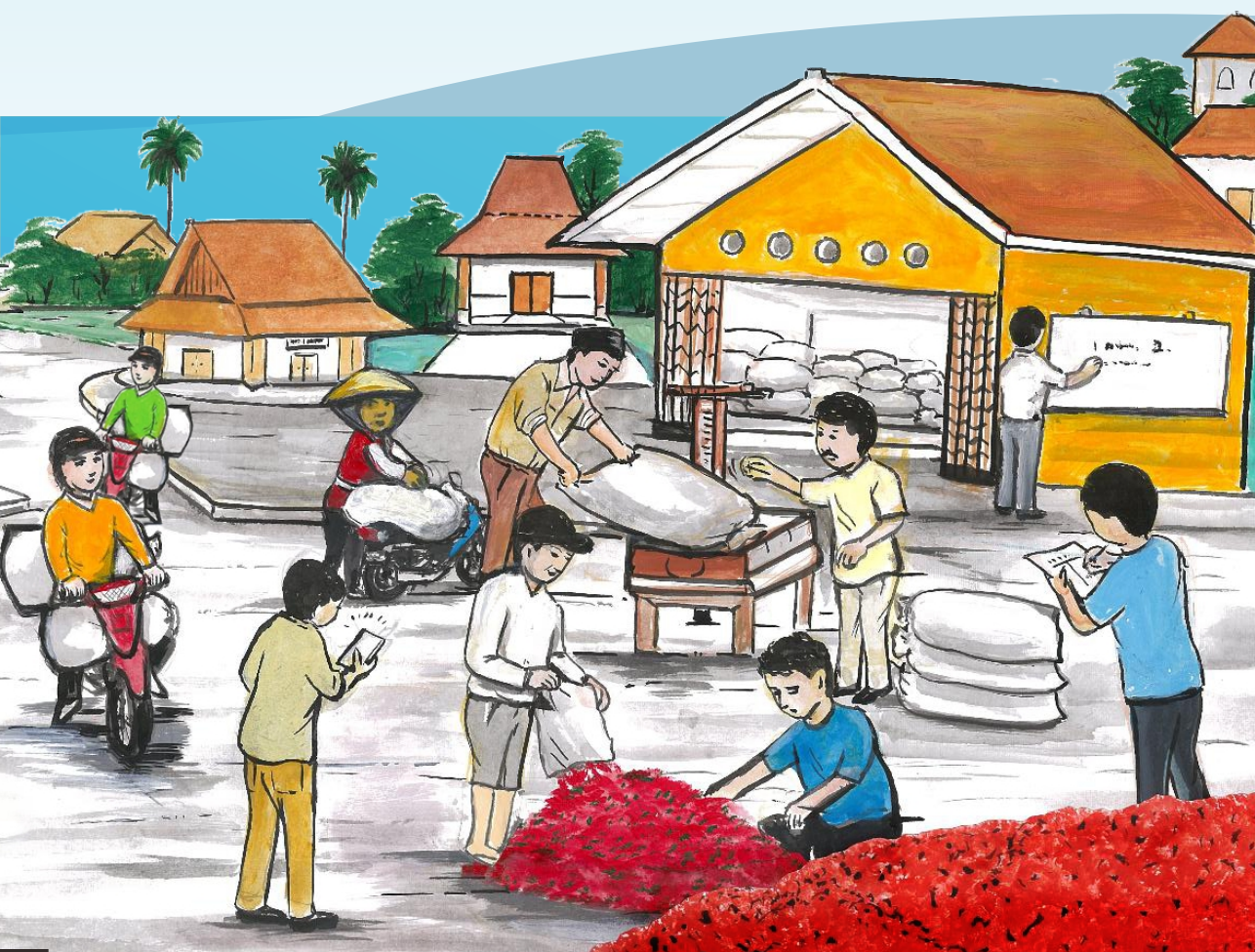


# UNRAVELLING THE INCLUSION OF SMALLHOLDER FARMERS IN MARKETS

The case of self-organised and farmer-led  
auctions trading chilli in rural Java

Dyah Woro Untari



## Propositions

1. Inducing organisational fixes undermines the sustainability of farmers' collective trading groups.  
(this thesis)
2. Participation in risk-taking makes vulnerable smallholders even more vulnerable.  
(this thesis)
3. Translating local knowledge into a higher level of abstraction enhances the relevance of social science.
4. The impacts of social science are indirect and long-term.
5. Hierarchically imposed work plans are likely to result in a poor work-life balance.
6. The use of personal communication channels threatens transparency and traceability in professional work.

Propositions belonging to the thesis entitled,

Unravelling the inclusion of smallholder farmers in markets: The case of self-organised and farmer-led auctions trading chilli in rural Java

Dyah Woro Untari

Wageningen, 10 January 2023

# UNRAVELLING THE INCLUSION OF SMALLHOLDER FARMERS IN MARKETS:

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auctions trading chilli in rural Java

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# Unravelling the inclusion of smallholder farmers in markets: The case of self-organised collective trading groups in rural Java

Dyah Woro Untari

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# Chapter 1

## General introduction

## 1 General introduction

### 1.1 Inclusion of smallholder farmers in dynamic markets

*In 2017, I visited the chilli farming area on the south coast, near Yogyakarta, Java. I have been familiar with this area since 2010, thanks to my participation in a UGM research team. The rural regions are quiet, but the highway, which borders the wetlands, is more crowded because the government built an international airport 12 km from there.*

*I visited a leader of a group of farmers, known as the ‘chilli auction figure’. He told me that chilli auctions were improving villagers’ welfare. He said that the villagers did not own land there until the 1990s. The only land they could access was the dry coastal area, where they could not grow crops. Villagers worked on landlord-owned wetlands, located in the northern part of the highway, to fulfil their daily needs. Farmers in this area have a history of being marginalised. However, in 2004, a small group of farmers began an auction. It sold smallholders’ chilli to the traders. The auction paved the way for brokering relations between smallholders and the markets. This was novel because, originally, they had relied on petty traders in their village. Then, other groups adopted the auction system.*

*The auction is a bottom-up practice, brokering terms of entry into the market for smallholders. The group leader told me, “There are a lot of cooperatives, but they do not operate well. Our auction is different from a cooperative. Our farmers only want to know that they always make a profit. They do not realise that businesses sometimes suffer losses.” This tells us that auctions are not always successful, as I found some of the 14 auctions I studied did not survive.*

This raises the question central to this thesis: what sustains collective trading groups to be included in chilli markets?

Performance and sustainability issues are relevant to the efforts involved in development strategies that organise farmers into groups, creating collective ownership. The cooperative model features heavily in these strategies, which has been studied a lot. However, farmer-led auctions differ from formal cooperatives and their persistence and performance has not been studied extensively.

This thesis describes the role of self-organised collective action groups in real perishable crop markets that strive to provide smallholder farmers with market access. Inclusion concerns how a process shapes specific conditions or terms through which farmers engage with market dynamics. I dig deeper to discover how

certain actions – like self-organised collective trading – shape or reshape specific terms. As such, this thesis aims to unravel the unfolding process of inclusion. It also examines how inclusion is affected by the agency of farmers' groups, which make inclusivity visible in how they organise collective trading and manage the associated tensions.

Policies in multiple countries focus on collective marketing (Abdul-Rahaman & Abdulai, 2020; Ochieng, Knerr, Owuor, & Ouma, 2018). The underlying idea is that encouraging collective marketing strengthens service provision (Gramzow, Batt, Afari-Sefa, Petrick, & Roothaert, 2018), replaces local intermediary traders and shortens supply chains by incentivising local farmer-led trading (Gyau et al., 2014). However, sustaining operations can prove a challenge. The way groups in charge of collective marketing initiatives govern their organisations, for example, presents issues, as do the types of markets and products, and the characteristics of the group (Markelova & Mwangi, 2010); policymakers and scholars looking to address groups' abilities to influence terms of inclusion in markets need to look at all of these factors.

This thesis' central focus is on the institutional arrangements of farmer-led chilli auction groups' trading practices in rural Java. It looks into what the trading capacities of these groups tell us about inclusion in the value chain. I am interested in unpacking how auctions and bidding mechanisms broker transactions between farmers and traders. The self-organised auctions in my study bulked chillies and arranged bidding to collectively sell produce for smallholders in villages. However, smallholder farmers encounter challenges maintaining relations with traders, and they are risk averse (Lu, Batt, & Fischer, 2010). Moreover, smallholder farmers are also faced with competition from large-scale producers, and they can struggle to meet quality standards (Hernández, Reardon, Natawidjaja, & Shetty, 2015). I consider that terms of inclusion in trading for smallholders' collective marketing groups are not limited to transactions costs. This study attempts to provide an empirical understanding of the institutional issues underlying the actual practices of farmer-led collective fresh produce markets.

The smallholders in this study formed auction groups to mediate their chilli sales to traders. 14 auction groups sold the farmers' produce along the rural-coastal area in Yogyakarta Province. Looking at practices, I detect how the smallholders engaged in collective trading through an auction system by collecting chilli in a single location. Operating team weighed chilli, recorded volumes, bulked and sorted the chilli, and made payments to smallholders. However, not all auction groups lasted. Failure to

## Chapter 1

operate auctions resulted in three groups dissolving, and only 11 groups survived into 2019.

This left me questioning what made some of the auction groups cease to operate, and why did all auction groups not immediately imitate the successful ones? Many policies promote cooperatives as an organisational model that aims for inclusion (Bijman & Wijers, 2019). However, it is acknowledged that applying the same governance to different enterprises can erode them (Hideto Dato, Hudon, & Mersland, 2020). Moving beyond this premise, this research focuses on practices and inclusion in food markets (Schoonhoven-Speijer & Vellema, 2020). The approach is used to understand how auction operators learn to manage tensions over time, tailor the practice of running an auction to both suppliers and traders, and whether ownership structures matter in influencing terms of inclusion. From these practices, I contend that written and unwritten rules emerge, which contribute to auctions' performance and sustainability.

In view of the above, key concepts used in this dissertation are auction groups' capacity to withstand tensions in trading, prominent features of inclusion for smallholders, the method to study unwritten collective marketing rules-in-use and the configuration of these rules. These concepts are used to discover what institutional aspects contribute to auctions lasting.

### 1.2 Problem statement

Studies on collective marketing organisations mainly emphasise organisations' internal governance. However, farmers' economic organisations relate to the actual practice of trading. Studies that assess organisational capacity are important to understand how these groups handle trading. Unfortunately, many studies concerning organisational capacity focus on large-scale groups (Ton, 2015). My study involves small-scale, farmer-led groups that organise themselves and have to manage tensions to sustain trading. This highlights the diversity of approaches that small groups take to handle collective trading and how they evolve continuously (Dentoni et al., 2020). These auction groups serve smallholders who want to sell chilli by setting quality requirements. However, different groups receive different responses from the smallholders (Bijman, Muradian, & Cechin, 2012). By looking at these issues, this thesis applies an approach to read and diagnose auction groups' capacity to handle tensions. This study is interested in establishing a contextual understanding of self-organised auctions and the collective trading of chilli that aim to broker these inclusion terms. Mwema and Crewett (2019) point out that institutional analysis is not easy because there are no guides for researchers. This



thesis attempts to diagnose institutions using a practice lens study to understand auctions as sites of knowing and collective ventures by small, task-oriented groups (Nicolini, 2011). This kind of study requires the study of unwritten rules, for which few tailor-made methods are available.

I consider that it is important to pay attention to unwritten rules because collective trading can be understood through them. By focusing on these auctions in particular, I explore the value of unpacking institutional grammar through a practice-oriented study. I use integrative methods to recognise different rules typified by Ostrom (2005) to better understand how these auctions practically work to broker market access for smallholder farmers. The rule typology in Ostrom's Institutional Analysis and Development (IAD) framework is less developed to examine collective action in trading. This thesis adopts a critical and empirical perspective on farming groups' capacity to broker smallholders' terms of engagement with markets and sustain their collective endeavours.

### 1.3 Theoretical perspectives on collective trading

I employ cooperative and institutional perspectives. The cooperative perspective provides further information on the efficiency and effectiveness of organisational models. I also pay attention to the rules that emerge from and underpin collective action, mainly based on Ostrom's work on the institutional lens. The smallholders in this study know how to operate auctions because they engage in the practice every day. They know how to learn from their mistakes (Nicolini, 2011) and those of other groups. In harmonising actions in the food market, the auctions inform groups' organisational capacity by operating without requiring a coordinating actor (Vellema, Obeng-Adomaa, & Schoonhoven-Speijer, 2021). The practice lens is inherent in each theoretical perspective.

#### 1.3.1 Cooperative perspective

I want to propose an alternative to the cooperative approach, which mainly focuses on ownership structure and representation. There is a lot of literature that assesses the effectiveness of certain organisational forms, such as is the case with the cooperative model, by looking at its governance in terms of generating profit, decision making and involving members. However, function in terms of value adding is not self-evident (Abate, 2018). Conversely, I look at that the other way around by scrutinising the practice to open space for what sustains smallholders' collective trading groups to modify terms of inclusion in the food markets.

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Collective trading groups have been central to inclusive food provisioning business models (Schouten & Vellema, 2019). Literature on inclusive development in food provisioning views the cooperative model as a potential approach for smallholders' inclusion in business (Borda-Rodriguez, Johnson, Shaw, & Vicari, 2016; Lyon, 2003; Stringfellow et al., 1997). Bijman (2016) discusses that this organisational set-up is used to empower farmers' organisations owing to the fact that it enables organisations to take control of trading, but the state-dominant approach often neglects community embeddedness. I shift focus from collective ownership as an antecedent for inclusive development to the running of auctions to negotiate terms of inclusion in food markets. My study attempts to discover the elements that affect smallholders' inclusion in markets. It does this by building on the framework proposed by Vermeulen and Cotula (2010) and elaborated by Chamberlain and Anseeuw (2018). It unpacks the inclusion process into four components: ownership, voice, reward and risk. By applying this framework to two distinct ownership structure auctions, this study discovers what dimension(s) affect smallholders' inclusion into food markets and whether ownership structure can explain similarities and differences between groups' approaches to refashioning terms of inclusion for smallholders in chilli trading.

Within groups, internal problems arise from the smallholders' interests, and these determine whether the groups remain intact or dissolve. In organising collective trading, organisational strength is a factor that defines its longevity (Hellin, Lundy, & Meijer, 2009). Organisational agency is measured in different ways. Unfortunately, most tools used to diagnose organisational agency are only applicable for large organisations (Ton, 2015). Several pieces of research examine groups' attributes and the external forces on them (Markelova, Meinzen-Dick, Hellin, & Dohrn, 2009; Molla, Beuving, & Ruben, 2020); another study employs transaction costs economics concept (Tefera, Bijman, & Slingerland, 2017). However, how these groups actually achieve sustainability has not been researched. In this study, I use ten core areas by Ton (2015) and a practice-oriented study to assess the variability of auction groups' capacities in tackling different inherent tensions. This study aims to reveal the skills visible in the performance of different small-scaled self-organised auctions in terms of how they contain tensions over time to achieve sustainability.

This dissertation contributes to the literature on producer organisations and collective action through the analysis of a trading performance-based analysis of self-organised farmer-led auctions. The analysis is rooted in the theory set out by Nicolini (2011) that stipulates that practice is where organisational knowledge emerges. I consider that the actual process of producers joining forces provides a

better understanding of how they control terms of trade (Fisher & Nading, 2021). The study aims to understand the actual performance of auction groups (Chapters 2 and 3) by investigating the groups' abilities to handle internal tensions and alter market access for smallholders. In Chapter 2, I offer a diagnostic tool that focuses on practices embedded in collective trading. I examine the diversity of how auctions correct errors to understand the ten core areas of tension containment capacity (TCC). Next, the practice of bulking, weighing, recording, sorting, bidding, packing, and making payment is outlined, providing insights into the dimensions of smallholders' inclusion in the value chain. In Chapter 3, I investigate the prominent dimensions that are favourable for vulnerable smallholder farmers in accessing markets.

### 1.3.2 Institutional perspective

I shift attention from organisational fixes to rules that connect to action situations by building on IAD, the institutional perspectives on collective action developed by Ostrom. The framework is mainly used in terms of the collective management of natural resources. I use the framework to analyse collective enterprises in trading. Ostrom's IAD framework provides a helping hand for moving from the formality of the organisational structure, mainly in terms of ownership and representation. I do this to analyse the emergence of rules in highly dynamic action situations.

I look at rules that emerge from the practice of farmer-led collective trading for perishable produce. Farmers' trading enterprises do not always run smoothly. They struggle to cushion tensions when brokering terms of entry into markets. I build on Mwema and Crewett (2019), who applied Ostrom's (2005) approach to understand the rules governing trading channels for smallholders in Kenya and who mention the challenge of researching informal collective trading groups that use unwritten rules. I expand their methods with a methodological choice to focus on practices. I consider that there are rules in self-organised forms groups. The combination of an institutional grammar tool (Crawford & Ostrom, 1995) with a practice study enables me to document seemingly messy trading practices into a systematic and precise structure of rules-in-use (Chapter 4). This methodology refines the application of rules typology to understand how auctions broker market space for smallholders' inclusion. I use the combined method to understand how the different practices construct assorted rules that Ostrom typified. Applying the rules typology helps me understand how smallholders configure a range of rule types and implement different institutional grammars (Chapter 5). This dissertation expects to uncover how auctions use various rules-in-use to sustain smallholders' inclusion terms in food markets.

## Chapter 1

The two theoretical perspectives help to demonstrate the central issue of the thesis: the performance and sustainability of brokering market relations or inclusion through the running of an auction. By analysing the terms through which smallholder chilli producers are included in Indonesian food markets, this thesis looks at how smallholders realise these terms through auctions and how processes enabling terms of inclusion are enacted. Even though many studies claim that collective action in marketing helps smallholders participate in value chains, it is not self-evident these groups last over the longer term (Abate, 2018). As such, empirical research is needed to investigate performance and sustainability in more depth. I link this phenomenon with a practice approach to inclusion to expand on that perspective. By focusing on the auctions, I learn how to analyse forms of collective trading and find ways to diagnose their capacities.

This thesis addresses whether the member-based organisation model fits food market trading dynamics. The farmers' member-oriented group model is widely applied as the answer to forming a collective group (Abate, 2018; Thorp, Stewart, & Heyer, 2005). The study examines two similar groups in their chilli trading operations that have differing ownership structures. This research is similar to Hideto Dato et al.'s (2020) study, which examines for-profit and non-profit groups. In this thesis, one group is a member-based auction, and the other is owned by a farmer-family. The two groups are relatively sustained and able to provide cash payments for the suppliers. Surprisingly, the family-based auction is able to provide cash on delivery, solving one challenging risk in trading. The dissertation assesses the inclusion of smallholder farmers to define what elements encourage an auction group to stay inclusive for smallholders or not.

### 1.4 Research objectives and questions

The general topic of this thesis is the performance of auctions as producer organisations in terms of organising collective trading in an action situation (Figure 1.1). The auctions contain tensions and handle risks. Their performance is expected to explain how they are able to broker market access by including smallholder farmers and maintaining the groups' sustainability in markets. In addition, by using a practice-oriented study, the dissertation generates a methodology to recognise auctions' rules by scrutinising the trading practices through the relationships of the auctions with suppliers and traders. The two research objectives of this thesis are as follows.

- (1) To understand how self-organised farming groups create and sustain the auctions as a mechanism for brokering terms of inclusion for smallholder farmers in perishable product markets.
- (2) To offer a practice-based perspective on the dynamics of collective trading by looking deeper into the dynamics of farmer-led forms of collective trading in order to advance diagnostic capacity.

These research objectives lead to the general research question:

What sustains farmer-led collective trading groups to refashion terms of inclusion in the context of dynamic markets?

I break down the general research question into the following four questions.

- (1) What are the skills involved in self-organised and farmer-led auctions are used to contain tensions inherent in trading to influence terms of inclusion in markets?
- (2) What capacities are mobilised in the trading practices at auction sites to refashion rules and conditions for entry of smallholder farmers into markets for fresh, perishable food products?
- (3) What methods help elicit unwritten rules-in-use for researching the everyday and messy practice of collective marketing?
- (4) How do rules-in-use in collective trading develop critical and empirical perspectives on the capacity of farmer groups to broker and influence the terms of engagement for smallholder producers and markets, and to sustain their joint endeavour?

This thesis also aims to provide a contextual understanding of collective trading practices by farmers' groups to inform interventionist thinking about how self-organised endeavours rearranging the terms of inclusion in food markets can be supported or catalysed.

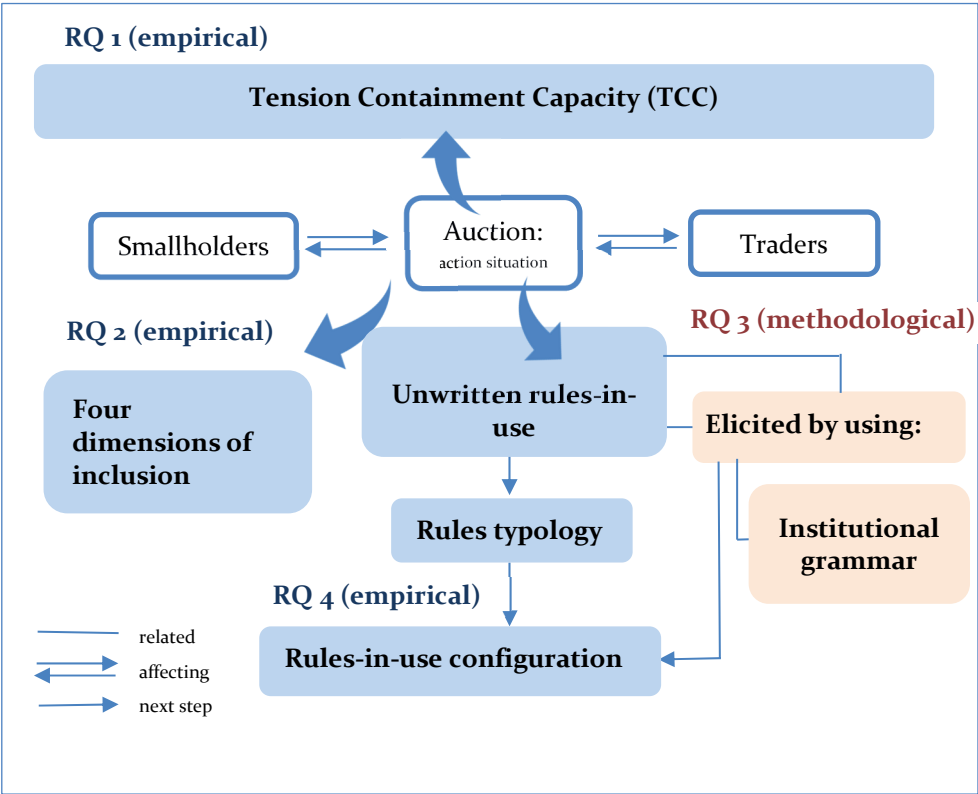


Figure 1-1 Concepts used in this dissertation and focus of research questions (RQ)

1.5 Study design

This study adopts a practice-oriented study approach. Practice-oriented studies look at everyday practices within organisations to understand how actors learn from their everyday routines and make improvements. I use a combination of empirical observations from the practice of running an auction and an institutional lens. The practice lens enables me to look at how the auctions manage daily tensions to find ways to relate smallholder farmers with traders. The practice approach also allows me to capture unspoken rules that emerge from the everyday activities of the auctions.

I employ the study design below to study collective trading and inclusive development. First, I present the study’s setting: smallholder-managed collective trading in rural Java. Then, I validate the case studies that I selected: the self-help smallholders’ chilli auctions. Lastly, I explain the data collection and analysis of the study.

### 1.5.1 Research area

The research setting of this study was self-organised smallholders who organise collective chilli trading using an auction system in a coastal rural area in the south-western part of Yogyakarta. The agricultural land that stretched starting from the beach was partly owned by the Paku Alam, a Javanese princely state within the Sultanate of Yogyakarta. Unlike the sites 12 km to the west of the villages, these areas were not converted into an international airport. Related to this, the smallholders had a certain degree of uncertainty surrounding land tenure. My main focus is on the processes through which vulnerable farmers are integrated into markets by zooming in on the role of self-organised auctions in this area.

Chilli was cultivated in the southern part of the villagers' residential area, in the 43.6 ha of modified sandy area along the Indian Ocean. Each smallholder in the research area held, on average, 0.39 ha of land on which they grew chilli in rotation with melon, watermelon, eggplant, cucumber and mustard. The smallholders also raised livestock to support their livelihoods. Before the farmers grew chilli, the land was a non-arable sandy area. This meant villagers had to earn income outside their villages. The villagers used to work in the wetland area owned by landlords located on the north side of the coastal villages. This began to change in the 1990s when some smallholders converted the area for chilli cultivation.

With the establishment of the auction system in 2004, smallholders increasingly began to expand their planting areas. The smallholders were strongly dependent on petty traders within the villages to sell their chilli. This bottom-up initiative brokered the terms of entry for smallholders, enabling them to connect to larger traders. These larger traders transported chilli using trucks that travelled for up to two days to supply buyers in the capital city, Jakarta, and its surroundings, including areas in Sumatra Island. The two distant locations are between 550 and 2,440 km away from Yogyakarta. The auctions have connected smallholders to outside markets because the auctions enable the smallholders to serve remote consumers.

The selected research location was Kulon Progo and Bantul, Yogyakarta (Figure 1.2). Data were collected over four periods: July – August 2017, January – February 2018, June – November 2018 and May – October 2019. Auctions were held in two seasons: during the dry season in July – August and during the rainy season in December – February. The auction observations took place during the peak of the harvest in July – August.

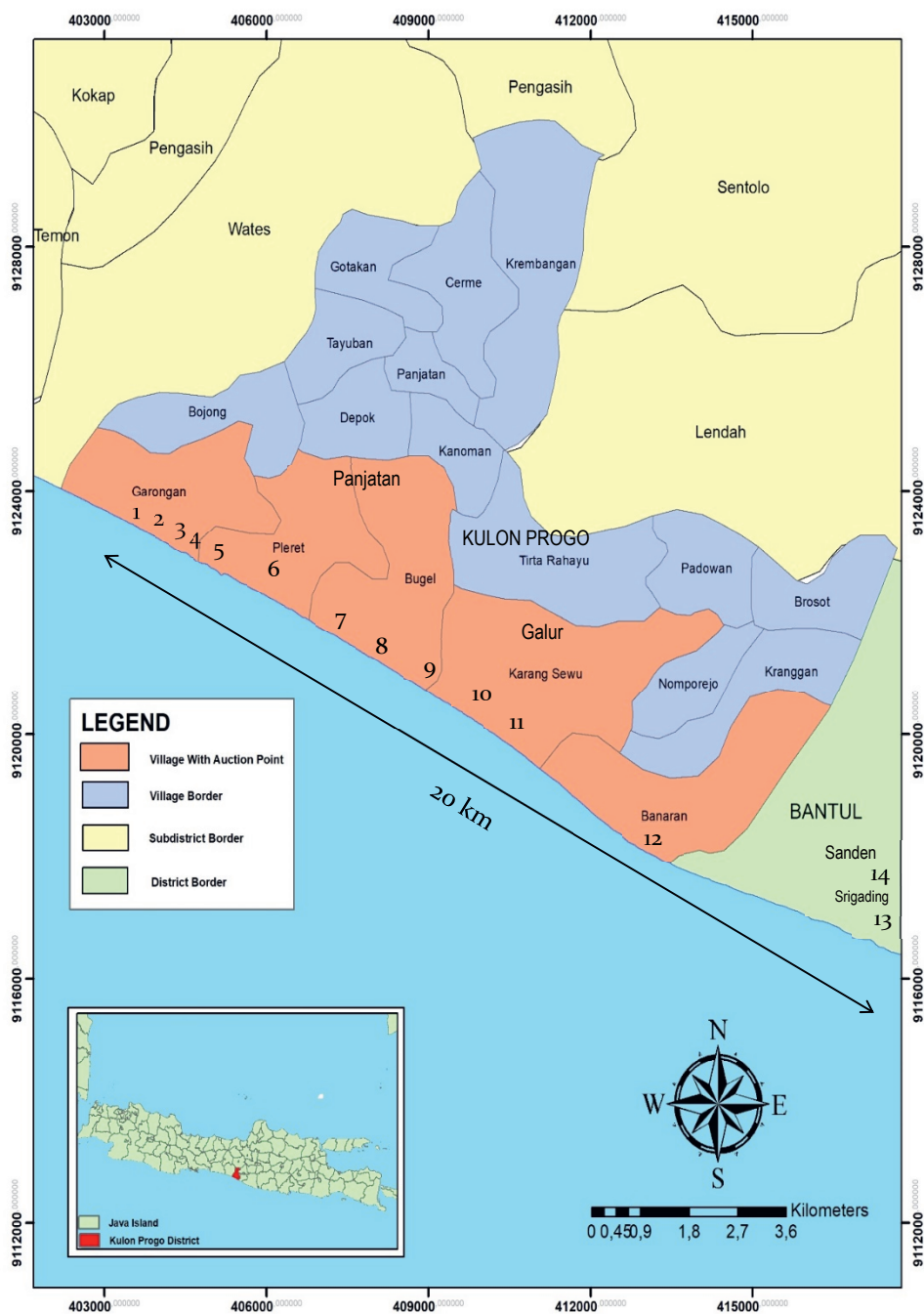


Figure 1-2 Location of the 14 auctions



### 1.5.2 Case study selection

I started by getting an overview of all of the 14 auctions. I selected two of these to study in further depth. I started to look at how many of them lasted and how many dissolved. Analytically, I link auction survival to their ability to withstand tensions (Chapter 2). I focus on two durable auctions to look deeper into their practices and examine how they stay intact in Chapter 3. I clarify my observations further by eliciting unwritten rules. Continuing from there, I develop an approach based on the institutional grammar and Ostrom's IAD (Chapters 4 and 5). I look at how auctions broker trade relations and terms of inclusion in their practices; rules emerge from practice, which are often unwritten.

### 1.5.3 Data collection and analysis methods

I employed mainly qualitative methods and gathered data from various sources (Table 1.1).

Table 1-1. Study design

Chapter		2	3	4	5
<b>Study design</b>	Key concept	Tension Containment Capacity	Four dimensions of inclusion	Institutional grammar	Institutional Analysis and Development
	Approach	Practice-oriented study			
	Methodology	Case studies	Comparative case studies	Case studies	Comparative case studies
<b>Data collection method</b>	Group interview	✓	✓	✓	✓
	In-depth interview	✓	✓	✓	✓
	Phone interview		✓	✓	✓
	Observation	✓	✓	✓	✓
	Survey	✓	✓		
	Trading network		✓	✓	✓
	Price recording		✓		✓

Group interviews with group leaders and trading teams were used to reveal group characteristics, rules and tension containment capacities. The data on ten tension containment capacities exposed the presence of specific tensions and the strategies

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employed to manage them. This demonstrated the kinds of containment capacities the groups had. Ten agency dilemmas are found in trade-related practices (Ton, 2015). The group interviews also aimed to construct event mapping. In this study, event mapping is used to portray the processes at play in agriculture and community, as well as the processes and sequencing of events in auctions. Events in auctions include setting up the auction (weighing, recording, bulking, sorting, price bidding and packing), links with traders, chilli quality checks and negotiation with traders. The events that occurred in the group planting areas were recorded as events in agriculture, while features in the smallholders' daily lives were categorised as events in the community. Relevant information from other research methods was also included in the mapping.

In-depth interviews with the operating team members and traders traced processes in collective trading over two main seasons. The in-depth interviews also covered the life histories of the two categories of actors mentioned above. Phone interviews with remote buyers were used to inform the trading scope of chilli from the research area. Every practice in the auctions was observed for two major seasons of chilli production. Observations were made by being present in the auctions, observing how smallholders delivered their chilli using motorbikes, witnessing the bags weighing and recording, and looking at the bulking and sorting. I also observed how operators organised bidding processes, held the packages and distributed payment. Trading network mapping was used to collect data from three farmers' group leaders on how traders supported each other in bulking volumes to fulfil their buyers' targets. It also informed how new entries shape relations with other traders.

A survey conducted using structured interviews with farmers' group members in the group-run and family-run auctions (Chapters 3 and 5). A qualitative survey of the 14 case studies examined tension containment strategies in collective-trading projects developed by the groups. Documenting the groups' use of skills, tools, techniques and knowledge in managing the auctions provides insights into the groups' capacities to trade and coordinate different tasks. A detailed account of these collective practices allows for an examination of how groups' capacities enable them to influence terms of inclusion (Chapter 2).

Data analysis started by coding the practices from the transcription of the collected data. The data were coded as bulking, weighing, sorting, bidding, payment and organising service provision. Data clustering was done to analyse groups' characteristics, tensions, rules and market structures. The data were also organised based on the key concepts used in each chapter. The events and trade-network

mapping were analysed by categorising collected data based on the events in agriculture and community and connecting the traders based on their relations with each other. More details on the methods used for data collection and analysis are provided in the various chapters.

## 1.6 Thesis outline

The dissertation is organised into the following chapters.

**Chapter 2: Skills to contain tensions in farmer-led collective trading: The case of chilli auctions in rural Java.** This inventory study compares groups accessing fresh produce markets and develops a typology of their capacity to contain tensions in collective trading. It studies how farmers' auction groups handle internal tensions.

**Chapter 3: Are collective trading organisations necessarily inclusive of smallholder farmers?: A comparative analysis of farmer-led auctions in Javanese chilli markets.** Chapter 3 studies how farmer-led collective trading groups include smallholders in their businesses. The study investigates the conditions under which two farmer-led auctions with distinct ownership structures open pathways to transform the terms of inclusion favourably for smallholder farmers linked to them.

**Chapter 4: An integrative method to elicit unwritten rules-in-use: The institutional grammar of collective action in real Javanese food markets.** A method to unravel the unwritten rules-in-use underlying collective trading is a necessary step to take before making a higher-order institutional analysis. This chapter develops a method to elicit unwritten rules.

**Chapter 5: Brokering market entry for smallholders: An institutional analysis of farmer-led auctions in chilli markets, Java, Indonesia.** This chapter zooms in focuses on the auctions that attempt to refashion terms of inclusion in chilli trading. It studies how auctions use a variety of rules-in-use to shape and sustain these terms for farmers in food markets.

**Chapter 6: General discussion and conclusions.** This final chapter reflects on the important findings of the empirical and methodological chapters. It discusses the paper's scientific contribution to the institutional diagnostic process of assessing farmers' agency and trading. The chapter also discusses the thesis' societal relevance with implications for policy and practice in terms of collective marketing interventions.



## Chapter 2

# Skills to contain tensions in farmer-led collective trading: The case of chilli auctions in rural Java

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## 2 Skills to contain tensions in farmer-led collective trading: The case of chilli auctions in rural Java

### Abstract

Many studies use internal governance, member representation and ownership structures to evaluate collective trading organisations controlled by farmers. However, collective trading is not just a matter of setting up an organisational architecture. In contrast, trading is dynamic, and tensions occur naturally in the processes of sourcing, aggregating, and marketing. This paper compares and assesses core areas that enable farmer groups to navigate, learn from and experiment with containing tensions inherent in trading. We start from the everyday performance of 14 self-organised and farmer-led auctions operating in the chilli markets in rural Java. Next, we apply a diagnostic tool that translates qualitative data into scores for containing tensions as proxies for organisational strength and economic performance. Our comparative analysis identifies five skill sets that contribute to performance and sustainability of the farmer-led auctions: assessing the reliability of traders; attaching a group of traders to the auction; organising instant decision-making; sustaining reliability and predictability; and accommodating members and non-members. This skill repertoire emerges from the situated practice of brokering the connection between upstream and downstream sides of agri-food chains and enables farmer groups to refashion terms of inclusion in food markets.

**Keywords** – collective trading, inclusive development, self-organised groups, skills, tensions

### 2.1 Introduction

Strategies aiming for sustainable and equitable development outcomes in small-scale agriculture often emphasise the formation of self-supporting groups based on collective ownership and membership structures (Bikkina, Turaga, & Bhamoriya, 2018; Gugerty, Biscaye, & Leigh Anderson, 2019). This perspective makes farmer organisations a central pillar in rural development and results in numerous endeavours inducing groups tasked to organise collective marketing expected to generate welfare and reduce poverty amongst smallholder farmers (Abdul-Rahaman & Abdulai, 2020; Ochieng et al., 2018). Nevertheless, the effects of group formation are not self-evident. Collective marketing groups are challenged to organise internal

and external relations with group members, service providers and actors in markets (Kaganzi et al., 2009). They have to find ways to balance or commensurate the interests and capacities of members or other suppliers selling to them, while also meeting the quality standards and quantity requirements of buyers in the market. Tensions that threaten farmer groups are frequently related to financial issues (Poole & Donovan, 2014). Correspondingly, farmer-led organisations managing the aggregation, processing and marketing of agricultural produce have to navigate tensions emerging from individual interests of smallholder suppliers, who may opt selling to other buyers at the farm gate (Dissa et al., 2022) - the free riding problem- and the collective interest in ensuring a consistent supply to and organising remunerative transactions with buyers in the market.

Therefore, both newly formed and established groups face multiple tensions, which necessitates them to test, continuously modify, and plausibly rearrange the relations they have with suppliers as well as buyers (Dentoni et al., 2020). This implies a time and resource consuming learning process, in which some groups are able to develop skills to sustain organisational capacity while also being effective in refashioning the terms of inclusion (Untari & Vellema, 2022). This makes the governance modalities of farmer-led marketing practices a focal point of the analysis (Barham & Chitemi, 2009; Markelova et al., 2009). Research on collective marketing strongly resonates with the history of farmer cooperatives in Europe and North America. This line of inquiry (Bijman & Wijers, 2019; Hellin et al., 2009; Mwambi, Bijman, & Mshenga, 2020; Ochieng et al., 2018) relates economic performance strongly to internal governance arrangements and organisational characteristics, such as formal rules and regulations regarding collective ownership, membership and representation, capacitated staff and a functioning office organising a preferably large turnover. Other studies on collective marketing in emerging and developing markets emphasise the importance of social capital or the embedding of farmer organisations in local communities (Bernard, Collion, De Janvry, Rondot, & Sadoulet, 2008; Gruère, Nagarajan, & King, 2009). In addition to looking at tensions or contradictions from an organisational or social perspective, our research starts from contradictions and tensions inherent in and emerging from the situated performance of coordinating aggregation, processing, and marketing in dynamic market environments.

In this paper, we focus on the capacity to handle tensions and coordination problems directly associated with the practices of buying and selling and more specifically of aggregation. The auctions coordinate quality and quantity amongst the smallholder suppliers while serving as a bridge to the higher levels of the value

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chain (Widadie, Bijman, & Trienekens, 2022). We seek to understand whether and how tensions can become a positive force for farmer groups, because they create ‘institutional friction’ that accommodates invention, flexibility and long-term adaptability. We conceptualise the composite practice of farmer-led auctions as the site where skills and knowing contributing to organisational strength and economic performance are developed and connected (Nicolini, 2012; Vellema, Obeng-Adomaa, & Schoonhoven-Speijer, 2022). Complementary to literature concentrating on technical and organisational criteria to assess the compliance of producer organisations with a predefined model, often that of a cooperative, our study of the actual and evolving practice of aggregation and marketing opens space to understand the viability and performance of farmer organisations as a composite and contingent outcome.

For this purpose, we assess and compare a selection of farmer-led chilli auctions accessing fresh produce markets in rural Java, Indonesia. Some of these auctions were sustained, while others dissolved or changed ownership, while the auctions operated in a similar market setting and in the same production area. We focus on capacities to navigate and contain tensions that emerge in the practice of running auctions, which exposes whether and how the groups learn and correct their mistakes in organising the daily bidding and trading operations. We investigate the following question: which skills do self-organised and farmer-led auctions apply to contain the tensions inherent in trading in order to influence the terms of inclusion in markets?

We use a diagnostic tool developed by Ton (2015) to reveal the presence and use of skills to contain tensions and consequently advance collective trading. The investigated auctions broker the engagement of smallholder farmers with buyers in dynamic markets. The farmer-led auction originated from a small-scale economic group and the principle of running the auction and organising a bidding process gradually spread throughout the area. The daily management of the auctions was usually delegated to a small group of farmers present at the site of the auction, which took decisions affecting the transactions with both suppliers and buyers. We adopt the Tension Containment Capacity (TCC) tool (Ton, 2015; Ton, Flores, Monasterios, & Yana, 2015) to diagnose the capacity of these farmer-led auctions to sustain their presence and performance in the rural community and the market. A comparison of 14 farmer-led auction groups demonstrates the ‘reading’ of organisational agency in terms of skills in coping with tensions emerging in the interface between suppliers and traders. The tool builds on qualitative interviews and observations of the practices related to aggregation and marketing in food



markets (Schoonhoven-Speijer & Vellema, 2020). Subsequently, the tool translates qualitative data into a scores of a quantifiable proxy of the combination of organisational capacity and economic performance. This analytical approach is appreciative of organisational skills emerging in a learning-by-doing process anchored in the everyday realities of farmer groups.

In the following section, we present an analytical framework for assessing the 10 core areas of TCC, categorised into four domains of trading encountered by farmer-led collective trading groups. This is followed by information on the collection and analysis of data for the 14 case studies. We then present the empirical results of the TCC analysis according to four categories: sourcing, transactions, internal governance, and external governance. We close by discussing and formulating conclusions concerning the skills endeavours of farmer-led initiatives to refashion, arrange and sustain the terms of inclusion in dynamic markets.

## 2.2 Analytical Framework

As identified by Ton (2015), authors have approached the managerial assessment of the organisational social capital of collective trading according to a variety of aspects, including administrative management, leadership, decision-making, financial transparency, trust, loyalty, commitment, history and the prevention of undesirable behaviours. We investigate how different collective trading groups manage tensions in a variety of conditions to sustain their operations. By focusing on the trading practices of these groups, we shift attention from a focus on the organisational architecture to the everyday practice of running an auction showing how groups evolve and learn from their errors (Nicolini, 2011). We zoom in on practices in which these organisations orchestrate their everyday practices without necessarily involving an overall coordinating actor.

Our study applies the TCC tool as a method for examining the performance of small farmer organisations. As a diagnostic tool, it assesses organisational strength based on literature and conversations with farmers' organisations. It emphasises the attitude of entrepreneurial business units that are willing to use information from value chain partners, to modify their practices, to fail many times and to learn from their mistakes (Dung, Bonney, Adhikari, & Miles, 2021). The TCC tool comprises 10 major agency problems identified by Ton (2015), which represent a tension:  $T_x$ . For the purpose of our research, we aggregate the 10 core areas of tension, as identified by Ton (2015), into more limited domains that inform the performative activities in gathering volumes, conducting transactions, and managing internal governance and external governance. The auctions represent a form of collective trading through

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which farmer groups are involved in sourcing, transacting, governing internally and externally (Figure 2.1). We seek to identify which types of groups remain intact while handling a variety of internal tensions under difficult market conditions. Overall, the practice managed by producer organisations engaged in trading reflects the capacity of these groups to handle their inherent tensions.

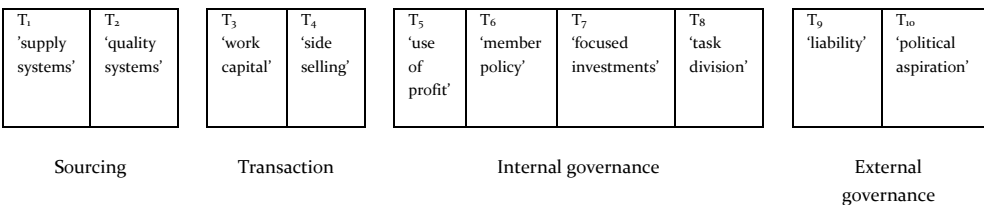


Figure 2-1 TCC diagnostic tool to assess major agency problems in trading domains

Source: Ton (2015); authors

2.2.1 Sourcing

We categorise T<sub>1</sub> ‘supply systems’ and T<sub>2</sub> ‘quality systems’ as the sourcing domain. A supply system can be problematic when the output market is constrained, thereby limiting the opportunities that farmers have to deliver in terms of supplies to collective trading groups. To ensure sufficient volumes, farmers’ economic groups provide services to attract suppliers. Unfortunately, rural businesses often have difficulty compelling farmers to repay the inputs, such that businesses tend to be reluctant to sustain the assistance. At the same time, however, their trading relationships are based on trust and gained through repeated interaction to enforce contracts (Fafchamps & Minten, 2001). For this reason, service providers are unlikely to sue violators, even when service agreements have been recorded (Bellemare, 2010). Community-based auctions operate in a similar manner in their daily trading interactions to establish joint trading.

Economic organisations maintain their quality reputations by rejecting low-quality products that could lead to aggregated deterioration (Winfrey & McCluskey, 2005). As suggested by Yaseen et al. (2018), market-oriented farmers integrate business attitudes into their farming activities. Groups manage the flow, quality, and packaging of products. In the current study, we use sourcing skill to represent the capacity to establish auctions by gathering volumes that meet the desired quality standard.

### 2.2.2 Transaction

We categorise the  $T_3$  'working capital' and  $T_4$  'side selling' as the transaction domain. The capacity to manage working capital is indicated by the commitment of farmers to an orientation to long-term economic gain (Cechin, Bijman, Pascucci, & Omta, 2013) and loyalty as a way of avoiding long-term side selling (Mujawamariya, D'Haese, & Speelman, 2013). Transactions represent an advanced capacity of groups to operate auctions, as they are intended to cope with market failures and support efficiency by solving high transaction costs, asymmetric information and externalities (Thorp et al., 2005). These areas are not always mastered by every producer organisation.

Even though side selling appears to be economically illogical, it is a rational choice for the living strategies of smallholders (Mujawamariya et al., 2013). Economic organisations that do not facilitate their members with competitive prices and services will ultimately fall behind in terms of market share and be pushed out of commercial or into reorganisation. Unfortunately, many economic organisations are often challenged by price transparency, delayed payment and competition with local traders (Haddad, Ton, Sraïri, & Bijman, 2017). The inability to solve transaction problems can be regarded as aggravating side selling behaviour in auction groups.

### 2.2.3 Internal governance

We cluster  $T_5$  'use of profit',  $T_6$  'member policy',  $T_7$  'focused investments' and  $T_8$  'task division' to represent the internal governance of the groups. Internal governance refers to the construction and activities of organisations in the creation of their decisions. It also indicates the residual claim right on the profits of the organisation (Bijman, Hanisch, & van der Sangen, 2014). Internal governance involves the management of constraining elements by sustaining and reinforcing the rules of the group. It coordinates the interaction between the individual members of the group to maintain economic activity.

In governing the use of profit, re-investment in collective action is a responsibility associated with a long-term vision (Kaganzi et al., 2009). For farmer-led marketing groups, profit can be allocated to the group's working capital to finance the next marketing season. Open membership creates a free-rider conflict for economic organisations, as the investment return is not fair for individual investment (Chibanda, Ortmann, & Lyne, 2009). The failure to differentiate services for members and non-members or for active and passive members creates tension amongst individuals. For this reason, economic organisations should perform transparency to create decent representation (Biénabe & Sautier, 2005). The

explanation signifies that the investment plan needs to involve the concerns of members, even though it is not always attractive to do so.

Internal governance also relates to work performance. Marketing groups must be democratic, provide the members with a sense of participation and ownership, and delegate tasks and mechanisms to replace incompetent board members (Robbins et al., 2004). Local community organisations are nevertheless likely to pass these positions along to the older members of the community based on age, legacy, and task rotation. It is essential for operators to be selected rather than elected (Bikina et al., 2018), and this makes young adults confront local norms. In many cases, no one will be able to perform the marketing tasks (Robbins et al., 2004). This mechanism renders management succession challenging within these groups, even if other competent individuals are available to operate the economic organisation.

### 2.2.4 External governance

We categorise  $T_9$  'liability' and  $T_{10}$  'political aspiration' as external governance. This collective domain provides the context of the auction operated by the groups that either enabled or constrained specific actions. External governance refers to the organisation's attitudes towards traders and the individual orientation of the elites within the groups.

The inclusiveness of farmer-owned businesses is reflected in the willingness of members to take on organisational risk. A business that provides smallholders with more ownership exposes them to greater risk. A cooperative owned and governed by producers is characterised by less information asymmetry, as the producers are included in the transaction (Sykuta & Cook, 2001). Due to their producer-led nature, however, such cooperatives are less able to adjust themselves to become customer-led economic organisations, as they inherently place the interests of producers before those of customers (Bijman & Hendrikse, 2003). For this reason, liability is likely to create a paradox if the interests of members and traders are not aligned.

Economic organisations could fail if the organisational culture allows elites to have a vested interest and individual aims, making it difficult to achieve the purpose of the collective work. In some cases, members may become elites and gain significant power solely because they are clever or have a high income. This status could result in a number of advantages, including the ability to play a role in interactions between formal institutions (contracts, incentives, authority) and informal institutions (norms, routines, political processes) (Zenger, Lazzarini, & Poppo, 2000). The dominance of such individual voices could nevertheless serve to make other

members unwilling to act. Alternatively, such control by elites could even silence other members. Elites who hold positions in collective organisations may thus either enable or constrain economic activity. This study focuses on roles that elites play that either contribute to the longevity of farmer-led organisations or cause them to dissolve.

## 2.3 Data and methods

### 2.3.1 Research area

The study took place in 2017–2018, with a survey of all groups performing collective chilli trading in the coastal land farming area of Yogyakarta, Indonesia. These groups were located in two shared-border districts with similar agroecology conditions. The farmers in the region concentrate on horticulture (e.g., chillies, melons, watermelons, eggplant, mustard, and cucumbers). A few decades ago, these farmers were quite vulnerable and marginalised; nowadays, after receiving land titles, their conditions for growing fresh produce in a profitable manner improved chilli peppers successfully. In this area, chillies were grown twice a year: in the dry season (from March to July) and in the rainy season (from August to January). The farmers were connected to a network of traders in local, regional and national chilli markets, initially via petty traders and more recently via farmer-led auctions. The groups had to cope with similar price setting processes in distant markets, and they transacted within the same network of traders. In the villages, petty traders also bought from the farmers. Before the invention of the chilli auction system in 2004, the farmers had sold to petty traders located in their villages, with prices differing amongst farmers. Prices of chilli sold via auctions generally were the same for all farmers; the main differences between auctions were found in modes of payments, service provision, or production and marketing risk strategies (Untari & Vellema, 2022). The selected auctions transact with a range of 10–16 local or regional traders.

Groups or farmers organising the auctions sold their products to traders via a self-organised bidding procedure. Most groups consisted of around 100 members and many sourced from non-members as well. The chilli auctions were managed by a group of 2–16 farmers, who acted as the operating team, running the procedures of weighing, recording, sorting, bidding, packing and payment to farmers. The auction groups were the marketing divisions of the farmers' groups. They served farmers, regardless of whether they were members from the same village or non-members from nearby villages, by selling their chillies collectively in determined auction sites. Traders participated in the auctions by sending bids directly or through text messages (WhatsApp or SMS). These traders came from the same area or nearby

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districts. After the auction announced the highest bid, the trader who had won the auction transported all the chillies (amounting to between two and five tonnes) by lorry to their buyers in the other cities surrounding Jakarta or Sumatra Island. The auctions were always held daily (often at night), following the flow of the chilli harvest.

### 2.3.2 Data Collection

We identified 14 chilli auction groups in seven villages located in the research area. We collected data through 14 group interviews, 32 interviews with key informants (the group leaders, the trading team and the farmers involved in the auction) and six expert interviews. Interviews were complemented by the analysis of documents related to running the auction, such as minutes, trading records, and lists of meeting attendees. The group interviews were carried out with the group leaders and the trading team. Each group interview involved three to six participants. The group interviews were intended to explore the organisational structure and market contexts of the groups. First, we identified the group characteristics: catchment area, establishment of groups and auctions, group size, ownership structures, life cycle, support from donors, obligation to supply, fees, profit distribution, service provision and involvement in decision-making. Second, we asked about the market structure: access to working capital, the responsibility of farmers in relation to market risks, and networks with traders. We then structured the various concerns of board members and organisation members, as well as their practices and capabilities to accommodate these concerns in their internal agreements. We investigated the 10 TCC core problems of the groups and how their operators contained these tensions in their everyday auction practices via regulating member supply, assuring quality, reducing the need for working capital, avoiding side-selling, defining ways to distribute profits, distinguishing profits and services to members and non-members, deciding on investments in strategic interests, delegating and supervising trading assignments, assuming liability in agreements and loans, and managing the political aspirations of the operating team. In the interviews with key informants, we also focused on the 10 aforementioned TCC core areas. More specifically, they addressed whether the groups encountered each of these tensions and what they did to react to them. We also interviewed experts knowledgeable about the history and endeavours of the overall auction groups and traders operating in the area.

### 2.3.3 Data analysis

We analysed the data in three parts: TCC coding, group-characteristic coding, and market-structure coding. The group characteristics and market structures were coded descriptively, based on the information collected from the group interviews and the secondary data triangulation. We then coded TCC based on the weighting factor of the tension-containment variables (Table 2.1). This was based on qualitative data from group and key informant interviews on the practice of containing the 10 tensions, as well as on whether there were tensions and how they were handled. To ensure objectivity, we weighted the scores comparatively after all data were coded. Nevertheless, different sources sometimes provided different responses. For this reason, we combined several interviews and checked them with the key informants and the experts of the auctions. The TCC weighting factor (Ton, 2015) applies as follows: organisations that contain more tensions have higher social capital than do organisations that either experience fewer tensions or that never contained them. An organisation that is able to contain given tensions is thus considered stronger than one that is still looking for a way to solve the problem or that does not do anything to solve it. As shown in Table 2.1, the tension and containment scores were then multiplied to result in a TCC value ( $t \times c = \text{TCC}$ ). After entering the TCC scores of each group, we analysed the relevance of each item of the tension question.

Table 2-1 *Weighting factors for tensions and containment levels*

Tension level	Score for tension (t)	Containment level	Score for containment (c)
The tension comes up in the activities of our organisation	3	We managed to resolve it with agreements and organisational arrangements	3
The tension hardly comes up	2	We are looking for a way to resolve it	2
The tension never comes up	0	We do not need to resolve anything	1

Source: Ton (2015)

## 2.4 Results

The descriptive accounts of this variety of practices and actions observed in the auctions indicate how auction operators gained and used skills in containing tensions inherent in collective trading. This section presents the qualitative results and how these translate into quantifiable proxies related to the 10 core areas of tension presented in Table 2.2. We organise these 10 areas into four domains covering the composite practice of trading: sourcing, transactions, internal governance, and external governance.

Table 2-2 Group TCC scores

No	Scores																			
	Sourcing						Transaction						Internal governance							
	T <sub>1</sub> 'supply systems'			T <sub>2</sub> 'quality systems'			T <sub>3</sub> 'working capital'			T <sub>4</sub> 'side selling'			T <sub>5</sub> 'use of profits'			T <sub>6</sub> 'member policy'				
	t	c	tc	t	c	tc	t	c	tc	t	c	tc	t	c	tc	t	c	tc		
1	0	*	1	=	0	3	*	3	=	9	3	*	3	=	9	3	*	3	=	6
9	0	*	1	=	0	3	*	3	=	9	3	*	3	=	9	3	*	3	=	6
2	0	*	1	=	0	3	*	3	=	9	3	*	3	=	9	3	*	3	=	9
11	0	*	1	=	0	3	*	3	=	9	3	*	3	=	9	3	*	3	=	6
5	0	*	1	=	0	3	*	3	=	9	3	*	3	=	9	3	*	3	=	6
7	0	*	1	=	0	3	*	3	=	9	3	*	3	=	9	3	*	3	=	6
13	0	*	1	=	0	3	*	3	=	9	3	*	3	=	9	3	*	3	=	6
8	0	*	1	=	0	3	*	3	=	9	2	*	3	=	6	3	*	3	=	6
12	0	*	1	=	0	3	*	3	=	9	3	*	3	=	9	2	*	3	=	2
3	0	*	1	=	0	3	*	3	=	9	3	*	3	=	6	3	*	3	=	9
10*	0	*	1	=	0	3	*	3	=	6	3	*	3	=	6	3	*	3	=	6
6*	0	*	1	=	0	3	*	3	=	9	3	*	3	=	6	3	*	3	=	6
14**	0	*	1	=	0	3	*	3	=	9	3	*	3	=	6	3	*	3	=	0
4*	0	*	1	=	0	3	*	3	=	9	3	*	3	=	9	2	*	3	=	6

No	TCC												TCC Category					
	TCC (T <sub>7</sub> +T <sub>8</sub> +...+T <sub>10</sub> )																	
	T <sub>7</sub> 'focused investments'				External governance				T <sub>10</sub> 'political aspiration'									
	T <sub>8</sub> 'task division'				T <sub>9</sub> 'liability'				T <sub>10</sub> 'political aspiration'									
	t	c	tc	t	c	tc	t	c	tc	t	c	tc						
1	3	*	3	= 9	3	*	3	= 9	3	*	3	= 9	0	*	1	= 0	69	High
9	3	*	3	= 9	3	*	3	= 9	3	*	3	= 9	0	*	1	= 0	66	
2	3	*	3	= 9	2	*	3	= 6	3	*	3	= 9	0	*	1	= 0	66	
11	3	*	3	= 9	3	*	3	= 9	3	*	3	= 9	0	*	1	= 0	63	
5	2	*	3	= 6	3	*	3	= 9	3	*	3	= 9	0	*	1	= 0	60	
7	3	*	3	= 9	2	*	3	= 9	3	*	3	= 9	0	*	1	= 0	59	
13	3	*	3	= 9	3	*	3	= 9	3	*	3	= 9	0	*	1	= 0	59	
8	2	*	3	= 6	2	*	3	= 6	3	*	3	= 9	0	*	1	= 0	57	
12	3	*	3	= 9	2	*	3	= 6	3	*	3	= 9	2	*	3	= 2	57	
3	3	*	2	= 6	3	*	2	= 6	3	*	2	= 6	0	*	1	= 0	54	
10*	2	*	3	= 6	3	*	3	= 9	3	*	3	= 9	3	*	1	= 3	54	
6*	3	*	2	= 6	3	*	2	= 6	3	*	2	= 6	0	*	1	= 0	51	
14**	2	*	3	= 6	2	*	3	= 6	3	*	3	= 9	0	*	1	= 0	51	
4*	2	*	2	= 4	3	*	2	= 6	3	*	2	= 6	0	*	1	= 0	46	



Note:

- \* : dissolved, data in 2018
- \*\* : new group
- T1–10 : tensions/core areas
- t : tension
- c : containment
- tc : group's capacity to contain tension (tension\*containment)
- TCC : Tension Containment Capacity (total tc)
- Score 9 : group experienced tension in the core area and managed to contain it.
- Score 6 : group experienced tension in the core area and looked for a way to solve it—or—  
group experienced hardly any tension in the core area and managed to contain it.
- Score 4 : group experienced hardly any tension in the core area and looked for a way to solve it.
- Score 3 : group experienced tension in the core area but did not feel the need to solve anything.
- Score 2 : group experienced hardly any tension in the core area but did not feel the need to solve anything.
- Score 0 : group never experienced tension in the core area and thus did not need to solve anything.

### 2.4.1 Sourcing

As shown in Table 2.2., supply limitations did not constrain all auction groups. In a group interview, the coordinator of Group 9 noted that an auction could bulk between one and five tonnes of chillies during the harvest season. No chillies remained unsold in any auction. Any farmers who produced chillies of good quality were allowed to access and supply the auctions. Although the operators warned farmers who did not sort their chillies before supplying them, not all groups managed to reach the quality standard. The quality decreased during the rainy season, as the chillies became wet and quickly deteriorated. One of the groups that scored low on TCC and that dissolved (Group 10) had looked for a way to resolve the low quality of chillies supplied by the farmers. In a group interview, the group's secretary mentioned that they accepted low-quality chillies because they were afraid that the farmers would otherwise sell their chillies to local traders.

The size and age of the groups (descriptive statistics, see the appendix) were not related to their TCC scores on quality systems. Groups 2, 7, 12 and 13 consisted of less than 80 members but still operated and secured quality supplies. In addition, regardless of whether they were newly formed or had been sustained for a long time, the auctions encountered a variety of issues with regard to ensuring that farmers met the required standard of quality for their chillies (e.g., due to outbreaks of pests and diseases, rapid deterioration during the rainy season, and the mixture of different qualities of chillies by farmers). Nevertheless, other characteristics may explain the capability of the auctions to gather volumes. For example, Group 2 managed to bulk because it provided cash payment, and Group 12 gathered sufficient volumes from its large catchment areas.

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In case farmer groups managed the auction, the obligation was to sell at least 70% of the harvest to the auction. Groups 2, 3 and 12 were an exception, with small groups of farmers running or privatising the sales. All auctions used their profits to provide rewards (e.g., cash payments, seeds, or seedling loans) and cash loans to attract the farmers to supply them. The only exceptions were Group 3, which dissolved, and Group 14, which was newly established. The leader of Group 14 noted that, if the group managed to pay cash, it would oblige the farmers to sell most of their produce at the auction. Groups 1, 9 and 10 used 50% of their revenues to finance the auction and the other 50% to provide services for members.

Even though all auction groups were familiar with the practice of quality enforcement and always tried to oblige all farmers to supply the auctions, only Group 10 was unable to control the behaviour of its members in terms of standardising quality. The members sold their chillies to the auction only when the auction operators reprimanded them. In addition, the members were more interested in focusing on their shrimp farms. As a result, the auction did not achieve sufficient volume to generate more profit.

### 2.4.2 Transaction

The farmers organised transactions with traders by making deals through bidding and then transferring the chillies to the traders. These traders paid for the chillies that they won after a maximum of three auction periods. After receiving payments from the traders, the auction operators distributed the money to the farmers. Transaction skills were the most challenging core area for the auctions, as they did not have sufficient working capital to compensate for delayed payments from traders. As revealed by the operator of Group 1 during a group interview, the traders were not able to pay on time because their remote buyers paid late as well. This situation led some farmers to sell to the local traders for cash on delivery. At the same time, the operators had to maintain relations with the traders in order to keep the business running.

Side selling occurred in all groups with low TCC (Groups 3, 4, 6, 10 and 14), as well as in some groups with high TCC (Groups 8, 9 and 11). Only several high-TCC groups found ways to tolerate delayed payments from traders while reducing side selling and were able to manage this tension by accessing their accumulated working capital, bank loans or personal assets. In a group interview, the auction coordinator of Group 1 indicated that they had managed to gather sufficient working capital, while Groups 2 and 12 borrowed from Bank Rakyat Indonesia and Group 7 used money collected by the shareholders. Groups 5 and 13 solved the problem by

agreeing with the farmers that they could take their payment after two or three days. These groups had developed the payment mechanisms by learning from their auction practices.

In an interview, the leader of Group 12 reported that he did not have any problem with volume, and that he was even able to split his auction's sales into the night auction and sales to petty traders in the afternoon before the night auction started. Groups 4 and 10, which were dissolved, did not address handle side selling (tension containment=3). Group 10 also did not oblige the members to supply chillies to the auction. Meanwhile, Group 4 obliged members to sell 70% of their produce at the auction. As revealed by the group's leader in a group interview, however, many members disobeyed this rule and chose to supply the local traders.

The groups that had many tensions (tension=3) and looked for solutions (containment=2)—including Groups 2, 3, 5, 6, 11, 13 and 14—indicated that side selling was related to the unavailability of cash payments. The groups identified this as the main reason that farmers tended to sell to local traders, even though this resulted in them receiving less than the payments from the auction. Group 14 reported being afraid to ask members to sell all of their produce to the auction, as the group was not able to provide cash payments. Similarly, in a group interview, the secretary of Group 13 mentioned that some farmers did side selling and did not attend group meetings, in order to avoid interaction with the operators. The avoidance of meeting the operators was intended to evade seed loan repayments. The disloyal behaviour of repaying the seed loan service provided by the auction groups caused groups to dissolve (as was the case for Group 6). This made it impossible for the group to finance the auction.

#### 2.4.3 Internal governance

Internal governance mechanisms are closely connected to financial management. After accomplishing the transactions, the operating team collected fees set per kilogram of chillies, amounting to 100–750 rupiahs per kilogram of chillies. The fees could progressively follow the increase of chilli prices (as applied in most groups) or when prices remained the same throughout the season (as was the case in Groups 7 and 14). Groups did not differentiate the fee per kilogram of chillies between members and non-members. As revealed in the interview with the auction leader of Group 2, this core tension was not an issue amongst the members, as the produce supplied by non-members even contributed to the income of the groups. Fees were allocated to wages of the operators, working capital, and services of the auction.

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The groups were aware that the use of profits for operational purposes was sensitive. Many groups struggled to convince their members to accept the profit usage (containment=2). All groups tried to keep the fee per kilogram of chillies low, made their profit usage transparent and used their profits for seed loans or cash payments to members (except Groups 3 and 14). They also enabled members to access the auction reports, thereby allowing them to engage with the management of the auction, and decisions were made to invest profits in financing the next auction or allocating some of the profits to support social and religious activities (except Groups 2, 3, 10 and 12). Groups confronted complaints concerning profit usage either often (tension=3) or rarely (tension=2), although they did so in different ways. When members noted that the operators had failed to provide incentives, had not invested the profits in seed loans, or had been unsuccessful in running the auction in specific ways, many farmers left the auction. Similarly, failure to differentiate incentives for members and non-members tended to generate conflict amongst members. Members of Groups 3 and 6 questioned the use of profits (tension=3). These tensions caused members to lose trust and become reluctant to adopt a long-term commitment to the auction. Group 6 was dissolved in 2018, and Group 3 has been on the edge of dissolving. Most of the groups differentiated between members and non-members mainly in terms of rights to obtain services (e.g., seed loans or cash payments). The groups prioritised services to its members and non-members were not eligible to access the seed loans.

Groups 2 and 3 faced high tension when internal conflicts arose between former members and new members concerning the right to working capital. Since 2017, the working capital in these groups had been distributed, leaving no financial support for the auction group. The two groups then decided to continue the auctions independently. Group 2 learnt that it could finance its auction by accessing loans through the Bank of Rakyat Indonesia, while Group 3 counted on delayed payments from traders to pay the farmers. Although the groups allowed more farmers to access their auctions, they also appreciated the contributions of members by prioritising them for payments. The issue of focussed investments affected all groups with low TCC scores. Group 3 was not able to attract more farmers to supply chillies to its auction, and Group 6 dissolved because it lost the members' shares.

In addition to financial management, governing auctions involved a variety of tasks. Operators were responsible for orchestrating the bulking, weighing, sorting, volume, and quality broadcasting to the traders, and collecting bids from traders, packing, and making payments. This also involved controlling quality. The leader of Group 1 mentioned that groups applied a variety of responses when faced with undesirable

quality of the chilli supplies. Efforts to enforce the quality standard included bringing the members together in group meetings or reprimanding them informally.

Most of the groups with TCC scores below 60 experienced tensions related to task division. Common problems amongst these groups included difficulty making collective decisions to find successors and distrusting the auction management regarding sorting, weighing, and payment. Nevertheless, Groups 2, 3 and 12 did not involve the suppliers in the task division, as they were privatised.

#### 2.4.4 External governance

In addition to governing their internal activities, groups dealt with various external actors: traders, petty traders, and non-members. The operating teams of all auctions took daily trading decisions, thereby excluding the members. Although the delayed payments from traders required the operational team to co-finance, the operators also had to report the actual quality of the chillies to ensure the participation of traders in the auction. In addition, operators had to make immediate decisions regarding delayed payments or defaulting traders.

Interviews with leaders of Groups 1 and 9 revealed that all auction groups were coordinated by an associative body of farmers' markets, known as Aspartan, with the exception of Groups 13 and 14, which were located in different districts. Through the information shared in the associative body, Group 1 had once replaced an auction winner because he was known for defaulting in another auction. Groups 1, 9 and 12 shared knowledge with the associative body concerning the backgrounds of traders, the networks of traders in sharing chilli volumes amongst themselves and the marketing experiences of auctions with new traders. Group 12 tested new traders within three transactions. Through the associative body, the operators made different decisions related to the punctuality of traders in repaying the chillies.

Liability reflects the willingness of members to take responsibility for the consequences when traders delay their payments or, in rare cases, do not pay. In some groups, liability was also transferred to members. Most groups had high scores on liability. The members of all groups were willing to accept the commercial risks of losing chilli payments from undisciplined traders, except for Groups 2, 3 and 12, which were privatised and did not require co-responsibility on the part of suppliers.

The groups managed delayed payments in different ways. For example, Group 12, a family-managed auction, did not receive many complaints from suppliers and handled the commercial risks towards traders (tension containment=6). The independent auction groups (Groups 2 and 3) did not oblige farmer-suppliers to take

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liability for their transactions with traders, as the auctions were operated by several people who worked together and were jointly responsible for taking decisions regarding the risks. Groups 2 and 12 financed their auctions by accessing loans from Bank Rakyat Indonesia, whereas Group 3 did not. This left the group free to decide how much profit would be distributed for the operating team and its auctions.

We observed that Groups 10, 12 and 13 had issues relating to political aspiration, as the group leaders simultaneously played double roles as local traders and auction operators. For example, in addition to being a farmer, the leader of Group 12 used to be a local trader, which required him to have a commercial network. He also generated more income than the other farmers did. In an interview, he mentioned that he shared his daily auction price with the other two trading spots operated by two petty traders in the village. The conditions generated an influential position for the leader of Group 12 within the community. As noted by the leader of this group, all risks had shifted to him when he privatised the group's auction. The members were not obliged to bear the risk of the chillies transferred to the traders. These leaders used their trade networks and established relationships to maintain the business trust between the auction group and the traders (e.g., to maintain the punctuality of chilli payments).

### 2.5 Discussion

This study concerns a set of groups in a similar area that were jointly managing chilli trading using an auction system. There were differences in the performance and sustainability of the auctions, visible in the viability of the auction operations, the size of the catchment areas, group size, use of profits and functioning of the operation teams. Our comparative analysis of the auctions focuses on the capacity to contain tensions inherent to brokering the connection between upstream and downstream sides of agri-food chains. We connect the containment of tensions to identifying a repertoire of skills, following Orlikowski (2002), that partly explain whether the farmer-led auctions remain intact or dissolve. These skill sets, presented in Table 2.3., are constituted in the practice of running an auction and are open for modification based on the trading context. The insights from our practice-oriented analysis complement and sometimes contrast literature on collective marketing and farmer cooperatives that are inclined to emphasise the formal organisational setup of farmer groups.

Table 2-3. Skills essential for enhancing collective trading practice

Trading domain	Practice	Activities comprising tension containment	Skills constituted in practice
External governance	Selecting traders	Knowing every new trader's origin and network Monitoring the transaction behaviours of traders and sharing market intelligence through the associative body	Assessing the reliability of traders
Transaction	Making a deal	Reducing side selling on the part of members to ensure sufficient volumes of chilli Tolerating the traders' delayed payments	Attaching a group of traders to the auction
External governance	Responding to market dynamics	Discharging defaulting traders Being transparent in reporting the quality of chillies to traders	Organising instant decisions
Sourcing	Ensuring consistency of supply	Rejecting disqualified supply Making profit usage transparent to farmers	Sustaining reliability and predictability
Internal governance	Providing services	Facilitating farmers with seed loans and cash payments	Accommodating members and non-members

Source: analytical framework based on Orlikowski (2002); authors

### 2.5.1 Assessing the reliability of traders

A central notion in literature on collective marketing or cooperatives is that farmer groups replace intermediaries and control the different elements upstream and downstream of the value chain (Markelova et al., 2009). Consequently, these groups are expected to take over the role of traders. Our analysis of farmer-led auctions nuances this perspective and emphasises the skill to select trading partners as part of efforts to negotiate the terms of trade. The auction operators realised that they were dependent on traders (Sitko & Jayne, 2014), which translated into a gradual selection of a group of traders with whom they could work. The operators checked their backgrounds and used market intelligence regarding the transaction behaviours of traders in different auctions coordinated by the associative body. Some groups shared these assessments with other groups through the associative body. The groups that had been formed early (Groups 1 and 9) were able to determine whether new traders were connected to the other traders in sharing their chillies. These groups considered new traders reliable if the network of traders welcomed them in

their mutual efforts to achieve the intended volumes. Group 12 (the newer group) tested a new trader by probing him three times during a transaction. If the new trader always repaid the chillies, the group concluded that he was reliable. Deals with traders that cheat or default affects payments to suppliers and the financial viability of the auction. The supplying farmers hold the operators accountable for such a situation, which had to bear the risks. The ability to assess the reliability of traders was an important asset of the viable auctions.

### 2.5.2 Attaching a group of traders to the auction

The notion of transforming farmer groups into traders entails value chain development interventions and entrepreneurial training meant to increase competences of and offer resources to include smallholder farmers in vertical coordination and commercial transactions (Ebata & Huettel, 2019). Although the auctions managed the site of aggregation, to which the supplying smallholder farmers were attached, they also had to maintain workable relations with buying traders knowing how to navigate dynamic chilli markets. This makes the brokering position of auctions a delicate one. Auction operators had to balance produce and money flows while making sure not to depend on a single trader, as traders took orders and prices from their remote buyers. Delayed payments by traders appear to be unavoidable, while timely payment is important for suppliers (Tefera, Bijman, & Slingerland, 2020). Traders reasoned that they also received late payments from their remote buyers. Hence, the auctions were in a difficult position between the traders and suppliers, as they needed traders to purchase the chillies, while smallholders demanded cash payments. For this reason, the groups tolerated delayed payments from traders in order to sustain their operations. Groups 1, 2 and 12 provided cash payments to the farmers to secure a consistent supply. Others tried to reduce side selling to secure chilli supplies, yet groups with low TCC (Groups 4 and 10) did not manage to offer sufficient volumes of chillies to traders, as many members engaged in side-selling to petty traders. It was therefore important to work with a selected group of traders attached to the auction. Auctions with low TCC scores (which served 10–15 traders each) either dissolved (Groups 4, 6 and 10) or nearly dissolved (Group 3) largely because they failed to bulk considerable volumes that would be appealing to traders. The ability to sustain produce supply proves to be vital to attach reliable traders to the auction.

### 2.5.3 Organising instant decisions

Decision-making in collective marketing can be portrayed as inclusive, which implies representation of members and suggests predictable market conditions



(Kruijssen, Keizer, & Giuliani, 2009). In the case of the chilli auctions, however, each auction had a small team of operators, which took immediate decisions in order to cope with changing situations in the market. Running the auctions enabled operators to understand market conditions better, to know how to meet demands of traders and to achieve product competitiveness by securing quality. Operators cannot assume that the market is fixed and predictable. One distinctive feature of these small teams is that they act independently. They did not consult the members when taking decisions because, within the context of the dynamic chilli market, decisions must be taken immediately (Tefera et al., 2020). In one of its auctions, Group 1 announced the auction winner but immediately announced another trader's name as the actual winner. The operators decided to replace the former winner after being informed via the associative body that this trader had defaulted payment in another auction. These operators are the midstream actors (Hernández et al., 2015), who developed the skill to take immediate, organised decisions to connect the upstream and downstream actors. All groups handled the trade-off between marketing performance and inclusiveness (Bernard & Spielman, 2009). Auctions relied on small and relatively exclusive teams that did not involve the supplying smallholder farmers directly in decision-making processes concerning the daily business.

#### 2.5.4 Sustaining reliability and predictability

Encouraging more farmers to become members of producer organisations has been suggested as a viable collective marketing strategy (Hao et al., 2018; Ma & Abdulai, 2017; Mwambi et al., 2020). Nevertheless, in the case of the auctions addressed in this study, large membership does not necessarily guarantee secure supply; this requires careful and situated actions by the auction operators. Group 12, which consisted of only 62 members, learnt that large catchment areas stretching beyond the village helped fill the void in the members' supply. The auction ensured the supply of chillies by providing seed loans, seedling loans and, in some cases, cash loans to its non-member suppliers from nearby villages. This is in contrast to Group 2 (with a size of 40 members), which did not offer seed loans but used cash payments to attract its suppliers. The supply of chilli importantly also depends on how sourcing is organised through strictness in terms of quality, ensuring payments and being transparent in governing the use of profits. Group 10 failed to aggregate sufficient chillies of the proper quality because the members preferred to concentrate on the shrimp business. Other groups that remained intact gathered volumes with the desired quality by disciplining the farmers to sell their chillies to the group rather than to petty traders. Some auctions sanctioned those who did not comply with

quality standards or did not follow regulations regarding side-selling. The auctions attracted buyers while governing transactions with smaller farmers in a way that made the supply of sufficient volume meeting quality requirements predictable (Dissa et al., 2022). To realise this, operators had to balance flexibility and strictness when including farmers. Without these efforts, auctions were not able to become reliable suppliers of substantial volumes.

### 2.5.5 Accommodating members and non-members

Collective marketing is often associated with member-based organisations, which offer financial, technical and marketing services exclusively to member suppliers (Mutonyi, 2019). In return, members are expected to commit to supply and refrain from side selling. However, viable auctions in our sample managed to attract supply from both group members and other farmers, which strengthened their position towards traders. However, non-members received the same price, which can be considered a disincentive for farmers belonging to the group (Mujawamariya et al., 2013). In the Javanese chilli market, auctions benefitted from a consistent supply and secure demand. This constant produce flow enabled running the auction. This was supported by fees paid by non-members, which helped to accumulate working capital, allowing the auction to buy from and pay their suppliers. None of the groups with low TCC (Groups 3, 4, 6, 10 and 14) accumulated sufficient working capital to provide services. In addition, auctions with sufficient turnover also customised service provision to the needs of a range of individual farmers, as they needed a reliable supply. The customisation of service provision was combined with the assessment of the members' loyalty in supplying to the group. Members who consistently supplied chillies for the auction were prioritised. The auctions were not obliged to provide services to non-members. The customisation of incentives was associated with many tensions. For example, members of Group 3 questioned why there was a differentiation in the incentives offered to earlier and newer members, and they asked the operators to return their shares. As a result, the auction had no working capital and nearly dissolved. Many members of Group 6 did not repay their seed loans, and the group almost disbanded because it did not have enough suppliers. The ability to integrate members and non-members, and in one case even petty traders, in organising supply indicates that embedding the auctions in a catchment rather than relying on a fixed membership base contributes to consistency in supply viability (Mwema, Crewett, & Lagat, 2021; Sidibé, Vellema, Dembelé, Traoré, & Kuyper, 2012). This made auctions a reliable player in the market and increased their bargaining power.

## 2.6 Conclusion

We used the TCC diagnostic tool to identify a skill repertoire for containing tensions inherent in trading. The capacity to contain tensions is an intermediate outcome of the *modus operandi* of auctions that denotes conditions under which self-organised collective trading groups of smallholders try to modify terms of inclusion. Assessing capacities to contain tensions is complementary to studies either focusing on the organisational set-up and usually formalised rules or emphasising the embedding in rural communities and the role of social capital. Comparing the performance of auctions indicates that taking part in trading entails improvisation and flexibility, and there is no generic recipe for how to organise this. Starting from evolving practices shows that there is no single organisational pathway for collective marketing and suggests that form follows function. Therefore, our research proposes to understand farmer organisations as working configurations that use a set of skills to act in dynamic market environments. Mastery of these skills is vital for the in-between position of economic farmer organisations that broker and construct the connection between suppliers and buyers in dynamic markets.

## Appendix of chapter 2

Table A: Characteristics of auction groups

No	TCC category	Catchment area (ha)	Auction age (years) / Group's size (people)		Operation team	Obtaining building support
1	High	31.4	15	116	farmers' group	Yes
9		38.4	15	133	farmers' group	Yes
2		70.7	14	40	independent group	-
11		24.9	11	86	farmers' group	Yes
5		42.0	15	97	farmers' group	Yes
7		7.5	7	18	farmers' group	Yes
13		7.9	9	70	farmers' group	-
8		33.8	9	123	farmers' group	-
12		(stretched to nearby villages)	7	62	private	-
3	Low	70.7	14	68	independent group	-
10*		44.6	15	143	farmers' group	Yes
6*		NA	14	100	farmers' group	-
14**		27.5	1	110	farmers' group	-
4*		22.2	13	39	farmers' group	-

\*= dissolved, \*\*= new group, NA= Not available

Table B: Rules of auction groups

No	TCC Category	Rules			
		T4 'side selling': (supply to auction: petty traders)	T5 'use of profit': Fee per 10,000 rupiahs (rupiahs)	T5 'use of profit': Revenue distribution = auction: farmers' group	T5 'use of profit': Service provision
1	High	100:0	200	50:50	cash payment, seed loan
9		no obligation	200	50:50	seed loan
2		70:30, in practice	250	100:0	cash payment
		30:70			
11		70:30	150	80:20	seed loan
5		70:30	300	not fixed	seed loan
7		no obligation	200 (flat)	2:49:37:12***	seed loan
13		no obligation	350	83:17	seed loan, seedling loan
8	Low	no obligation	200	60:40	seed loan
12		no obligation	500	100:0	cash payment, seed loan
3		70:30, in practice	200	100:0	-
		30:70			
10*		no obligation	750	50:50	seed loan
6*		no obligation	300	not fixed	seed loan
14**		no obligation	300 (flat)	not fixed	-
4*		70:30, disobeyed	300	not fixed	seed loan

\*= dissolved, \*\*= new group, \*\*\*Ratio = alms : working capital and shares : labour wage : PPLP activities





## Chapter 3

# Are collective trading organisations necessarily inclusive of smallholder farmers? A comparative analysis of farmer-led auctions in the Javanese chilli market

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### 3 Are collective trading organisations necessarily inclusive of smallholder farmers? A comparative analysis of farmer-led auctions in the Javanese chilli market

#### Abstract

Organising smallholder farmers into groups or cooperatives is widely promoted as a strategy to connect farmers to markets and turn them into price makers rather than price takers. This pathway usually combines cooperative organisational models, based on collective ownership and representation in internal governance, with measures to shorten the agri-food chain, shifting the ownership of intermediary sourcing, aggregating and trading functions to the group. The underlying assumption is that this improves smallholder farmers' terms of inclusion in markets. To scrutinise this assumption, our study compares two examples of farmer-led auctions facilitating trading in the chilli market in Java, Indonesia. The auctions' ownership, management and performance evolved differently: one was run by a group and the other by a family. The comparison brings nuance to the prevalent emphasis on cooperative ownership structures. By researching practices central to collective trading at the chilli supplier–trader interface, this study unravels four dimensions—ownership, voice, reward and risk—capturing smallholder chilli farmers' terms of inclusion in both the auctions and the market. Our comparative analysis suggests that shared ownership and control of the trading function, a central feature of cooperative models, does not necessarily ensure favourable terms of inclusion for smallholder farmers with little capacity to take risks. The capacity to reconfigure the terms of market inclusion for vulnerable smallholder farmers involves direct payment modalities and risk taking. A collectively owned trading organisation does not necessarily imply an inclusive business concept when the organisation cannot acquire sufficient working capital to pay its suppliers.

**Keywords:** collective action, inclusive development, farmer organisations, risk



### 3.1 Introduction

Organising farmers into groups has been an important strategy for arranging market access and achieving inclusive development on favourable terms for smallholder farmers (Lyon, 2003; Minah & Carletti, 2019). Collective action anchored in cooperative organisational models is often proposed to effectively link smallholders with markets (Borda-Rodriguez et al., 2016; Lyon, 2003; Stringfellow et al., 1997). Donors and governments expect these organisations to replace and improve public support of service provision (Gramzow et al., 2018), as well as replacing middlemen or intermediary traders and thus shortening the agri-food chain by providing trading services (Gyau et al., 2014). This model is strongly anchored in the notion of a collective ownership of resources managed by farmers' economic organisations (Bijman, 2016). The premise of this argument is that such a shift to a cooperative model may change farmers from price takers – being forced to accept price determined by others –, to price makers – having capacities to determine or influence price-setting –; however, it is not self-evident that induced cooperative models based on collective ownership can effectively enhance smallholder farmers' terms of inclusion in rural markets.

The premise of our research is that reshaping terms of inclusion requires more than a change in ownership structures; it entails actions, skills and capacities from which modified practices and rules of trade emerge. This paper therefore focusses on the practice of farmer-led auctions, which enables them to perform intermediary functions that may modify their relations with more resourceful and powerful downstream players in agri-food chains, namely traders or retailers. This paper unpacks trading practices by comparing how two farmer-led auctions in the Javanese chilli market reshaped the terms of inclusion for small chilli producers. The central question for the comparison, building on (Mwema & Crewett, 2019) who study rules governing access to markets, is: what capacities are mobilised in the trading practices at the auction sites to refashion the rules and conditions of entry for smallholder farmers into markets for fresh, perishable food products?

The paper aims to move beyond organisational models based on collective ownership as a recipe for inclusive development and shifts attention to the *modus operandi* of an auction to unravel how multiple processes reconfigure the terms of inclusion in food markets (Hoffecker, 2021). This intermediary site, where the connection between sellers and buyers is constructed, is the entry point for investigation. The methodological choice to focus on practice shifts attention from measuring effects or benefits to—following Jones and Murphy (2010)—documenting

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a set of routinised, improvised and situated actions that constitute and reproduce the power of farmer-led auctions to (re)direct trade relations. The everyday reality of the auctions consists of practices of conduction (Legun & Bell, 2016), such as sourcing, transporting, warehousing, retailing, and trading. By taking this as an analytical object, the study offers a grounded understanding of how terms of inclusion, as a higher-order phenomenon in food markets, are reproduced or transformed through the situated actions and interactions in the auctions studied.

Descriptive accounts of the day-to-day running of the auctions provide the basis for understanding inclusion as an evolving process with emergent (intermediate) outcomes regarding the ways in which access to markets are arranged. Reshaping the terms of inclusion for smallholder farmers is not a matter of installing a fix; the farmers running the auction developed capacities gradually to keep the auction afloat in the markets and learned from their mistakes. The paper applies and expands the framework developed by Vermeulen and Cotula (2010) and elaborated by Chamberlain and Anseeuw (2018) to assess the effects of farmer-led auctions for the terms on which smallholder farmers are included in markets. This framework identifies four distinct dimensions: ownership, voice, reward and risk. In addition, zooming in on the everyday practices of the auctions facilitates the investigation of the ways in which the relationships between upstream actors (chilli farmers) and downstream actors (traders) are enacted and (re)configured in the practice of the auction. For that reason, this research recognises that farmer-led auctions, as an economic organisation (Soboh, Lansink, Giesen, & Van Dijk, 2009), have a dual purpose: satisfying their members or clients and being competitive in the market.

The study examines the conditions under which two farmer-led auctions, with distinct ownership structures, are able to transform the terms of inclusion in a favourable manner to smallholders. Both auctions operate in the major chilli-producing area in Yogyakarta, Indonesia. They are therefore linked to the same trading networks. One auction, from which the auction idea originated, sustains a collective ownership structure and is managed by a small operational team. The other auction was, after a couple of years, taken over by a local farmer family and therefore deviated from the notion of collective ownership that is central to the cooperative model. In combination with a multi-dimensional perspective on inclusion, the comparative analysis shifts attention from an exclusive focus on ownership and membership representation, as is reflected in the literature on cooperative models, to an appreciation of the skilful and purposeful endeavours to reconfigure the nature of doing business in the Indonesian chilli market.

### 3.2 Analytical approach

This study combines a multi-dimensional perspective on inclusion with a methodological focus on auction practices where the terms of inclusion are moulded, and where internal and external modes of governance are configured. The analytical approach emphasises the processual nature of inclusion and considers it as outcomes emerging from, and reinforced in, situated actions.

#### 3.2.1 Focussing on practices

Our methodological choice focusses on the auction practice to assess the conditions for smallholders' terms of inclusion in food markets. Our approach argues that human action comes from participating in practices (Nicolini, 2011), starting with conduction practices (Legun & Bell, 2016) such as sourcing, aggregating, sorting and storing. The study considers that intermediaries usually have the know-how to interpret information, improvise, control quality, repair errors, sort and bulk produce, arrange finance, take risks and enable transactions (Schoonhoven-Speijer & Vellema, 2020). Mastering this set of skills for a farmer-led auction is a challenging process and knowing how to engage with trading to alter the terms of inclusion is an achieved skill (Orlikowski, 2002). Our focus on practices will therefore inform our analysis of the capacities of auctions to alter organisational rules and routines in market transactions (Mangnus & Vellema, 2019) and modify smallholders' terms of inclusion in trading.

#### 3.2.2 Connecting internal and external governance

Zooming in on the auction practices exposes the internal and external governance of the everyday reality of auctions. Studies of producer organisations and collective actions show a strong focus on internal modes of governance (Bijman & Bitzer, 2016), which define who has the right to decide, monitor and control the decision-makers and the distribution of residual claims (rights to profits) (Bijman et al., 2014). Accordingly, the auction merges horizontal coordination among the suppliers and members with vertical coordination with the other value chain actors (Royer, Bijman, & Abebe, 2017). The research investigates how auctions handle the suppliers' and traders' diversity of interests (Iliopoulos & Valentinov, 2017); therefore, researching the practice of running an auction reveal processes connecting the internal and the external governance of trading (Figure 3.1).

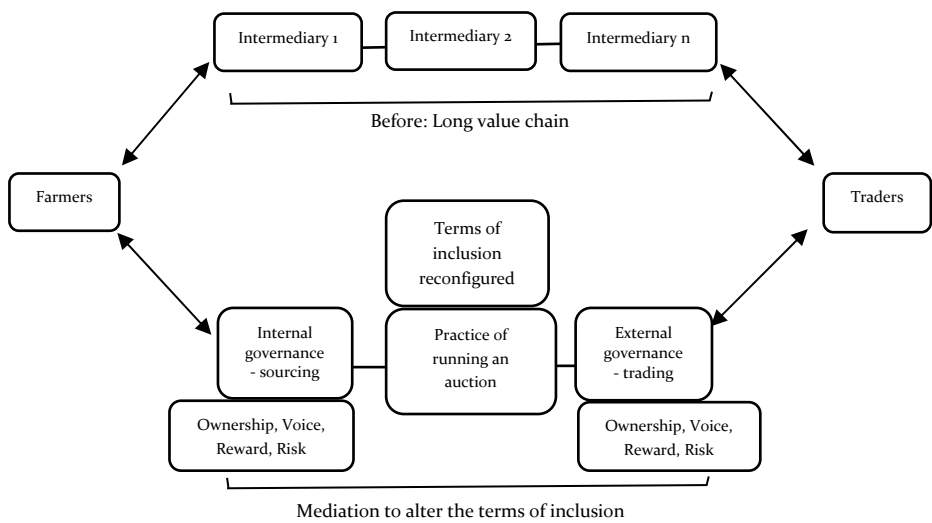


Figure 3-1 The focus of analysis of collective trading configuring the terms of inclusion

### 3.2.3 Unravelling terms of inclusion

The framework developed by Vermeulen and Cotula (2010) is applied to assess whether and how the auctions reconfigure the four dimensions of inclusion in business: ownership, voice, reward and risk. These dimensions, detailed by Chamberlain and Anseeuw (2018), are used to analyse smallholder farmers’ terms of inclusion in running the auction (Table 3.1).

Ownership of the physical infrastructure of the auction—the trading facilities, the working capital and the produce—distinguishes the two case studies central to this study. The auctions started in collective ownership but gradually one auction developed a slightly modified cooperative model, whereas the other became privately owned. Both ownership structures perform the same function but with distinct outcomes.

Voice reflects the representation in member-based organisations and concerns the involvement of suppliers in decision-making. In theory, a cooperative distributes decision-making equally (Reynolds, 2000); however, Mwambi et al. (2020) suggest that participation in decision-making addresses inclusion more accurately than does membership. Thorpe (2018) underlines the procedural justice in decision-making and shows that economic benefits cannot compensate for processes that members or clients consider procedurally unjust. Our framework adds aspects of decision-

making beyond the immediate transaction, which may also involve collective choices in the wider community.

*Table 3-1. The dimensions and categories of smallholder farmers' terms of inclusion in auctions*

Four dimensions of inclusion	Categories	Description
Ownership	Land and fixed assets	Auction location and building
	Moveable assets	Working capital
	Produce	Chillies
Voice	Pre-implementation	Decision on the date to start auction
	Day-to-day operation	Decision making in, and control of, everyday tasks
	Seasonal	Planning and coordination of planting season, price monitoring
	Medium and long term	Wage standardisation, maintaining trading network
Reward	Price setting and payment modalities	Payment collection, price making, ensuring that traders pay
	Profit sharing	Dividend sharing, use and distribution of profit
	Service provisioning	Input loans, credit, traders' payment liquidity
	Employment and skills	Salary and responsibilities in arranging transactions
Risk	Commercial	Delayed or defaulted payments by traders
	Political	Tensions among farmers, tensions with petty traders
	Reputational	Quality assurance, transparency
	Sustainability	Obligation to supply, supply continuity

Source: Vermeulen and Cotula (2010); Chamberlain and Anseeuw (2018); authors.

Evaluative studies on rewards generated by collective trading or cooperatives (Bekkum & Bijman, 2006; Hernández-Espallardo, Arcas-Lario, & Marcos-Matás, 2013; Johnson & Berdegue, 2004) predominantly use higher prices as a proxy for the economic benefits of inclusion. This study widens the analytical scope to network relations with traders, service provision and employment opportunities. Other possible rewards may also include the capacity to purchase high volumes, a stronger bargaining position, high upgrading capacity, market information, low transaction costs (Vorley, Lundy, & MacGregor, 2009; Wollni & Zeller, 2007) and the reliable purchase of produce (Mujawamariya et al., 2013). This study gives attention to the non-price aspects that lure farmers into the cooperative (Chamberlin & Jayne, 2013), requiring an enriched framework for analysing the rewards that auctions generate.

Risk handling is coupled with the ownership of an auction, whether collective or private. Collective ownership implies shared risk-taking (Chaddad & Cook, 2004) and faces the difficulty of attracting additional equity capital from members (Bijman, Hendrikse, & Veerman, 2000). Moreover, trading requires maintaining a good

reputation with traders while taking action to provide fair prices and keep risks low (Lu et al., 2010); hence, auctions cope with commercial risks in transactions with both farmers and traders.

### 3.3 Materials and methods

This section presents the area of study in a coastal farming area growing chillies and the selection of two farmer-managed auctions as the case studies, followed by qualitative and quantitative data collection and analysis methods.

#### 3.3.1 Research area

The two auctions are located in a coastal agricultural area in Java, Indonesia, called Kulon Progo. The Kulon Progo District covers 586 km<sup>2</sup>, consists of 12 subdistricts with 87 villages, and has 425,758 inhabitants. Within this district, chillies are grown in the four subdistricts in the southern coastal area: Temon, Wates, Panjatan and Galur. Until the 1980s, most farmers were landless and marginalised. After the introduction of soil-modification measures and irrigation with chain wells, the farmers shifted from growing cassava and *kleci* (small black potato) to chillies.

#### 3.3.2 Context and case studies of farmer-led auctions

We purposely selected two cases from the 12 auctions in the region with a history of more than five years trading chilli. Our first case study, the group-run auction, used to sell their chillies to petty traders before running their auction, but in 2004, a larger trader asked the farmers to bulk the chillies in one spot. Other traders followed, and the larger trader proposed the traders expressing their bids on the spot to determine who could trade. After several such auctions, traders changed to writing down the bids on cigarette paper. This practice became the foundation for establishing farmer-led auctions in the area. The second case study, the family-run auction, started as a group-run auction in 2012. After three years, some members disagreed with the leader's idea to split the chilli sale. Tension built, and the treasurer started another chilli-selling point, followed by the leader's brother. In 2016, the auction ownership was transferred to the leader.

#### 3.3.3 Data collection

The group interviews involved the operations team focussing on the traders linked to the auctions (Table 3.2). The in-depth interviews with 12 operators concerned their life histories and roles in the auctions, and the observations focussed on the everyday business of the auctions. In Village 1, a small group of 16 operators of the group-run auction weighed the chillies; recorded the volume; then bulked, sorted

and packed the chillies. They contacted the traders, collected the bids and determined the auction. In Village 2, the family's auction activities were the same, but operated by a husband and wife. Mapping the network of the traders attached to the two auctions was done during interviews with three auction leaders. Next, interviews captured the sourcing mechanisms and trading areas of 18 traders. Four petty traders in the villages were interviewed about how they interacted with the auctions. Similar interviews with three buyers based in the provinces surrounding Jakarta—Bekasi, Tangerang and Purwakarta—were conducted by phone. Lastly, a survey among 66 members of the farmers' groups associated with the auctions collected perspectives on the auctions' roles in their relations with the market.

*Table 3-2. Data collection methods*

<b>Data collection method</b>	<b>Number</b>	<b>Location</b>	<b>Period</b>
Observation	12 events	Villages 1 and 2	Jul 2018, Jun–Sept 2019
In-depth interview	12 operations team members	Villages 1 and 2	Jun–Jul 2019
	Four petty traders	Village 1 and other districts	Oct 2019
	18 traders	Kulon Progo, Bantul, Purworejo	Sept–Nov 2018
Phone interview	Three buyers	Bekasi, Tangerang, Purwakarta	Nov 2018
Group interview	Six group interviews	Villages 1 and 2	Jan–Feb 2018, Jul–Aug, Oct 2019
Trading network mapping	Two maps	Villages 1 and 2	Oct 2019
Survey	66 farmers	Villages 1 and 2	Jul–Sept 2019
Recording price information	Two auction records	Villages 1 and 2	Oct 2019
	One national chilli prices list	PIHPS Nasional (2019)	Nov 2019

*Source: Authors*

### 3.3.4 Data analysis

We analysed the data in two steps to produce the comparative analysis. First, the auction practices sourced from the transcriptions of collected data were coded as bulking, weighing, sorting, bidding, payment and organising service provision. Second, the trader-network mapping was converted into a table that clustered traders based on their location, sourcing area, relationships with the auctions and relationships with other.

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In the comparative analysis, the data fragments were coded to the categories in Table 3.3; for example, for the 'land and fixed asset' category, we deduced the data point: 'The farmers paid the land rental cost. The Bank of Indonesia erected the building'. The data fragments were:

*'I would ask the other operators, "How much money should we give to the landowner?". They would suggest, "X amount is ok"'. (Coordinator of the group-run auction, Group interview, 31 July 2018). 'We used to occupy a villager's house, but then we received an auction building with support from the Bank of Indonesia'. (Farmers' group leader, Group interview, 5 February 2018).*

After the coding, the dimensions and categories were matched with a cross table of internal/external governance. Specifically, the auction records and national chilli prices from PIHPS Nasional (2019) completed the reward dimension. Lastly, the data were examined again to ensure the precision of the categories and governances.



Table 3-3: Comparative analysis of the four inclusion dimensions of the group-run and the family-run auction

Four dimensions of inclusion	Categories	The group-run auction		The family-run auction	
		Inclusion of farmers in the auction (internal governance)	Inclusion of farmers in the market (external governance)	Inclusion of farmers in the auction (internal governance)	Inclusion of farmers in the market (external governance)
Ownership	Land and fixed assets	The farmers paid the land rental cost. The Bank of Indonesia erected the building.	The farmers were free to come and monitor the auction.	No farmer investment in the land and auction building.	The farmers came to the auction spot only to sell.
	Moveable assets	Working capital was sourced from the farmers' fees and government support.	The operators used working capital to pay for the first and second auctions.	Working capital was sourced from the farmers' fees and bank loans.	Working capital was used for daily payments to the farmers.
	Produce	The farmers balanced their sales to the auction with their sales to petty traders.	The produce was owned collectively. The operations team sold on behalf of the farmers by auction.	No obligation to sell at the auction.	The produce was owned by the family. They sold it themselves at night auctions and afternoon sales.
	Pre-implementation	The farmers were included in deciding the start of the auction.	The operations team informed the traders about the start date of the auction.	The family decided the date to start the auction without involving the farmers.	The family informed the traders about the start date of the auction.
Voice	Day-to-day operation	The operations team received supplies, and weighed, bulked and sorted them.	The operations team did the bidding and packing.	The family received supplies, and weighed, bulked and sorted them.	The family did the bidding and packing.
	Seasonal	The farmers discussed the decision to grow and the planting date in a group meeting.	The operations team monitored the chili prices and traders within the associative body.	The leader initiated a group meeting with the farmers to discuss the decision to grow and the planting date.	The leader monitored the chili prices and traders within the associative body.
	Medium and long term	The farmers discussed the pickers' wage standard, service provisioning and payment delivery in group meetings.	The operations team maintained the trading network with the traders.	The leader initiated a group meeting with the farmers to discuss the pickers' wage standard.	The family maintained the trading network with the traders.
	Price setting and payment modality	The farmers were price takers. The farmers received services, including payment deliveries.	The operations team was responsible for price making and ensured that the traders would pay the farmers.	The farmers were price takers. Selected farmers received services.	The family was responsible for setting prices and sustaining cash payments.
Reward	Profit sharing	No dividend for the farmers.	The profit was invested in the group's working capital and service provisioning.	No dividend for the farmers.	The profit was invested in private business diversification and service provisioning.
	Service provisioning	The farmers received seed loans, limited cash payments and payment deliveries.	The operations team negotiated the traders' payment liquidity on behalf of the farmers.	The selected farmers received seedling loans. All farmers received cash payments.	The family represented themselves when negotiating the traders' payment liquidity.
	Employment and skills	The farmers knew how to assess quality, how to bulk and how to sort the chilies.	The operations team received a seasonal salary and understood trading complexity.	The farmers knew how to assess quality, how to bulk and how to sort the chilies.	The family received a seasonal salary and understood trading complexity.
	Commercial	The farmers received fluctuating prices with delayed payment.	The farmers took the risks of delayed payment and being cheated by the traders.	The farmers received fluctuating prices with cash on delivery.	The family took the risks of delayed payment and being cheated by the traders.
Risk	Political	Some farmers in conflict with the auction operations team engaged in side-selling.	The farmers' group resolved the tensions with the petty traders.	The family shared their daily auction price result with the other two trading spots.	The family let petty traders access the other two trading spots.
	Reputational	The farmers' group mobilised the farmers to maintain their chili quality.	The operations team maintained transparent transactions with the traders.	The family mobilised the farmers to maintain their chili quality through group meetings.	The family maintained transparent transactions with the traders.
	Sustainability	The farmers' group obliged the farmers to supply the auction continuously.	The operations team ensured the supply and sustained trading relationships with the traders.	The farmers were free to supply the auction or the other two trading spots.	The family ensured the supply and sustained trading relationships with the traders.

Source: primary data.

### 3.4 Performance of the auctions

This section compares the two auctions, which have different ownership structures, to identify how their practices affected the four dimensions of inclusion (Table 3.3). The terms of inclusion were analysed by looking at the practice of sourcing chillies (internal governance) and selling chillies to buyers in the market (external governance).

#### 3.4.1 Ownership

The group-run auction started in 2004 on rented land. Later, in 2013, the Bank of Indonesia supported the group by erecting an auction building. The leader of the farmers' group explained that farmers stayed to watch the auction, and between five and 16 operators started the sorting, bidding and packaging at 7:30 pm. Regarding working capital, he mentioned that the auction did not access any bank credit because none of the members wanted to act as guarantors. The auction coordinator acknowledged that the group-run auction afforded to pay cash only for the first and second auctions among the 83 times of auction. After that, the farmers received payments with 2-5 days delay. The survey of group members showed that 12% of members' sales went to petty traders offering cash on delivery, usually before the auction opened. According to the auction's record book, 96,008 kg of chillies supplied by 108 farmers were sold in the first season in 2019.

The family-run auction started in 2012 and was located in the middle of the village. A farmers' group formerly owned it before a disagreement, and ownership was taken over by the farmers' group leader and his wife in 2016. The couple sold the chillies through a night auction and an afternoon sale to the smaller traders. At this auction, the farmers were not obliged to supply, and they only came in the afternoon when selling their chillies. At 6:00 pm, the husband determined the highest bid as the winner, then one or two workers packed the chillies. The leader mentioned that he accessed Bank Rakyat Indonesia to provide daily cash payments. The survey of members revealed that the farmers sold 10% of their chillies at the village's two other trading spots. The family's trading book record in the first season in 2019 showed that the combined 101 days of auction and afternoon sales amounted to 173,247 kg supplied by 277 farmers.

#### 3.4.2 Voice

The leadership of the group-run organisation shared that they opened the auction only when they expected to bulk at least 200 kg of chillies. In the late afternoon, the operations team started to receive supplies, then weighed, bulked and sorted the

chillies. After the bidding procedure, they organised the packing. The operators monitored chilli prices through Aspartan, the associative body during the season. The larger farmers' group discussed service provisioning and planting schedules to avoid pests and diseases in their joint endeavour to aggregate sufficient volume. They also discussed pickers' wage agreements and the expansion of the auction. In 2018, the group standardised the pickers' wage at a maximum of 60,000 rupiahs per day to avoid competition in finding workers. In addressing the issue of a delayed payment, the auction coordinator shared that they delivered payments to the farmers' houses to prevent them from asking the operators.

The family's terrace was always full of vegetables, such as cucumber, aubergine, luffa, and chillies. In the daily operation of the auction, the couple was prepared to receive, sort and weigh the chillies at noon. Once the auction winner was determined at 6:00 pm, the workers started to pack the chillies. In this village, the chilli growers met as a group, similar to the group-run auction, and the family-auction leader led the discussion also monitored daily prices through Aspartan. He was also a prominent figure in the village. During the chilli harvest, this area attracted around 300 workers from outside the village. The secretary confirmed that last year some farmers competed to hire these workers. The leader then initiated a farmers' group meeting, resulting in an agreement to set a maximum salary of 80,000 rupiahs per day.

### 3.4.3 Reward

From 2004 onwards, the group-run auction ensured that one price was paid throughout the entire area, which contrasted with petty traders who paid uncertain prices for similar quality. The average price in the group-run auction was 42,009 rupiahs per kg of chilli per day. The group interview revealed that the farmers considered the chilli prices at the auctions to be high because they were closer to market prices. Figure 3.2 confirms this by showing that auction prices followed the provincial and national chilli prices. Nevertheless, the daily prices depended on the actual traders' bids received from distant markets in Jakarta or Sumatra. The working capital accumulated from the fee per kg of chillies was around 300–500 rupiahs, to which the farmers did not object. Fifty percent of this revenue went towards asset accumulation; the other half was allocated as operators' salaries. Thus, no dividend was paid to the farmers. The operators delivered the payments to the farmers' houses once the group finally received payments from the traders, as well as to offer farmer services, such as seed loans, at the beginning of the season.

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In the village of the family-run auction, the farmers also used to sell their chillies to petty traders before 2012. They had to transport their chillies on their bikes and travel over unpaved roads, which were difficult to traverse during the rainy season. The average price received by this private auction was 42,365 rupiahs per kg of chilli per day in the season, similar to the group-run auction. As a result, both auctions were price takers. The family’s working capital was sourced from the fee of around 500–1000 rupiahs per kg of chillies, complemented by a bank loan. The farmers considered this number high compared to the other auctions’ fees. Even though there were no shares for the farmers, the family provided seedling loans and credits for selected farmers and ensured cash payments. The family also diversified its business into melon growing, which generated additional income. The family’s auction did not involve the farmers in running the operation but did transfer to them the skill of knowing how to assess quality. They also provided two casual workers’ salaries.

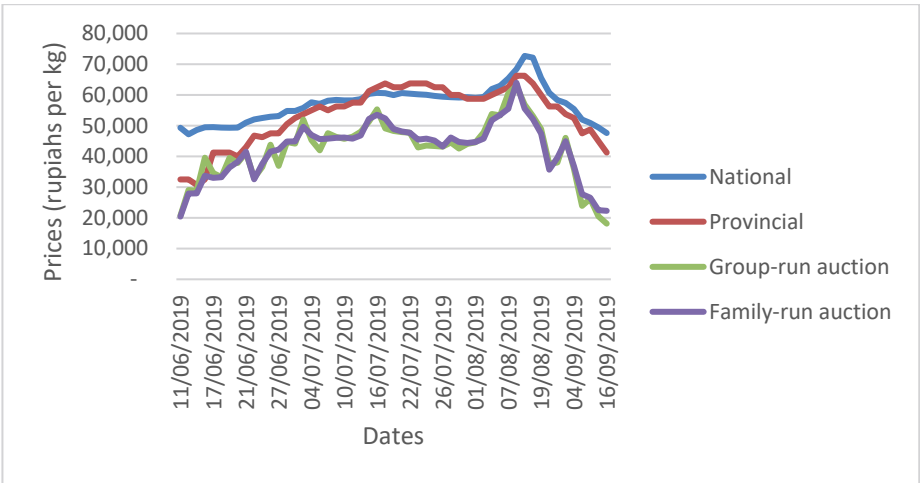


Figure 3-2 Comparison of national, provincial, and auction chilli prices in June–September 2019

Source: PIHPS\_Nasional (2019) and primary data

3.4.4 Risks

In the group-run auction, the main risks for farmers were related to fluctuating prices and delayed payments. The auction coordinator confirmed that the traders frequently had to wait for payments from their buyers, which resulted in delayed payments to the members of the group supplying the chillies. The leader of the farmers’ group shared that the auction experienced political risks that resulted in the farmers selling to petty traders. Often, some farmers were involved in personal conflicts with the operators, usually concerning the payment process. Moreover, the

large traders preferred to buy from petty traders, rather than the auctions, because they did not have to compete in bidding. The group always tried to make precise calculations, because their reputation was at a stake if there was a miscalculation in payments. Reciprocally, the group could issue a supplementary bill to any trader whose payments were deficient. The group mitigated sustainability risks by recommending that the farmers always supply high-quality chillies to the auction. In return, the auction compensated the farmers with price certainty and service provisioning.

The family-run auction leader agreed that unpredictable prices were a major commercial risk. One of the traders explained that they only took orders from buyers in Jakarta or Sumatra to find chillies for specific volumes at specified prices. Although rates fluctuated, the family was committed to paying farmers in cash. In addition, the family responded to a request expressed in the community to share the daily auction price with the other two trading spots in the village. The leader shared that the traders who placed bids in his auction also bought from the other two trading spots; however, he said that it did not affect his business because he had enough sales already. Regarding produce, the leader always asked his suppliers to bear quality in mind, and he rejected chillies that he deemed to be of insufficient quality. He shared his expertise in growing chillies and reinforced the growing season rule to avoid pests and diseases, ensuring quality and productivity.

### 3.5 Comparing the farmer-led auctions

The results describe how both auctions partly replaced the petty traders in the village, although the farmers still sold chillies to these traders when they needed immediate cash. When comparing the practices however, the family-run auction appears to be altering the engagement of the smallholders with competitive markets, which is an insight similar to Hideto Dato et al. (2020), who noted that organisations with smaller boards perform better than those with an extensive formal governance model. In both auctions, a small group of operators handled the day-to-day decision-making affecting complicated transactions (Aoki & Hayami, 2001). Moreover, the group-run auction had to shoulder additional costs for compensating the collective meetings for a similar service offered by the family business (Ton, 2008). Our comparative analysis shows that both auctions consistently acted as intermediaries between poorly resourced farmers and traders (Abebe, Bijman, & Royer, 2016), but with different qualities of inclusion for the smallholders.

The study reveals the auctions' capacities to refashion the terms of inclusion in their everyday practices (Table 3.4), although influencing price setting was beyond the

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span of influence of both auctions, meaning the farmers remained price takers. The family-run auction was however able to ensure direct payment, which appeared to be a favourable condition for smallholder farmers (Latynskiy & Berger, 2016; Sahara, Umberger, & Stringer, 2013). The ownership structure of the family-run auction made it possible for it to access a loan from the bank, which was more difficult for the member-based auction (Bekkum & Bijman, 2006). The comparative analysis suggests that membership of the group-run auction did not imply a willingness for members to supply to the organisation, consistent with what was discussed by Hao et al. (2018). The group-run auction was able to sustain the provision of seed loans but was not able to continuously arrange cash payments; therefore, small chilli farmers continued to sell part of their chillies to petty traders to ensure cash flow.

This points to two key conditions for making collective trading an attractive option for smallholder farmers: the capacity to secure direct payments and to handle the risk of delayed payments. The group-run auction's limited capacity to provide direct payment signifies the active exclusion of resource-poor farmers who chose to sell to petty traders (Xu, 2019). This was particularly evident when the auction did not manage to pay cash even though the members shared the ownership of the auction. The direct involvement of smallholder farmers in taking business risks appears to be inappropriate for their situations. By contrast, the family-run auction was a predictable and transparent buyer. Our study suggests that the member-based trading organisation is constrained in their capacity to influence smallholder farmers' terms of inclusion. For resource-poor smallholder farmers, the family-run auction may be the best bet under specific circumstances.

Table 3-4. Changes in practices of the farmer-led auction

Four dimensions of inclusion	Group-run auction		Family-run auction	
	Change	Practice	Change	Practice
Ownership	The trading point ownership was shifted from the petty traders in the village to the members.	The farmers' group leader initiated an auction system with a trader, which then developed into an auction, with premises owned by the group.	Trading point ownership shifted from petty traders to the group auction, and then shifted to a farmer family embedded in the community.	The farmers' group leader took over the auction, then organised its operations within premises owned by the family.
Voice	The operators took over the trading decisions from the petty traders in the village.	The operators of the auction mastered the trading skills, and members decided collectively how to run the auction.	The family took over the trading decisions from the petty traders in the village.	The family mastered the trading skills and decided how to run the auction and embed it in the community.
Reward	The group took over the provision of seed loans from the petty traders.	The group accumulated annual profits as its working capital; however, they were unfortunately insufficient to cover cash payments.	The family took over the provision of input loans from the petty traders.	The family accumulated working capital, sustained capacity to arrange cash payments, and accessed a bank loan to provide working capital.
Risk	The group-run auction took over the risk of delayed payment by traders for a limited period.	The group did not access a bank loan to finance the auction because no one was willing to take the risk of providing the collateral.	The family took over the risks of providing cash payments from petty traders for the whole season.	The family channelled other income sources to the auction and saved money as a capital base for the auction.

Source: primary data.

### 3.6 Discussion and conclusion

The comparison of two farmer-led auctions brings nuance to the prevalent emphasis on cooperative ownership structures in collective marketing endeavours. In research on collective action by farmers in markets, there is a strong emphasis on the internal governance of collective economic groups (Sacchetti & Tortia, 2016). Our comparative analysis of two farmer-led auctions, with either a collective ownership structure or a family-run business set-up, indicates that marketing intervention models in rural areas anchored in an exclusive preference for member-based cooperatives overlook the practices and precise conditions for reconfiguring smallholder farmers' terms of inclusion in markets. Our study highlights that the auctions, as a form of inclusive business, can be an attractive option for chilli smallholders with less capacity to take risks and who need direct payment. Our analysis reveals that the family-run auction prioritised risk-handling practices by accessing external financial support to address delayed payments from traders or cope with defaulting traders. The family-run auction stayed close to the farmers' motive to sell to petty traders by offering cash on delivery. Therefore, a collectively owned trading organisation does not necessarily imply an inclusive business concept when the organisation cannot acquire sufficient working capital. This insight contrasts with intervention strategies that rely strongly on collective ownership as a condition for providing smallholders with an opportunity to capture value (Markelova et al., 2009). The cooperative model emphasises collective ownership as the distinguishing dimension of inclusion in collective trading, whereas our study shows that private ownership of farmer-led enterprises in trading is not necessarily a threat to terms of inclusion.

Our comparative analysis implies a trade-off between inclusion, decision-making and performance as reliable buyers effectively influencing the terms of entry in competitive markets, as discussed by Bernard and Spielman (2009); Mwambi et al. (2020). It reveals that there was an interplay between the internal members' interests and external negotiation with the traders in the two auctions. Our study shows the importance of the capacity to balance members' or clients' interests and meet demands (Sacchetti & Tortia, 2016). The high inclusion of farmers in decision-making may come at a cost. Our study alludes that even if the family-run auction benefitted the wealthy family, a critique raised by van Westen, Mangnus, Wangu, and Worku (2019); Wangu, Mangnus, and van Westen (2020), it is still relevant to acknowledge that more prosperous farmers running a trading hub can sustain direct payments for a longer time in cases where their payment is delayed (Poulton, Dorward, & Kydd, 2010). Consequently, a focus on everyday business practices shifts



attention from shared ownership and collective action to practices that influence or refashion different terms of inclusion, which expose how inclusive business mobilises resources and capacities to navigate real markets.

The comparative analysis complements common ways of evaluating farmer-led forms of collective trading. Price setting and income have been the exclusive focus in studies of farmers' inclusion in market access to show the viability of a business (Wach, 2012), for example, in the case studied by Mhembwe and Dube (2017). Our study highlights the terms of inclusion other than price that are relevant for smallholder farmers. Accordingly, we shift attention from price taking to risk taking. In the analysis of inclusive business, individual farmers' opportunity to carry business risks is proposed as an indicator of inclusiveness (Chamberlain & Anseeuw, 2018). Smallholder farmers are hampered in accessing markets because they have limited resources, are vulnerable to risk and lack market information (Bijman, Ton, & Meijerink, 2007). Given their resources, economic organisations endowed with assets are relatively more resilient in dealing with risks (Barham & Chitemi, 2009). This is consistent with the observation of Fafchamps and Hill (2005) that wealthier farmers can facilitate sales. In the case of the family-run auction, capital-poor farmers relied on endowed farmers to influence their terms of inclusion in markets. Moreover, the wealthier farmers transferred technical and managerial skills to farmers (Lu et al., 2010). Therefore, we propose, in line with Kusumawati, Bush, and Visser (2013), to first analyse how the poorly understood intermediary practice of trading, and thus running an auction, works and is embedded in the wider social fabric, before suggesting the by-passing or exclusion of a poorly understood element in the agri-food chain.

We conclude that it is important to look beyond established organisational models and find ways to diagnose the inclusiveness effects of everyday business practices (Borda-Rodriguez et al., 2016) used to navigate the real conditions of sourcing and selling in dynamic markets (Johnson & Berdegue, 2004). We consider it unwise to induce organisational models for market access that primarily emphasise the principle of 'one member, one vote'. Development agencies' support for smallholder farmers' market access better focus not only on collectively owned organisations and bypass other ownership structures. Our study has exposed the practices and capacities enacted in auctions, as an expression of collective trading, to shape the terms of inclusion and, most importantly, handle the risks of trading at the aggregate level for smallholder farmers who have little capacity to take risks.



# Chapter 4

## An integrative method to elicit unwritten rules-in-use: The institutional grammar of collective action in real Javanese food markets

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## 4 An integrative method to elicit unwritten rules-in-use: The institutional grammar of collective action in real Javanese food markets

### Abstract

Written rules-in-use are not available for many smallholders' economic practices. Nevertheless, such practices operate by regulations crafted by smallholders, and people follow those unwritten rules-in-use. Here, we propose a methodology that enables unwritten rules to be deciphered. We introduce an easy-to-follow methodology that integrates practice-oriented study with an institutional grammar tool to study collective trading. This grammar tool has been used mainly to study natural resource governance; our method is new in applying it in the field of collective marketing. We use rich data sources and demonstrate how to recognise unwritten institutional grammars underlying collective trading practices and decipher them in terms of three institutional grammars – rules, norms, and strategies. We elaborate on practical ways to ensure research credibility when collecting and analysing unwritten rules-in-use. The integrative methodology can be applied to study the institutional nature of food markets that operate unwritten rules-in-use or a blend of written and unwritten rules-in-use.

**Keywords:** Unwritten rules-in-use, practice-oriented study, institutional grammar tool, collective trading

### 4.1 Introduction

In food markets, buyers and sellers arrange their transactions to ensure a consistent flow of produce and money. In the context of small and medium traders linking their business to numerous smallholder farmers embedded in diverse rural communities, a major institutional challenge is how to organise smallholder farmers' terms of inclusion. Characteristically in such commercial settings, the rules-in-use underlying transactions in the action situation of buying and selling are often not explicitly communicated; yet actors recognise how trade is conducted. Many development-oriented initiatives have tried to transform this by organising farmer cooperatives or other forms of collective action, often accompanied by a range of formalised rules and by-laws related to modes of governance and membership responsibilities within the organisation. Besides such induced forms of collective action, smallholder farmers' terms of inclusion can be co-shaped by self-organised forms of collective

trading, in which associative groups embedded in local communities initiate new ways of organising the linkage to markets. This paper started from the empirical phenomenon of self-organised auctions in the chilli market in the rural coastal area near Yogyakarta, Indonesia. The auctions were initiated by farmers and played the same role as local traders in the village: to gather and aggregate produce from smallholder farmers and resell it to traders operating in larger markets. The auctions did not have written or explicitly communicated rules-in-use, and yet their actions and performance looked governed and predictable. This provides a challenge for institutional analysis, namely, what methods help elicit unwritten rules-in-use for researching the everyday and messy practice of collective marketing?

To address this methodological question, we propose to combine of Crawford and Ostrom's (1995) institutional grammar tool (ADICO) with a practice lens. Institutional grammar is part of Ostrom's (2005) institutional analysis and development (IAD) framework. It aims to detect and qualify institutional diversity by providing a method that captures the grammars of institution – rules, norms, and strategies – and deciphers them into their components (Schlüter & Theesfeld, 2010). The grammar tool has been applied in policy studies with a strong focus on the analysis of written rules (Huda & Kauneckis, 2021; Watkins & Westphal, 2016). These studies compare policy documents and other texts (for example, Dunlop et al., 2020; Heikkilä & Weible, 2018; Siddiki et al., 2011). In our approach, deciphering the grammar is the final analytical step, after first finding a way to depicture the rules-in-use by closely observing the performance of tasks. The practice lens (Jones & Murphy, 2010) adopted here prepares the ground for the institutional analysis of unwritten and even unspoken rules-in-use in the action situation of coordinated and collaborative forms of collective trading.

This paper considers practice as the site where organisational knowing emerges (Nicolini, 2011), which emphasises that actors know how to coordinate and collaborate to ensure trading as a collective and diverse path that contributes to broader institutional processes. Accordingly, the analysis starts from everyday actions and mundane economic activities and subsequently uses the grammar tool to portray the institutional nature of the socioeconomic phenomenon of self-organised collective trading (Jones & Murphy, 2010). This builds on empirical studies revealing the reinforcement of institutions in an assemblage of individual traders embedded in a spatially bounded configuration (Schoonhoven-Speijer & Vellema, 2020) and the persistence of a loosely associated group of traders operating in whimsical markets and an unpredictable agro-ecological environment in Mali (Mangnus & Vellema, 2019). Observing the performance of specific tasks central to

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the core auction functions – namely, buying and selling – provides signs of the implicitly regulated nature of the economic activity. Consequently, gathering information about rules-in-use involves the in-depth and qualitative study of farmer-led collective trading (Mwema & Crewett, 2019; Ostrom, 2005). We aim to demonstrate how to recompose unwritten rules-in-use by combining descriptive methods for researching the everyday and messy practice of collective marketing and then decipher them with the institutional grammar.

Identification of practices provides data for researchers to further translate into written rules-in-use and then analyse using institutional grammar. The steps facilitate the study of groups performing collective marketing. To elucidate the method's core meaning, we explore the value and effectiveness of the methodological design through two case studies of fresh-produce auction phenomena organised by smallholders.

Our practice-based approach resonates with the action situation emphasis in the IAD framework. We provide a way to connect institutional grammar with the embedding of self-organised and farmer-led economic organisations in the community by applying it to the two case studies, which relate to collective chilli marketing in rural Java: two auctions with different ownership structures, the first one operated by a group, the second managed by a group but then taken over by a farmer family. The two auctions organised bidding practices to facilitate buying and selling activities. The collective marketing groups' buying and selling practices elucidate the situated coordination and collaboration with suppliers and traders.

This study is structured as follows. Section 4.2 explicates the use of an integrative methodology as a tool to research messy and dynamic practices of collective marketing and then moves to higher-order questions about institutions that shape terms of inclusion through coordination and collaboration with actors in actual markets. To apply the methodology, the section presents the case studies. Section 4.3 describes the four steps to elicit unwritten rules-in-use in collective trading. This section explicates the methodology by applying it to our data on the two case studies. We conclude by offering our reflections and a future research agenda for the methodology.

### 4.2 Building an integrative methodology

Scholars who want to understand the workings of economic activity need to know how it is regulated. Farmer-led economic entities, for example, commonly employ

unwritten rules-in-use. To build an integrative methodology, we first elaborate on the institutional grammar concept and practice-oriented study.

#### 4.2.1 Institutional grammar

Institutional grammar describes the cumulative manner that shapes agents' assumptions about others' performances and the result of their actions (Crawford & Ostrom, 1995). This tool is a preliminary step before analysing the rules typology in Ostrom's (2005) IAD framework. Institutional grammar is an attempt to formulate the concept of rules. It provides the refinement and the means to identify the inconsistencies of rules, norms, and strategies, known as institutional grammar (Ostrom, 2005). Therefore, institutional grammar sheds light on the rules-in-use underlying practice and aims to understand these rules, which are known and utilised by actors.

For researchers investigating policy documents, the institutional grammar tool helps to deconstruct institutions' rules into components (Siddiki et al., 2012). This tool adopts a comprehensive and forensic actor-centred institutionalism approach (Dunlop et al., 2019). In this kind of study, the tool analyses the rules exposed to the actors but not necessarily followed by the actors. It is not possible to ascertain the usage of the rules, because the area coverage is too broad. Therefore, the usage is limited to the computation of institutional grammars – rules, norms, and strategies.

Institutional grammar is instrumental for understanding collective marketing actors' behaviours in an action situation. Using the grammar tool in the field of collective marketing is new and needs to be fine-tuned. We introduce the methodology to examine the unwritten rules-in-use in collective marketing. The elaborated components are called ADICO, that is, Attribute of the organisational actor or the user of rules-in-use (A), Deontic (D), Aim (I), Condition (C), and Or else (O) (Ostrom, 2005). For example: The farmers in the village (A) must (D) supply the auction (I) of the farmers' group (C) or lose their farmers' group memberships (O).

ADICO has not been widely applied to qualitative data because, when performing their activities, people do not talk about rules, norms, and strategies (Watkins & Westphal, 2016). In other words, it is difficult to unravel institutional grammar that underlie practice. This study elaborates how people talk and the kind of institutional grammar inherent in the talk that can be analysed.

Table 4.1 defines the ADICO elements. The formula works as follows: ADICO represents a rule, ADIC represents a norm, and AIC represents a strategy (Figure 4.1). Rules-in-use always contain modals that permit or prohibit actions (must, must not,

may, may not), and sanctions always follow every time the actors breach these rules. Norms cover the modals that suggest or do not suggest particular behaviours, without any penalties for the perpetrators. Lastly, strategies are straightforward and inform the actors about how the rule-maker treats the actors.

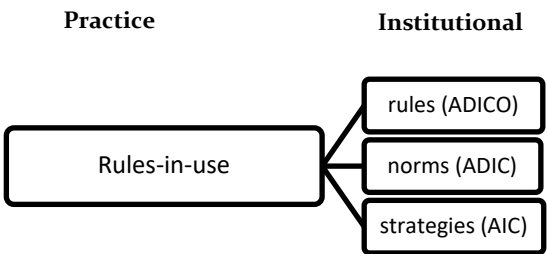


Figure 4-1 The composition of rules-in-use

Table 4-1. The institutional grammar tool elements (ADICO)

Element	Definition
A – Attribute	the entity to whom/which the institutional grammar applies
D – Deontic	modal verbs that inform what is permitted (may), mandatory (must), and forbidden (must not)
I – Aim	the action or action’s outcome assigned by the deontic
C – Conditions	when and where the action is permitted, mandatory, or forbidden
O – Or else/sanction	the consequence for infracting the grammar

Source: Crawford and Ostrom (1995)

4.2.2 Understanding practice routines

To discover unwritten rules-in-use, we look at the auction as the site of knowing and collective endeavour by a small, task-oriented group (Nicolini, 2011). McFeat states that this kind of practice is an ordered task maintained by the group’s persistence (Cloak, 1975). The group consists of human actors who are the carriers of practices and shape them by physical activities and material arrangements (Olohan, 2017). The auction practice represents the action situation of collective trading that uses skills, tools, techniques, and knowledge to make the bidding process work and establish the connection between supply and demand (Jansen & Vellema, 2011). The action situation reflects the mutually constituting practices – sourcing, bidding, transacting



– and there are different manifestations of coordination and collaboration (Young, 2008) between the auction and the farmers and between the auction and the traders.

Coordination is necessary to launch control systems to reduce the risks related to the organisation's aim, which does not incentivise cheating. Collaboration is necessary to formulate rules-in-use governing actors' behaviour to deter and sanction infringements. There are three kinds of sanctions: automated sanctions for violating a strategy, internal and external deltas/emotional sanctions for violating a norm, and tangible sanctions for violating a rule (Schlüter & Theesfeld, 2010). Nevertheless, the individuals acting in an action situation do not always adhere to the regulations; they can aggregate, adapt, or reject them (de Koning, 2014). Understanding how auction practice creates an action situation generates evidence for further analysis.

A systematic approach enables us to create descriptive accounts of auction practices. Then, we continue by collecting data, using mixed methods to unravel the performance and navigation of the auctions.

#### 4.2.3 Applying the integrative methodology

We applied the methodology by starting from practices and then interpreting unwritten rules-in-use. The context is collective trading in chilli auctions in rural Java. Our analytical object was the performance of collectively managed auctions. We addressed the issue by researching in depth two sustained chilli auctions in their pathways to position themselves in larger markets. One auction was organised by a group and the other by a family. We use these cases to make the methodology accessible to readers. The two collective marketing spots were among the 12 auctions in a rural coastal area of Yogyakarta, Java. The cases depict smallholders growing and selling chillies for the larger markets in the regions around the state capital Jakarta and several Sumatra regions. In the coastal area, chilli is best produced between March and August, during the dry season. In the rainy season, the growing season extends from August to January. The farmers have modified the sandy area with manure and installed pipe wells and pumps to irrigate their crops. The regular five-day harvest starts two months after planting. After the harvest, the farmers sell their produce to auctions at their village's auction spot. The auctions have replaced the earlier custom of selling to local petty traders. The auctions' operators manage the weighing, volume recording per farmer, sorting, bulking, bidding, and packaging. They also organise the transactions with the traders who participate in the auction and payments to the farmers. The auctions have developed different practices to continue the trading arrangements.

4.3 The four steps to elicit unwritten rules-in-use in collective trading

The auctions make the connection between sourcing produce and selling it to the market. In this study, we aimed to ascertain the unwritten rules-in-use that facilitated this connection. We discerned four steps to elicit unwritten rules-in-use (Figure 4.2).

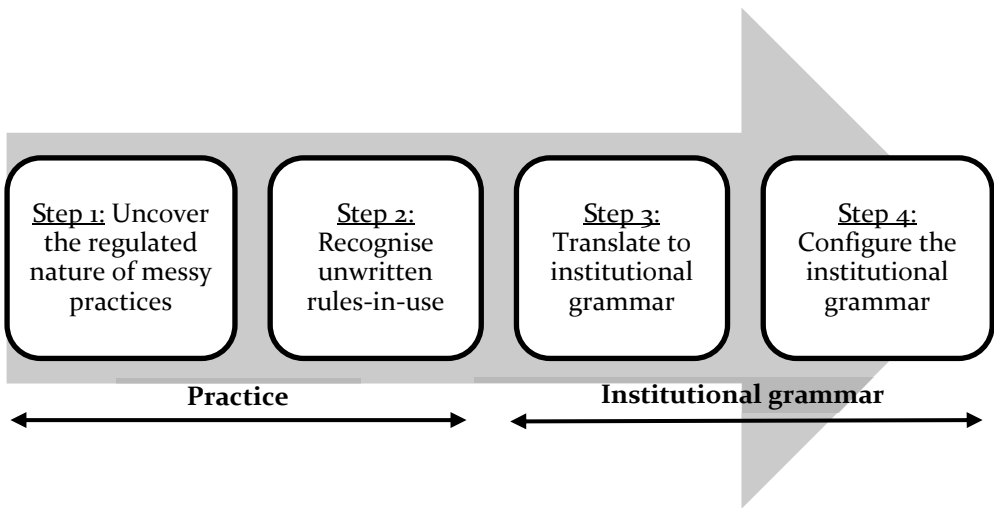


Figure 4-2 The four steps to elicit unwritten rules-in-use in collective marketing

4.3.1 Step 1: Uncover the regulated nature of messy practices

This step consists of using mixed methods to uncover the data in messy practices. In our cases, the practice looked messy, but the people seemed to know what they should do to execute tasks. We used mixed methods to discover the unwritten rules-in-use that regulated practices. We collected extensive data about trading activities, agriculture, and community events to capture practices and the collective economic activity context. We visited the auction's real-time action to familiarise ourselves with the practices before organising further data collection. Our data collection covered observations, mappings, documents about price and volume, individual and group interviews, and surveys (Table 4.2).

Table 4-2. Mixed methods to unravel practices

Data collection method		Number	Location (Auction spot/District) or source	Period
Observation		20 auction events	Auctions 1, 5, 6, and 8	Jul 2018, Jun–Sept 2019
Mapping	Trading network mapping	9 events: group meeting, harvesting, religious meeting		
	Farmers' group event mapping	2 maps	Auctions 1, 6, and 8	Oct 2019
	Community life event mapping	2 maps	Auctions 1 and 8	Oct 2019
	Community life event mapping	2 maps	Auctions 1 and 8	Oct 2019
Price and volume	Primary data: auction book records	2 books, June–Sept 2019		Oct 2019
	Secondary data: national and provincial data	1 data source	PIHPS website	Oct 2019
Interview	Group interview	6 group interviews: operators, farmers' group board members	Auctions 1 and 8	Jan–Feb 2018, Jul–Aug 2018, Oct 2019
	Life history interview	12 operating team members	Auctions 1 and 8	Jun–Jul 2019
	In-depth interview	4 petty traders	Kulon Progo and Bantul	Oct 2019
		18 larger traders	Kulon Progo, Bantul, and Purworejo	Sept–Nov 2018
	Phone-call interview	3 buyers from remote markets	Bekasi, Purwakarta, Tangerang (all located in West Java Province)	Nov 2018
Survey		66 farmers	Auctions 1 and 8	Jul–Sept 2019

Our team documented all observations, including the auctions, farmers' groups' farming, and community activities, by creating documents containing lists of events. A list records the time of observation, photographs, and descriptions of the practice observed. We also made some videos to provide visual observations that we could access whenever needed. We compiled the photos and videos per observation in a folder. For the mappings, our team made pictures or, when applicable, digitised them in Microsoft Excel. We copied the auctions' book records, looked at their transactions, and compared those data with the chilli price trend obtained from provincial and national chilli databases. We talked with the people that we met in the auctions in every observation at the night auctions. Our team interviewed the operators and the different categories of traders on other occasions. We also

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organised group interviews with the operators and the board members, discussing the same topics in each interview. We asked our respondents why they operated the auctions and all of their related actions. We organised these activities to ensure data reliability. Lastly, we surveyed some suppliers, selected randomly: 66 out of 175 farmers were asked their opinion on the auctions' rules-in-use. Finally, we found that it was essential to record the daily activities to organise data and ensure accessibility, as the researchers could be busy arranging appointments with respondents, scheduling visits, creating resumés or transcriptions, and then doing analyses months after data collection.

We transcribed the interviews in English. However, some interviews were transcribed in Javanese or Bahasa Indonesia because we were unsure whether translating them into English would suit the coding run with Atlas.ti at the beginning of data analysis. We did not find software use helpful for our analysis, because, besides eliciting the grammar, we also wanted to understand the contexts. We also found that transcribing data was time-consuming. For consistency, we suggest that only one language should be selected at the beginning of data transcription.

### 4.3.2 Step 2: Recognise unwritten rules-in-use

To start, we unravelled what was permitted, obliged, or suggested in the auctions' operation. We divided the procedure into two steps: summarising the unwritten rules-in-use focusing on buying and selling, and then describing everyday practice.

#### 4.3.2.1 *Summarising the unwritten rules-in-use*

The rules-in-use were composed and shared among the smallholders and traders in each auction. We attempted to recompose what had been composed by the auction into texts using the grammar tool. First, we defined the auctions' attributes (A). Because the tool is actor-based, we suggest including only the collective marketing clients' actors and excluding operators. Operators are excluded to avoid duplication of rules-in-use from a different point of view. In our observations, the auction clients or attributes (A) were the member or non-member suppliers, petty traders, and traders. Second, we adopted the deontic (D) from Crawford and Ostrom's (1995) grammar tool. We included 'no deontic' in order to code the strategies. Lastly, we defined the aims (I) of the actions. We divided the practices or aims (I) into several categories, from sourcing to payment. For clarity of the aims, we addressed the details of the practices to capture the real practices. We confirmed this through group discussions with the auction managers. Table 4.3 shows who were exposed to

the auction rules-in-use, what exposed them, and how they should behave towards the rules-in-use.

*Table 4-3. Summary of the institutional grammar*

Element	The group-run auction	The family-run auction
Attribute (A)	The suppliers The members The traders The petty traders	The suppliers The traders The petty traders
Deontic (D)		(No deontic) May May not Must Must not
Aims (I)		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> Sourcing Weighing Recording Sorting Bulking </div> <div style="font-size: 2em; margin-right: 10px;">}</div> <div>Buying</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="margin-right: 10px;">Bidding/sales Packing</div> <div style="font-size: 2em; margin-right: 10px;">}</div> <div>Selling</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="margin-right: 10px;">Payment</div> <div style="font-size: 2em; margin-right: 10px;">}</div> <div>Buying and selling</div> </div>

*Source: Siddiki et al. (2012); Ostrom (2005)*

#### 4.3.2.2 Describing everyday practice

In our study, practices were often found as tacit knowledge shared among the auction actors at the action situation. After observing several auctions, we classified the practices into sourcing, weighing, recording, sorting, bulking, bidding, packing, payment. Nevertheless, detecting practice was not easy. We did not always find the practice obviously worked by the auction operators, and talking with them during their work was not convenient for them. Therefore, we combined the information with the group interview involving the operators to obtain further details about practice. Examples of collected data fragments that show the institutional grammars – rules, norms, and strategy – underlying auctions' practice of obtaining and selling the raw materials are provided at the end of this section and in the appendix. In each example, we include the different data fragments from the mixed methods of data collection to detect the unwritten rules, norms, and strategies. We noted what the people did in the auctions as the economic activities embedded in communities. Nevertheless, some expressions do not truly reflect real-life situations when provided in quotes because they cannot capture tone, delivery, hidden messages, and cultural

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metaphors. Therefore, we present the data fragments in narratives to demonstrate the situations in actual practices.

From the information gathered through group interviews, we noted that the auctions acted as an intermediary between farmers and traders. They bought farmers' produce, bulked it in their warehouse, and then auctioned it to traders.

Figures 4.3 and 4.4 summarise our observations of the collective trading practices. Buying included sourcing, weighing, recording, sorting, bulking, and paying suppliers. Selling covered bidding/sales, packing, and receiving payment from the traders. Sourcing refers to the auctions' efforts to have a reliable supply of chilli by ensuring chilli quality and volume. Weighing indicates the measurement of each supplier's chilli bags by an operator using a scale. Recording is the activity of an operator noting the volume of each supplier's chillies in the auction book records. Sorting includes the operators' action to remove rotten chillies and leaves from the bags supplied. Bulking refers to operators emptying the chilli bags in the middle of the auction spot to create a big pile of produce to facilitate further treatment.

Making deals/bidding was treated slightly differently in the two auctions. It represents an operator's activity of announcing chilli quality and volume at 5.00 pm (in the family-run auction) or 6.00 pm (in the group-run auction) to the traders through SMS or WhatsApp. The activity continued with feedback from traders, consisting of their names and bids in rupiah. The group's operator wrote each bid down on cigarette paper in the group-run auction and put it in a wooden box. Around one hour later, that operator opened all the bids and listed them on a big wall-mounted whiteboard, whereas the family-run auction leader listed each bid on a small whiteboard that he accessed privately. He did not use cigarette papers. Both auctions then selected the highest bid and announced the name of the trader who had won the relevant auction. Packing covers the activity of perforating the cardboard boxes for air circulation, weighing the chillies in the boxes – as much as 30 kilograms per box –, sealing them, and loading them on the auction winner's truck.

In the selling activity, payment comprises receiving settlement from traders. In the buying activity, the operators distribute the money to the suppliers based on their volumes.

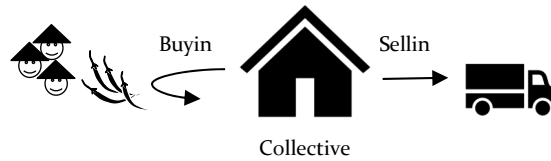


Figure 4-3 The intermediary practice of a collective marketing group

In a collective marketing context, buying and selling problems can arise from either coordination or collaboration (Figure 4.4). Coordination with suppliers is intended to provide the produce (sourcing) and distribute payment to farmers; coordination with traders is the practice of deal making (in this case, bidding). Collaboration among operators concerns the practice of weighing, recording, sorting, and bulking produce. Then, collaboration with traders involves packing produce and receiving payment.

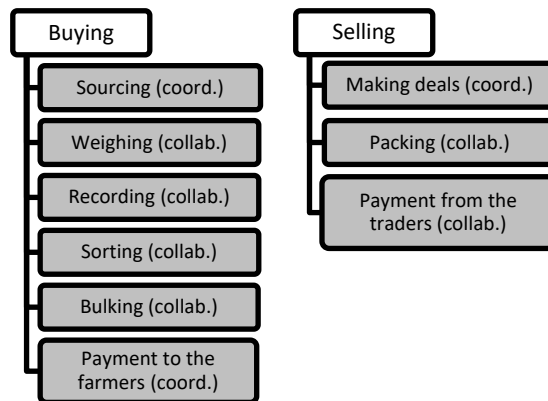



Figure 4-4 The aims of buying and selling and the coordination and collaboration problem diagnosis

Once we understood the collective trading practice, we went deeper to code the practice from our data fragments. However, the everyday practice was embedded. We had to generate examples of what a rule, a norm, and a strategy looked like. We clustered the messy practices to transform them into institutional grammars. Table 4.4 shows an example of practice coding in the buying activity (the extended version is available in the appendix).

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Table 4-4 *Recognising the unwritten rules-in-use, an example of a rule in the group-run auction's buying practice.*

Practice	Aim	Methods of data collection	Data	Auction
Buying	Sourcing (coord.): obligation to supply the auction	Observation	At harvest time in a leader's field, the workers packed the chillies in 14 bags. The leader with his son transported all of the bags to the auction by motorbike. The workers said the leader should give an excellent example to the other members by supplying all of his chillies to the auction.	Group-run
		Events mapping	The events mapping in agriculture revealed that in 2004 the farmers' group required the members to supply 75% of their harvest to the auction.	
		Documents (price and volume)	The auction book record revealed that the average number of suppliers per day was 15 farmers. There were 163 members in the group. However, the group leader stated that only 40% of farmers grew chilli that season because of the poor harvest last year.	
		Interview	'The farmers must supply 75% of their harvest to the auction. We can detect if a farmer does side-selling by observing how many workers he employs for the harvest. For example, if he hires five persons, he will obtain four bags of chillies for sure. If he supplies only one bag to the auction, then we know that he does side-selling.' (farmers' group secretary, group discussion, 5 Feb 2018).	
			'The farmers who do side-selling are the confused people. We just let them; they will be back. I used to warn them in the group meeting. Next year, we will withdraw their memberships if we still find side-selling' (the farmers' group leader, group discussion, 31 Jul 2018).	
			We used to yell at the farmers who try to sell their chillies to the local traders, 'Where are you going to bring your chillies to?' (Auction coordinator, group discussion, 31 Jul 2018).	
		Survey	Our analysis of the survey showed that everybody sold to petty traders at the beginning of the chilli harvest before the auction started to open. (data input from the survey, 2019).	

 : rule elements, A: attribute, D: deontic, I: aim, C: conditions, O: or else

In Table 4.4, we identified the actor's attribute (A), whether this grammar is permitted, mandatory, or forbidden (D), and then the action's outcome (I), when/where the action should take place (C), and whether there is any consequence for not following the grammar (O). The examples illustrate a step that we call detecting and labelling unwritten rules-in-use. We moved from the narratives to



wording that follows the grammar. We labelled the rules, norms, strategies in terms of the grammar tool suggested by Crawford and Ostrom (1995).

We collected plenty of data but had difficulty defining what data cover what practice. Accordingly, Table 4.4 helps to reveal the practice of buying. As can be seen from the practice coding, the group discussion with the farmers' group leader contradicted the survey data. However, the document analysis showed the reason why the practice happened. After coding the data fragments in Table 4.4, we applied them to narratives. Hence, the purpose of the following narratives is to show how we made sense of the logic and relationships and detected arbitrary data. Scholars can construct the narratives by looking only at Table 4.3; thus, the following narrative writing step is optional.

In the examples, we have inductively labelled the practices as rules, norms, and strategies to present the examples systematically. In the actual study, these data fragments were the many unlabelled gathered information based on a similar aim.

*Example 1: Buying practice:* Table 4.4 provides data fragments used to extract rules about the buying practice. The group-run auction tried to secure the farmers' share of the harvest while providing space for side-selling. The farmers' group's secretary said that the operators could monitor the number of workers hired by a farmer and thereby detect whether they sold at least 75% of the harvest to the auction (group discussion, 5 Feb 2018). The group operator explained that the operating team sometimes caught the farmers transporting their chillies to petty traders. The operators chided them by yelling, 'where are you going to bring your chillies to?' (group discussion, 5 Feb 2018). The events mapping showed that the group's auction had been practising the selling quota since 2004. The farmers' group leader identified the side-sellers as confused people that he set free because they would eventually be back selling to the auction. The group-run auction tried to hold the side-sellers accountable during the group meeting, while also recognising that all farmers still sold at least some chillies to petty traders. Our survey confirmed that everybody sold to petty traders at the beginning of the chilli harvest before the auctions started. The auction book record analysis did not substantiate members' compliance with supplying the auction. Only 9% of the members sold to the auction per day. However, we accepted the leader's explanation that, in 2019, only 40% of farmers grew chilli, because prices had fallen in recent years. In a harvest observation, the workers stated that the leader always sold his harvests to the auction to give the members an example of being loyal to the auction. The data fragments indicated that the farmers were obliged to supply the auction or received

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a warning when they failed to do so. Therefore, the coordination in supplying the chillies to the auction provided no incentive for the farmers to cheat.

The extended version of Table 4.4 and the narratives relating to examples 2 to 6 are available in the appendix.

### 4.3.3 Step 3: Translate to institutional grammar

Continuing with the examples, we framed the empirical evidence narratives into rules, norms, and strategies using the grammar tool. We started from messy practices in which rules-in-use were not obvious. The grammars were empirically rooted in observations and interview fragments, and the contexts were grounded in the mappings. We took the following steps to arrive at a clear grammar. First, we associated fragments with an attribute (A). As mentioned earlier, we adopted the suppliers and traders' perspective and so we chose one of the closest actors related to the fragments. Table 4.5 shows that the selected attribute referred to the members, suppliers, and traders.

Second, we connected the attribute (A) with the deontic (D): no deontic, may, may not, must, and must not. We had difficulty distinguishing the deontic modals 'may' and 'must'. Subsequently, we formulated the deontic 'may' as meaning that the actor was allowed, authorised, permitted, entitled, had the right to, or qualified to perform an action. Further, we explained the deontic 'may not' as the opposite of the mentioned words by adding the word 'not'. For the 'must' deontic, we specified that the actor was required, necessitated, obliged, ordered, or had a duty to perform an action. Similarly, when using the deontic 'must not', we considered that the actor was restricted, forbidden, prohibited, or kept from performing an action. We considered that using the proper term was essential to differentiate the mandatory degrees of rules or norms.

Third, we continued by matching it with the aim (I), condition (C), and sanction/'or else' (O). We arrived at these grammars based on several observations, interview fragments, and mappings. Lastly, we labelled them as rules (ADICO), norms (ADIC), or strategies (AIC).

Table 4-5. Detecting the rules, norms, strategies

Practice	No	Attribute (A)	Deontic (D)	Aim (I)	Condition (C)	Or else (O)	Type of rules-in-use	Auction in which grammar applied
Buying	1	The members	must	supply 75% of their harvests	to the auction	or the operator s warn them	Rule (ADICO)	Group-run
	2	The suppliers	may	sell the chillies	to selling points 1, 2, or 3 at any time	-	Norm (ADIC)	Family-run
	3	The suppliers	-	receive cash payments	every day	-	Strategy (AIC)	Family-run
Selling	4	The traders	must not	have more than 3 payment arrears	to the auction	or they will be banned from the auction	Rule (ADICO)	Group-run and family-run
	5	The traders	may	buy the chillies	in the afternoon and night/auction	-	Norm (ADIC)	Family-run
	6	The traders	-	receive a good quality of chilli	every time they purchase chilli from the auction	-	Strategy (AIC)	Group-run and family-run

#### 4.3.4 Step 4: Configure the institutional grammars – rules, norms, and strategies

In real analysis, a study can produce many rules, norms, and strategies, making it difficult to read an organisation's behaviour. We elaborated a rules-in-use configuration to grasp better the action situation of deeply embedded coordination and collaboration practices in the real food market. Table 4.5 can be simply converted into Figure 4.5 by categorising the rules, norms, and strategies based on the buying and selling practices. To make the organisational comparison, we clustered the similarities and differences of the institutional grammars in the two auctions. Doing it this way helps to compare how the organisations use similar and

different rules, norms, and strategies. Figure 4.5 demonstrates that the group-run auction preferred to use rules to operate its trading, whereas the family-run auction tended to use norms and strategy. The configuration shows how the action situations in the two auctions are similar or different.

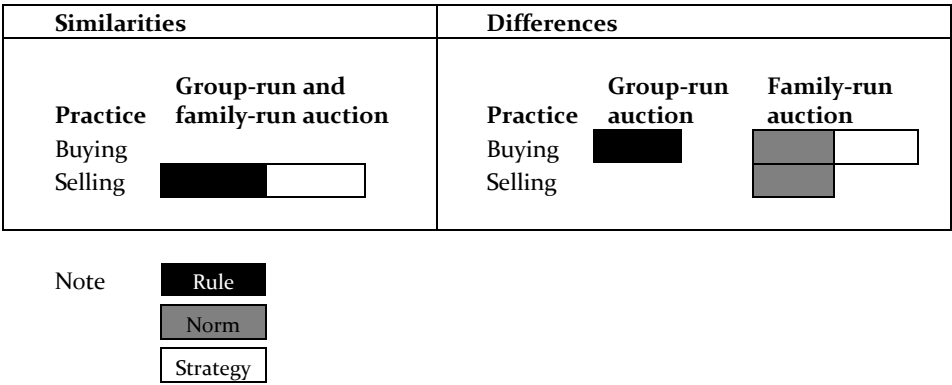


Figure 4-5 Rules-in-use configuration to compare collective marketing groups

4.4 Discussion and conclusion

The four steps are necessary to compare organisations with different organisation structures but the same practice. They allow us to compare the organisations by looking at the relative usage of rules, norms, and strategies in the configuration.

4.4.1 Contributions and reflections

We discovered a way to elicit unwritten rules-in-use in the practice of collective marketing. We made the unwritten rules-in-use visible by using several data collection methods and a systematic effort. We started by examining the qualitative data of everyday practices. Following Young's (2008) coordination and collaboration problems of an institution, we proposed that buying and selling were the key areas of interest in undertaking the practice study to further decipher rules, norms, and strategies. We have made a significant contribution to the systematic study of unwritten rules-in-use in collective marketing to analyse data fragments. The grammar tool helps to elicit unwritten rules-in-use by providing patterns to identify different institutional grammars. Regarding data collection and analysis, this paper is methodologically innovative in recomposing unwritten rules-in-use.

The grammar tool offers an opening method to classify rules, norms, and strategies. The deontic component (may, may not, must, must not) facilitates the organisation and comparison of the institutional grammars. In different areas, rule creators may use different deontic modals, for example, shall, must, will, or can. However, the meaning of the grammar, in reality, may be similar (Dunlop et al., 2019). The deontic also helps avoid inconsistencies, such as when institutions permit and forbid identical behaviour (Ostrom, 2005). This step provides a rich dataset that enables progression to the next institutionalism analysis step. Nevertheless, the institutional grammar tool is not straightforward in offering guidance about the kind of data to collect. This study indicates what data to collect by combining the grammar tool with practice-oriented study and using it as an interesting initial step towards the sophistication of researching unwritten rules-in-use.

We selected the auction as the case study to give the readers access to understanding and reproducing the integrative methods to elicit unwritten rules-in-use for their research designs. The auction followed the cooperative principles commonly used in various kinds of collective marketing models. The data collected included suppliers' and buyers' roles and trading-practice elements that are familiar to scholars who work in a similar field. The data-analysis method is transparent and convenient to follow, making it feasible to undertake studies and write articles about collective marketing that operates unwritten rules-in-use.

We categorised the collective marketing practices as buying and selling, in which each practice contains a coordination and collaboration problem diagnosis. Even though Young (2008) states that coordination is needed to control systems by applying solutions that do not provide incentives to cheat, our finding shows that sanctions can still be applied to ensure that the actors follow the coordination practice. Therefore, we conclude that coordination and collaboration practices may contain sanctions to enforce compliance.

According to Watkins and Westphal's (2016) study, the deontic 'must' signifies a higher mandatory level and is most likely linked to a rule. We have discovered three reasons why the deontic 'must' can also be associated with norms – firstly, when it is implausible that any actors would break that norm. For example, such a norm might say that the traders 'must not' interfere with the result of the auction when the operator announces the winner. The second reason relates to a situation where there is no option other than to follow the norm. For instance, suppliers 'must' accept unstable prices determined by remote markets. The third reason relates to instances where no infraction can be detected. For example, suppliers 'must' inform the

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operators when they receive overpayments. In this way, norms can be seen as social capital to solve collective problems because they reduce monitoring and punishment costs (Ostrom, 1990). The three reasons for using the deontic 'must' in norms enabled the auctions to direct the actors' behaviours more quickly and with fewer resources.

In categorising sanctions, Schlüter and Theesfeld (2010) identify automatic sanctions for defying strategies, internal or external deltas/emotional sanctions for infringing norms, and tangible sanctions for breaking the rules-in-use. In community-based collective marketing groups, sanctions can be social and have long-term implications for economic contexts. For example, when caught for not supplying 75% of the harvest to the auction, a farmer gets a warning from the auction operator. This sanction is a social sanction. Nevertheless, in a community context, it also means that the farmer will not be able to access community's labour for his farm or will be excluded from traditional ceremonies that require community contributions. Hence, in the context of community-based collective trading, emotional sanctions can lead to tangible sanctions.

Besides providing insights on the integrative methodology, we have also paid attention to data analysis technicalities. We analysed the data manually because using the qualitative data analysis software, Atlas.ti, was ambiguous in its interpretation of the phenomenon's context; as Watkins and Westphal (2016), whose analysis used NVivo, also found. Software may be more useful for analysing written rules than for understanding a phenomenon's context.

We addressed the point that qualitative studies must not make any misleading assumptions and must ensure the research's credibility (Silverman, 2015). Translating data from one language into another creates a problem of different cultural and language contexts that may lead to loss of meanings (Kamran & Shivakoti, 2013). In this case, we involved a native researcher who could understand Javanese and English and the context of the practice to ensure a correct translation and match the cultural contexts.

Following Silverman (2015), researchers should avoid the ironic mistake in triangulating data – that is, using one piece of useful information and deleting another. In our study, we combined the data collected from observations with data from group interviews. We believe that this is how most researchers treat their data. However, various respondents repeatedly made similar grammars, as shown in the interview fragments. We achieved comprehensive data treatment by looking at

smaller datasets and examining them repeatedly. If the generalisation applies to every piece of related data, this means that the treatment is satisfactory (Silverman, 2015). Nevertheless, we found that contradictory data from different source appeared. For example, although the leader of the farmers' group stated that membership was withdrawn from those who engaged in side-selling, the survey showed that everybody did side-selling before the auction. After examination of several different sources, both pieces of information were correct for different reasons. Hence, we suggest repeated confirmations of different sources to ensure the credibility of the data.

Scholars can ascertain the sequence of events through in-depth interviews, focus groups, participant observation, or embedded written forms to create narratives (Guest et al., 2013). Our research constructed the events mapping through group discussion and then completed it with the different data collection sources. Researching collective trading always involves smallholders as the main actors. Therefore, understanding community events is also essential to support the understanding of events in agriculture. The combination of the two was helpful for understanding the context of the phenomenon.

Watkins and Westphal (2016) state that the institutional grammar that do not exist but that are desired to be in use can be a crucial point in explaining an institution's dysfunctions and the evolving nature of rules-in-use. Using the practice approach, we can contrast and compare the observed institutional grammars with how the auctions can serve the suppliers and traders better. Therefore, using practice-based study with institutional grammar enables diagnosis of the institutions regarding their current and expected performances.

Unlike in written policy, research respondents did not create a rules-in-use inventory. They explained and summed up rules-in-use in stories and individual judgements about how to sort things out and how they sense them (Watkins & Westphal, 2016). Similarly, our experience showed that researching the practice of collective trading does not imply a predefined knowledge about what variables and data to collect. The researchers had to jump into the messy nature of everyday practices and then take the next analytical steps. The practices were not apparent because the operators did not talk when working. We saw that institutional analysis needed to become more sophisticated. Therefore, we worked with ADICO to have a more precise understanding of the kind of unwritten rules-in-use used in collective trading in a specific empirical situation. The focus on practice and the institutional

grammar tool is an initial step towards analysing the institutional nature of food markets.

### 4.4.2 Future research

Our integrative methodology offers an alternative to collective marketing studies that tend to focus on how an organisation is supposed to work by using written protocols, by-laws, or other regulations. The tendency to focus on written rules has limitations because it cannot explain an organisation's performance and embeddedness in the wider social fabric. The integrative methodology looks beyond written regulations in cooperatives and partnerships, which act as the community's economic practice. The performance of these institutions is highly dependent on how to blend the written and unwritten rules-in-use. Given the mixture of written and unwritten rules-in-use, we suggest that scholars should not see institutions in isolation from their community's actual situation.

The integrative methodology provides a steppingstone towards a comparative analysis of organisations that look similar in their operations but different in their outcomes. Our study used two farmer-managed chilli auctions with similarities but that are different in terms of their skills and viabilities. By using the integrative methodology, scholars can compare the performance and viability of different ways of organising collective marketing by comparing the situation in which written or unwritten rules-in-use are dominant and looking at the balance between institutional grammars – rules, norms, and strategies. The methodology also enables researchers to open the black box of collective trading that appears to be driven by written rules; performance emerges from a blend of written and unwritten rules-in-use.

The application of this approach is not limited to the context of collective trading. For example, producer organisations do not work with legal – or even informal – forms, whereas cooperatives and partnerships with legalised entities work with written rules and specific legislation (Bijman & Hanisch, 2012). However, Azari and Smith (2012) contend that, even when written rules exist, unwritten rules can complete, work in parallel, or coordinate the written rules. Therefore, we add to this distinction that, even though producer organisations commonly apply unwritten rules-in-use, cooperatives also apply them in their technical operations. The methodology to elicit unwritten rules-in-use helps scholars unravel the forms of collective trading by obtaining a deeper understanding of collective trading and similar organisations' set-ups by looking at the mixture of written and unwritten rules-in-use that motivate how the institutions behave and perform.



The above are relevant issues to which the grammar tool and the practice-based approach can be applied. Other investigation themes that use unwritten rules-in-use with actors and practice as the centre of the study are also amenable to this approach. When conducting further analysis, authors must relate the methodology to theories with which they are familiar (Maxwell & Cole, 1995). Therefore, we suggest that scholars who aim to elicit unwritten rules-in-use should be open to broader exploration topics based on their expertise in the food market's institutional nature.

## Appendix of chapter 4

Table 4.4. Practice coding

Practice/ Example	Aim	Methods	Data	Auction
<b>Buying practice</b>				
Example 1: rule (ADICO)	Sourcing (coord.): obligation to supply the auction	Observation	At harvest time in a leader's field, the workers packed the chillies in 14 bags. The leader with his son transported all of the bags to the auction by motorbike. The workers said the leader should give a good example for the other members by supplying all of his chillies to the auction.	Group-run
		Events mapping	<sup>A</sup> The events mapping in agriculture denoted that in 2004 the farmers' group required the members to supply 75% of their harvest to the auction.	
		Price and volume	The auction book record revealed that the average number of suppliers per day was 15 farmers. There were 163 members in the group. However, the group leader stated that only 40% of farmers grew chilli that season because of the poor harvest last year.	
		Interview	<sup>D</sup> 'The farmers must supply 75% of their harvest to the <sup>C</sup> auction. We can detect if a farmer does side-selling by observing how many workers he employs for the harvest. For example, if he hires five persons, he will obtain four bags of chillies for sure. If he supplies only one bag to the auction, then we know that he does side-selling.' (Farmers' group 1 secretary, group discussion, 5 Feb 2018). <sup>O</sup> We used to yell at the farmers who tried to sell their chillies to the local traders, 'Where are you going to bring your chillies to?' (Auction coordinator, group discussion, 31 Jul 2018).	
		Survey	Our analysis of the survey showed that everybody sold to petty traders at the beginning of the chilli harvest before the auction started to open. (Data input from the survey, 2019).	
Example 2: norm (ADIC)	Sourcing (coord.): suppliers' alternative to sell to selling	Observation	<sup>A</sup> 'Actually, there are three selling points here. I shared my auction price every day with them because, back then, the farmers complained of getting different prices from the three selling spots.' (Chat with the auction 2 owner, during observation, 24 Jun 2019).	Family-run
		Events mapping	The events mapping in agriculture indicated that the auction was taken over by the family in 2016. In the same year, there were two other selling point established, meaning that the village had 3 selling points.	

## Method to elicit unwritten rules-in-use

	points 1, 2, and 3	Price and volume <b>D</b>	The auction book indicated that the family expanded their purchase to the farmers from other villages. Therefore, the owners had no problem competing with the other selling points.	
		Interview	The life history interview with a founder of the group auction revealed that, after he and the other operators established the group auction in 2012, there was friction with one of the operators. Then the group leader took over and privatised the auction, which then became the family-run auction. At the same time, the mentioned operator established the second selling point. Then, the leader's brother opened the third selling point.	
		Survey	'There are three selling points here, but I only supply chillies to the auction (selling point 1) and selling point 3, because the owners are my relatives.' (Respondent 15, survey, 13 Sept 2019).	<b>I</b>
Example 3: strategy (AIC)	Payment to the farmers (coord.): suppliers receive cash payments for the whole season	Observation <b>C</b> <b>I</b>	Every time after supplying the chillies the farmers went to the owner's desk to receive payments.	Family-run <b>A</b>
			At the beginning, middle, and end of the auction, the suppliers always receive cash on delivery. (Auction 2, observation, June–Sept 2019).	
		Events mapping	In around 2016, the success of chilli and melon farming enabled the farmers to renovate their houses and buy motorbikes.	
		Price and volume	The owners documented the payments of the suppliers in the auction book. The 'high price' mentioned by the owner was confirmed with the auction prices that followed the provincial and national chilli daily price data provided by the government.	
		Interview	'If the farmers sell to my auction, they receive the high price. It is also convenient for them to have a close selling point and cash payments. My auction is the only one that can pay cash throughout the season.' (Auction 1 owner, interview, 24 Jun 2019).	
			The life history interview with the wife of the family-run auction leader uncovered that the family used their vegetables sales saving and accessed the bank of BRI to provide cash payments for the suppliers.	
		Survey	The term 'high price' was always conveyed by the suppliers during the survey to compare the price provided by the auction and the petty traders.	
<b>Selling practice</b>				
Example 4: rule (ADICO)	Payment from traders	Observation <b>A</b>	In a group-run auction the winner (trader) of the auction was announced but then the auction coordinator replaced him with the second-highest bidder. An operator said,	Group and

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	(collab. ): traders having more than 3 arrears	D	'The formerly selected winner trader has not repaid for three auction sessions.' (Auction 1, observation, 27 Jun 2019)	I	family-run
		Events mapping	O During the trader network mapping, the family-run auction owner banned a trader because he had not repaid for more than 3 times. C		
		Price and volume	The two auctions recorded the traders' payments in their auction books.		
		Interview	A trader from Purworejo explained, 'My buyers pay for the chillies after 5–6 deliveries. I am not sure why they do that. But when we enter markets, the produce from the cities will be distributed to small retailers, then to markets in outskirts area. Thus, payments are rolling.'		
		Survey	-		
Example 5: norm (ADIC)	Making deal/bidding (coord. ): permission to traders to buy in the afternoon and night	Observation	Every afternoon at 12.00 am–05.00 pm, several petty traders came with their small trucks and bought 1–2 bags of chillies and a few bags of other vegetables such as cucumber, eggplant, or luffa. They always had a chat with the auction owners, then, they paid for the chillies and the other vegetables. (Observation, 29–31 January 2018).		Family-run
		Events mapping	The traders network mapping showed the location of the afternoon and the night traders. The family-auction owner marked the traders who used to be both kinds of traders.		
		Price and volume	The auction book record showed that there were 2–7 chilli buyers in one day. The first buyer on the list (the winner) always bought the largest volume; the others bought below the auction winner's volume.	I	
		Interview	A There are two kinds of traders in our auction, the D afternoon and night traders. The afternoon traders took some chillies in the afternoon, then, they pay the same price with the auction's price result in the night. The night traders come after 5.00 pm to join the auction.' (Auction 1 owner/wife, interview, 12 Jun 2019)	C	
		Survey	-		
Example 6: strategy (AIC)	Sourcing (coord. ): traders obtain good quality of chilli	Observation	The operators in the group-run and family-run auction always sort the chillies on the spot before weighing them. The suppliers witness the weighing. When bulking, the operators sort the chillies again. (Auction 1 and 2, observation, June–Sept 2019).		Group and family-run
			In a religious meeting to express the farmers' gratitude to God, called <i>pinuwunan</i> , the farmers' group leader wished that the village would be blessed with good harvests to support community welfare.		
		Events mapping	The events in agriculture mapping revealed that both auctions experienced a low season due to heavy rainfall in		

			2015–2017 that had caused them to receive complaints from the traders.	
		Price and volume	-	
	I	Interview	'I always ask my suppliers to sort their chillies because I have to maintain quality. The infected and rotten chillies must be omitted. Because if the quality is low, the traders will send in low bids. Actually, if the chillies are well sorted, the traders dare to send in high bids.' (Auction 2, group interview, 29 Jan 2018).	A C
			A trader from Kulon Progo stated that he used to suffer a loss if he bought some low quality chillies, 'If I ever delivered chillies with bad quality, I sold the chillies 70% cheaper than the price that I paid.'	
			A buyer from Tangerang, West Java, confirmed in a phone call that he had several suppliers. One of them was a trader from Temanggung who purchased chillies from the auctions, 'during rainy season chilli is not good. If I suffer from loss, I share it with my supplier (the trader), the same way when I obtain profit.'	
		Survey	The respondents to the survey said that they separate the different qualities of chilli during the rainy season. They must maintain quality, yet and broken chillies must be omitted to avoid complaints from the traders.	

### *Buying practice examples*

Example 1: rule (mentioned in Step 2: Recognise unwritten rules-in-use/Describing everyday practice)

Example 2: norm

Table 4.4 shows that, unlike in the group-run auction, we identified that the selling quota rules did not apply in the family-run auction. During our observation, we incidentally found out that there were three selling points in the village. The auction leader said, 'actually, there are three selling points here. I shared my auction price every day with them because, back then, the farmers complained of getting different prices from the three selling spots' (observation, 24 Jun 2019). One of the former auction founders validated these grammars during our life history interview with him on another occasion. Furthermore, the events mapping in agriculture confirmed that the family took over the auction in 2016. Then, in the same year, two other selling points were established, meaning that the village had three selling points. We were curious about how the family auction responded to the risk of decreased volume because of the split produce in the village. When we checked the auction

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book record, it indicated that the family expanded their purchase to farmers from other villages. Therefore, these data confirmed why the owners did not have any problem competing with the other selling points. Besides, we discovered that the family used their social relationships to ensure volume. We discovered similar grammars to the one expressed by one of our survey respondents, 'there are three selling points here, but I only supply the auction (selling point 1) and selling point 3, because the owners are my relatives' (respondent 15, survey, 13 Sept 2019). The gathered information demonstrated that the suppliers had the choice to sell to any selling point, and there was no consequence involved for any choice made. This activity is categorised as the coordination in sourcing.

### Example 3: strategy

Cash payments were important for the farmers to pay the workers and daily consumption (Table 4.4). The farmers supplied chillies to the auctions to obtain a high price with cash on delivery. In the family-run auction, the farmers went to the owner's desk to receive payments every time after supplying the chillies. The owner always documented the payments of the suppliers in the auction book. He noted, 'if the farmers sell to my auction, they receive the high price. It is also convenient for them to have a close selling point and cash payments. My auction is the only one that can pay cash throughout the season' (interview, 24 Jun 2019). The survey respondents referred to the 'high price' as the price compared to the one that they received from petty traders. We explored the definition of the 'high price' mentioned by the owner by comparing the auction prices with the government's provincial and national chilli daily price data, which resulted in the same trend. In around 2016, chilli and melon farming's success enabled the farmers to renovate their houses and buy motorbikes. Next, the life history interview with the family-run auction leader's wife uncovered that the family used their savings from vegetables sales and accessed the bank of BRI to provide cash payments for the suppliers. These data demonstrated that the cash payments benefited the farmers if they chose to supply the auction. The data did not indicate any sanction for not choosing to sell to the family's auction. This example shows the practice of coordination in payment to the farmers.

*Selling practice examples*

## Example 4: rule

Table 4.4 demonstrates that both the group-run and the family-run auction forced the traders to pay immediately for the chillies that they won. We witnessed that, in the group-run auction, the operator announced the auction winner-trader, but then the auction coordinator replaced him with the second-highest bidder. An operator said, 'the formerly selected winner trader has not paid for three auction sessions' (observation, 27 Jun 2019). During the trader network mapping, the family-run auction owner mentioned that he banned a trader because he had not paid more than three times. Keeping the traders' payments was important. That was why the two auctions recorded the traders' payments in their auction books to ensure the money flow. Nevertheless, the auctions were aware that the traders often had difficulty paying cash. A trader from Purworejo explained, 'my buyers pay for the chillies after 5–6 deliveries. I am not sure why they do that. However, when we enter markets, the cities' produce will be distributed to small retailers, then to markets in the outskirts. Thus, the payments are rolling' (interview, 19 Sept 2018). The traders were restricted from postponing payments for more than three auctions. If they did, they received the sanction of being prohibited from participating in the next auction. The data show the collaboration of the auction with the traders to arrange payments.

## Example 5: norm

Table 4.4 indicates that, in the family-run auction, every afternoon between 12.00 am and 5.00 pm, several petty traders came with their small trucks and bought 1–2 bags of chillies and a few bags of other vegetables such as cucumber, eggplant, or luffa. They always had a chat with the auction owners, and then they paid for the chillies and the other vegetables (observation, 29–31 Jan 2018). No traders came to the night auction. The owner received the bids from the traders through WhatsApp messages, then executed the auction by himself and broadcast the result to the participating traders. We noted that the auction book record showed 2–7 chilli buyers in one day. The first buyer on the list was the winner who always bought an enormous volume; the other traders bought smaller volumes. During the trader network mapping, the auction owner showed the afternoon and the night traders' location. He marked the traders who used to be both afternoon and night traders. On another occasion, we interviewed the wife, and she said, 'there are two kinds of traders in our auction, the afternoon traders and the night traders. The afternoon traders take some chillies in the afternoon, and then they pay the same price as the night auction's price. The night traders come after 5.00 pm to join the auction' (interview, 12 Jun 2019). These

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data fragments signify that the traders had the opportunity to purchase in the afternoon and the night sale without any effect of not doing so. The data fragments show the coordination of making deals.

### Example 6: strategy

Table 4.4 shows the group-run auction always maintained their chilli quality to favour the traders. The operators always sorted the chillies on the spot before weighing them. The suppliers witnessed the weighing. When bulking, the operators sorted the chillies again (observation, June–Sept 2019). We participated in a religious meeting held in the village. The ceremony, called *pinuwunan*, was held to express the farmers' gratitude to God. The farmers' group leader wished that the village would be blessed with an excellent climate to enable good harvests. We related this with our events mapping; the severe climate had caused heavy rainfall in 2015–2017 that had caused them to receive complaints from the traders about the low quality of chilli. The survey respondents said that they separated the different qualities of chilli during the rainy season. They must maintain the quality by removing the wet and broken chillies to avoid complaints from the traders. The family-run auction leader mentioned, 'I always ask my suppliers to sort their chillies because I have to maintain quality. The infected and rotten chillies must be omitted. If the quality is low, the traders will send in low bids. Actually, if the chillies are well sorted, the traders dare to send in high bids' (group interview, 29 Jan 2018). A trader from Kulon Progo stated that he used to suffer a loss if he bought low-quality chillies, 'If I ever delivered chillies of bad quality, I sold the chillies 70% cheaper than the price that I paid' (interview, 19 Sep 2018). Low quality of chilli was a chain issue; a buyer from Tangerang, West Java, confirmed in a phone call that he had several suppliers, 'During rainy season chilli is not good. If I suffer a loss, I share it with my suppliers; if I earn a profit, I share with them too' (22 Nov 2018). This information shows that good-quality chillies were provided to the traders with the aim of capturing the market. The example shows the coordination in sourcing in the group-run auction.







# Chapter 5

## Brokering market entry for smallholders: An institutional analysis of farmer-led auctions in chilli markets, Java, Indonesia

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## 5 Brokering market entry for smallholders: An institutional analysis of farmer-led auctions in chilli markets, Java, Indonesia

### Abstract

Linking groups of smallholder farmers to markets and agribusiness has been widely considered as instrumental to sustainable and socially just development in rural areas. Research assessing the performance of groups involved in collective trading concentrates on conformity with a set of written and formalised rules that shape internal governance and the organisational design. This paper shifts attention to understanding the configuration of unwritten rules emerging in the situated practices of self-organised and farmer-led auctions brokering market entry for smallholders. It compares two farmer-managed chilli auctions, with distinct ownership structures, to typify the unwritten rules-in-use and elicit their institutional grammar manifest in everyday business and trading practices. The analysis combines a practice lens with the rule typology central to Ostrom's Institutional Analysis and Development framework and applies the related institutional grammar tool. The analysis shows that rules affecting who is able to do what (position), how to enter or leave the auction (boundary) and how to communicate around prices setting and the daily transactions (information) constitute the main principles of the auction. Traders largely followed these principles, and the rule grammar exposes the possible sanction of exclusion. The combination of position, choice and payoff rules and a variety in institutional grammar signify the main difference for how the auctions brokered the relationship with suppliers. Our analysis broadens the scope of evaluating the performance and sustainability of farmer-led initiatives in market entry and appreciates diversity in how organisations develop capacities to contribute to inclusiveness in a specific market environment.

**Keywords:** collective trading, inclusive development, farmers' agency, governance, institutional analysis

## 5.1 Introduction

The integration of smallholder farmers into markets connects them to resourceful agribusinesses or traders as buyers of their produce. Working with organised farmer groups, as a modality for collective marketing, has been proposed for capturing efficiency gains, economies of scale, and enhancing the capacity of farmers to negotiate favourable terms of entry and bargain the distribution of risks and benefits with traders or buyers (Fischer & Qaim, 2014; Jelsma, Slingerland, Giller, & Bijman, 2017; Kissoly, Fasse, & Grote, 2017). A leading organisational set-up for achieving this is the cooperative model, which enables collective marketing (Bijman & Wijers, 2019; Ton, 2008). Research on cooperatives emphasises the complications of internal governance (Kormelinck, Bijman, & Trienekens, 2019) to ensure commitments and monitor compliance (Hellin et al., 2009; Narrod et al., 2009). Empirical studies focus strongly on formalised institutional arrangements, for instance, through membership and participation in decision making (Mwambi et al., 2020), rules about membership-related voting rights, distribution of benefits, capital gains and shares tradability (Chibanda et al., 2009) or the strategy relating smallholders to markets by registering farmer groups and contract farming (Gramzow et al., 2018). This perspective mainly centres on the internal, organisational features of farmer-led collective marketing to assess the potential of realising economic benefits.

However, farmer groups taking up a business function not only have to deal with internal governance matters; it is equally essential to use rules that are functional to their (new) role in buying and selling produce (Barham & Chitemi, 2009). Rules and their use are important in constructing collective action arrangements (Markelova et al., 2009). Yet, research on rules-in-use that underlies collective trading groups' achievements is scarce. Moreover, the rules related to everyday trading are not always written and formalised, and, therefore, not obvious to detect. This makes discovering the rules used in collective trading endeavours challenging. We build on the work of Mwema and Crewett (2019) in Kenya that applies the Institutional Analysis and Development (IAD) framework (Crawford & Ostrom, 1995; Ostrom, 2005; Ostrom, Gardner, & Walker, 1994) to distinguish delivery rules for producers of leafy vegetables supplying schools and restaurants. Accordingly, we aim to open the black box of rules-in-use, as the opposite to rules-in-form (Ostrom, 2005), in collective or farmer-led forms of trading. Understanding what rules are used provides a basis for imagining how to sustain bottom-up forms of collective trading that navigate dynamic markets.

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The empirical focus of this paper is on two farmer-initiated auctions in the Indonesian chilli markets as a case of coordinated action in marketing. Auctions form an established alternative marketing strategy for farmers to influence the terms of entry in agricultural markets (Blaine, James, & James, 1997; Meulenbergh, 1990; Tubene & Hanson, 2002); they have a wholesale function and offer a ready market for smallholders that may generate positive economic impact in rural communities (Reid, Simmonds, & Newbold, 2019). Auctions organise a bidding process linking suppliers and buyers at a physical site where large volumes of produce are aggregated and offered for sale to traders (Johnson, Fraser, & Hawkins, 2016). One highlighted effect of produce auctions in Europe and North America is that the competitive bidding process provides growers with the highest possible price given existing market conditions (Barendse, 1987; Meulenbergh, 1990; Tourte & Gaskell, 2004). In the Indonesian market situation, the effects of setting up and supplying an auction may be broader. Indonesian fresh produce markets are characterised by supply from many small-scale producers with uncertain access to markets, dependency on petty traders, and problems of immediate cash needs and insecure incomes (Devi, Harsoyo, & Subejo, 2015; Nugroho, 2021). Auctions exemplify a way of skilfully linking small-scale producers with these dynamic and competitive markets and eventually to consumer demand (Tourte & Gaskell, 2004). The chilli auctions shape and eventually consolidate the sourcing relationship with small-scale farmers, and the bidding procedure may stimulate competition among traders without a set of written and explicit rules-in-use. This makes it relevant to identify and classify the array of predominantly unwritten rules-in-use that underly a collectively organised bidding process, which facilitates payments to and sourcing from smallholders and organises the buying process in a predictable and transparent manner.

To understand how rules shape and sustain the performance of farmer-led trading groups and contribute to refashioning the terms of inclusion of smallholder farmers in food markets, we conceptualise the auction as a situated action that emerges from self-organisation and spontaneously orders through interactions among actors, as proposed by Hodgson (2006). Eliciting the use of both unwritten and written rules starts from everyday trading practices handled by the auction operators. Next, we use the IAD framework to identify what rules are used for what aims, which portrays the capabilities to govern and regulate the action situation of the auctions. Next, we deepen the insights into the actual use of specific rule types by uncovering the institutional grammar emerging in the situated and everyday action of running the auction. Combining a practice lens (Jones & Murphy, 2010; Nicolini, 2011) with an institutional perspective (Ostrom, Janssen, & Anderies, 2007) enables us to recognise

the regulated nature of what seems to be a messy practice of collective trading that operates with unwritten rules-in-use (Mangnus & Vellema, 2019; Schoonhoven-Speijer & Vellema, 2020). It opens space for appreciating proven capacities to manage evolving collaborative and coordination processes in fresh produce trading, rather than assessing compliance with ideal-typical forms of organising farmers.

This paper is organised as follows. Section 5.2 elaborates on the analytical framework employed to distinguish rules and identify the institutional grammar of the rules-in-use. Section 5.3 provides the case study selection, data collection, and data analysis. Next, section 5.4 describes the action situation of the auctions, categorises the distinct rules-in-use and exposes how these rules are used in brokering the relationships between suppliers and traders. In the discussion, we compare the performance of both auctions with distinct ownership structures to reflect on their capacities to influence the terms of engagement with competitive markets. Finally, we conclude how insights into the rules-in-use contribute to understanding the agency of groups to influence the terms of inclusion of smallholder producers in food markets.

## 5.2 Analytical framework

### 5.2.1 Rules used in action situations

This study identifies and analysis rules used in everyday practices and routines, which makes running of the auction the action situation central to our institutional analysis. We choose everyday practice to offer awareness about the various actors, practices and the rules that manage them (Arts, Behagel, Turnhout, De Koning, & Van Bommel, 2014) and to discover capacity to solve unexpected issues (Mangnus & Vellema, 2019). The emerging rules from practices can be formal (law, regulations) or informal, implying how to do things (Steketee, 2010; Zapata, Vazquez-Brust, & Plaza-Úbeda, 2010). The latter concerns the rules-in-use that direct or change behaviours of individuals or groups participating in the action situation (Ostrom, 2005; Poteete & Ostrom, 2004), such as buying and selling as the central analysis of this study.

To recognise unwritten rules-in-use in the auctions, we first employ the rules typology – part of the Institutional Analysis and Development (IAD) framework by Ostrom – to capture and categorise the different rules visible in the practice of auction (Table 5.1). The IAD-framework is widely used in the field of natural resource management, such as in the sector of oil and gas regulations (Heikkila & Weible, 2018), common property pastures (Baur & Binder, 2013), water planning (Larson, 2006), ecosystem services (Lien, Schlager, & Lona, 2018), irrigation system

(Kamran & Shivakoti, 2013), urban ecosystem (Mincey et al., 2013), ecological restoration (Watkins & Westphal, 2016), and irrigation systems (Ostrom & Basurto, 2011). The application of the IAD-framework in the coordination of commercial transactions and collective trading is rare. We build on one study that focuses on African leafy vegetables operates the rules typology to structure and analyse the characteristics of rules in the value chains (Mwema & Crewett, 2019). Similarly, our study uses the typology to distinguish different kinds of rules that bring order to the messy practices of the auctions.

### 5.2.2 The grammar of rules-in-use

As a next step, we use the institutional grammar tool, a tool building on the IAD-framework, known as ADICO. Crawford and Ostrom labelled rules-in-use as institutional grammars that represent rules, norms, or strategies (Ostrom, 2005)(Table 5.2). ADICO explicates the grammar indicating how rules are used. The ADICO grammar comprises attributes or actors (A), deontics (D), aims (I), conditions (C) and sanctions (Or else). Deontics are the modal verbs: may, may not, must, must not and 'no deontic'. The differentiation of rules-in-use that actors are exposed to but do not necessarily follow is based on whether the rule comes with a sanction and prescribed behaviours. In this categorisation, rules are prescriptive and include sanctions for non-compliance, norms leave out penalties or sanctions, and strategies mainly qualify how the rule makers intends to treat or interact with other actors. The grammar tool has a strong focus on the compliance with written rules (Dunlop, Kamkhaji, Taffoni, & Wagemann, 2020; Siddiki, Basurto, & Weible, 2012; Tschopp, Bieri, & Rist, 2018). By operationalising the types of grammar in the context of farmer-led marketing activities, we shift attention from outcomes to processes of brokering the terms of inclusion of smallholder suppliers in market access. The processes explain how suppliers and buyers recognise and comply with the auctions' institutional set-up in the middle of agri-food chains. In our approach, deciphering the grammar is the final analytical step, after first finding a way to depicture the rules-in-use by closely observing the performance of tasks.



Table 5-1 Rule types visible in action situations

Rule types	Definition
Position rules	the ability of an agent to move from only a user position into someone who owns specific skills.
Boundary rules	the number of participants, their attributes, the requirements to enter and conditions if they leave.
Choice rules	the mandatory, authorised or forbidden actions.
Aggregation rules	whether particular actions necessitate permission or agreement of others or not.
Information rules	decisions that the participants are allowed/not allowed to share with others
Payoff rules	the sanctions that are given for breaking any rules and the rewards for the conformers. The rules also monitor the conformance of the agents and decide the person responsible for sanctioning.
Scope rules	the known outcome or results of actions taken within the situation.

Source: (Ostrom, 2011)

Table 5-2 Three institutional grammars of rules-in-use

Institutional grammar	Definition	Institutional grammar
Rule	A subset of participants (A) that are prescribed/not prescribed (D) to do a specific description (I) in a particular location and time (C). If the participants perform non-compliance, a <u>sanction</u> (O) applies.	ADICO
Norm	A subset of participants (A) that are prescribed/not prescribed (D) to do a specific description (I) in the defined location and time (C). There is <u>no sanction</u> (O) that applies for non-compliance.	ADIC
Strategy	A subset of participants (I) to do/not do a specific description (I) in a determined location and time (C). There is <u>no deontic</u> element (D) and <u>no sanction</u> (O).	AIC

Source: (Crawford & Ostrom, 1995)

5.2.3   Analysing auctions as configurations of rules-in-use

Our analysis compares the action situations of two auctions with different ownership structures: one is operated by a small group of farmers, and the second one started similarly but was taken over by a farmer family. The written and unwritten rules used in the practice of running an auction can be classified with the IAD-framework. The different ways that rule types are used or put into practice are exposed by finding the grammar, and subsequently classify the uses as rules, norms, or strategies. These steps open space to portray the action situations of the auctions as configurations of written and unwritten rules-in-use, which allows us to understand the observed differences in performance and outcomes between the two auctions. We couple these rule configurations to their capacities to broker and refashion the terms of inclusion of smallholder suppliers into dynamic markets (Figure 5.1).

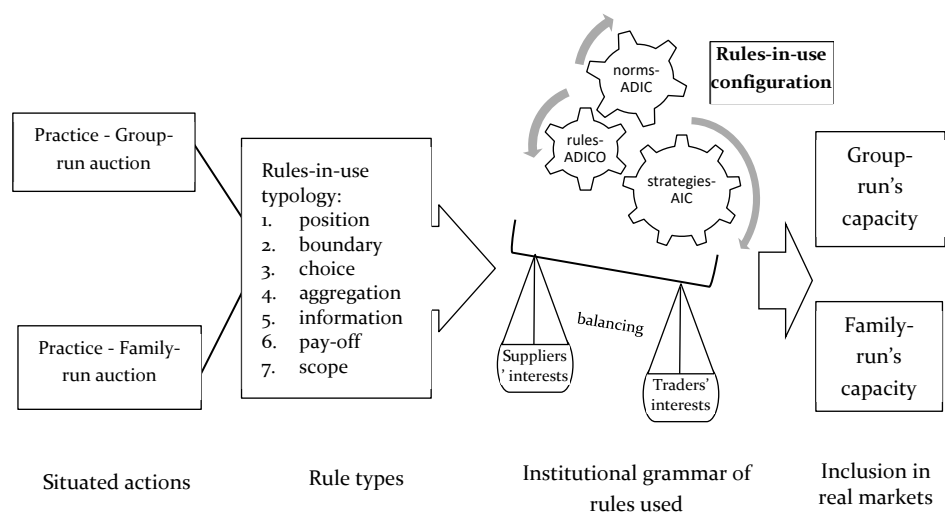


Figure 5-1 Analytical approach

5.3.1   Case study selection

This study was performed in a rural coastal area in Kulon Progo, one of the largest chilli producers in Yogyakarta Province. In the area, smallholder farmers produce red-curly chillies farms with an average size of 0.4 ha. Chillies were sourced from the auctions by traders and then resold to buyers located in the state capital, Jakarta, in other provinces and even to regions on Sumatra Island. Prices offered by the auctions reflect the chilli quality (Darina, 2017). The practice of the auctions in the study area began in 2004 when a larger trader from the nearby village told a farmers' group leader to gather the farmers' chillies in order to organise and coordinate the

purchase of chilli. Other traders took an interest in this and subsequently the larger trader proposed to install auctions in which traders shout their prices. However, this open system limited their profits, and therefore the leading trader asked others to write their bid on paper. This became the bidding procedure central to the *modus operandi* of the actions, which gradually spread to nearby villages. In response to these coordinated actions, the government formed an association, Aspartan, connecting active auctions. From the 12 auctions listed by Aspartan in 2017, we selected two mature auctions that had been running for a longer period. The auctions had different ownership and governance structures, which allowed for a comparative analysis of their rules-in-use. One auction was managed by a small team originating in the farmers' group that started the first auction. The other auction was managed and owned by a farming family, which took over the auction's operations from the group after three years of shared ownership. The auction operators managed the action situations, and their daily works serves as unit for analysing the emergence and use of different rules.

### 5.3.2 Data collection

Collecting information about unwritten rules-in-use necessitates in-depth and qualitative field study (Mwema & Crewett, 2019; Ostrom, 2005). Data collection consisted of observing the working of 20 actual auctions, enriched by informal interviews with operators. This was complemented by observing several events, such as group meetings, harvesting practices, and community or religious happenings in both villages. With the operators of the auctions the networks of traders were mapped, which was accompanied by interviews about the nature of the relationships with the traders. To further contextualise the auctions, group interviews served to map events exposing the histories of the farmers' groups and the communities. Group interviews with operators, suppliers, and farmers' group board members, life history interviews with operators, and interviews with 4 petty traders, 18 larger traders and 3 remote buyers enabled documenting the workings of auctions. During fieldwork, several documents were collected, including the records administered by the auction operators. Other than these, there were hardly any written documents present in the auctions. In observations, we occasionally recorded traders' bids written on auctions' whiteboards, WhatsApp messages to the traders about chilli volume and quality, and operators' WhatsApp group conversations related to on-going bidding processes. Secondary data reveal price trends and market dynamics. A survey among 66 farmers found traces of rules used in running the auctions and the subsequent responses of farmer suppliers.

### 5.3.3 Data analysis

The situated actions of the auctions appeared to be predictable, coordinated and regulated. However, the rules used to achieve this were mostly unwritten. To elicit the sets of unwritten and written rules-in-use, we developed a stepwise approach that combines practice-based study with the institutional grammar tool (Untari, Vellema, & Leeuwis, 2021) (Figure 4.2).

*Table 5-3 Rule types and their aims (I)*

Rules	Categories	Aims (I)
Position	Roles and specifications	What are a position's roles and specifications of action?
	Number of participants in a position	How many people are holding the position?
Boundary	Rules related to multiple positions	What are the rules related to multiple positions?
	Succession rules	Who is eligible to enter a position?
	Exit rules	Who is eligible to control over the entry and exit of a position?
Choice	Actions	What actions are chosen?
		What actions are permitted?
		What actions are required?
		What actions are forbidden?
Aggregation	Approval of others	What actions need prior agreement/approval from the others?
	Symmetric aggregation rules	Symmetric aggregation rules: What are the actions that need unanimity?
	Nonsymmetric aggregation rules	Nonsymmetric aggregation rules: Who has the full authority to make decisions/who is the expert?
	Lack of agreement rules	Lack of agreement rules: what is the no agreement rule that continues?
		Lack of agreement rules: what is the no agreement rule that randomly used?
		Lack of agreement rules: what is the no agreement rule that replaced by external rules?
Information	Channels of information flow	What information channel must exist (required)?
		What information channel must not exist (forbidden)?
		What information channel may exist (permitted)?
	Frequency and accuracy of communication	What is the frequency and accuracy of the information?
	Subject of communication	What are the topics allowed to be discussed among participants?
	Official language	What are the coding systems assigned to products?
Payoff	Rewards and sanctions	What are the rewards or sanctions of doing particular actions?
	Formula	What is the formula for rewarding or sanctioning for example, for first, second or repeated infractions?
Scope	Understanding	What is the actor's understanding of the result/outcome of particular actions?

*Source: adapted from (Ostrom, 2005)*

As first step, we uncover and describe the regulated nature of the action situation: running an auction. This leads to detecting empirical manifestations and consequences of rules used in concrete tasks, such as weighing, recording, sorting, bulking, bidding, and making payments. Second, we coded the signs of often unwritten rules-in-use emerging in observations and interviews in line with Ostrom's rule typology, which we adapted and brought in line with aims relevant to the practices of the auctions (Table 5.3). After classifying actions and practices into rule types, we applied the ADICO-tool to find the institutional grammar that indicates how rules were used and with what consequences. Translating daily practices into an institutional grammar was an analytical step by the researchers, which started from the actors affected or directed by the rule. Subsequently, we assessed whether the use of the rules was accompanied by prescriptions or sanctions, which enables deciphering rules into their components (Siddiki et al., 2012). This was done by both authors in three cycles of translating sets of actions into rules in accordance with the grammar systematic. We grouped all rules-in-use together in a comparative table (Table 5.4), which presents similarities and differences in how the auctions related to suppliers and traders. This table exposes and compares the rules-in-use configurations of both auctions by identifying what rule types shared similar principles in serving the suppliers and traders and for what types of rules remarkable differences can be observed. The comparative table allows to identify differences in how the auctions act and how rules are used.

## 5.4 Results

In this section, we describe how the rules used by the auction operators shape the relations with suppliers and traders. Table 5.4 details similarities and differences between the two auctions and specifies the institutional grammar of the identified rule repertoire. The repertoire is not exhaustive but sufficiently captures the ways of working of both auctions and therefore allows for a comparison in the next section.

### 5.4.1 Position rules

The position rules inform the possibility of an actor to move from one position to another. Both auctions did not give much voice to either members or suppliers in the daily management of the auction (strategy grammar). An exclusive small group of members or the family ran the auction and handled daily transactions. In the case of the group-run auction, however, rules obliged members to pay annual contributions and refrain from side selling in combination with the option to take part in annual meetings and long-term decision making (rule grammar). Interviews

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with suppliers disclosed that the privately owned family-run auction basically positioned suppliers as its clients who cannot interfere with how the auction provided payments and handled risks (strategy grammar).

For managing transactions with traders, both auctions positioned traders primarily as bidders. Auctions were organised at night-time and bids could only be received during stipulated hours. The record books showed that the group-run auction transacted with nine large traders, while the family sold to 14 large traders and was able to involve five petty traders buying during the added afternoon sales. The trader with the highest bid was appointed as the auction winner (rule grammar) but was not allowed to take part in any decision-making processes (rule grammar).

### 5.4.2 Boundary rules

Boundary rules lay down the conditions for suppliers and traders to either enter or leave the auction. A shared condition for being allowed to supply to both auctions required suppliers to meet basic quality standards, or their chilli will be rejected (rule grammar). Both auctions charged suppliers a fee, and without paying were not allowed to bring chilli to the auction (rule grammar). The group members agreed on the fee during their annual meeting. The family-run auction applied a fee of 500-1,000 rupiahs per kilogram, two times higher than the group, which, according to the owner, was meant to compensate for risks of using private working capital. Suppliers can be farmers or farmers that also act as petty traders buying from neighbours: both were entitled to bring chilli that meet quality criteria to the actions (strategy grammar). The group auction was deeply embedded in the rural community, which compelled farmers to become member sell exclusively to the auction; leaving the group was considered socially unacceptable and would create tensions with the community (rule grammar).

Both auctions constructed boundary rules that granted traders access on the condition of not having delayed payments or arrears (rule grammar). Sending a bid was the main condition for traders to enter the auction. However, the family-run create more transactional space by allowing (petty) traders as chilli buyers during the night auction and directly in the afternoon and (strategy grammar); this rule enabled the auction to source larger volumes from different sources and accommodated petty traders buying smaller volumes in the afternoon. The family imposed a maximum to the volume that could be purchased in the afternoon. In the group-run auction, traders were only allowed to buy chilli during the night auction (rule grammar).

### 5.4.3 Choice rules

Choice rules stipulate the mandatory, authorised, or restricted actions. The auctions listed a number of chilli varieties that were acceptable and for which market demand existed (rule grammar). The group gave suppliers and community members no space to sell elsewhere and required them to sell exclusively to the auction (rule grammar). However, the auction was not always able to pay on delivery due to limited cash later in the season. The group-run auction operators mentioned the problem of assuring sufficient working capital. During a group interview, they explained that members were not inclined to share responsibility for obtaining a bank loan to provide working capital. Even though their membership was reconsidered when selling chilli elsewhere, members opted for side selling to petty traders in situations of cash shortage. Here the rule grammar conflicted with the market options choices open to farmers in the area. In contrast, the family-run auction gave suppliers the option to choose their selling points or to split their sales (norm grammar). There was the central auction site where the bidding process set the prices for the day, which was followed by two associated selling points managed as independent businesses without an auction but linked to the family-run auction (strategy grammar). The family connected its operation to these selling point and petty traders buying in the afternoon as part of its strategy to secure a consistent flow of chilli. Using choice rules, with a norm grammar, made transactions less strict and gave suppliers space to choose or combine options.

A restriction for traders transacting with both auctions was a rule not to coordinate their bids or be banned (rule grammar). In an interview, the group-run auction operators reported that this rule was not always easy to enforce. In some cases, all bids were similar and low, and the group tried to impose this rule to prevent any form of coordination among traders. The stable supply by the family-run auction attracted competing traders, which constrained coordination. Correspondingly, a large trader confirmed that bid cooperation among the traders was impossible due to competition.

### 5.4.4 Aggregation rules

Aggregation rules specify whether specific actions require permission or agreement from others or not. Price setting was essentially outside the control of both auctions. Therefore, suppliers to the auctions had to accept that the approved bids generally followed market dynamics in which traders manoeuvred (norm grammar). In the group-run auction, acceptance of this situation was enforced during meetings among members, in which leaders emphasised that suppliers must only sell to the auction

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or lose their membership (rule grammar). Moreover, mainly due to limited working capital, suppliers to the group-run auction received immediate cash payments only during the first weeks of the season. Subsequently, payments were only done after receiving money from the traders who also waited for their buyers (norm grammar). The family-run auction decided independently to pay suppliers immediately on the spot and therefore took the full risk of delays or arrears at the side of traders (strategy grammar). The family did not need permission of agreement from their suppliers to do so; nevertheless, this practice of cash payment related to the absence of a strong aggregation rule made supplying the auction attractive for smallholder farmers.

For the traders, the shared commitment to obeying the bidding procedures and thus how to compete for or access chillies represents the main aggregation rule, with a clear sanction, and thus a rule grammar, attached to it: namely potential banning from the auction. Taking part in the auction also implied not to delay payments for more than three days, with the same sanction of auction bans. And both auctions required traders to approve that they may not have more than three arrears (rule grammar).

### 5.4.5 Information rules

Information rules describe what can be communicated, with whom and via what channels. Suppliers were informed by the auction operators about the bidding procedure; knowing the workings of the auction was essential for organising the supply in a timely and transparent manner (rule grammar). In return, suppliers were required to be frank about the quality of the chillies they brought to the auction, and in case of breaching this rule they ran the risk to be blacklisted (rule grammar). In the group-run auction, the operators were required to compose an annual financial report and share this with the members; being accountable to the group was a rule grammar and failure to do so could lead to accusations and possible sanctioning by the group (rule grammar). This was different for the family-run auction, which managed its financial affairs within the family business. Both auctions agreed to be transparent about the prices of the winning bids and the suppliers were allowed to communicate this to other farmers and pretty traders. In return, the operators of both auctions expected suppliers to report any miscalculations in the payments made. Yet, mistakes in payment remained the risk of the operators (norm grammar). The family-run auction also communicated prices to the other selling points and used the price of the previous evening when organising the afternoon sales (norm grammar).



For the traders, the information rule stipulated not to share any information before or during the bidding process. Doing so would have as sanction that the auction would be cancelled (rule grammar). In return, traders were allowed to check or receive information on quality and available volumes. This information was available for all involved in the daily trading, and without this transparency the auction would not work (rule grammar). Bids by traders were only shared with the operator leading the bidding process (rule grammar). Every afternoon, the group coordinator broadcasted chilli volumes and the quality. In the evening, the coordinator opened SMS or WhatsApp messages communicating traders' bids and wrote them down on folded lotteries. In the family-run auction, the leader always sat privately in his house while holding his phone and writing down the bids on a small whiteboard. In the group-run auction, traders and suppliers exchanged information about prices in remote markets (norm grammar), while in the family-run auction this exchange did not take place and market information was largely gathered by the family head (strategy grammar).

#### 5.4.6 Payoff rules

Payoff rules portray the penalties given for breaking any rules and the rewards for the conformers. The two auctions received similar prices through the season; the average price in the group-run auction was 42,009 rupiahs per kg, whereas in the family-run auction was 42,365 rupiahs per kg. Key for the auction was that suppliers sorted their chilli, or else the operator had to correct this and deduct this from the volume supplied (rule grammar). There was a main difference in timing of the payments. The group-run auction waited 2-5 days for traders to pay and only then paid its suppliers (norm grammar). Suppliers of the family-run auction always received cash on delivery during the entire season, which was enabled by own capital credit accessed from a government-owned bank (strategy grammar). The family-run auction captured 100% of the profits, while the group-run auction's profit was divided into 50% for the operators and 50% was allocated to the group's working capital. Penalties for suppliers were closely linked to quality. In both auctions, the operators weighed rotten chillies and deducted this from the initial volume as a consequence. To incentivise suppliers, the group prioritised the seed loan service for reliable member suppliers (strategy grammar), while the family-run auction granted services to selected and loyal suppliers only (strategy grammar).

Our observations showed that pay off rules with the same rule grammar apply for traders. First, traders must complete payment within three days. Otherwise, the operators noted that as one arrear. The family-run auction leader judged traders as trustworthy if they managed to pay their first, second and third auctions. Being

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required to pay on time was complicated for traders, because, as a large trader noted, their buyers in distance markets always paid late. Second, both auctions excluded traders with more than three arrears to contain repeated infractions. Exclusion from the auction was the main sanction. During one auction, the group-run auction replaced a trader who was the highest bidder with another trader who was the second-highest bidder after they remembered the arrears of the first trader. The family-run auction leader excluded one trader from his auction because the trader's debt was too high.

### 5.4.7 Scope rules

Scope rules depict the recognised outcome or result of actions taken. In the case of auctions brokering the connection between smallholder suppliers and traders, this becomes visible in a consistent supply of chilli that are bought by traders on a daily basis. How to supply the auction was clearly stipulated and farmer knew that timing and sorted quality of their delivery entailed acceptance or rejection by the auction operators (rule grammar). There was substantial difference between the auctions in terms of volumes sold, but farmer recognised both as an accessible and reliable site to bring their produce. Based on the auction book records, during the first season in 2019, the group-run auction gathered around 96 tons of chilli; the family-run auction bulked around 173 tons of chilli. This was partly related to the size of the sourcing areas and the presence of adjacent auctions to which farmers can bring their chilli: the family-run auction expanded its sourcing areas and was relatively remote from other auctions, which attracted larger numbers of farmers.

The presence of the auctions also had a ripple effect to other domains than the brokered commercial transaction. In both areas, suppliers were expected to obey jointly agreed planting schedules to prevent pests and diseases in the farms, which results in a degree of coordination among chilli farmers (norm grammar). Another reason for collaborative action was triggered by fierce competition for workers to harvest chilli. Some farmers increased wages to attract workers, while more vulnerable farmers were not able to find enough labour. Farmers connected to the auctions deliberated in the community and to avoid worker recruitment competition jointly set a maximum wage standard for harvesters (the group-run auction was 60,000 rupiahs per day in group-run and 80,000 rupiahs per day in the family-run auction) (norm grammar). In combination, these rules contributing to coordinated actions in the production area were conducive for realising the prime outcome: a reliable supply and consistency of daily volumes available for traders.

Traders were asked to acknowledge that the availability and quality of chilli was contingent on the season, especially when rainfall intensified pest and disease attacks. The auction operators preferred traders who were able to buy consistently while moving with the flow of the season. This fitted the realities of the many smallholder farmers supplying the auctions. In case of failure, traders risked creating tensions and even be asked to leave the auction (rule grammar). However, a trader expressed that often buyers in Jakarta or Sumatra offered low prices and were very strict about the quality. Traders buying from the auctions risked return cost for deteriorating produce and consequently losing market share. Consistency of supply organised by the auctions appeared to be a condition for this scope rule, which the family-run auction was capable of realising. The group-run auction needed to address more problems with their suppliers, partly in cases when traders were late in paying.

Table 5-4 Comparison of rules-in-use in two auctions

Rule used by auction	Brokerage relationship with	Similarities		Differences	
		Group-run & Family-run auction	Family-run auction	Group-run auction	Family-run auction
Position	Suppliers	<b>Norm:</b> Non-members and/or suppliers (of the family-run auction) (A) may not (D) give voice (I) in all decision-making processes (C).	-	<b>Rule:</b> Members (A) must (D) pay contribution for memberships (I) in the farmers' group (C), or they cannot access services (O).	-
		<b>Strategy:</b> Non-members and/or suppliers (A) are not the owners of the auction (I), they do not have the right to give voice to the auction (C).		<b>Rule:</b> The members (A) must not (D) do side selling (I) to other trading channels (C), or termination of memberships applies (O).	
				<b>Strategy:</b> Members (A) take medium and long-term decisions and select operators (I) as long as they pay membership fee (C).	
	Traders	<b>Rule:</b> Traders (A) must (D) submit a bid at the auction, through phone calls or text messages (I) at a specified time (C) or the bid is refused (O).			<b>Strategy:</b> Traders (A) are the buyers of the chillies (I) whether in the afternoon or in the auction/night (C).
		<b>Rule:</b> Traders (A) must (D) have the highest bid to win the auction (I) at that day (C), or they do not obtain any volume (O).			
Boundary	Suppliers	<b>Rule:</b> Traders (A) must not (D) interfere with auction procedures (I) when the winner is announced (C) or the auction is annulled.			
		<b>Rule:</b> Suppliers (farmers or petty-trader farmer) (A) may (D) bring produce to the auction (I) that meets quality criteria (C), or access is denied (O).		<b>Rule:</b> Suppliers (A) must (D) pay the fee of 200-500 rupiahs per kilogram (I) agreed by the group (C), or they cannot supply (O).	<b>Rule:</b> Suppliers (A) must (D) pay the fee of 500-1,000 rupiahs per kilogram (I) set by the family business (C), or they cannot supply (O).
		<b>Rule:</b> Suppliers (A) must (D) agree with a cut of 0.5 kg/30 kg (I) to compensate shrinking volume during bulking (C), or access is denied (O).		<b>Rule:</b> Members (A) must not (D) leave the auction (I) because they live in the village (C) or will be isolated (O).	
	Traders	<b>Norm:</b> Non-members and suppliers (A) may (D) look for other buyers (I) because they are not bounded to the auction (C).		<b>Strategy:</b> Non-members (A) are not eligible to nominate themselves as operator (C).	<b>Strategy:</b> Suppliers (A) are not eligible to nominate themselves as operator (C).
		<b>Rule:</b> Traders (A) must (D) send the highest bid to win auction (I) at that day (C) or get no chilli (O).		-	<b>Rule:</b> Traders buying in the afternoon (A) must (D) buy a maximum 0.5 ton (C) or will not be served (O).

Rule used by auction	Brokering relationship with	Similarities Group-run & Family-run auction	Differences	
			Group-run auction	Family-run auction
Choice		<b>Rule:</b> Traders (A) must not (D) delay payments (I) for more than 3 days (C) or will be banned (O).		<b>Norm:</b> Traders (A) may (D) buy (I) in the afternoon and in the auction/night (C).
		<b>Rule:</b> Traders (A) must not (D) have more than 3 arrears (I) in all auction points (C), or auction operators ban them.		
		<b>Rule:</b> Suppliers (A) may (D) bring only selected chilli varieties (I), or their produces will be rejected (O).	<b>Rule:</b> Members (A) must (D) sell to the auction (I) and contribute to growth and stability of the group's working capital (C), or their membership is reconsidered (O).	<b>Norm:</b> Suppliers (A) may (D) select selling points or split their produce (I) appropriate for their location or moment in the season (C)
	Traders	<b>Rule:</b> Traders (A) may not (D) coordinate their bids (I) before the auction starts (C), or they run into conflict with the auction operators (O).		<b>Strategy:</b> Two selling points linked to the auction (A) follow the price (I) set during the auction (C).
Aggregation	Suppliers	<b>Norm:</b> Suppliers (A) must (D) accept (I) prices of approved bids determined in remote markets (C)	<b>Rule:</b> Members (A) must (D) supply (I) the auction (C), or lose their memberships from the farmers' group (O)	<b>Strategy:</b> Suppliers (A) receive immediate cash payments for their delivery (C)
			<b>Norm:</b> The suppliers (A) may (D) receive cash payments (I) for limited periods, after that they receive delayed payments (C).	
			<b>Strategy:</b> Members (A) decide jointly who to select as operators (I) during group meeting (C).	
	Traders	<b>Rule:</b> Traders (A) must (D) obey bidding procedure (I) and refrain from coordination before the auction starts (C), or risk to be removed from auction (O).		
Information	Suppliers	<b>Rule:</b> Traders (A) must not (D) delay payments (I) for more than 3 days (C), or they will be banned from the auction (O).		
		<b>Rule:</b> Suppliers (A) must (D) understand bidding procedure ran by operators (I) during auction (C), or auction is considered as defective (O).	<b>Rule:</b> Members (A) must (D) receive a financial report (I) every season (C), or operators will be seen as untrustworthy (O).	<b>Norm:</b> Suppliers (A) must (D) receive same price at selling points (I) connected to auction (C).
		<b>Rule:</b> Suppliers (A) must (D) inform operators (I) about quality and over-payments honestly (I) when weighing (C) or will be blacklisted (O).		
		<b>Norm:</b> Suppliers (A) may (D) share the prices (I) to anyone, including petty traders, in area (C).		

Rule used by auction	Brokering relationship with	Similarities Group-run & Family-run auction	Differences	
			Group-run auction	Family-run auction
Payoff	Traders	<b>Rule:</b> Traders (A) must not (D) see the bids by other traders (I) before or during the bidding process (C), or the auction is defective (O).	<b>Norm:</b> Traders (A) may (D) interact and discuss prices with the suppliers (I) who attend the auction (C).	<b>Strategy:</b> Traders (A) cannot interact with the suppliers (I) in the auction (C).
		<b>Rule:</b> Traders (A) must (D) communicate their bid only to operator (I) before bidding (C) while exposing the bid makes auction defective (O).		
		<b>Norm:</b> Traders (A) may (D) come to check the chilli quality (I) before the auction starts (C).		
	Suppliers	<b>Rule:</b> Suppliers (A) must (D) sort supplies (I) within flow of season (C), or the operators re-sort the chillies and deduct the volume (O).	<b>Norm:</b> Suppliers (A) receive cash payments (I) for a limited period, after which they receive delayed payments after 2-5 days (C).	<b>Strategy:</b> Suppliers (A) receive cash payments (I) directly after it is brought to auction or the next morning (C).
			<b>Strategy:</b> Members (A) are prioritised to receive services (I) if they constantly supply the auction (C).	<b>Strategy:</b> Selected suppliers (A) receive services (I) if they consistently supply the auction (C).
Scope	Traders	<b>Rule:</b> Traders (A) must (D) pay within three days (I) after winning the auction (C), or auction notes the delay as one arrear and removes traders with more than three arrears (O).		
		<b>Rule:</b> Traders (A) must (D) repay the delayed payments (I) within 3 days (C), or the traders be excluded in the next auction (O).		
		<b>Rule:</b> Suppliers (A) must (D) understand conditions (timing and quality) for supplying auction (I) within the season (C) or may not be able to access the auction (O).	<b>Norm:</b> The suppliers (A) must (D) understand that the payments come later (I) after supplying the chillies (C).	
	Suppliers	<b>Norm:</b> The suppliers (A) must (D) agree to pay harvester in accordance with a community-based wage standard (I) set before harvesting seasons by farmers in the village (C)		
	Traders	<b>Rule:</b> The traders (A) must (D) accept to act as reliable buyers (I) despite seasonal fluctuations in availability and quality (C), or they may be asked leave the auction (O).		

## 5.5 Discussion and conclusion

Collective organisations are considered to boost marketing performance through services (Orsi, De Noni, Corsi, & Marchisio, 2017) and a set of written and formalised rules that shape the organisational structure (Bijman & Wijers, 2019). This perspective mainly centres on the internal, organisational features of farmer-led collective marketing to assess the potential of realising economic benefits. This paper aspires to deepen and contextualise our understanding of the ways of working of farmer-led and self-organised practices to broker and possible refashion the terms of engagement of smallholder farmers with markets. It studied chilli auctions in rural communities in Java, Indonesia, that shape and eventually consolidate the sourcing relationship with small-scale farmers, and that organise and maintain a bidding procedure that set the rules for traders and may eventually stimulate competition among traders use. The case study auctions have remained operational over a longer period of time without a set of written and explicit rules-in-use. They stayed intact while being unable to substantially influence prices offered by larger traders in the dynamic fresh produce markets in rural Java. To analyse the performance and sustainability of the auctions the paper made the methodological choice to elicit unwritten rules manifest in the action situation and daily practice of running an auction. This served as entry point for detecting the institutional and regulated nature of the auctions.

Taking practice as entry point opens space for assessing the performance and transformative capacity of farmer-led auctions based on how problems are solved, and rules are used and modified in specific contexts. To understand and compare the differences in the performance of the auctions, our analysis combines the rule typology central to the IAD-framework (Ostrom, 2005) and the institutional grammar visible in the use of rules (Crawford & Ostrom, 1995). This complements perspectives primarily looking at the organisational design, and thus written rules, of farmer groups. A focus on the *modus operandi* (Hoffecker, 2021) visible in the action situations of the auctions. It changes the focus of comparative analysis from assessing the organisational architecture of farmer groups, especially shared ownership or member representation, to opening the black box of unwritten rules-in-use in the context of dynamic markets and production environments. In this way, we portray auctions as rules-in-use configurations rather than as organisational designs.

In the case study auctions, configuring and using the rules was largely done by a small and exclusive group of operators. The ownership structure of the auction was

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remarkably different, either collectively organised by a group or organised as a privately-owned business entity, which importantly shapes the aggregation rules since group members were involved in some parts of the decision making outside the daily operation. However, rules affecting who is able to do what (position), how to enter or leave the auction (boundary) and how to communicate around prices setting and the daily transactions (information) constitute the main principles of the auction. Traders largely followed these principles, which translated into predictable and transparent behaviours produced by rules (Elbers & Schulpen, 2013). Both auctions were able to create a degree of transparency appreciated by suppliers and traders. The information rules played a prominent role in creating conditions for the brokered transaction between suppliers and traders and violating these rules could result in the sanction of exclusion for both sides of the chain (Blanc & Kledal, 2012). Interestingly, the traders buying from the auction had to cope with the sanction stipulated by the rule grammar. In the context of a competitive market for chilli, this enabled the auctions to gradually build a network of reliable traders with capacity to buy larger volumes. Traders not willing or able to obey the rules were warned and possibly sanctioned by way of exclusion.

Despite these shared principles linked to the bidding process, the overall rule configurations of the auctions differed substantially. The combination of position, choice and payoff rules signifies the main difference. The group-run auction was strict for its fee and membership paying suppliers, enforced commitment to supply, and struggled with generating sufficient working capital for ensuring a consistent supply. This created a dependency between membership and working capital, which, in line with van der Krogt, Nilsson, and Høst (2007), suggests that group members limit their exposure to risk-taking. The brokering role of this auction was constrained by a limited period of cash payments, which reduced suppliers' interest in participating in marketing groups (Shiferaw, Obare, Muricho, & Silim, 2009) and triggered them to opt for alternate market channels (Bernard & Taffesse, 2012). The family-run auction considered suppliers as clients and was solely responsible for generating working capital and handling the risks related to defaulting or late paying traders. The family-run auction gave weight to ensuring a consistent flow of chilli and created space to accommodate both afternoon sales and night auctions and offer chilli suppliers freedom to choose selling points. Accordingly, the family-run auction neither forced smallholders to supply nor required equity commitments (Grashuis & Cook, 2018). Another major difference was the family's capacity to pay cash on delivery, without requiring suppliers to share risks related to obtaining working capital. Aligning this pay off rule with a more flexible approach to sourcing chilli,



reflected in norm and strategy grammar, enabled the family-run auction to be a consistent supplier of larger volumes attractive for traders.

By finding the grammar of the rules-in-use, our analysis highlights nuances in the actual use of rules. The more rigid rule grammar in the rules-in-use at the group-run auction constrained their capacity to broker the relationships between suppliers and traders. To overcome this problem, (Galor & Sofer, 2019) suggest that collective groups can sustain themselves without accumulating member investments and no financial surplus. Correspondingly, we observed that the family used rules as norms or in a strategy-oriented manner. The private auction incentivised the suppliers with consistent cash payments, which suppliers seem to recognise as an unwritten rule with a strategy grammar that helps to secure volumes and contain risks. We recognise the risks that these arrangements may self-selective or work better for resourced farmers who are less risk-averse than the poorer (Molla et al., 2020). However, the rules used in the family-run auction made it possible to take away the risks smallholder farmers encounter when entering markets.

Our analysis broadened the scope of evaluating the performance and sustainability of farmer-led initiatives in market entry. We started from how the functioning of auctions (re)configures rules underlying practices that refashion the terms of market entry for smallholder farmers. This study demonstrates that the focus on rule types and their institutional grammar enables us to understand the diversity in how organisations develop capacities to contribute to inclusiveness in a specific market environment. The scope rules in both case studies indicate that the rules-in-use for realising the commercial transaction brokered by the auction may generate ripple effects and induce coordinated action in other domains, such as farm and labour management.



# Chapter 6

## General discussion and conclusions

## 6 General discussion and conclusions

### 6.1 Introduction

The empirical focus of this study is farmer communities in rural Java who were not landowners until the 1990s. With small pieces of land, the farmers tried to generate income. This is not exceptional in Java due to the enormous levels of land scarcity. By experimenting with different horticultural crops, the farmers discovered that chilli was a good commodity. In 2004, the farming community managed to organise a reliable collective market channel for chilli by creating auction systems.

This study assessed the terms on which smallholder chilli farmers are included in Indonesian food markets. Smallholder inclusion into markets is important to ensure that the smallholders do not merely accept the prices dictated to them but are capable of setting prices. This is important given that roles in chilli trading are mainly played by intermediaries. The two overarching objectives of this thesis were as follows. First, the thesis set out to understand how self-organised farming groups created and sustained auctions as a mechanism for brokering the terms of inclusion for smallholder farmers in perishable product markets. Second, it aimed to offer a practice-based diagnosis of the dynamics of collective trading by looking deeper into farmer-led forms of collective trading; it did this to advance the diagnostic tools used to study organisational agency and research rules-in-use in collective trading.

Many studies show that organising farmers into groups is widely promoted by policies that support smallholder inclusion in markets. However, the adoption of cooperatives as the dominant organisational model in interventions does not assist smallholder inclusion in food markets. This study aimed to understand how self-organised auction groups of smallholder farmers were able to overcome internal tensions and set rules to shape and sustain terms of inclusion in food markets.

This study aimed to answer the general research question: What sustains farmer-led collective trading groups to refashion terms of inclusion in the dynamic market context? The underlying assumption was that collective trading groups differ in their practices and strategies. This led me to four research questions.

- (1) What are the skills involved in self-organised and farmer-led auctions are used to contain tensions inherent in trading to influence terms of inclusion in markets?

- (2) What capacities are mobilised in the trading practices at auction sites to refashion rules and conditions for entry of smallholder farmers into markets for fresh, perishable food products?
- (3) What methods help elicit unwritten rules-in-use for researching the everyday and messy practice of collective marketing?
- (4) How do rules-in-use in collective trading develop critical and empirical perspectives on the capacity of farmer groups to broker and influence the terms of engagement for smallholder producers and markets, and to sustain their joint endeavour?

This dissertation addressed these research questions by investigating farmer-led collective trading groups in rural Yogyakarta. My study on 14 chilli collective trading groups (Chapter 2) explored group agency in relation to handling tensions inherent in managing trading, sourcing, transactions and governance. The case studies of two auction groups compared the smallholders' inclusion in trading by examining the auctions' efforts to involve them in the organisations' ownership and voice, and to include them in the auctions' risks and rewards (Chapter 3).

I developed a methodology to elicit collective trading groups' unwritten rules-in-use (Chapter 4) by combining a practice lens study with an institutional grammar tool. The methodology was applied to the two case studies. Then, I compared the auctions' rules-in-use, which were used to inform the organisations' actions in terms of farmer-suppliers and traders in order to keep the auctions active in markets (Chapter 5).

In the following sections, I discuss the main findings of the research. In Section 6.2., I elaborate on the research findings of each chapter. In Section 6.3., I discuss the theoretical contributions. I demonstrate that collective trading is a skill mastered by smallholders and point at risk taking as the main issue for vulnerable smallholder farmers. In Section 6.4. I present the methodological contributions concerning the diagnostic tools. I demonstrate that they can be used to understand organisational agency and how research collective trading works with unwritten rules. Next, the analytical discussion leads to future research and policy implications elaborated in sections 6.5. and 6.6. Lastly, I close this chapter with the conclusion in Section 6.7.

## 6.2 Main findings

I aimed to advance theoretical perspectives on smallholder group agency in influencing terms of inclusion in trading. By concentrating on situated action as suggested in the practice approach (Jansen & Vellema, 2011) and focusing on action

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situations as suggested by Ostrom, this thesis generates insights into the institutional and organisational features and architectures of collective trading. Using the practice approach, I revealed the different activities that constitute the operation of collective trading by smallholder-actors. This approach generated insights into the institutional nature of collective trading.

Chapter 2 analysed the practice of the 14 case studies of self-organised farmers' auctions. The auctions brokered relationships between the smallholder farmers who supplied chilli and the traders who bought the bulked chilli. The study investigated the core areas that enable the auctions to react to and learn with tensions inherent in their trading practices. However, the auctions operate in different circumstances, forcing them to refashion terms of inclusion in markets. Utilising the TCC diagnostic tool combined with a practice lens, this chapter elaborated on the differences between the auctions that lasted and those that did not. Five essential skills underpin the auction operators' modification of terms of inclusion: 1) assessing the reliability of traders, 2) attaching a group of traders to the auction, 3) organising instant decision-making, 4) sustaining reliability and predictability for smallholder farmers, and 5) accommodating members and non-members. The five skills differentiate how auctions brokered chilli trading to achieve inclusivity for smallholder farmers. Mastery of these skills is vital for the in-between position of economic farmer organisations that broker and construct the connection between suppliers and buyers in dynamic markets.

Chapter 3 demonstrated whether the auction groups were inclusive for smallholder farmers. This chapter used two case studies of auctions to do so. One auction was operated by a group, and another one was formerly operated by a group, but after three years, ownership was transferred to a farmer's family. By comparing these two case studies, this study revealed the assumption of whether development pathways – which often operate with a cooperative organisational structure that focuses on joint ownership and smallholder representation – enhance smallholder inclusion in markets. The chapter examines the practices in trading, starting from bulking, weighing, recording, sorting, bidding, packing to payment, and focuses on the four dimensions of smallholder inclusion in markets—ownership, voice, reward and risk. The comparison of the two case studies showed that collective ownership based on the cooperative model did not add to inclusion of smallholders who were less able to take risks. The chapter found that collective trading possessed by smallholders does not comply with the inclusive business concept when it cannot provide sufficient working capital.

Chapter 4 elaborated on an integrative method to research rules-in-use in collective trading groups. These rules are primarily unwritten; this chapter offers practical steps to elicit them. Two farmer-organised chilli auction groups provide examples of how to use the method for actual market research. The integrative method is a combination of a practice lens with an institutional grammar tool. The approach brings in new nuance to institutional grammar – which is usually applied to natural resource management – by applying it in collective trading managed by farmers. The methods used: observation, in-depth interviews, group interviews, phone interviews, trading networks and surveys. The integrative method indicates and differentiates the institutional grammar into three aspects: rules, norms and strategies. This chapter suggested that this method can be used in other studies focusing on the institutional nature of food markets, which operate with unwritten rules-in-use or a mixture of written and unwritten rules.

Lastly, Chapter 5 shifted focus away from identifying inclusion in markets that features profit distributions, members' participation and internal governance of organisations to examining institutions' rules-in-use. Rules-in-use are rules that are noticed and obeyed by actors and underpin the operation or 'game' of trading. Applying the integrative method provided in Chapter 4 – a practice-oriented study combined with institutional grammar tool – Chapter 5 deciphered the rules-in-use underpinning the operation of the two case study chilli auctions. The elicited rules-in-use were categorised into Ostrom's rules typology to unravel how auction operators organised messy trading practices to connect farmers and traders. This analysis demonstrated that information rules are the basis of including smallholders into markets. Payoff rules are decisive for proposing the inclusion of smallholders in markets. This chapter showed that both auctions shared similar principles but used distinct institutional grammars to sustain their trading relationships. This study indicates that auctions that implement rules with a strategy grammar are more adaptive to market dynamics.

### 6.3 Theoretical contributions to collective trading and inclusion

The dissertation makes a number of contributions to how collective trading can be perceived: 1) as a skill involving handling tensions, 2) as a situated action used to handle actual problems, and 3) as a means of dealing with risk-taking.

### 6.3.1 Collective trading as a skill to contain internal and external tensions

I looked at auctions from the perspective of their function: brokering market entry in negotiating terms of inclusion. Auction operators learn to deal with payment uncertainties and unreliable traders. It was not easy for them to solve these problems (Chapter 2). Operators learn that cash payment is vital for smallholder farmers, so put effort into developing skills to accumulating capital for the running of the auctions (Chapter 5). Operators learn from mistakes, such as being defaulted by traders, and find ways to discover which traders are reliable (Chapter 3). My theoretical contribution is looking at auctions as skilful actions instead of as organisational solutions. This focus turns attention to how smallholder-operators become skilful. Auction groups exist and evolve by learning from their mistakes. They develop skills over time. These skills are related to combating internal tensions and skills related to organising transactions with traders. Groups that have a function in brokering market entry are skilful and resourceful in performing auctions. My observations of these groups show that collective trading is not constant because suppliers' and buyers' circumstances and actions remain in constant flux, creating different problems throughout time. Collective trading groups gradually mobilise different skills to handle tensions specific to their auctions (Chapter 2). One of these auctions shifts ownership to a family and attempts to provide direct payment using private assets, thus becoming more inclusive for smallholders by providing direct payments (Chapter 3). Auctions employ rules in a variety of ways to survive in markets without being abandoned by suppliers and traders (Chapter 5). These findings demonstrate that the practice of collective trading is not static. Auction operators constantly acquire skills (Ashby et al., 2009), updating and improvising trading operations to meet suppliers' and traders' different interests.

### 6.3.2 Rules emerge from action situations

Most written rules concern ownership and representation. However, trading, in the auctions I studied, involves many other rules, primarily unwritten. From these notions, I make a distinction between written and unwritten rules. The unwritten rules emerge from the practices and differ between the two auctions (Chapter 3). Discovering unwritten rules is important because they refer to specific types of rules that I consider to be the central operating procedures for collective action in trading. Building on the work of Mwema and Crewett (2019), which applies Ostrom's rules typology to analysing smallholder inclusion to markets, I link the unwritten rules to typology. This typology helps understand chilli auction markets as action situations,



and it opens a space to distinguish between the written and unwritten rules underpinning daily auction operations. It also helps define the various unwritten rules at play in trade (Chapter 5).

I use situated action to shift the attention from the emphasis on rules attached to the organisational setup to discovering rules that are closely connected to role performance. The rules that underpin the joint force in trading are unwritten but are vital for the continuation of routines. By focusing on action situations, I discover unwritten rules and reveal issues in market brokering, namely, how to approach risk-taking (Chapter 3). The focus on unwritten rules is more relevant for looking at actual concerns regarding the running of farmer-led collective trade work rather than for observing the organisational structure that allows the maintenance of farmers' united economic activity.

My study shows that auction operators connect with suppliers internally through farmers' group meetings and everyday interactions in the village. They also set up external relationships with the traders by making them aware of auction rules through conversations during auction events (Chapter 5). I perceive creating rules as being meaningless unless they are enforced. This finding applies to the performance of auction groups in their endeavours to uphold inclusion for smallholders in markets. Group-run auction operators manage internal tensions by requiring members to guarantee steady produce supply (Chapter 2). They sanction members engaged in side-selling, labelling this behaviour as disloyal to their group (Chapter 5). As such, research and interventions can shift attention to situated action, enabling the creation of rules for the handling of tensions, as opposed to codifying and listing rules, while expecting everybody to obey.

### 6.3.3 Risk-taking as the central issue in smallholders' collective trading

Auction groups develop a capacity for risk handling. This finding is illustrated by the comparative analysis between the group-run and family-run auctions (Chapter 3). The comparison indicates that finding ways to handle transaction-related risks is vital for managing external tensions. The groups developed market intelligence, so they were able to select reliable traders.

Contrary to the idea of involving farmers in risk-taking as a precondition for inclusive development (Chamberlain & Anseeuw, 2018), this study shows that smallholders avoid risks of traders defaulting. It is more difficult for smallholders to take risks related to engaging with markets because they are more vulnerable; it is

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therefore relevant to look at what kind of organisational entities mediate these risks. In addition, the smallholders waiting for a long time to receive payment from auctions would rather side sell their chillies to petty traders. These traders charged them a higher fee per kilogram of chilli but offered immediate cash payments (Chapters 2, 3 and 5). Smallholders have limited resources to finance labour and inputs: fast money is preferable. Molla et al. (2020) observe that poorer farmers are less risk-seeking than the richer ones. Their vulnerability makes it unfeasible for them to take risk being cheated by traders. Inclusion for smallholders in collective trading is better to be tailored towards reducing smallholders' involvement in risk-taking.

Following the above, the ideal inclusive value chain requires all farmers acting as the owners, decision makers, beneficiaries and risk-takers. Examining the above in greater detail, comparing two farmer-led auctions demonstrates that a family can take on responsibility for a group and manage risks by mobilising their private assets, providing that ownership and profit go to them (Chapter 3). The family has the potential of elite capture. However, in line with Fafchamps and Hill (2005), the family's action opens an opportunity for smallholders to market their produce with consistent, predictable prices. My argument is in keeping with current research on organisational governance that states different organisations make distinct governance choices (Hideto Dato et al., 2020). This finding confirms that non-collectives can take risks without excluding smallholders from the value chain.

There is no single recipe for risk taking because risk taking comes with features other than collective ownership. The analysis of the group-run auction shows that a collectively owned auction's capacity to take risks is limited. Since they have more difficulties in organising working capital, this enables them to handle risks involving delayed payment and defaulting traders. It also relates to handling risk relating to smallholders selling chillies elsewhere because there was no immediate payment. The group-run and the family-run auctions handle risks differently; as such, trying to discover how market risks are handled can be valuable for understanding smallholders' inclusion in collective trading.

### 6.4 Methodological contributions: Diagnostic tools for researching smallholders' collective trading

The thesis aimed to contribute to institutional diagnostic tools for organisational agency in collective trading. The first diagnostic tool integrated practice-lens research with the Tension Containment Capacity (TCC) framework to provide a

reading of joint trading's organisational agency in accessing market. The second one is a combination of practice-oriented study with the institutional grammar tool to elicit unwritten rules.

#### 6.4.1 A diagnostic tool to understand organisational agency

Collective trading organisations without tensions are rare because governing relationships with different actors involves different, occasionally conflicting interests. To answer this problem, organisational diagnostics are often done by assessing organisational outcomes, such as how effective an organisation is at generating income or attracting memberships. However, identifying tensions can help organisations address them. My thesis provides alternatives to diagnosing organisations through an understanding of internal tensions that lead to the capacity of organisation to handle trading. I use a 'radiography' of collective trading to assess organisational capacity in handling inherent tensions between members and organisations, called Tension Containment Capacity (TCC) (Ton, 2015), elaborated on in Chapter 2. The thesis shifts attention away from literature that focuses on technicalities (i.e., high yield crop introduction, soil productivity, subsidies, etc.) and policies that do not consider the practice of making collective trading sustainable (Poole, Chitundu, & Msoni, 2013). Also, looking at small self-help groups rather than giant enterprises working in food markets (Ton, 2015). This thesis qualifies the TCC core areas and methodologically contributes to diagnosing which clusters of agency needs more attention rather than looking at the individual core area. The study demonstrates that integration of TCC with practice study helps detect the agency of collective trading groups in navigating their businesses, even though the researched case studies are similar in their structures. The integrated methodology captures the agency of the auction operators by confirming it with their actual trading and how they deal with tensions inherent in their everyday collective trading practices. It shifts attention away from outcomes to processes of negotiating terms of inclusion in market access. The methodological interest in processual outcome is relevant in assessing organisational capacity in handling different tasks.

#### 6.4.2 A diagnostic tool to research rules-in-use in collective trading

Adopting the practice lens contributes to developing integrative methodologies to diagnose rules-in-use. I focused on the action situations of the collective trading groups and discovered there were unwritten rules. The practice lens allows me to pay more attention to unwritten rules in two ways. First, the action situation generates unwritten rules that broker terms of inclusion for smallholder farmers. It is important to be attentive to unwritten rules, a large part of the auction

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sustainability explanation can be found here. Second, I consider that forms of collective action have an institutional grammar. I studied institutional grammar in depth to elicit unwritten rules because my research question could be answered through this step. The grammar is a steppingstone toward discovering and exposing the unwritten rules. I demonstrate that the unwritten rules underpinning auctions are present in trading; this is a substantial methodological contribution because it has been overlooked in literature until now.

In this study, the focus on action situations enables me to discover the associated type of rules (Chapter 5). The variety of rules attached to the workings of a group brokers terms of inclusion for smallholder farmers in markets (Chapter 3). Notably, the teams delegated to manage auctions are skilful in reinforcing these rules (Chapter 2). I detect the trading practices, then combine it with the institutional grammar. This methodology helps me identify the functions of unwritten rules: rules, norms or strategies (Chapter 4) that shows the *modus operandi* of the smallholders collectively organise trading in their local context (Hoffecker, 2021), rather than pinpoint at the organisational structure or written rules.

The unleashing of the rules-in-use leads to a consistent set of *mores* acceptable and expected in interacting with suppliers and traders in running auctions. It is a more precise and advanced way of researching collective trading and other fields related to smallholder practices. The application of this diagnostic tool enables a better understanding of auction teams' organisational agency in using the different rule grammars that make them capacitated to organise collective trading and to find ways to refashion terms of inclusion. This capacity is better to be appreciated, rather than assuming that the most commonly used organisational structures (i.e. that of the cooperative) is ideal.

Thus, methodologically, this thesis contributes to first, refining the diagnostic tool to unravel the agency of actors operate jointly in marketing smallholders' produce. Second, developing the diagnostic tool to study the rules that emerge and are used in the everyday practice of collective trading that are mostly unwritten. Third, diagnosing the *modus operandi* of auctions that leads to *mores* in collective trading.

### 6.5 Future research

This thesis suggests potential topics for future research in both its theory and methodology. I propose that future studies examine features of real practices of collective trading, the dimensions of inclusion that fit vulnerable smallholder-farmers' strategies and preferences, and diagnostic methods for assessing

smallholder agency in collective trading. This thesis discovered that collective trading involves mastering key skills related to containing internal and external tensions by auction operators. Prospective studies could research how such skills are established, and also zoom in on the presence and development of other skills that may be important in collective trading practices, such as operators' skills involved in coping with shocks in trading or in upgrading trading performance. Discovering other skills of collective trading is especially useful for preventing false assumptions about these groups.

Second, this thesis defines risk as a critical dimension for smallholder inclusion in the value chain. In the context of collective trading for vulnerable farmers, poorer farmers prefer to avoid involvement in risk-taking. In future research, scholars can study whether other dimensions of inclusion (e.g., ownership, voice and reward) pose challenges for specific groups or contexts of collective trading. Conducting such research would allow for comparison of key challenges and skills across groups and contexts.

Finally, this thesis proposes a combination of practice research using an institutional grammar tool and a tension containment approach. These can be used as diagnostic tools to understand farmer-managed collective action in market access. Other approaches studying similar cases could further refine these methods. In addition, using these tools for diagnostic and comparative research in different institutional settings may yield further insights into the *modus operandi* and how the interplay between context, unwritten rules, challenges and skills relates to the sustainability of collective economic endeavours.

## 6.6 Implication for policy and practice

The thesis demonstrates the importance of mastering trading skills and handling risks in collective trading. It creates a diagnostic tool to understand which internal tensions occur and how they emerge, and it lays out a method for researching collective trading practices that operate with unwritten rules. The findings imply that it is valuable for policy and practice to focus on strengthening knowledge of the conditions under which specific types trading practice contribute to development outcomes. Taking this step before proposing any organisational model enables policy and practice to envision an enabling environment and co-create interventions that reduce risks encountered by smallholder farmers and collective trading groups.

### 6.6.1 Strengthening knowledge of actual practice for development orientation

Based on our findings, we arrive at the question of whether policy need to create new groups or support self-organised groups that foster collective trading. Creating new groups diminishes collaboration because of conflicting interests. While trading is preferred when it is with trusted partners and recognised by the smallholder suppliers because it is created from a long-existing group (Gruère et al., 2009). Policy and practice may give weight to strengthening and catalysing the practices emerging in self-organised groups. Supporting existing groups can benefit from established social structures and relationships (Mangnus & Schoonhoven-Speijer, 2020). To foster groups' skills, policies and donors can take groups' dimensions of inclusion into account, which needs to be supported to enhance trading practices and make these more inclusive. Development agencies may want to see what pre-existing practices are in place and how they can support them (Lyon, 2003). The use of the practice lens may help development agencies to discover collective trading groups' inherent problems and their problem-solving strategies.

Assessing a collective marketing organisation's need and performance is commonly based on comparing it with an ideal-typical organisational setup. This easily leads to suggesting 'best practices' without considering the internal workings of the organisation (Hideto Dato et al., 2020). I suggest development interventions to diagnose organisations' internal tensions (Chapter 2) and analyse how collective trading groups create skills and mobilise resources in working with and incentivising the suppliers and in finding buyers. Development interventions benefit from gaining insights into the written and unwritten rules that help economic organisation actors to operate effectively (Chapter 5). Operators and researchers can use the diagnostic tools provided in this thesis to understand the internal tensions that emerge. In my study, I consider that using thoughtful observations of practitioners brings nuance to understanding how institutions work in reality.

### 6.6.2 Creating enabling environment by reducing risk for collective trading groups

The insights from this thesis shift attention from price to risk. Handling risk seems to be pivotal while trying to influence price may be beyond farmers' control (Chapter 3). A lot of the rules used in the auctions are geared towards risk-taking (Chapter 5). Traders defaulting and risks related to being unable to generate adequate volumes or guarantee feature in this thesis' case studies. Regarding smallholders' welfare, social grants can disincentivise market participation by diminishing the importance of

market produce (Sinyolo, Mudhara, & Wale, 2019). Risk-taking is a central issue for smallholder farmers arranging joint marketing. Promoting interventions that are unable to tackle to risk issue may not be applicable for vulnerable farmers. One policy option to handle the risk-taking problem is by strengthening the functioning of auctions' associative bodies in coordinating prices gained and in developing shared market intelligence.

Another option would be to acknowledge and build on the position of larger traders as the enablers of making farmer-led auctions part of the value chain. Auctions need to expand their businesses towards larger markets and prevent delayed payments by traders. To support this, policymakers can involve larger traders in shaping the future regulations and stimulate an accreditation system for traders. Such an accreditation system could provide relevant information about the reliability and buying capacity of traders and allow auctions to assess the qualities of traders before involving them as auctions' bidders.

## 6.7 Conclusion

Self-organised and farmer-led collective trading groups strive to access markets to include smallholders in ways that offer them a better or more predictable income. One of this study's key conclusions is that the practice of collective smallholder marketing groups can modify the terms of inclusion of smallholders in perishable food markets. The auction system allows farmers to influence their terms of inclusion by using bidding as a condition for traders to obtain chilli. This thesis shows that small task groups have considerable capacity to make deliberate decisions, resolve internal and external tensions, transform market access for smallholders and fit this economic activity into rural communities. The study shows that local agency must be appreciated. Policy and practitioners are advised to look at grassroots agency before applying an ideal organisational model aimed at solving marketing problems at the level of producers. Sustainability of collective trading is subject to how groups include smallholders and enable successful sales. The terms of inclusion for smallholders in markets depend on operators' skills in containing internal and external tensions in trading. Being obliged to take risks may hamper vulnerable smallholder farmers from being included in markets on favourable terms. A specific institutional diagnostic tool is helpful for grasping how this materialises in everyday practices underlying collective trading processes. This dissertation demonstrated that, complementary to focusing on outcomes like distributed profits and representation, it is crucial to understand the practices that underpin trading operations in processes of collective trading and inclusion.





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## English Summary

This thesis investigates the performance of farmer-led and self-organised auctions in rural Java, Indonesia. The auctions broker the relationship between small-scale chilli producers and traders operating in regional and national markets and organise collective trading. Performance of the auctions features ways to handle tensions and risks, practices that shape the terms of inclusion of smallholder farmers, and the use of a variety of mostly unwritten rules that direct actions and practices at the auction site. Looking at the everyday practice of running an auction is expected to explain how they are able to broker market access by including smallholder farmers and maintaining the groups' sustainability in markets. In addition, this practice-oriented study generates methods to recognise and insights into the use of unwritten and unwritten rules that shape the trading practices with both suppliers and traders. The two research objectives of this thesis are as follows. First, to understand how self-organised farming groups create and sustain the auctions as a mechanism for brokering terms of inclusion for smallholder farmers in perishable product markets. Second, to offer a practice-based perspective on the dynamics of collective trading by looking deeper into the dynamics of farmer-led forms of collective trading in order to advance diagnostic capacity. The main research question of the thesis is: What sustains farmer-led collective trading groups to refashion terms of inclusion in the context of dynamic markets?

Chapter 2 uses 14 case studies of farmer-led chilli auctions to identify skills that collective trading groups develop and use to contain tensions inherent in practices brokering relationships between smallholder farmers and traders. The auctions operated under different circumstances, which required them to refashion terms of inclusion in markets. This chapter shows the differences in how the groups either survived or dissolved by utilising a diagnostic tool that searches for capacities to contain tensions, which emerge in the practice of the auction. This analysis identifies a repertoire of five essential skill sets that auction operators used to improve their ability to influence terms of inclusion in markets. These are: 1) assessing traders' reliability, 2) attaching a group of traders to the auction, 3) organising instant decisions, 4) sustaining reliability and predictability for smallholder farmers, and 5) accommodating members and non-members.

The following chapters study and compare two farmer-led auctions that have been able to sustain their operations in the dynamic chilli markets. The two case studies organised ownership of the auction differently: one was operated by a group, while the other began as a group until ownership shifted to a farmer family. Chapter 3

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details whether and how collective trading is inclusive for smallholder farmers, specified as terms of inclusion linked to ownership, voice, reward and risk. This chapter compares two case studies and dissects the assumption that development pathways operating with a cooperative organisational model advance smallholder inclusion in markets. The comparative analysis demonstrates that collective ownership – similar to the cooperative model – does not necessarily create preferable terms of inclusion for smallholders who have less ability to take risks. When accessing auctions, smallholders needed cash payment and could not afford to take risks. Therefore, smallholder-owned collective trading enterprises do not comply with concepts of inclusive business since they cannot provide adequate working capital to provide cash on delivery.

To advance an institutional understanding of the performance of the auctions, chapter 4 develops an integrative and stepwise method to elicit mostly unwritten rules-in-use in collective trading groups. The integrative method is a combination of practice study and an institutional grammar tool. The integrative method is new in terms of how it shifts the usage of the institutional grammar – which is more commonly used in natural resource management – to the endeavours of farmers in marketing. Using various data sources from observation – in-depth interviews, group interviews, phone interviews, trading networks and surveys – this integrative method recognises and divides the institutional grammar into three components: rules, norms and strategies. The method is used for the comparative analysis presented in Chapter 5.

Chapter 5 attempts to typify the rules-in-use in self-organised efforts to broker smallholder inclusion in markets. This chapter complements perspectives that centre the analysis on a set of written and formalised rules that shape internal, organisational features of farmer-led collective marketing to assess the potential of realising economic benefits. It aspires to deepen and contextualise our understanding of the ways of working of farmer-led and self-organised practices to broker and possible refashion the terms of engagement of smallholder farmers with markets. It postulates that unwritten rules-in-use underpin the *modus operandi* of farmer-led auctions. The analysis clusters the rules-in-use based on Ostrom's rules typology of rule: position, boundary, choice, aggregation, information, payoff, and scope. This considers messy trading practices managed by auctions as a configuration of different rules. The use of rules is further qualified by unravelling the institutional grammar. This study demonstrates that the focus on rule types and their institutional grammar enables us to understand the diversity in how

organisations develop capacities to contribute to inclusiveness in a specific market environment.

Chapter 6 discusses and concludes the main theoretical and methodological contributions of the previous chapters. The theoretical findings relate to how perceiving collective trading as a skill for handling tensions is valuable. Auction operators learn how to handle traders' delayed payments and improve their own skills in accumulating working capital to organise payments. The practice of collective trading requires operators to acquire, update and improvise their skills to meet suppliers' and traders' different interests. This thesis shifts focus from regarding auctions as an organisational fix to looking at auctions as skilful and situated actions. Second, rules emerge from action situations. Written rules often regulate ownership and representation central to endeavours to organise collective trading. The thesis broadens this perspective by linking collective trading the rule typology, which highlights the centrality of risk-taking linked to immediate cash payments as a key ingredient of refashioning the terms of inclusion of smallholders in markets. Smallholder farmers avoid risks when engaging with markets because they are vulnerable. Farmer-led and self-organised auctions may have limited risk-taking capacities, which can be addressed by private-led forms of collective trading that mediate these risks without excluding smallholders from markets.

The methodological contributions in Chapter 6 refer to diagnostic tools for researching smallholders' collective trading. It moves away from traditional organisational diagnostics that often examine outcomes like income, membership and technicalities (high yield crop introduction, soil productivity, subsidies, etc.) within large organisations. This thesis establishes two diagnostic tools: one focusing on organisational agency to make tensions inherent to trading manageable, and one focusing on the capacity to (re)configure rules with the task of brokering relationships with both suppliers and traders.

In conclusion, this research moves attention of policy and development from predefined organisational models to practices and processes that underpin joint trading operations. This study provides recommendations for advancing the inclusion of smallholder farmers into markets, which give weight to mastering skills to handle tensions and risks inherent to small-scale, collective trading groups. The thesis shows the capacity of small task groups to make deliberate decisions, withstand internal and external tensions, create market access for smallholder farmers and fit into the community.

## Nederlandse samenvatting

Deze dissertatie onderzoekt de werkwijze en organisatie van door boeren geleide en door hen zelf georganiseerde veilingen op het platteland van Java, Indonesië. De veilingen bemiddelen in de relatie tussen kleinschalige producenten van Spaanse chilipepers en handelaren actief in regionale en nationale markten. Op deze manier organiseren de veilingen een collectieve vorm van handel drijven. De werking van de veilingen wordt gekenmerkt door omgangsvormen met tal van spanningen en risico's. De handelswijzen van de veilingen geven vorm aan de voorwaarden voor insluiting in markten van kleine boeren. Zij gebruiken daarbij een verscheidenheid aan meestal ongeschreven regels die handelingen en praktijken op de veilinglocatie richting geven. Door te kijken naar de dagelijkse praktijk van het runnen van een veiling ontrafelt en analyseert de thesis hoe deze in staat zijn markttoegang te bemiddelen voor kleine boeren. Ook zoekt de thesis naar randvoorwaarden die veilingen in staat stellen om hun werkwijzen en invloed te laten beklijven in veranderlijke markten. Daarnaast genereert deze praktijkgerichte studie methoden om het gebruik van geschreven en ongeschreven regels, die de handelspraktijken met zowel boeren als handelaren vormgeven, te herkennen en inzichtelijk te maken.

De twee onderzoeksdoelstellingen van dit proefschrift zijn als volgt. Ten eerste, te begrijpen hoe zelfgeorganiseerde boerengroepen de veilingen creëren en in stand houden als een mechanisme voor het bemiddelen van voorwaarden voor inclusie voor kleine boeren in markten voor bederfelijke voedselproducten. Ten tweede, een praktijkgericht perspectief te bieden op en diagnostische capaciteit te bevorderen om de dynamiek van het collectief drijven van handel te doorgronden en contextualiseren. De centrale onderzoeksvraag van dit proefschrift is: Wat houdt door boeren geleide vormen van collectieve handel in stand en bestendigt daarmee het gezamenlijke vermogen om de condities van inclusie van kleinschalige landbouwproducenten mede vorm te geven in de context van dynamische markten?

Hoofdstuk 2 gebruikt 14 casestudies van door boeren geleide veilingen van Spaanse chilipeper om de vaardigheden te identificeren die collectieve handelsgroepen ontwikkelen en gebruiken om spanningen te beheersen die inherent zijn aan de praktijk van tussenhandel die makelt in de relaties tussen kleine boeren en handelaren. De veilingen opereerden onder verschillende omstandigheden, waardoor ze de voorwaarden voor opname in de markten moesten herzien. Dit hoofdstuk toont de verschillen in de manier waarop de groepen overleefden of ophielden te bestaan. Het maakt gebruik van een diagnostisch instrument dat zoekt naar capaciteiten om spanningen, die in de praktijk van de veiling naar voren

komen, te beheersen. Deze analyse identificeert een repertoire van vijf essentiële vaardigheden die veilingoperators gebruikten om hun vermogen om de voorwaarden voor insluiting op de markten te beïnvloeden en verbeteren. Dit zijn: 1) het beoordelen van de betrouwbaarheid van de handelaren, 2) het binden van een groep handelaren aan de veiling, 3) het organiseren van onmiddellijke beslissingen, 4) het handhaven van betrouwbaarheid en voorspelbaarheid voor kleine boeren, en 5) het tegemoetkomen aan zowel leden als niet-leden.

In de volgende hoofdstukken 3 en 5 worden twee door boeren geleide veilingen bestudeerd en vergeleken die hun activiteiten op de dynamische chilimarkten hebben kunnen handhaven. De twee casestudies hebben het eigendom van de veiling verschillend georganiseerd: de ene werd beheerd door een groep, terwijl de andere begon als een groep totdat het eigendom en beheer verschoof naar een boerenfamilie. Hoofdstuk 3 gaat in op de vraag of en hoe collectieve handel inclusief is voor kleine boeren, gespecificeerd naar condities van inclusie die verband houden met eigendom, inspraak, beloning en risico. In dit hoofdstuk worden twee casestudies vergeleken. Dit draagt bij aan discussie over de vraag of ontwikkelingstrajecten verankerd in een coöperatief organisatiemodel de inclusie van kleine boeren op markten bevorderen. De vergelijkende analyse toont aan dat collectief eigendom - vergelijkbaar met het coöperatieve model - niet noodzakelijkerwijs leidt tot betere inclusievoorwaarden voor kleine boeren, vooral omdat kleine boeren minder risico's kunnen nemen. Bij de toegang tot veilingen wilden kleine boeren in de regel contant worden betaald wat goed paste in hun dagelijkse behoeften en de geringe capaciteit om zich risico's te veroorloven. Het hoofdstuk wijst op het belang van voldoende werkkapitaal om contant te betalen bij levering door kleine boeren, als randvoorwaarde voor collectieve handelsondernemingen om bij te dragen aan inclusief ondernemen.

Om een beter institutioneel begrip te krijgen van de werkwijzen van de veilingen, wordt in hoofdstuk 4 een integratieve en stapsgewijze methode ontwikkeld om meestal ongeschreven regels in collectieve handelsgroepen aan het licht te brengen. De integratieve methode is een combinatie van praktijkstudie en een instrument voor institutionele grammatica. De integratieve methode is nieuw in de zin dat zij het gebruik van de institutionele grammatica - die meer gebruikelijk is bij studies naar het beheer van natuurlijke hulpbronnen - verschuift naar de inspanningen van boeren op het gebied van het vermarkten van hun producten. Met behulp van verschillende methodieken, zoals observatie, diepte-interviews, groepsinterviews, telefonische interviews, handelsnetwerken en enquêtes, herkent deze integratieve aanpak de institutionele grammatica in drie componenten: regels, normen en

strategieën. De methode wordt gebruikt voor de vergelijkende analyse in hoofdstuk 5.

In hoofdstuk 5 wordt getracht de regels te typeren die in gebruik zijn bij zelfgeorganiseerde manieren om de inclusie van kleine boeren in markten te beïnvloeden. Dit hoofdstuk vormt een aanvulling op perspectieven bedoeld om het potentieel van het realiseren van economische voordelen te beoordelen die de analyse vooral richten op een reeks geschreven en geformaliseerde regels die ten grondslag liggen aan interne, organisatorische kenmerken van door boeren geleide collectieve marketing. Het hoofdstuk beoogt ons begrip van de werkwijzen van door boeren geleide en zelfgeorganiseerde praktijken te verdiepen en deze te contextualiseren. Zodoende krijgen we zicht op de voorwaarden om de verbintenis van kleine boeren met markten te bemiddelen en eventueel te hervormen. Het hoofdstuk veronderstelt dat vooral ongeschreven regels de werkwijzen van boerenveilingen schragen. De analyse clustert de gebruiksregels op basis van Ostrom's typologie van regels: positie, grens, keuze, aggregatie, informatie, beloning en reikwijdte. Dit beschouwt rommelige handelspraktijken die door veilingen worden beheerd als een configuratie van verschillende regels. Het gebruik van regels wordt verder gekwalificeerd door het ontrafelen van de institutionele grammatica. Deze studie toont aan dat de focus op typen van regels en hun institutionele grammatica ons in staat stelt de diversiteit te begrijpen van de manier waarop organisaties capaciteiten ontwikkelen om bij te dragen aan inclusiviteit in een specifieke marktomgeving.

Hoofdstuk 6 sluit de thesis af en bespreekt de belangrijkste theoretische en methodologische bijdragen van de voorgaande hoofdstukken. De theoretische bevindingen hebben betrekking op hoe waardevol het is om collectieve handel te zien als een vaardigheid om met spanningen om te gaan. Veilingexploitanten leren hoe zij moeten omgaan met de vertraagde betalingen van handelaren en verbeteren hun eigen vaardigheden in het verzamelen van werkkapitaal om betalingen te organiseren. De praktijk van collectieve handel vereist dat exploitanten deze vaardigheden verwerven, bijwerken en verbeteren om tegemoet te komen aan de verschillende belangen van leveranciers en handelaren. Deze dissertatie verschuift de aandacht van het beschouwen van veilingen als een organisatorisch recept naar het bekijken van veilingen als vaardige en gesitueerde acties. Ten tweede laat de dissertatie zien dat regels voortkomen uit actiesituaties. Geschreven regels regelen vaak eigendom en vertegenwoordiging die centraal staan in pogingen om collectieve handel te organiseren. Deze dissertatie verbreedt dit perspectief door de collectieve handel te koppelen aan de regeltypologie, die de nadruk legt op het belang van het



nemen van risico's. Dit staat in verband met het bieden van contante betalingen als een belangrijk ingrediënt van het opnieuw vormgeven van de voorwaarden voor insluiting van kleine boeren in markten. Kleine boeren vermijden risico's wanneer zij zich op markten begeven omdat zij kwetsbaar zijn. Tegelijkertijd kunnen door boeren geleide en zelfgeorganiseerde veilingen beperkt zijn in hun mogelijkheden om zelf risico's te nemen. Dit kan worden aangepakt door ruimte te bieden aan particuliere vormen van collectieve handel die wel in staat zijn deze risico's nemen zonder daarbij kleine boeren uit te sluiten van markten.

De methodologische bijdragen van de dissertatie hebben betrekking op diagnostische instrumenten voor onderzoek naar collectieve vormen van handel door en met kleine boeren. Het onderzoek stapt af van meer gebruikelijke organisatorische diagnostiek waarbij in eerste instantie gekeken wordt naar uitkomsten als inkomen, lidmaatschap en technische aspecten (introductie van gewassen met hoge opbrengst, bodemproductiviteit, subsidies, etc.) binnen grotere organisaties. Als tegenwicht stelt deze dissertatie twee diagnostische instrumenten voor: een die zich richt op het organisatorisch vermogen om spanningen inherent aan handel hanteerbaar te maken, en een die zich richt op het vermogen om regels te (her)configureren met de taak om te bemiddelen in relaties met zowel leveranciers als handelaren.

In conclusie, dit onderzoek verlegt de aandacht van beleid en ontwikkeling geënt op vooraf gedefinieerde organisatiemodellen naar praktijken en processen die ten grondslag liggen aan gezamenlijke werkwijzen in het drijven van handel. Dit onderzoek geeft aanbevelingen voor het bevorderen van de inclusie van kleine boeren in markten. Het legt de nadruk op aanpakken die gewicht geven aan het beheersen van vaardigheden die nodig zijn voor het omgaan met spanningen en risico's die inherent zijn aan de werkwijzen en dynamiek van kleinschalige, collectieve handelsgroepen. Het proefschrift toont het vermogen van kleine, taakgerichte groepen om weloverwogen beslissingen te nemen, interne en externe spanningen te weerstaan, markttoegang te creëren voor kleine boeren en zich in te passen in de gemeenschap.

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## About the author

Dyah Woro Untari was born in Nganjuk, East Java in 1981. She went to Universitas Gadjah Mada, Indonesia, to obtain her bachelor's and master's degrees. Her bachelor's degree majored in agricultural extension and communication in 2004. A year later, she was awarded a scholarship by the Directorate General of Higher Education (DIKTI), Indonesia, for a master's degree program in agricultural economics.

After she completed her master's, she started teaching at Universitas Gadjah Mada in 2010. In 2016, she was awarded NFP fellowship grant for the short course on 'Market Access for Food security – toward pro-poor and smallholder inclusive market development (MAffS),' organised by the Wageningen UR Centre for Development Innovation. At the end of 2016, she was awarded a scholarship by DIKTI-LPDP to start a PhD program at the Knowledge, Technology and Innovation group Wageningen University. After completing her PhD, she will be back at Universitas Gadjah Mada. Her research interests cover understanding how markets work for the poor, including the dynamics of collective trading and the inclusion of smallholder farmers in markets.

Name of the learning activity	Department/Institute	Year	ECTS*
<b>A) Project related competences</b>			
WASS Introduction	WASS	2017	1
Proposal Writing	WUR	2017	6
Scientific Writing	Wageningen in'to Languages	2019	1.8
'Collective trading and inclusion: A comparative analysis of farmer-led auctions in the Javanese chilli market'	WASS PhD day, the Netherlands, virtual	2020	0.5
'Eliciting unwritten rules: An integrative methodology for analysing collective action's rules-in-use in real markets'	IGRI Conference, US, virtual	2021	1
'Collective trading and inclusion: A comparative analysis of farmer-led auctions in the Javanese chilli market'	16th EADI General Conference: Solidarity, Peace and Social Justice, the Netherlands, virtual	2021	1
Reviewing a Scientific Paper	WGS	2017	0.1
Reviewer for article of Journal of Agricultural and Environmental Ethics	JAGE	2021	1
Research Methodology: From topic to proposal	WASS	2017	4
Advanced Social Theory, RSO58306	WUR	2017	6
Qualitative Data Analysis with Atlas.ti: a hands-on practical	WASS	2017	1
Institutions and Societal Transformation, CPT57802	WASS	2018	2
<b>B) General research related competences</b>			
Food Value Chain Research: Understanding Inter-organisational Relationships	WASS	2017	1.5
The Essentials of Scientific Writing & Presenting	Wageningen in'to Languages	2017	1.2
Publish for Impact	WUR Library	2017	0.1
Scientific Publishing	WGS	2017	0.3
Poster and Pitching	Wageningen in'to Languages	2017	1
Mobilising Your Scientific Network	WGS	2017	1
Wageningen UR - Indonesian Network Scientific Exposure	WISE 2018	2018	0.5
PhD Carousel (Brain Training, Supervising MSc Student, Online Personal Branding, Debating)	WGS	2017	0.3
Data Management Planning	WUR Library	2017	0.4
<b>C) Career related competences/personal development</b>			
Competence Assessment	WGS	2018	0.3
Teaching and Supervising Thesis Students	Education Support	2020	0.6
Introduction to LaTeX	PE&RC	2021	0.1
<b>Total</b>			<b>32.7</b>

\*One credit according to ECTS is on average equivalent to 28 hours of study load

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