MAKING INSTITUTIONS VIABLE

a contextualised understanding of bulking in Ugandan food markets

Mirjam Schoonhoven-Speijer

Propositions

1. The informal-formal binary ignores that institutions are only functional when arising from an embedded practice.
   (this thesis)

2. The 'exploitative trader' narrative hinders sustainable development.
   (this thesis)

3. The study of innovation should start from what stays the same.

4. A PhD's individual successes and failures both have collective roots.

5. Populists can be silenced by the sincere apologies of politicians.

6. Electric bicycles hamper the ability to 'take life as it comes'.

Propositions belonging to the thesis, entitled

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Making institutions viable:

a contextualised understanding of bulking in Ugandan food markets

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“Reis ver, drink wijn, denk na
lach hard, duik diep
kom terug”
Spinvis

“I heard a whisper
as soft as iron, as safe as lions
by the ocean beyond the sea”
Jon Foreman

Voor Joram en Jiska

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List of abbreviations

APEP	Agricultural Productivity Enhancement Program
APMP	Agricultural Processing Machinery testing and Manufacturing project (USAID project)
CDO	Cotton Development Organisation (Uganda)
CLUSA	Cooperative League of the United States of America
CMDT	Compagnie malienne pour le développement du textile (Malian company for the development of textiles)
FAO	Food and Agricultural Organisation of the United Nations
IDP	Internally Displaced People
IFAD	International Fund for Agricultural Development (United Nations agency)
LRA	Lord Resistance Army
MAAIF	Ministry of Agriculture, Animal Husbandry and Fisheries (Uganda)
MFAD	Manpower for Agricultural Development (USAID program)
NARO	National Agricultural Research Organisation (Uganda)
NIE	New Institutional Economics
NGO	Non-Governmental Organisation
NRA	National Resistance Army (Uganda)
OSSUP	Ugandan Oilseed Sub-sector Platform
PAN	PAN 7351, hybrid sunflower variety
PBA	Produce Buyers Association (Lira, Uganda)
PEAP	Poverty Eradication Action Plan
PMA	Plan for the Modernisation of Agriculture (Uganda)
PRSP	Poverty Reduction Strategy Paper
R&W	Retail and Wholesale
SNV	SNV Netherlands Development Organisation
UDB	Ugandan Development Bank
UGX	Ugandan Shilling
UNADA	Ugandan National Agro-input Dealers Association
UOSPA	Ugandan Oilseeds Producers and Processors Association
USAID	United States Agency for International Development
USD	US dollar
VODP	Vegetable Oil Development Program
VSLA	Village Savings and Loans Association

Prologue

In the spring of 2011, I was studying at the Radboud University Nijmegen, and conducting research for my master thesis in the rolling hills of Central Kenya. I was trying to understand the effects of Utz Certification, a fair trade label, on the risk behaviour and livelihoods of Kenyan coffee farmers. The coffee farmers sold their coffee via cooperatives, and sometimes via informal traders. But I didn't look much into the daily functioning of the cooperative; I only took the farmer's trust and loyalty towards the cooperative into account as variables explaining their risk behaviour. Moreover, informal traders felt like a distant rumour – sometimes a farmer would mention that they had sold their coffee via so-called 'middlemen'. But I hardly took any notice: 'side-selling' was only included in 2 questions of the 21 pages long survey – did the farmer sell his or her coffee outside the cooperative, and if yes, why did they do so? The answer to these questions didn't even make it into my thesis.

Things however started shifting in 2012, while I was working at SNV's head office in The Hague. One day, my colleague Jan Ubels told me we were going to meet a researcher from Wageningen University, Sietze Vellema, to discuss several successful SNV cases with him. I remember these first meetings with Sietze mostly as scribbling anxiously along with the conversation, my head spinning with all these insights about processes, mechanisms, levers, and contexts. I started grasping that for better understanding the outcomes I found in my master thesis, it would be important to study processes of how cooperatives actually work in practice. In the same period, Jan Ubels and I were outlining action research in the Ugandan oilseed sector together with Bill Vorley, a senior researcher at IIED. Bill suggested to shift questions from 'making markets work for the poor' to 'how do farmers actually make markets work for them?'. In this way, the so-called agency of farmers is honoured: you start with understanding how people make a living, instead of imposing a remedy. Then you may find that 'how farmers make markets work for them' is often by using several options at once, not only 'formal' solutions such as cooperatives, but also the informal sector. There were the middlemen again.

Attention for processes instead of only outcomes of development interventions, agency in markets, and the informal sector was completely new to me, but struck a core. At the end of the year, I e-mailed Sietze Vellema for the possibilities of supervising a PhD on these topics. Fast forward ten years, and I am defending a thesis where these processes and middlemen, or intermediary traders, feature in a prominent role. Moreover, I am convinced that development research and practice can learn from a processual view, and from the skills and capacities of traders and other actors to bring food to the market. And I conclude that the successful cases of cooperatives and contract farming included in this thesis do just that: learn from local market solutions and incorporate them in their way of organizing. My own process took me, so far, from Nijmegen and Kenya, via the Hague, to Wageningen and Uganda. This thesis is the end-result of that journey, and hopefully the start of many more interesting research endeavours.


SALTER

'We weigh in the village, load, unload here, weigh again, and then the balance is being calculated. Payment is always done after weighing.'

Wholesaler, male, at Produce Lane. Lira, Uganda

CHAPTER 1

General Introduction

1. General Introduction

1.1 Societal challenge: food and nutrition security and connecting farmers to markets

In the past decades, developing regions in the world have seen tremendous developments in agricultural food markets due to a rising middle class (Tschirley, Reardon, Dolislager, & Snyder, 2015), urbanisation, a diversification of diets, the so-called 'supermarket revolution' (Michelson, Reardon, & Perez, 2012), and an expansion of food supply chains (Reardon, 2015; Sitko, Burke, & Jayne, 2018). It is assumed that most small-scale agricultural producers are included in, and benefit from, these transformations of agricultural markets (Liverpool-Tasie et al., 2020). In this way, global ambitions to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture by 2030 are materialising (Sustainable Development Goal 2). Farmers might especially contribute to the 'food availability' dimension of food security, defined as the physical presence of food through all forms of domestic production, commercial imports and food aid; determined by production, trade, stocks and transfers (FAO, 2008). Food availability thus includes the production, as well as the distribution and exchange of food – requiring farmers to produce food crops, as well as the ability to market their produce. In the latter way they are expected to benefit from the possibilities agricultural transformation is offering.

So-called 'linking farmers to markets' endeavours in development policy and practice aim to facilitate this connection of farmers to markets and have materialized in a range of value chain approaches. A value chain comprises the set of activities ranging from production to consumption - a system of governance linking firms, or other organisational market structures, together in a variety of sourcing and contracting arrangements (Gereffi, Humphrey, Kaplinsky, & Sturgeon, 2001). In development interventions, value chain approaches are engaged as a tool to make agricultural market systems 'work for the poor' (Dorward, Kydd, & Farrington, 2005) or 'for development' (Taglioni & Winkler, 2016), thus achieving desired outcomes such as poverty alleviation. Efforts by many non-governmental organisations (NGOs), international donors and large companies have been expanded with an emphasis on 'inclusive businesses' – making sure that businesses in value chain become more inclusive towards the poorest farmers; and 'public-private-partnerships' – to more effectively enhance resource and knowledge sharing.

This array of value chain approaches has a common thread: the implication that small-scale producers are linked to markets via newly introduced 'institutional arrangements', referring to the introduction of farmer cooperatives (Bijman, Muradian, & Cechin, 2011), formal contracts with large processors (Barrett et al., 2012) supermarkets (Reardon, Timmer, Barrett, & Berdegue, 2003), or commodity exchanges (Meijerink, Bulte, & Alemu, 2014). The quality of these arrangements could be enhanced by the introduction of standards (Raynolds, Murray, & Heller, 2007). Newly introduced

institutional arrangements should enable farmers to market their products and provide an opportunity to work their way out of poverty.

The introduction of new institutional arrangements is endorsed by two arguments concerning agricultural market institutions in developing countries: market institutions are either imperfect, including challenges such as high transaction costs and small returns, coordination problems, and scattered markets (Barrett, 1997; Fafchamps, 2001); or market institutions do not yet exist, a situation labelled as institutional voids (Khanna & Palepu, 1997). The imperfection of market institutions or the mere absence thereof is assumed to be 'fixed' by the introduction of institutional arrangements. For example, formal contracts can ensure access to commodities for companies and a market for selected farmers in situations where there is presumably no other way of accessing the market (Gow, Streeter, & Swinnen, 2000). Collective marketing via cooperatives, on the other hand, is assumed to solve market imperfections such as low prices and little bargaining power of farmers otherwise selling to exploitative intermediary traders (Shiferaw, Hellin, & Muricho, 2011). Studies of these induced institutional arrangements focus on the initial design under which institutional arrangements operate given certain transaction costs (e.g. Key & Runsten, 1999; Schipmann & Qaim, 2011; Michelson et al., 2012; Abebe, Bijman, Kemp, Omta, & Tsegaye, 2013; Hao et al., 2018); factors driving participation in, and preferences for, institutional arrangements (see Ola & Menapace, 2020 for an overview study); and measuring the effects, or outcomes, of institutional arrangements on farmers' incomes and livelihoods (e.g. Barrett et al., 2012; G. T. Abate, Francesconi, & Getnet, 2014; Schoonhoven-Speijer & Ruben, 2015; Wuepper & Sauer, 2016; Bellemare & Bloem, 2018; Giel Ton, Vellema, Desiere, Weituschat, & Haese, 2018; Anh, Bokelmann, Thuan, Nga, & Van Minh, 2019).

The above discussed literature on institutional arrangements connecting farmers to markets still leaves several gaps. First, an exclusive focus on initial design, factors driving participation, or outcomes of institutional arrangements pays less attention to how the institutional arrangements actually work and remain intact in specific contexts and how these evolve over time. Second, studies on induced institutional arrangements have a strong focus on enhancing sustainability in high-value markets (Ola & Menapace, 2020) or global commodity chains. These may offer higher incomes for smallholder farmers. However, a focus on the engagement of farmers with domestic food markets is highly relevant for understanding the conditions of ensuring local food and nutrition security. Third, a strong focus on the introduction of novel arrangements – with the underlying arguments of modifying imperfect markets or filling institutional voids – might overlook market solutions already present within the context, organized by locally embedded actors in the so-called 'hidden middle' (Reardon, 2015). These might be particularly fit to navigate conditions of scarcity, seasonal fluctuations and disparity in specific local contexts of food provisioning. Below, I discuss these gaps in more detail, and explain how I aim to add to the literature of institutional arrangements in agricultural market under transformation.

1.2 Research focus: how institutions work and evolve

Questions about how farmers, and other market actors, make institutional arrangements work in a viable manner have received limited scholarly attention (Helmsing & Vellema, 2011). In recent years, this question is drawing more attention in the literature. Bulte, Richards & Voors (2018) argue that, instead of qualifying institutions as 'good' or 'poor', careful attention needs to be paid to where institutions come from, and how they change. Their perspective includes shifting the focus from organisational fixes, or 'snapshot pictures', to a more dynamic and bottom-up perspective. A bottom-up perspective pays more attention to how smallholder farmers and other market actors modernise on their own terms, by embedding beneficial elements of modern markets into (informal) structures of tradition and culture, and vice versa (Vorley, Pozo-Vergnes, & Barnett, 2012). Indeed, little attention has been paid to how institutional arrangements within the boundaries of value chains become embedded in historically grown institutions. This while actual food security appears to be a location specific outcome of how evolving social actions and related institutions direct and condition the ways societies arrange the provision of food (Schouten, Vink, & Vellema, 2018). Therefore, Schouten et al. (2018) call for a precise description and analysis of how institutions work and evolve within a given context. Such an analysis aids the implementation of intervention strategies tailored to the context-specific ways of producing, distributing and accessing food.

The thesis responds to this call for a contextualised understanding of how institutional arrangements evolve and sustain in the dynamics of local food provisioning. The empirical focus on local food markets offers a complementary perspective to the rich body of literature focusing on international or high-value cash markets (Ola & Menapace, 2020). In recent years, more attention is paid to the fact that the majority of smallholders actually produce food crops for the local economy (Vorley et al., 2012). And the literature more often addresses the contribution farmers can make to these local food markets. Some examples of this are the use of cooperatives for the marketing of bananas in Kenya (Fischer & Qaim, 2012) or several food crops in Ethiopia (Molla, Beuving, & Ruben, 2020); the use of formal contracts for marketing staple foods in Tanzania (Kangile, Mgeni, Mpenda, & Sieber, 2020) or supplying vegetables to supermarkets in Kenya (Ogutu, Ochieng, & Qaim, 2020). However, these are all examples of induced, or formal, arrangements in food markets, while availability of locally produced staple crops in developing countries is largely shaped by traders and wholesalers organizing themselves in the so-called 'middle segment' of food systems, also labelled 'the hidden middle' (Reardon, 2015).

For decades, policies and development interventions have presupposed that this middle segment was dominated by small, poorly capitalised, isolated market actors, imposing major transaction costs on market participants (Sitko et al., 2018); translating into labels such as 'exploitative traders', critiqued by Sitko & Jayne (2014). In this way, the middle segment of agri-food value chains has remained largely hidden from

both academic theory and policy debate, while traders, wholesalers, but also storage, processing and logistics constitute 40% of the average food supply chain (Reardon, 2015). In recent years, a reassessment of this image is underway, with more attention for their expanding role in food supply chains (Reardon, 2015; Legun & Bell, 2016; Sitko et al., 2018), affirming that intermediary actors have a vital position within rural markets, brokering between producers and (urban) consumers (Guarín, 2013).

Intermediary traders do not necessarily exploit farmers: margins for doorstep traders in maize markets in Eastern Africa are rather small, and competition for the purchase of produce limits opportunities for exploitation (Sitko & Jayne, 2014). Selling to rural and urban traders and processors can thus significantly increase household incomes and food security (Manda et al., 2020; Nuhu, Liverpool-Tasie, Awokuse, & Kabwe, 2021). Intermediary traders provide reliable and predictable market access at the farmer's doorstep or in their vicinity through dense networks of trade (Chamberlin & Jayne, 2013). Also, intermediaries accept lower quality and smaller quantities of produce supplied by small-scale farmers, as opposed to the stringent quality and quantity requirements of formal market linkages (Mujawamariya, D'Haese, & Speelman, 2013; Milford, 2014; Abebe, Bijman, & Royer, 2016). And intermediary traders pay farmers cash on delivery or offer credit to small-scale farmers often excluded from formal financial institutions (Vorley et al., 2012; Bailey, Bush, Oosterveer, & Larastiti, 2016). Through informal arrangements with wholesalers and processors, complementary services include not only credit, but also input provision, information and logistics (Liverpool-Tasie et al., 2020). Intermediary traders, wholesalers and processors thus form an important and emerging market connection for smallholder farmers in the context of food provisioning.

To summarize, the contribution of smallholder farmers to food security, more specifically food availability, is facilitated by institutional arrangements. The study of these institutional arrangements should focus more on a precise description and analysis of how institutions work and evolve within a given context of food provisioning. Recently, there has been more attention in the literature for the use of formal, induced arrangements - contracts and cooperatives – in food markets; but less for self-organized, or informal, actors making up a large proportion of 'hidden' market linkages, such as intermediary traders. Together, this leads to the following aim of the thesis: a better understanding of how both locally organised and induced institutional arrangements work, evolve, interact and are embedded in a dynamic context of food provisioning. The research focuses on the sunflower sector in northern Uganda, a sector marked by recent transformation in the last phase of a civil war, a strong expansion of the sector in terms of numbers of farmers, produced volumes, networks of intermediaries, processors, and food provisioning is governed by a variety of institutional arrangements.

1.3 Scientific background: a contextualised understanding of institutions and modes of governance

A better understanding of how institutional arrangements work and evolve within a given context has the following elements. First, the 'working and evolving' of institutional arrangements is further explored scrutinizing institutional theory, leading to the notion of viable institutions (1.3.1). Second, a further definition of what institutional arrangements 'do' in food markets leads to 'modes of governance' (1.3.2). Third, the importance of a contextual understanding is emphasized through embeddedness and external pressures (1.3.3).

1.3.1 How institutions are studied: bridging structure and agency

Institutions form my key point of interest and are reflected in the recent scholarly attention for institutions within the field of development studies (Dorward, Poole, Morrison, Kydd, & Urey, 2003). In development literature, institutions are commonly referred to as 'the rules of the game', or the formal legal rules and informal social norms that govern individual behaviour and structure social interactions (North, 1991). In addition, the notion of mediation is important: institutions mediate farmer's access to markets, thereby mediating an actor's ability to carry out strategies and achieve certain outcomes (Scoones & Wolmer, 2003). In this way, institutions influence the composition of livelihood strategies (Chambers & Conway, 1992), implying that certain institutions might better enable the achievement of positive outcomes than others. This resonated in phrases such as 'bringing the right institutions into place', or the World Development Report 2002 entitled 'Building institutions for markets' (World Bank, 2002).

The 'mediating' character of institutions for the achievement of individual outcomes shows two important strands of thought concerning institutions. A focus on the macro-level - tracing the evolution of an institutional form and asking how it affects individual preferences and behaviour, and the micro-level – exposing how institutions are devised to solve collective action problems experienced by individuals (Scott, 1995). A macro-level perspective represents a structural view (North, 1991), a focus on the micro-level is also labelled as an agency or functionalist view (Williamson, 2000), where individuals strive to maximize their economic behaviour. Both differ in the degree of choice individuals possess within a society in selecting their institutions (Greif, 2006). The structuralist view argues that institutions foster structure, and shape behaviour, rather than reflecting the needs and possibilities of those whose behaviour they influence; whereas the second, functionalist, view emphasizes that individuals create institutions to serve various functions. In light of my research focus, a structuralist view leads to the introduction of institutional arrangements, regarding them as organisational fixes and researching initial design of the arrangement; whereas an agency perspective leads to researching how individual actors have a preference for a certain structure, or how using a structure leads to certain welfare effects.

In both structure and agency approaches, there is less attention for the processes of how institutions are being formed, shaped, reproduced and reinforced or undermined. These processes shift the research gaze to structure-agency interactions. Greif (2006) argues that a definition of institutions should bridge structure and agency, because 'an institution is sometimes a structure beyond the control of individuals whose behaviour it influences, and at other times it is an outcome reflecting their actions' (Greif, 2006:41). He therefore defines institutions in the following way:

'*An institution is a system of social factors (rules, beliefs, norms and organisations) that conjointly generate a regularity of behaviour. Together these components motivate, enable and guide individuals to follow one behaviour among the many that are technologically feasible in social situations' (Greif, 2006:30*).

In this way, institutions are defined less static, but consider that agency is on the one hand shaped by structure - rules, beliefs, norms and organizations; and on the other hand, agency shapes structure: individuals need to be motivated and enabled to follow the rules implied by institutions. In other words, institutions can be open to modification, and exist only to the extent that they are carried forward by the integrated and standardized behaviour of individuals (Hughes 1939; in Scott, 1995). If this is no longer the case, if individuals act in a manner that does not reproduce the associated rules, beliefs, norms and organizations - an institution is being self-undermined and might change (Greif & Laitin, 2004). Greif & Laitin (2004) argue that the cause of change in behaviour might be endogenous or exogenous to the institution. The latter points at contingency upon the context, and the above given definition of institutions indeed emphasizes that institutions are context-specific: they should be 'technologically feasible in social situations. Changes or disruptions in the context might cause an institution to adapt.

These two aspects of the reinforcement of institutions, internal dynamics and the influence of the context, links to the concept of *institutional viability*, defined as *'the capability of a set of empirical institutions, for being sustained within their environment, despite a wide range of external pressures and internal tensions'* (6, 2003, p. 398). The viability of institutional arrangements is not a given, but subject to internal tensions and external pressures. The notion of internal tensions enables to investigate how institutions are shaped and reinforced through agency, and at the same time consolidate regularity of behaviour within organisational settings, whereas the notion of external pressures lays emphasis on the importance of embeddedness of arrangements within changeful and challenging contexts.

Greif's perspective on institutions, based on theorizing trade, gives space for studying the interaction between dynamics of market structures and the agency of economic actors. In this thesis, I aim to explore this dynamic, or meso, perspective on institutions, which is less developed in the literature. A dynamic perspective is aided by the

notion of institutional viability and is therefore used to investigate how institutional arrangements emerge and evolve. Below, I further explain how to study the viability of institutional arrangements with a focus on the reinforcement of governance structures, and secondly, their interactions with dynamic contexts.

1.3.2 What institutions do: governance of market transactions

In market places, a set of institutions – which I label an institutional arrangement - constitute *a mode of governance* that develops to regulate or manage economic exchanges, when transaction costs to negotiate and conclude a separate contract for each exchange are too high (Coase, 1937). Governance thus ensures that interactions between market actors exhibit some reflection of organisation, rather than being simply random. My specific interest resonates with the interest in governance found in the rich literature on value chains (Gereffi, 2001; Gereffi et al., 2001; Gereffi, Humphrey, & Sturgeon, 2005). The governance of a value chain can be defined as 'authority and power relationships that determine how financial, material and human resources are allocated within a chain' (Gereffi, 1994, p. 97). Governance thus determines the allocation of produce and finance by ensuring and ordering interactions. For this thesis, the relevance lies in the processes linking how produce and finance are allocated in linking farmers to firms or other organisational market structures in a variety of sourcing and contracting arrangements (Gereffi et al., 2001).

The institutional arrangements researched in the thesis – cooperatives, contract farming, intermediary trade – constitute several modes of governance. Each mode of governance has similar functions, defined by Fernandez-Stark & Gereffi (2019) as legislative, judicial and executive functions. Legislative functions define the basic conditions for participation – quality, price and delivery reliability, whereas judicial functions coordinate the conformance to these conditions. Executive functions provide assistance to actors in meeting the operating rules. For an effective functioning of governance, the capacity of sanctioning is needed, which can be negative or positive, a stick or a carrot. Modes of governance are commonly thought to further formalize as an industry evolves and matures; a line of thinking providing grounds for the above described preference for formal over informal market arrangements. However, less attention has been paid to how modes of governance rise and transform.

In this thesis, I focus on the rise and transformation of modes of governance manifest in different types of institutional arrangements: intermediary trade, cooperatives, and contract farming. In the literature, these arrangements are mostly studied in isolation. Studying different modes of governance in the same context is therefore a contribution to the literature and functional for the understanding of institutional viability. Comparing different modes of governance in the context of food markets can aid the understanding of what makes institutions become viable; within a similar context, there might be similarities in how modes of governance deal with internal tensions and external pressures.

1.3.3 What makes institutions viable: socio-material embedding and external pressures

The effective governance of bulking does not only depend on resolving internal tensions, but also on how actors organising bulking navigate the socio-economic and natural environment in which they operate (Andriesse, Beerepoot, van Helvoirt, & van Westen, 2011). Governance arrangements surfacing in a specific bulking practice are constrained in a specific way due to the local context. A highly located, context-specific assessment is required to understand whether and how food becomes available (Schouten et al., 2018). This implies a contextualised understanding of processes through which institutions become viable, which shifts attention to the socio-material *embedding* of bulking practices, and emerging capacities to withstand *external pressures*.

A context-specific assessment entails both material and less tangible aspects (Coe, Dicken, & Hess, 2008). An analysis of bulking practices therefore includes a study of its embedding, which centres on the connectivity of a practice in geographically bounded systems co-shaped by chain and non-chain actors (M. Granovetter, 1985; Helmsing & Vellema, 2011). Granovetter (1985) argues that economies can only function if they are embedded in social organisation. Social organisation addresses localized social relationships, distinctive institutions, history and cultural practices. This also brings on board communities, government policies, various forms of business associations (including farmers' organisations), banks, and NGOs.

In this thesis, I define embedding not only as social, but also as material. Material grounding of bulking includes the influence of the agro-ecological setting (e.g. seasonality of production), the materiality of food (e.g. storage and volumes), and physical (e.g. roads and distances) and logistical infrastructures (transport) (Djanibekov, Van Assche, Boezeman, & Djanibekov, 2013). Following Greif's definition of institutions, embedding in both the social and material context explains which of the many 'institutional options that are technologically feasible in social situations' are followed (Greif, 2006). The formation of institutions is thus a socially and materially embedded process: embedding shapes the preferred institutional arrangement that arises in a specific context.

Contexts, however, are dynamic and might change. Understanding viability lies in understanding how specific challenges, or external pressures, posed by the social and material environment might challenge the reinforcement of institutions over time (Greif & Laitin, 2004). External pressures in the specific context of the research include the post-war situation in northern Uganda, changing rainfall patterns due to climate change, and an increasing competition for produce. How institutions remain viable entails a detailed study of external pressures posed by the context over a longer time period, and how institutional arrangements respond to them.

1.3.4 How institutions work and evolve: a practice perspective

I consider social-material practices of bulking as analytical 'objects' whose study can demonstrate how institutions are enacted, consolidated and/or transformed through the everyday actions embedded within them (Jones & Murphy, 2010; Mangnus & Vellema, 2019). Practices are defined in different ways. Nicolini (2012, p. 7) gives the following definition: *'practices are meaning-making, identity-forming, and order-producing sets of activities'*. A practice does not entail just one activity, but a set of activities, or 'a complex whole composed of 'smaller' elements' (Gherardi, 2012). For instance, shaking hands is one component of the practice 'greeting'. Arts et al. (2013, p. 9) are a bit more specific in what these activities entail, a practice is 'an ensemble of doings, sayings, and things in a specific field of activity'. A practice thus entails actions (doings), but also discourse, knowledge and rules (sayings) and non-human and inanimate entities (things).

The fact that practices are 'order-producing' links to my aim of understanding how institutions become viable: it is inherent to practice is that they institutionalize activities and ways of doing. When repeating daily activities, such as the handshake, there is a need for recognizability and repetition for the practice to keep functioning between individuals. Repeating practices furnish, or reinforce, ordering principles in order to become durable. At the same time, consolidation takes place when institutions in place sustain the morality, meaning, and normativity of the practice (Nicolini, 2012). This places practice at the centre of structure and agency.

Practice theory carves a specific place for individual agency in the above described structure-agency debate. Ortner (1984; in Nicolini, 2012) argues that three perspectives on the individual can be distinguished: *homo economicus* – a (semi) rational decision maker; *homo sociologicus* – a norm-following, role-performing individual; and *homo practicus* – carrying, and carrying out, social practices. The notion that practice reinforces institutions, and institutions in their term sustain a practice is summarized by Arts et al. (2013) in the concept of *situated agency*. Situated agency explains how agency (ideas, behaviours, and identities of actors) and structure (traditions, rules and discourse) continuously co-shape each other. Co-shaping implies that human behaviour entails both routine and improvisation. Performing a practice always requires adapting to new circumstances, so that practices is 'neither mindless repetition nor complete invention' (Nicolini, 2012). Arts et al. (2013) use the metaphor of a play. In a play, actors are guided by a script and director (institutions), but they are also supposed to interpret, improvise and perform (agency). Each new performance is slightly different than the last one, hence outcomes are partly unpredictable. In that sense, institutions are produced and reproduced in practice, in the interaction between actors and structures.

Adapting to circumstances hints at the importance of context. Indeed, practices always occur within a specific context: they are historically and geographically recurring localized occurrences (Gherardi, 2012). The performance of a practice is shaped by the social and material context. In this way, a practice approach also aids in understanding the influence of the context on the performance of bulking, which I operationalized above using the concepts of embeddedness and external pressures.

The specific practice central to this thesis is *the practice of bulking*. Bulking is the specific step wherein food materials are collected in order to make them available for processing or marketing (Ton, Opeero, & Vellema, 2010). Bulking practices entail activities such as arranging storage, transport, and quality control, protection of produce, arranging finance, and the transaction of produce including price negotiations and payment modalities. Bulking entails multiple transactions and interdependencies, as well as disagreements and negotiations. A focus on the practice of bulking makes visible how financial, material and human resources are allocated within a chain, and how a particular mode of governance enables these allocations. Institutional reinforcement is needed for the continuation of the activity governed (Greif, Milgrom, & Weingast, 1994), and realizes coordination of bulking activities. Investigating the performance of bulking reveals how a particular mode of governance is shaped and reinforced through the daily activities of actors over time, their role in governance processes, and the context in which they are situated.

1.4 Research objectives and research questions

Based on the theoretical discussion above, the aim of the study is to enhance the understanding of how farmers and value chain actors make institutional arrangements governing bulking practices viable. The **overall research question** of the thesis is as follows:

What makes bulking practices of local food crops institutionally viable in dynamic contexts?

Answering the research question entails developing a meso-perspective on institutions. In this way, a theoretical objective of the thesis is to enhance institutional thinking around agricultural markets. A practice approach combined with a selection of institutional lenses (elaborated on in section 1.5) together combine to a methodological objective of enhancing 'institutional diagnostics' (Schouten et al., 2018). I propose to develop a meso-perspective in two ways: first, a search for the interaction between agency and institutions; how individuals 'shape rules, beliefs, norms and organisations', and are at the same time motivated to reinforce these institutions; and second, the influence of the wider socio-material context on which institutions surface and how they remain viable through situated agency.

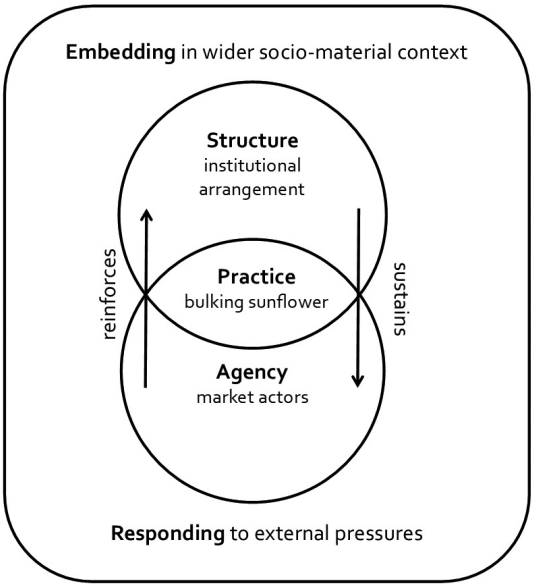

Figure 1.1 Summary of conceptual design to research institutional viability

The research studies two types of institutional arrangements governing bulking. First, existing, more informal arrangements, which are self-organized by intermediary traders and evolve within the context. Considering the challenges in the context of northern Uganda, it is not evident that bulking practices become institutionally viable, which is examined in the study of reinforcement. Second, induced, more formalised, arrangements are especially fit for studying processes of how they become embedded in dynamic contexts, and respond to external pressures. Both angles are attentive to the contingency of viability on the dynamic context of agricultural transformation; it is therefore also taken into account how this context historically developed. This leads to answering the main research question with the following sub-questions:

1. **Which historical dynamics shaped the contemporary features of agricultural transformation of the sunflower sector in northern Uganda? (Chapter 2)**
2. **How are institutions governing existing bulking practices of intermediary traders reinforced over time? (Chapter 3)**
3. **How do newly introduced institutional arrangements become viably embedded within socio-material contexts (Chapter 4), and respond to external pressures? (Chapter 5)**

The concepts leading the research questions above come together in the following conceptual design (Figure 1.1). A study of how institutions in locally embedded bulking

practices become and remain viable should bridge structure and agency. I argued above that a focus on the everyday realities of actors helps in examining interactions between structure and agency. Agency is situated in the daily activities constituting bulking practices. These practices produce and reinforce structure, in this case institutional arrangements for the marketing of food; and simultaneously, institutions sustain the practice. Practices are not isolated, but embedded within dynamic contexts, and should be able to respond to external pressures coming from this context.

1.5 Research design

For a study of the viability of institutions, I use the following research design. I start with introducing the research methodology, adopting a so-called zooming in & zooming out approach. Zooming in and zooming out combines a selection of institutional lenses that explore different angles of viability, embedding, and external pressures. Then, I further introduce the context of the research: the sunflower sector in northern Uganda; and explain which case studies in the context are selected: a cluster of informal traders, 2 cooperatives, and a contract farming arrangement. Finally, the methods used for data collection and analysis are discussed. This leads to outlining the rest of the thesis.

1.5.1 Zooming in & zooming out

To understand the complex whole of the daily work of actors in bulking, their role in governance processes, and the embedding of a practice in socio-material contexts, the bulking practice needs to be studied from different angles (Vellema, Obeng Adomaa, & Schoonhoven-Speijer, 2022). This is what Nicolini (2009) labels a 'zooming in – zooming out' approach. First, one zooms in on the details of the accomplishment of a practice in a specific place to make sense of the local accomplishment of the practice. In the thesis, the emphasis of zooming in lies at answering research question 2, scrutinizing existing bulking practices of intermediary traders. This is followed by, and alternated with, a zooming out movement through which one expands the scope of the observations following the trails of connections between practices.

In the thesis, this leads to studying connections of induced arrangements with the institutional features of sustained practices embedded in the socio-material context, thereby answering research question 3. These 'trails of connections' are considered through both space and time. The spatial dimension includes questions such as: which other practices affect, enable, constrain the practice under consideration? In which ways does the practice reproduce existing social arrangements? The time dimension includes the question of how did we get to where we are: what led to the current situation? The latter considers a study of the practice's emergence and evolution (Nicolini, 2012), which is taken into account in both research question 2 and 3, as well as in the historical perspective on the agrarian transformation unfolding in the sector and northern Uganda answering question 1.

Table 1.1 Institutional lenses used and their description

Institutional lens	Description
Historical perspective (Blok, 1978)	Concerns how the past grew into the present, and which processes connect them
Economic history (Greif, 2006)	Greif's definition of institutions (see 1.3.1) stems from economic history, as his work is based on the study of the social institutions that support economic development, and their history, particularly medieval trade
Institutional bricolage (Cleaver, 2002; Baker & Nelson, 2005)	Institutions are regarded as both constructed deliberately as well as in the practical iterations of daily life. It regards existing institutions as a bricolage of borrowed, adapted and combined institutions
Institutional diagnostics (Rodrik, 2010; Schouten et al., 2018)	Theorizes about how development policies should adapt to their specific context instead of concentrating on organisational fixes or treatments. Rodrik proposes to start with identifying what works and what doesn't, to aid the search for 'locally suited remedies' to overcome the most binding constraints in a given context

Zooming in and zooming out is achieved in two ways: using a selection of theoretical lenses and switching between several modes of governance. First, switching theoretical lenses is done by using a selection of institutional theories and a historical perspective, summarized in Table 1.1. The following 'institutional lenses' are used in the thesis: a historical perspective (Blok, 1978), economic history (Greif, 2006), institutional bricolage (Cleaver, 2002; Baker & Nelson, 2005), and institutional diagnostics (Rodrik, 2010; Schouten et al., 2018). These lenses have in common that they recognize, as Greif does, that individual action is characterized both by agency and structural constraints. Together, they aid in the study of governance, embeddedness and external pressures from different angles. Using several theoretical perspectives enriches the understanding of a practice, through 'reading the results of one form of theorization through another' (Nicolini, 2012:219). Second, zooming in and zooming out is achieved by switching between several modes of governance, all involved in the bulking of sunflower. This aids the understanding of the richness of bulking practices in the sunflower sector, as well as the connections of one type of bulking practice to the next. As explained above, the modes of governance studied are intermediary trade, cooperatives, and contract farming.

1.5.2 Research area: bulking sunflower in northern Uganda

The empirical context of the study is formed by the sunflower sector in northern Uganda, which exemplifies the important role of smallholder farmers in securing food supply for a fast-growing population. I focus on sunflower, an oilseed crop. Oilseeds are, when processed into edible oil, an essential part of local diets in Uganda, and the expansion of sunflower production has especially been instrumental in interventions addressing poverty in the former war zone of the north (IFAD, 2011). The oilseeds sector in northern Uganda represents an agri-food system in transformation. Northern Uganda was traditionally an important region to produce cotton, a sector which collapsed during the 1980s due to political turmoil and mismanagement. Sunflower was introduced in the 1990s as an alternative crop for edible oil production. These dynamics are further elaborated in Chapter 2. Since then, several types of linkages were

created between food industries and farmers, which become manifest in different types of bulking practices.

The specific location of the research chosen was the town Lira, Lango region, northern Uganda (Figure 1.2). In 2006, a leading processing, and food company, Mukwano, established a large processing plant in Lira, through which the town developed as the major hub for sunflower trade and processing in northern Uganda (further elaborated on in Chapters 2 and 5). I therefore chose the town as starting place for the research. Access to the research area was based on earlier research of the co-supervisor (Ton et al., 2010; Vellema, Nakimbugwe, & Mwesige, 2011) and myself (Schoonhoven-Speijer & Heemskerk, 2013; Gildemacher et al., 2015). Field data was collected during two periods: November 2014 – April 2015 and November 2015 – February 2016. Sunflower can be grown in two seasons, but the period between November and April is when most sunflower is bulked.

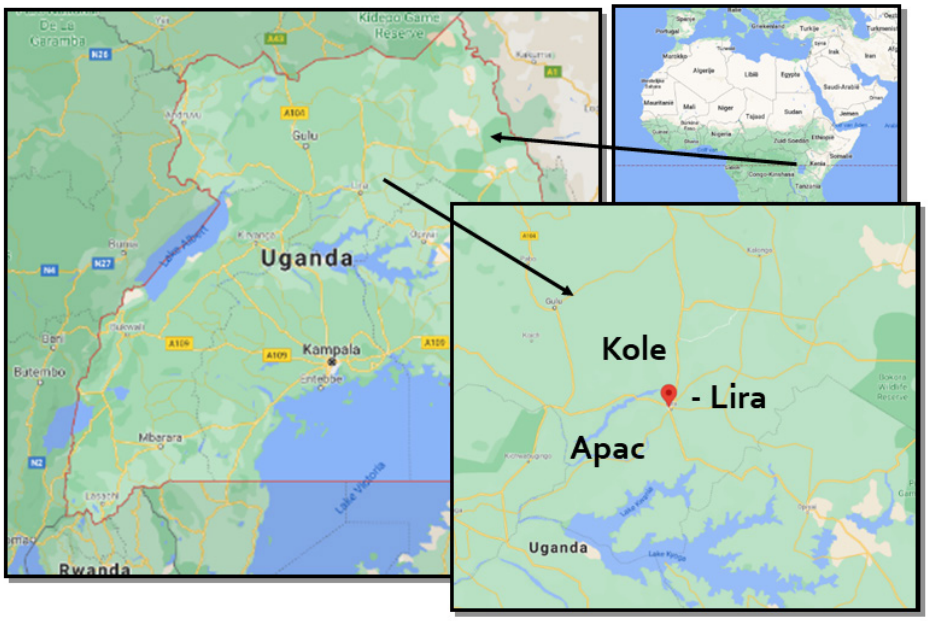

Figure 1.2 Research location of the research, northern Uganda
Source: https://goo.gl/maps/M14DCt4wktg1bsiF9 (accessed July 8th, 2021)

1.5.3 Case study design and case selection

The thesis starts with a good understanding of the context and how it developed over time, aided by a historical background study (Chapter 2). This is followed by the study of different institutional arrangements organizing bulking for which a multi-case study design is used. In-depth case studies allow for detailed descriptions of processes, their setting and the people and interactions in specific contexts (Vellema, Ton, de Roo, & van Wijk, 2013). It provides insights into complex social-material practices and traces

how interventions evolve. The context of northern Uganda, and especially around Lira town, is bustling with bulking activities. Several types of linkages were created between food industries and farmers over the last twenty years, which become manifest in different types of bulking practices and modes of governance. These form suitable case studies used in the research and are discussed in further detail below (see Table 1.2 for an overview).

Contract farming was introduced in the early 2000s by Mukwano, one of Uganda's main oil processing companies, which decided to shift from importing palm oil to local sourcing of oilseeds for manufacturing edible oils. Via the contract farming scheme, farmers in the region were provided with hybrid sunflower seeds and access to the company as main buyer. This contract farming scheme is studied in Chapter 5 in combining a *historical background study* of the evolving contract arrangement with a *multi-case study design*. Mukwano uses several types of intermediaries: their own agents, cooperatives, and intermediary traders, which are studied in parallel. Special geographical focus of the case studies is Apac (Figure 1.2), a district West of Lira, where all three arrangements are present, and where bulking has been taking place for a long time, as this is an area less affected by the civil war.

Cooperatives in the region received a lot of support in the same period, as a response of NGOs to aid farmers after the end of the twenty year long civil war between the government and the Lord Resistance Army. One of these cooperatives is Alito Joint Christian Farmers Society, located in Kole district (Figure 1.2) and studied in Chapter 4. Farmers were able to initiate the cooperative during the civil war. A comparative case study is used: the Ugandan cooperative is compared with cooperative Nyetaa Waale in Mali. Interestingly, both cooperatives are placed in a context where bulking shifted from cotton to another crop, sunflower in the case of Uganda, and sesame in the case of Mali. A comparative case study enables to learn lessons about processes of bulking while comparing contexts of agrarian transformation.

Interestingly, after fifteen years of market transformation, *intermediary traders*, studied in Chapter 3, still play an important role in the local market and co-exist with newly introduced forms of market linkages, contract farming and cooperatives. A single in-depth case study is used to come to a detailed understanding of how traders self-organize and reinforce the mode of governance of a cluster of smaller and larger retailers and wholesalers in Lira town (Figure 1.2).

1.5.4 Methods used for data collection and analysis

The above described choices for a multiple case-study design combined with a historical background study leads to the use of a mixed methods approach. Table 1.2 provides on overview of the methods used per chapter. Data collection methods were importantly qualitative, with a mixed methods approach taken for generating descriptive statistics

of intermediary traders (Chapter 3), the Ugandan cooperative (Chapter 4), and the study of contract farming (Chapter 5). Below, I give a short overview of the specific methods used, which are further elaborated in the subsequent chapters.

The search for *modes of governance* builds on a technographic methodology (Jansen & Vellema, 2011) by investigating the social and technical details of bulking, the ways in which collective tasks and distributed competencies are coordinated, and by identifying the rules and routines constructing how bulking is arranged. This led to using the following methods: semi-structured interviews with key informants, observations of the daily activities of traders, focus group discussions with several farmers, observation of and participating in bulking practices. Qualitative data was complemented with quantitative data, providing for instance an overview of actors present in the cluster of traders (Chapter 3), or descriptives of relationships between intermediaries and buyers (Chapters 4 and 5). All techniques helped to get a grip on various deeply embedded processes of acting and doing, shedding light on everyday activities (Arts et al., 2013).

Table 1.2 Summary research design and methods used per chapter

Chapter	Research design		Methods for data collection				
	Institutional lens	**Methodology**	**Participant observation**	**Interviews**	**Focus groups**	**Survey**	**Desk research**
2.	Historical lens	Historical analysis		x			x
3.	Economic history	In-depth case study	x	x		x	
4.	Institutional bricolage	Comparative case study	x	x	x	x	x
5.	Institutional diagnostics	Multi-case study	x	x		x	x

To examine *embeddedness*, bulking practices are related to interactions with both chain and non-chain actors in northern Uganda (Chapters 4 and 5). The first are (competing) traders, farmer organisations, and processors, while the second comprise of farmer associations, banks, local governments and NGOs. These interactions are mapped using semi-structured interviews with key informants, observations of daily interactions and focus group discussions with farmers, and using document analysis. In addition, during the period of the fieldwork I attended several meetings of the Oilseeds Subsector Platform (OSSUP). This included regional (Lira) and national meetings (Kampala), as well as facilitator meetings where the regional facilitators of the northern, eastern and western platform and SNV's support staff would meet. This aided in better understanding interactions and dependencies between several actors and practices. Survey data was especially helpful in understanding the interactions of

induced arrangements with local bulking practices (Chapter 5). The data quantified certain aspects of relationships between a variety of intermediaries and buyers. Also, how embedding shapes conditions for market participation of farmers was described using survey data (Chapters 4 and 5).

To study *the response to external pressures*, key informants in the area were used to better understand contextual dynamics and changes over time: district agricultural officers, NGO staff, and government officials. The data gathered at OSSUP meetings was again insightful to understand current dynamics in the oilseeds sector as well as stakes and dynamics between stakeholders. Also, historical data was collected to document the sequence of instructive events (Chapter 2), get a better understanding of embedding and an overview of external pressures (Chapter 5). Historical data is based on the case studies of bulking practices, desk research for tracing back historical developments, and key informant interviews to discuss the more recent past and developments of the processed oilseeds sector.

Data derived from interviews, observations, focus groups and desk research is analysed using an iterative process between coding (Auerbach & Silverstein, 2003), detecting patterns, processes, and/or instructive events, and then going back to another round of coding while taking these patterns, processes or instructive events into account. Codes used are further elaborated upon in the subsequent chapters. The quantitative data gathered was cleaned and used for descriptives, underlying findings from qualitative data. Interviews and participant observation data were analysed using Atlas.ti; descriptives were derived using SPSS.

1.6 Thesis outline

The research design leads to the following outline of the thesis. In each chapter, one of the institutional lenses (see Table 1.2) is used.

In **Chapter 2,** I start the thesis with a historical lens, giving a rich overview of the historical (political, economic and technical) processes which shaped the current dynamics of agricultural transformation in the sunflower sector. This overview feeds into understanding the current *embeddedness* of bulking practices, as well as *external pressures* faced, and the origins of both.

In **Chapter 3,** I elaborate Greif's dynamic institutional perspective by combining it with a practice approach. This institutional framework is used for studying the *modes of governance* of bulking practices in a cluster of larger and smaller traders in Lira. This chapter analyses how institutions governing bulking practices are reinforced and consolidated. The depth of using a single case study is necessary for coming to an understanding of what the context-specific institutional properties of bulking practices in a cluster are, which contribute to its viability.

In **Chapter 4**, an institutional bricolage approach helps to unravel how farmer organisations become *embedded* within their context. A bricolage approach is especially fit for studying the introduction of new institutional arrangements, such as cooperatives. Arrangements relying on a blueprint of universalised 'design principles' may result in inadequate institutional solutions, as they fail to recognize the depth of social and cultural embeddedness of decision-making and relations. However, through bricolage, induced institutions might gradually adapt to create more socially embedded and robust arrangements (Cleaver, 2002). In addition, the comparative aspect of the study – comparing bulking via cooperatives in both Uganda and Mali – enables to learn lessons about the specific influence of the context on these processes of embedding.

In **Chapter 5**, a multi-case study of an evolving contract farming arrangement – and specifically the governance of intermediation of the contract – combines several elements of viability. I research how practices of several types of intermediaries are mutually constituting modes of governance, and how these are evolving through time under context-specific external pressures. This is done using the concept of institutional diagnostics, searching for 'locally suited remedies'.

Lastly, in **Chapter 6** – the general conclusion - the research questions are answered, and I explore how the research design used aids in enhancing both institutional thinking and institutional diagnostics. Recommendations for development policy and practice are discussed, and I close the research with reflections for enhancing the institutional vocabulary used when studying modes of governance in agri-food markets.


MIRINDA
300 ml

'I sell to some retailers in Lira; I bring the jerrycans in the morning, and collect them at the end of the afternoon. They buy the oil on credit. Others buy the jerrycans in bulk, and then they are taken to a local market in the village'.

Small-size Ugandan oil miller, male. Lira, Uganda

CHAPTER 2

From cotton to sunflower: historical dynamics driving agricultural transformation in the edible oils sector in Uganda

Author: M. Schoonhoven-Speijer

2. From cotton to sunflower: historical dynamics driving agrarian transformation in the edible oils sector in Uganda

2.1 Introduction

Edible vegetable oils are deemed an important part of a healthy, daily diet (WHO, 2015). Figure 2.1 shows the main edible oil crops *produced* in Uganda: sunflower, groundnuts, sesame, soybeans and cotton. The importance and persistence of the availability of groundnuts, and to a lesser extent sesame (locally called simsim), stands out in this figure. Groundnuts and sesame are however mainly produced for home consumption, and if they are sold, they are sold unprocessed which is worth more than if processed into oil (IFAD, 2011). Figure 2.2 shows which crops are *processed* into edible oil. It stands out that cotton was Uganda's most important processed edible oil crop until the end of the 70s, when the sector completely collapsed. From the 90s onward, its share was steadily replaced, then largely outrun, by sunflower. Figure 2.3 and 2.4 show the importance of both oil crops for local consumption: only a small percentage of processed oil is exported, whereas the export of crops has been increasing in the last decade. The in-country production of oils is not sufficient and is supplemented by the import of palm oil: in 2016, for instance, almost 270,000 tons of palm oil were imported.

In this chapter, I have an interest in understanding how this shift in main processed oil crops, from cotton to sunflower, came about. Below, I will first discuss the main characteristics of both sunflower and cotton: how both crops are produced and processed into oil, and what these features imply for making the crops available for the market. I will then argue for the importance of understanding the history of the oilseed sector for the current dynamics in the sector, leading to the research question. This is followed by a short discussion of methods used, and an explanation of the four periods used to structure the rest of the chapter. The chapter concludes with answering the research question, thereby identifying historical conditions for agrarian transformation necessary to better understand the subsequent chapters.

Cotton and sunflower oil have different dynamics in production and processing; sunflower oil is the main product of sunflower production – it has a high oil content (30-50%) which makes it suitable for oil extraction (Enzama, 2015) - whereas cotton oil is a by-product of cotton production. Cotton is in the first place cultivated for its highly valuable textile fibre (lint) and is the most important textile fibre crop in the world. Cottonseed oil is retrieved from the cottonseed. Historically, it was an important source of oil and dominated the world edible oil markets until WWII, when it was replaced by soybean oil. It is now the 7th vegetable oil crop in the world (Heuze, Tran, & Vittet, 2015), whereas sunflower oil ranks 4th.

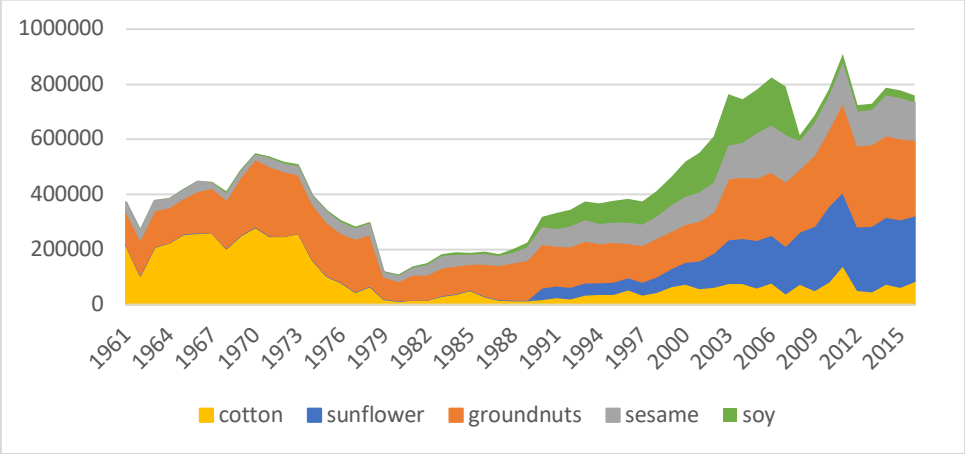

Figure 2.1 Oilseed production in tons in Uganda, 1961 – 2016
Source: FAO (2020)

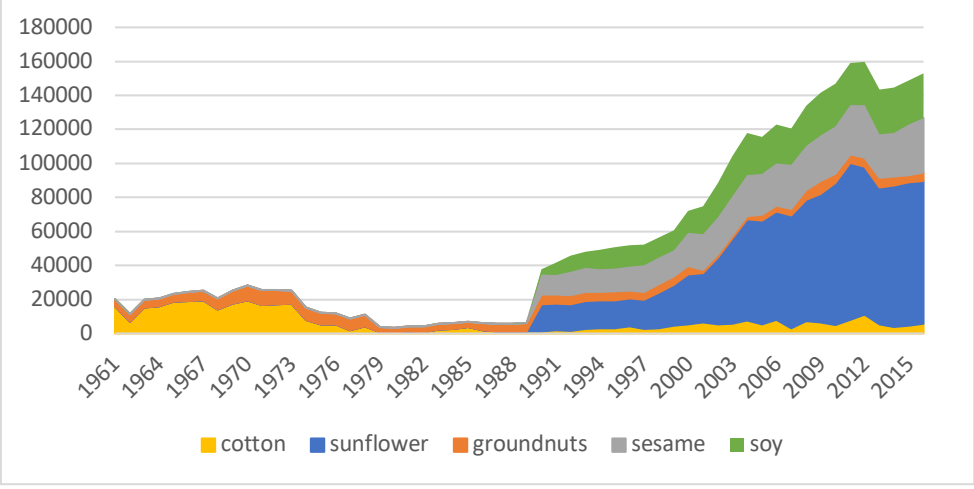

Figure 2.2 Oilseed processed in tons in Uganda, 1961 – 2016
Source: FAO (2020)

This is also reflected in Uganda's place in the world market of both crops: it currently ranks 34th worldwide in cottonseed producing countries, and 18th for sunflower oil producing countries (2018 figures FAO). The production of sunflower and cotton in Uganda has regional differences, as I will explain further in section 2. Cotton can be produced in most areas in Uganda, whereas sunflower is more suitable for the Northern and Eastern regions only.

In Uganda, the value chains for the production of both crops and their processing into oil looks slightly different. Regarding cotton, ginning companies, or cooperatives, are important players in the value chain. They usually buy raw cotton from the farmer, and separate lint and seeds in the ginning process. Seeds are sold to processing companies to process into oil, or, in a few cases, seeds are processed directly by a ginning company. The processing of sunflower, on the other hand, is dominated by the private sector. The first step, separating seeds from the sunflower head and drying the seeds, is done by the farmer directly after harvesting. The seeds are then bought by processing companies (often with intermediary traders or cooperatives in between) who process the seeds into oil. The processing can also be done by hand, with hand-presses, which is done on a small scale by farmers themselves. Sunflower is processed by a few very big processors, and many smaller companies. The main processing company in Uganda is 'Mukwano Industries Uganda Ltd', in short Mukwano, a leading conglomerate in East and Central Africa and a major player in manufacturing, agriculture and logistic supply chains. Their oil processing plant is established in Lira, northern Uganda. The company has been a key private actor in the Ugandan sunflower industry and is further introduced in paragraph 4.5.

The processing of seeds into oils has itself an important by-product: feed cake, used for feeding livestock or poultry. This is made out of the hulls of cotton and sunflower seeds which are rich in protein and crude fibres (Johnston & Meyer, 2007). For both cotton and sunflower, producing feed cake is done by the processing companies, for whom it is an important source of income. Figure 2.5[1] shows that this is especially so for sunflower processors: for sunflower, both oil and cake volumes produced are similar, whereas the volume of cotton oil produced is twice the volume of cotton feed cake. The (export) value for feed cake of both crops is roughly 15%-20% of the value of exporting oil (own calculations, based on FAO 2020). The opportunities for marketing feed cake strongly depend on whether there is a market for the product, in other words if livestock and poultry farming are thriving in the area. In addition, it depends on the scale of the company processing. Mukwano, for instance, has such a capacity that they also provide large volumes to Kenyan feed processors (IFAD, 2011). Export figures however show that the export for both oil and cake is a small share of produced feed cake, in other words, most production is for the national market (FAO, 2020).

1 Data was only available from 1990 onward and until 2013.

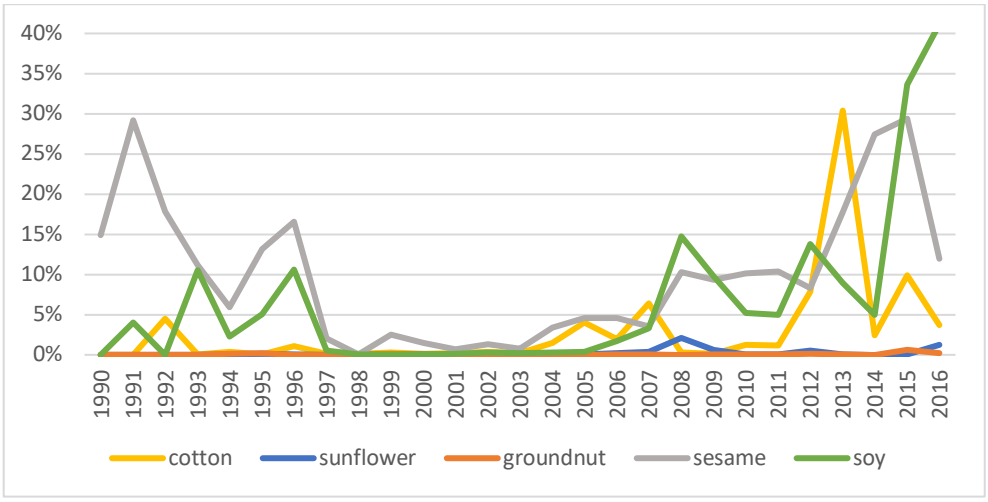

Figure 2.3 Export percentage of oilseed crops produced in Uganda
Source: FAO (2020)

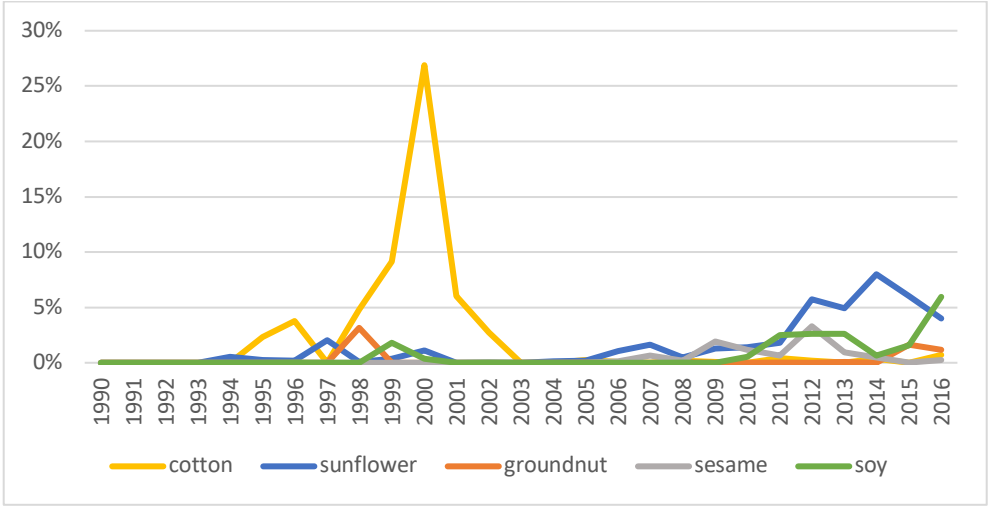

Figure 2.4 Export percentage of processed oil produced in Uganda
Source: FAO (2020)

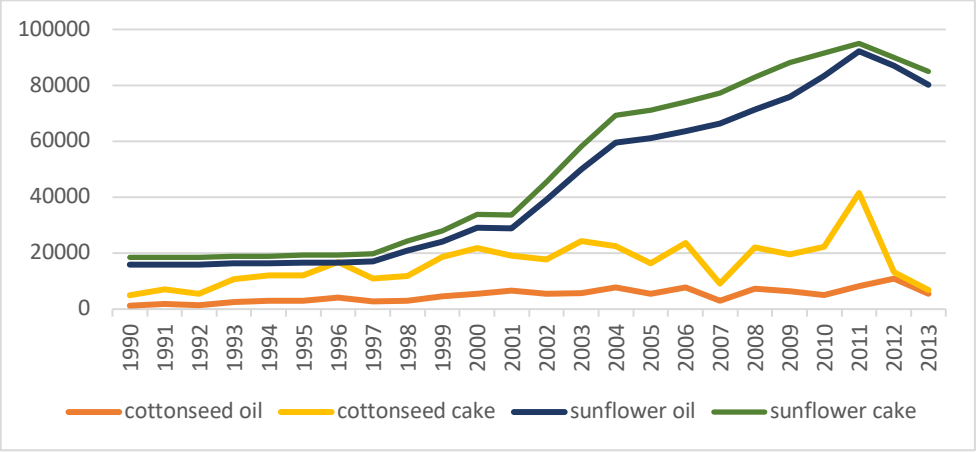

Figure 2.5 Production of oil and cake for both sunflower and cotton
Source: FAO (2020)

Making oil seed crops – cotton and sunflower - available for Uganda's local market and the wider East-African region thus has many aspects: the production of the crop by (often small-scale) farmers, the trade of raw product to ginning companies and oil processors, and finally the retail of oil and feed cake. As explained in Chapter 1 of the thesis, in the literature of food security and agrarian transformation, the process of making a food crop available for the local and regional market is understudied. I have also emphasized that a contextual understanding of these processes is important. To understand the *current context of agrarian transformation* in which bulking practices in the sunflower sector take shape and are embedded, an historical perspective is important. How and why has the current situation emerged historically, and more specifically, what does the shift from cotton to sunflower imply for recent processes of agrarian transformation in the sunflower sector? The main question I am answering in this chapter is therefore as follows: *Which historical dynamics shaped the contemporary features of agrarian transformation of the sunflower sector in northern Uganda?*

I use an historical perspective, which focuses on the question of how the processed oilseeds sector has developed in what it is today; the way in which the past grew into the present, and the contextual dynamics that connect the two (Blok, 1978). I further subdivide these contextual dynamics in political, socio-economic, and technical dynamics (following Gildemacher et al., 2015; Schouten et al., 2018). Political and socio-economic dynamics are described for the country in general, and I research the influence they have had on the cotton as well as the sunflower sector. The technical dynamics – agronomics and crop research - mainly concern the cotton and sunflower sector. The chapter has a geographical focus on Uganda's Northern region, since this region has been the most important for sunflower production, which will become clear in the course of the chapter.

To answer the research question, I have used the following methods. Desk research was done on both academic literature and policy briefings concerning the cotton and sunflower sector in Uganda, as well as broader political dynamics such as the establishment of the colony, political rule and the influence of international donors on socio-economic politics. Key search terms used were (the history of) cotton, sunflower, northern Uganda, Lango (a northern sub-region where sunflower processing is concentrated). This gave me a broad first overview of sector developments in the processed edible oil sector, as well as events on political and economic level that influenced them. After a first round of coding I did a second round of literature search, zooming in on topics that appeared important, such as the importance of coffee compared to cotton, the expelling of the Asian population, the civil war in the Northern region, and sunflower processing company Mukwano. For the last period, I enriched the data with key informants interviews conducted between October 2013 and February 2016, namely the head extension officer of Ngetta Zonal Agricultural Research and Development Institute (part of the National Agricultural Research Organization (NARO)), Mukwano's field operations manager, two of Mukwano's extension officers, the government's District Agricultural Officer for Lira, a UOSPA extension officer in Lira, and data from the Lira Chamber of Commerce.

The analysis of this data enabled me to structure the data along four time periods. I choose these four periods as they signify important political transitions at national level: the transition from colony to independence; the political turmoil of the 70s and 80s, the start of Museveni's reign, and the end of the civil war in northern Uganda. In the course of the chapter, I will show that these transitions concur with transitions in the edible oil sector: the introduction of both crops, the downfall of the cotton industry, the choice for revitalizing the edible oil sector by the use of sunflower, and the establishment of the sunflower sector. These periods are the following:

- Period 1: 1894 – 1962: pre-independence & introduction of crops
- Period 2: 1962 – 1986: national political turmoil & downfall of the cotton industry
- Period 3: 1986 – 2001: recovery, civil war in northern Uganda & take-off of the sunflower sector
- Period 4: 2001 – 2016: peace in northern Uganda & establishment of the sunflower industry

2.2 Period 1, 1894 - 1962: pre-independence & introduction of crops

I start at the very establishment of Uganda as a British colony in 1894 and end this period with Uganda's independence. This period explains how colonial politics, agro-ecological zones and tribal differences influenced the introduction and expansion of cotton and sunflower, both foreign crops to Uganda.

2.2.1 Establishment of Uganda as British colony

Uganda was established as a British Protectorate in 1894. The British divided Uganda in four regions (a division used until this day): the Eastern, Central, Western, and Northern region (Kemirere, 2007). The country existed of three major groups of tribes: the Bantu (of which the Baganda are the most important group), the Central Sudanic, and Nilotic tribes (Laruni, 2015) (see Figure 2.6). The empirical research took place in a sub-region of the Northern region, Lango (see Figure 2.6). Its inhabitants, called the Langi, are part of the Nilotic tribes, including the Acholi, Alur, and other smaller ethnic groups. Originally the Nilotic tribes were herders, and had large cattle herds; their societies were organized in clans by patrilineages (Kemirere, 2007).

The name Uganda came from the Swahili word for the Bagandan area in central Uganda, which says something about the importance of the Baganda for the colonial administration. They had the most influence on British colonial rule, as they were a very organized tribe (Kemirere, 2007). Civil service jobs were for instance preserved for people from central Uganda, whereas Northerners constituted the main pool of recruitment into the army (Doom & Vlassenroot, 1999), as well as more unskilled labour such as construction workers and agricultural labour (de Haas, 2017a). This difference was enhanced by different labour distribution patterns in Southern and Northern regions, as will be explained further below.

2.2.2 Introduction of cotton and sunflower

Cotton was Uganda's first cash crop: it was introduced in 1903 by the British Cotton Growers Association to supply raw material to the British textile industry (Baffes, 2009). The agronomical features of cotton were well suited for growing the crop in Uganda: it can be cultivated at altitudes up to 2000m, needs temperatures between 18 and 30 degrees, ample sunshine and fairly dry conditions, especially during fruit ripening (Uganda Investment Authority, 2009). Uganda did not have an indigenous cotton textile industry, so virtually all raw cotton found its way to the export market (de Haas & Papaioannou, 2017). The introduction of cotton was preceded in 1901 by the construction of the 1400 km Mombasa (Kenya's major port) - Kisumu railway, and its water connection with Uganda's capital Kampala via Lake Victoria, which made the export of bulky agricultural commodities viable (Baffes, 2009; de Haas & Papaioannou, 2017).

Figure 2.6 Major groups of tribes in Uganda
Source Figure 6: (Dingemanse, 2005) (permission granted for reproduction)

Cotton quickly became Uganda's most important cash crop, and the main cash-earning activity for the majority of Uganda's population, reaching production of 60,000 tons during the early 1930s, a level sustained for almost four decades (Jamal, 1976). Cotton was first introduced in Central region, but expanded soon to Western and Eastern regions (Taylor, 1978), and to the Northern region as well. An important factor driving the expansion of cotton was the so-called 'poll-tax'. This tax was introduced in 1906 by the colonial government – a taxation levied on every adult, without reference to income or resources - as a means to encourage the cultivation of cotton and other cash crops (Taylor, 1978). With cotton being the main cash crop in this period for many households, cultivating cotton was the only way peasants could pay the poll tax. The poll tax was on paper removed prior to World War II, but the practice continued until independence (Baffes, 2009).

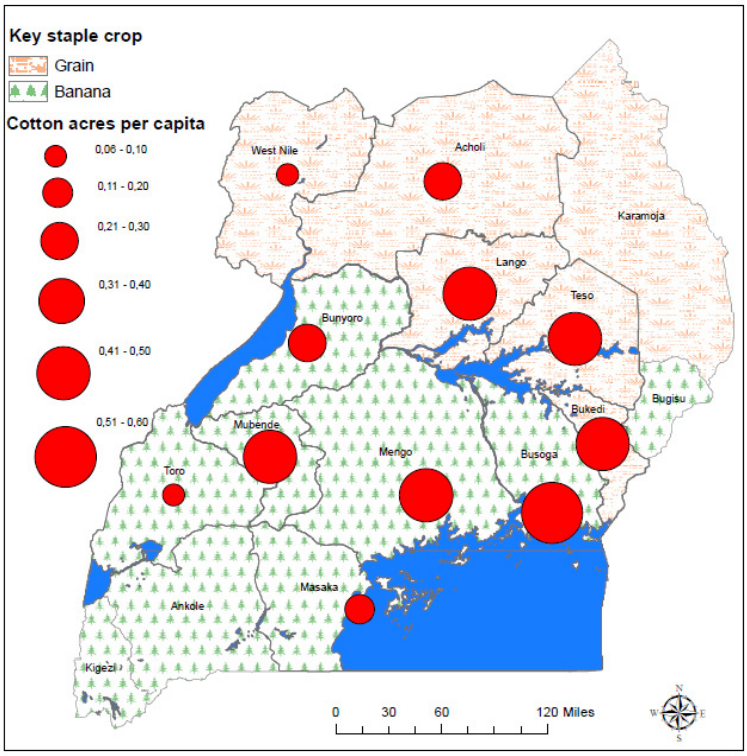

Figure 2.7 Average annual cotton cultivation in Uganda's colonial districts (1925-1960)
Source Figure 7: de Haas & Papaioannou, 2017 (permission granted for reproduction)

Although cotton was grown throughout the whole country, there were differences in distribution of labour and wealth between areas. These differences could be explained by the two different agro-ecological zones recognized in Uganda: the so-called 'grain areas' in northern and eastern Uganda, and the 'banana areas' in central and western Uganda (de Haas & Papaioannou, 2017) (see Figure 2.7). The banana areas, bordering Lake Victoria, had fertile soils, plentiful and well-distributed rainfall. This provided good conditions for high-yielding, perennial green bananas, and left ample time to rotating field crops, such as beans, groundnuts, maize, and cotton. In Northern and Eastern regions rainfall was well-distributed as well, but less plentiful. The area knew two rainy seasons, the first (often longer and more reliable) from February-March until June, and the second (shorter) from July-August till November. Soils and rainfall patterns did not allow for banana or coffee, and instead, more arduous annual field crop rotations were practiced, alternating grains with a range of supplementary food crops, and cash crops with periods of fallow. In addition, livestock was also important in larger parts of the grain area (de Haas & Papaioannou, 2017).

These different agro-ecological circumstances influenced cropping patterns, and therefore the distribution of labour and wealth. Due to fertile soils, more rains, and the steady production of the food crop banana, households in central and western Uganda were better able to diversify their incomes beyond the farm and profited from off-farm opportunities (de Haas, 2017a; de Haas & Papaioannou, 2017). Unskilled labour was therefore more often done by male labour migrants from Northern and Eastern regions, attractive to those who could not profitably cultivate cash crops (de Haas & Papaioannou, 2017).

In the 'grain areas' in northern and eastern Uganda, the bulk of household labour inputs was assigned to the cultivation of food and cash crops. The first, more secure rainy season was used to secure food supply, the second was committed to cash crops such as cotton.[2] In case the first season was insufficient, farmers partially substituted cotton cultivation in the second season for additional food crops to compensate. This inhibited cash crop production. On the other hand, in the Northern and Eastern region, cattle also formed an important part of the economy and were a possibility to fall back on when cash crops production was less than expected. Cattle were also slowly integrated in farm practices during the colonial period (de Haas & Papaioannou, 2017). All in all, the research area, Lango, was the most prosperous Northern region during the 1950s, due to its wealth both in cotton and cattle (Gertzel, 1974; in Oleke, Blystad, & Rekdal, 2005).

These different opportunities for crop diversification in the two zones eventually made cotton a less important crop for the Central and Western region. Smallholders here switched from cotton to the more lucrative cultivation of coffee, which could be easily intercropped with banana. Also, coffee required less labour than cotton, and had a higher yield per acre (Young, Sherman, & Rose, 1981). Coffee was already introduced in 1900, but poorly performing seeds, along with the spread of diseases, discouraged its expansion. However, in the 1920s, coffee production was increasing in response to government extension and better varieties, and by 1958, coffee had overtaken cotton as chief export crop (Baffes, 2006). Nonetheless, cotton was not abandoned in these areas; de Haas (2017) found that over the years, the banana and grain areas contributed more or less equally to Uganda's cotton acreage.

Sunflower, an indigenous North American crop, was introduced by British missionaries in the 1920s and 1930s (Turiho-Habwe, 1992). These varieties are nowadays referred to as local varieties, are of low oil content, and have a hard testa which is difficult for use in oil pressing equipment (IFAD 1997; in Oremo, 2008). In 1947, the first trial and seed increase plots were laid out in western Uganda. Marketing of sunflower was first reported in 1950 from Kigezi and West Nile, 51 tons and 31 tons respectively (Bua

2 Both cotton and sunflower are grown as annual plants. In theory, both can be planted two seasons per year, but the second rains are generally preferred. This because harvesting and, in case of sunflower, drying, are facilitated by dry weather, and the second rains are followed by a longer spell of sunshine (Johnston & Meyer, 2007; Heuze, Tran & Vittet, 2015).

and Molo, 1985; in Anyanga, 2002). By 1962, the end of the colonial period, sunflower was grown in many parts of the country (Turiho-Habwe, 1992). Its characteristics, however, made the semi-arid ecology of northern and eastern Uganda most suitable for sunflower production. Sunflower is moderately drought-tolerant, does not well in humid climates, and can stand temperature fluctuations between 8 and 24C degrees.

2.2.3 Government support for cotton, little developments in sunflower

The cotton sector was largely public-led, with the colonial government being important in providing important conditions for the cotton sector: cotton research, seed breeding, extension services, input supply and quality control functions were retained by the government. In 1949, the cotton research corporation opened a regional research station at Namulonge (Central region) in recognition of Uganda's cotton production. In the 1950s and 1960s, the majority of research efforts here focused on Uganda's principal cash crops, cotton and coffee; thereby recognizing the importance of both cash crops and regional differences in the cultivation of the crops (Laker-Ojok, 1994).[3] Limited research was done on some 21 other food and cash crops. Sunflower fell in the latter category: there was little research capacity building for sunflower, and new technologies to support farmers' initial interest in the crop were not developed (Anyanga, 2002).

The production and marketing of cotton was increasingly done via cotton cooperatives, as a response to the disadvantageous terms of trade imposed on peasant farmers by the mercantile policies of Asian immigrants (Young et al., 1981). The Uganda Growers' Cooperative Union was established in 1933, and became the first large, effective cooperative union after World War II, acquiring its first cotton ginnery in 1950. By 1960, there existed 273 cotton farmer groups, registered in 21 unions, and owning 14 ginneries (Young et al., 1981). Each ginnery maintained a monopoly in its own regional zone (Lugojja, 2017). They were recognized by the government as a formal institutional setting for production and marketing of cotton seeds. Cooperatives had autonomy in forming and managing their affairs with minimal government involvement (Enzama, 2015). Although ginning and marketing functions vested in the cooperatives, the government held a monopoly on the domestic and international trade of cotton lint and seed via the Lint Marketing Board, also established in 1933 (Lugojja, 2017). All in all, cotton production increased to 371,000 bales by 1960/61 (MAAIF, website accessed 9-1-2019).

The processing of cotton was however taken over by the private sector in the 1930s. Cotton ginneries, its owners mainly of Indian origin, were established across the country and took over processing and marketing of cotton lint and oil from the British government. To compare, in 1914, Indians owned 5 ginneries out of 20, while by 1931 this share had increased to 155 out of 194.

3 It can however be argued that this diversified system with regional concentration and diversity of staple food crops complicated a single leverage point where a breakthrough could lead to broad transformation. This also led to pressure on research structures to become overextended. This in contrast to economies where most consumers depend on a single staple (Laker-Ojok, 1994).

In comparison, the sunflower sector received little support in terms of production, marketing and processing. There was a poor market structure, very low prices, and few oil mills (Anyanga, 2002). Sunflower production quantities were negligible in this period: in 1962, production counted for 800 tons (Turiho-Habwe, 1992).

2.2.4 Main takeaways of period 1, 1894 - 1962

The following are the main takeaways of period 1 (summarized in Table 2.1). For every period, I will give a summary of takeaways in terms of political, economic and technical developments important for the historical developments of the edible oil sector.

The disadvantaged political position of the Northern region can be traced back to the period of colonial rule: the Baganda of Central region had most influence on British colonial rule, while Northerners were mostly found in the army and unskilled labour. These differences led to some marginalization of the Northern region and further development of the Southern region (Doom & Vlassenroot, 1999). On the other hand, Lango was a relative prosperous region in northern Uganda in terms of cotton and cattle.

Cotton and sunflower were both non-local crops, introduced under British rule. Agro-ecological differences between regions influenced differences in cropping and labour patterns between central and western Uganda on the one hand, and eastern and northern Uganda on the other hand. In central and western, rainfall was more generous, which made it possible to take up coffee as additional cash crop and farmers had more off-farm possibilities. Cotton, on the other hand, remained the most important cash crop for the Eastern and Northern regions. Sunflower is not a crop of much significance.

Cotton played an important role in the British economy, emphasized by introducing a poll-tax, and the sector was largely public-led, except for the processing of cotton oil. In terms of technical support, there is a focus on supporting cotton and coffee, in combination with a support for the entire infrastructure of the cotton chain, for instance by stimulating the establishment of cotton cooperatives.

Table 2.1 Timeline period 1, 1894-1962

Year	Major political developments	Cotton	Sunflower
1894	Establishment British protectorate of Uganda		
1901	Finishing construction of Mombasa – Kisumu railway		
1903		Introduction of cotton	
1906	Introduction of poll-tax		
1914		# of cotton ginneries: 20	
1920s	Expansion of coffee production		Introduction of sunflower
1931		# of cotton ginneries: 194 Processing taken over by private sector	
1933	Establishment of Uganda Growers' Cooperative Union and Lint Marketing Board		
1947			First trial and seed increase plots for sunflower in western Uganda
1949	Opening of regional research station Namulonge		
1950			First marketing of sunflower
1960s	Main research efforts focus on cotton and coffee		

2.3 Period 2, 1962 - 1986: national political turmoil & downfall of the cotton industry

In 1962, Uganda became independent, a republic with its own constitution, and the British governor-general was replaced by an executive president. Independence was thought to be the era that would give Ugandans a new national identity, setting them on the way to economic growth and modernization. The first decade seemed indeed promising, but from the 1970s onward, Uganda became embroiled in violent conflicts often delineated along ethnic lines (Laruni, 2015). The country faced the same challenges as most post-colonial states: it had to operate within artificial boundaries which meant a large number of ethnic groups were to form one society (Hansen, 2013). In terms of politics, this made for a tumultuous period fuelled by conflicts along ethnic and regional lines in which Uganda saw several presidents. Especially the cotton sector was heavily affected by these challenges. This chapter describes the developments in these two periods, 1962 – 1971 and 1971 – 1986.

2.3.1 1962 – 1971: Uganda's shift to independence

Uganda became independent from the United Kingdom in 1962 and the first Ugandan president was the Baganda King at the time, Edward Mutesa, with Milton Obote as prime minister. Obote, who originated from the research area, Lango, deposed the King from presidency in 1966 after which the King fled to exile in London. By deposing the Baganda king, Obote enlarged the already existing rift between southern and northern ethnic groups. Also, due to British policies, Obote inherited a national army full of northern Acholi whose vocation and identity had become the military service (Enzama, 2015). On top of that, he transformed the army as institution from being politically neutral to an actor within the political arena (Hansen, 2013). In his seize to power, Obote was aided by Idi Amin, who was promoted to colonel and army commander. In terms of economic development, this period was still relatively stable.

2.3.2 The cotton sector at its peak

On independence, the cotton sector became increasingly nationalized: power shifted from the private sector to cotton cooperatives and government institutions. The government took over ownership of cotton ginneries owned by Asian businessmen and handed them over to the cooperative unions. This was done so to avoid exploitation by private ginneries (Enzama, 2015), and to challenge the dominance of British and Indian cotton farms (Drost, van Wijk, & de Boer, 2014). Cooperatives gained more autonomy in this way, but in 1970 it appeared that cooperatives were prone to increasing inefficiency and corruption. The law was again changed, giving more power to the government in supporting and controlling the affairs of the cotton cooperatives (Enzama, 2015). The performance and efficiency of cooperatives was stabilized by these interventions, but tighter government supervision also lead to declining participation (Young et al., 1981).

Cotton production reached its highest levels of 470,000 bales of lint in 1969/70 (see Figure 2.8), and contributed to roughly 40 percent of Uganda's foreign exchange (You & Chamberlin, 2004; Tschirley, Poulton, & Boughton, 2006). This made Uganda Sub-Saharan Africa's largest cotton producer at the time (Baffes, 2009). However, high production levels were not due to an increase in productivity – yield per acre decreased during this period. Instead, high world cotton prices caused an expansion of acreage, but these prices did not prove stable in subsequent years (Baffes, 2009; Lugojja, 2017).

In terms of cotton oil production in the 1960s and 1970s, Uganda was self-sufficient in edible oils, mainly based on cottonseeds, and substantial quantities were exported to Kenya and Tanzania. Interestingly, the processing capacity for oil production out of cotton seeds was still largely in hands of Asian businessmen (Laker-Ojok, 1994).

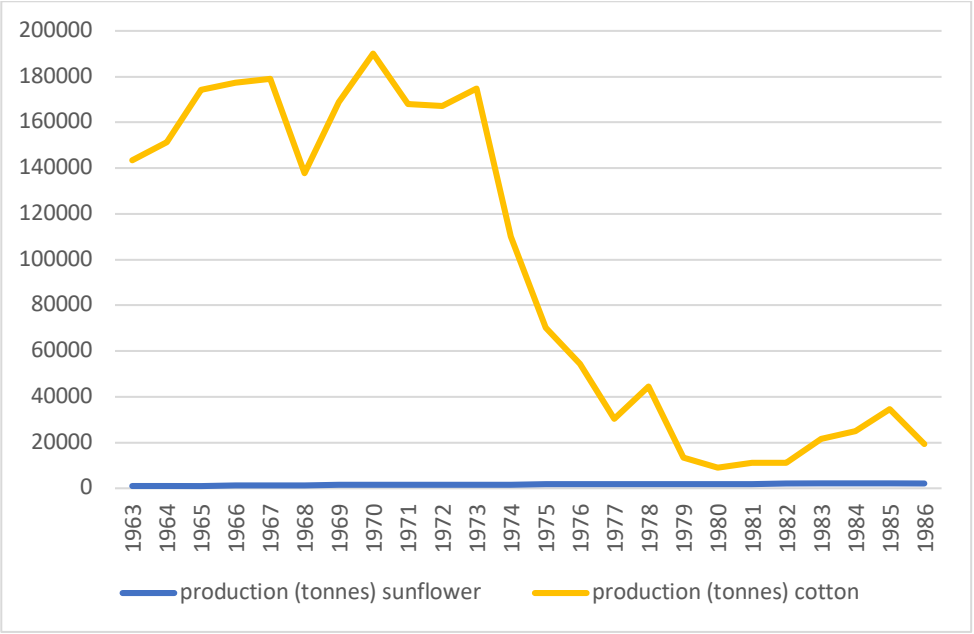

Figure 2.8 Sunflower and cotton production (tons) 1963 - 1986
Source: FAO (2020)

2.3.3 Little development in the sunflower sector

In comparison to cotton, the sunflower sector did not expand much during this period and the volumes produced were minimal: 900 tons in 1962 to 1500 tons in 1971 (see also Figure 2.8). The sunflower sector started to receive more technical government support, in the form of the newly founded 'National Semi-Arid Resources Research Institute' at Serere in Eastern Uganda, which was focusing on soil and crops from eastern and northern Uganda. This specific investment was an important recognition for the different agro-ecological circumstances of these regions and their crops. At Serere, newly introduced sunflower varieties were tested and evaluated in the 1960s and 1970s. These were varieties from Russian and Kenyan origin, with an oil content varying from 10 to 30%. However, only testing and evaluating was possible, and no further seed development took place. Production and marketing of sunflower remained marginally coordinated by the informal sector and church missionaries (Laker-Ojok, 1994); the sector stayed at similar level due to poor market infrastructure, low prices and few oil mills (Anyanga, 2002).

2.3.4 1971 – 1986: Political unrest

Over the years, a rift developed between president Obote and his army commander, Idi Amin, and in 1971 Idi Amin seized power by leading a military coup while Obote was out of the country (Doom & Vlassenroot, 1999). Idi Amin ruled from 1971 to 1979, an eight-

year military rule, which saw massive human right violations, social disintegration, and economic decline. At first, his aggression was specifically targeting Acholi and Langi (Doom & Vlassenroot, 1999), but soon included members of other ethnic groups as well. In 1972, Amin declared 'economic war' to 60,000 'British' Asians, mainly Indians, and Europeans who were holding British passports. Amin argued that they were not official Ugandan citizens, although about 23,000 had acquired Ugandan citizenship. They were said to sabotage Uganda's economy, and were given 90 days to leave the country (Uche, 2017). Many owned businesses which had formed the backbone of the Ugandan economy for a long time. These were taken over by supporters of Amin, which led to mismanagement and proved disastrous for an already declining economy (Mintalucci, 2009).

Amin's rule was characterized by rampant human rights abuses, as well as nepotism and corruption. By 1979, support for Amin was waning, and mutiny in the army caused fights to break out at the Ugandan-Tanzanian border. The Tanzanian president initiated a war against Uganda, and Idi Amin fled the country in April 1979. Obote was again elected president from 1980 to 1985, although election results were contested. In 1985, General Bazilio Olara-Okello overthrew Obote and proclaimed himself president. His reign was however short, and in 1986, Yoweri Museveni was elected president, remaining president until this day.

Museveni was involved in the rebellions that toppled both Amin and Obote. The period 1981-1986 is known as the 'Uganda Bush War', in which several opposition groups united under Museveni's National Resistance Army (NRA), and the civil war ended in victory for the NRA. With Obote being from northern decent, the NRA's support was mostly coming from central and western Uganda, and it increased regional tensions in the country. Especially the Luwero Triangle (situated between three lakes; Victoria, Albert and Kyoga) was an area of tense conflict between Obote and Museveni. In the area there was strong support for the NRA, and a retaliation expedition led by Obote in 1983 led to more than 300,000 deaths for which Acholi armies were held widely responsible.

Overall, an estimated 800,000 people died from politically inspired violence between 1971 and 1985 (Oleke et al., 2005). This period of civil unrest and political violence under Amin and Obote had severe consequences for the economy as a whole and the edible oil sector in particular.

2.3.5 Consequences of political unrest for cotton and sunflower

From the 1970s onward, cotton output collapsed under several pressures. First, there was a dramatic fall in world prices for raw materials, particularly cotton. This caused a major decline in the entire Ugandan economy, and a subsequent decline in income and food reserves, as farmers started selling food crops as an alternative source of income (Tosh, 1978; in Oleke et al., 2005). Second, the cotton cooperatives continued to show mismanagement, for instance by expanding payrolls and employing more people than

necessary. This increased cooperative operating costs, and cooperatives failed to make timely payments to cotton growers (Young et al., 1981; Laker-Ojok, 1994; Baffes, 2009). This all left cotton producers unsupported technically, led to serious shortages of raw materials for crushing, and eventually cotton cooperatives collapsed (Laker-Ojok, 2007; Oremo, 2008). Third, the expelling of the Asian population was a final blow for the edible-oil-part of the cotton sector, since Asians still owned the national oil crushing capacity (Laker-Ojok, 1994). The downfall of the cotton sector was further fostered by political instability under Idi Amin, leading for instance to disruption of research, and poor maintenance of ginning operations. Farmers massively abandoned cotton in the 1970s, and referred to producing mainly food crops, both for consumption and sale (Young et al., 1981).

By the mid-70s, the commercial edible oil production fell to negligible levels: from 78,000 tons in 1972 to 14,000 tons in 1976; and a record low of 2000 tons in 1987 (Baffes, 2009). The Northern and Eastern regions were hit hardest by the downfall of the cotton sector. Cotton was its traditional cash crop (Youe, 1978; in Oleke et al., 2005), whereas the Central and Western regions could still more or less depend on the coffee sector, which escaped collapse. Coffee also suffered distortions during Amin's regime, but not as severe as the cotton sector, for several reasons: one-quarter of the output was marketed outside the official channels, to neighbouring countries; coffee required only limited purchased inputs, so the collapse of the input market did not have a major impact on the sector; and coffee did not require primary processing quickly, so it could leave the country unprocessed (Baffes, 2006).

The sunflower sector still stayed at similar low levels: there were less than 5000 ha under production at the start of the 1980s (Laker-Ojok, 1994), and in 1986 national production was 2000 tons.

Another aspect affecting the entire edible oil sector, was the way Uganda's general technical support in agriculture suffered. Due to the political unrest, the government failed in providing adequate levels of support, and research facilities, equipment and machinery deteriorated, as well as germplasm collections for seed breeding and development. Especially germplasm collections at Serere research station were largely lost, which was the centre for sunflower research at the time. Another aspect in which research was heavily affected, was the isolation of Ugandan researcher of the international scientific community, leading to a lack of resources for training, travel and written materials. This was further jeopardized by the break-up of the East African Community in 1977, thereby losing access to facilities in Nairobi, where East Africa's best research facilities had been established. Lastly, international aid in rehabilitating, retraining and redirecting Uganda's institutional research capabilities was delayed. In 1983, the United States Agency for International Development (USAID) had signed an agreement with the Ugandan government to assist research in food crop production under the Manpower

for Agricultural Development Project (MFAD). MFAD selected maize, sunflower and soybeans as primary focus of the research. However, direct investments were delayed due to the ongoing political instability. All in all, by 1986, Uganda had suffered a near total collapse of agricultural research, seed multiplication, output markets, input distribution networks, and extension services (Laker-Ojok, 1994).

2.3.6 Main takeaways of period 2, 1962 - 1986

The following are the main takeaways of period 2 (summarized in Table 2.2). This period, starting at independence, could be split into two. The first decade is relatively stable in terms of politics, during which the cotton sector is thriving. From 1971 onwards, Uganda sees a period 15 years of political turmoil, massive human rights violations, corruption and violence, including Idi Amins dictatorship, followed by the bush wars between Museveni and Obote. This period worsened relationships between several ethnic groups from southern and western Uganda supporting Museveni, and northern groups such as the Acholi and the Langi, supporting Obote.

These years of political turmoil let to the downfall of the entire economy; and is one of the reasons for the downfall of Uganda's most important cash crops, cotton. Especially expelling the Asian population by Idi Amin negatively affected the cotton industry, as they owned most of the cotton oil processing capacity. But there were other causes, such as gross mismanagement of the cotton cooperatives, a dramatic fall in world prices for raw materials, disruption of research, and poor maintenance of state-led ginning operations. As a result, farmers massively abandoned cotton. This hit the Northern and Eastern region hardest, because of cotton being its main cash crop. In comparison, coffee production never saw such a decline since the 1960s. The production of sunflower is still not of much significance for the Ugandan economy.

In terms of research and development, some diversification emerged, as research on other crops is started. This happened for instance in the newly established research institute in Serere which was area-based for the Eastern and Northern region. However, research for both crops came to a near standstill due to the disruptive political context. little research and development was possible; materials were destroyed; and international support had to be postponed until after 1986, when Museveni was elected president.

Table 2.2 Timeline period 2, 1962-1986

Year	Major political developments	Cotton	Sunflower
1962	Independence, first president is Baganda King Edward Mutesa	Uganda is SSA's largest cotton producer Uganda is self-sufficient in edible oils, peak of cotton production	Minimal production of sunflower
1960s			
1966	Milton Obote deposes Mutesa and becomes president		
1960/70s			
1970s		Corruption and inefficiency of cooperatives, leading to stronger state control	Introduction and testing of new varieties
1971 – 1979	Idi Amin president: human right violations and economic decline	Collapse of the cotton sector: 78,000 tons in 1972 to 2000 tons in 1987	
1972	Expulsion of 60,000 Asians		
1980 – 1985	Milton Obote again president; Uganda Bush Wars		
1983	USAID project MFAD		
1980s		Collapse of agricultural research, seed multiplication, output markets, input distribution, and extension services	

2.4 Period 3, 1986 – 2001: recovery, civil war in northern Uganda & take-off of the sunflower sector

I start this period with Uganda's recovery from the damage of over two decades of corruption and civil war. Peace and prosperity were restored, however not for the whole country. In northern Uganda, civil war raged, one of the longest Sub-Saharan Africa has experienced in its post-dependence era (Doom & Vlassenroot, 1999). Due to the downfall of the cotton industry, commercial edible oil production fell to negligible levels by the mid-70s, and by the late 1980s, Uganda was importing 98% of its edible oil consumption. The 1990s are marked by the revival of the edible oil industry, with a choice for sunflower over cotton. This section explores these developments in the edible oil sector, and how they are influenced by the civil war and other (political) developments.

2.4.1 Recovering the economy with liberalization policies

In 1986, the National Resistance Movement took power, with Yoweri Museveni as their president. In 1987, after almost two decades of political unrest, disruption and violence, leading to economic collapse, the new government started the Economic Recovery Program with support of the IMF, World Bank and other donors. The rationale of behind this program was that - much needed - economic growth would result from liberalization and privatization. These policies were driven by the so-called Structural

Adjustment Programs of international donors, and included the liberalization of agricultural input and output prices, and the dismantling of both commodity boards for coffee and cotton (Sharer, De Zoysa, & McDonald, 1995; Bahiigwa, Rigby, & Woodhouse, 2005). Investments were also made in the revival of research and seed breeding under NARO, with support from MFAD (Sabune, 2005).

During the 1990s, these policies appeared fruitful: the proportion of Ugandans living in absolute poverty fell from 56% in 1992 to 35% in 1999. International donors such as the World Bank and DFID were eager to look for success stories to justify liberalization politics, and Uganda was often presented as a great example of pro-poor politics (Hickey, 2005). However, these poverty figures should be interpreted with some caution. They mainly display the significance of revival in one activity, coffee production. Also, poverty trends started at a low base due to the preceding 15 years of dictatorship and unrest. For instance, in 1987, per capita GDP was estimated at about 40 percent below the 1970 level (Ellis & Bahiigwa, 2003; Hickey, 2013). And a sole view on economic growth overlooks tensions in other areas. These were several, such as opposition to multi-party politics; the fact that the country was hit hard by the HIV/AIDS epidemic - the main cause of death during the 1990s, with one out of every six adults being HIV positive (Tumwine, 2018); and the ongoing violence in northern Uganda (Hickey, 2013).

2.4.2 Civil war in northern Uganda

Insecurity in northern Uganda was coming from two sides: The Lord's Resistance Army (LRA), which originated in Acholi, and cattle raiding from Karamojong pastoralists. The LRA was one of several rebel groups springing up among the Lango, Acholi and Teso. Museveni originated from the Bantu-speaking south and south-western area, from which he drew strong support for his presidency. He also managed to get the Karamojong, residing in north-eastern Uganda, to align with him by offering them a stake in the new government. In the northern and north-western parts, the rise of Museveni's government was viewed with great caution and resistance, and several rebel groups originated from here. Most of these were overwhelmed by the strength of the NRA, but the rebellion was continued by the group eventually known as the LRA, let by Joseph Kony (Doom & Vlassenroot, 1999). The LRA claimed to be seeking to end both the Museveni regime and the marginalization of the Acholi people. However, over the years it became a war against the Acholi themselves, as from 1994 onwards Kony attacked civilians in order to (forcibly) recruit soldiers, mostly children, and steal resources (Kemirere, 2007).

The Northern region also saw a dramatic decline in its cattle wealth during this period. Cattle were important for traction, as a source of food, cash through sales, and cultural value. During the 1980s, Karamojong pastoralists from north-eastern Uganda intensified cattle raids dramatically, aided with weapons abandoned by fleeing soldiers of Idi Amin. It is also thought that the NRA military supplied the Karamojong with

weapons, to retaliate the northern population for supporting president Obote. This dramatically diminished the cattle population in many regions; for instance, Kitgum fell from 156,000 cattle in 1986 to a mere 3239 in 1998 (Oleke et al., 2005).

Due to these insurgencies, the Northern region was more strongly affected by the AIDS crisis – prevalence figures were even higher than those in Kampala -, as civil unrest reduced access to health care and prevention services (Fabiani et al., 2006).

The combined effect of this livestock destocking, the earlier mentioned sudden fall of the cotton industry, and civil war violence greatly affected the peasants' household economy in northern Uganda. The latter prevented northern Uganda from accessing markets; as well as hindered investments (Higgins, 2009). HIV/AIDS related mortality undermined the availability of agricultural labour, the effectiveness of group saving and credit schemes, and therefore a poor adoption of newly introduced technologies. It also increased the number of more vulnerable female headed households (Agong, 2008). All in all, the Northern region experienced only a modest poverty decline of 17%, compared to 60% in the Western and Central regions (Worldbank, 2007; in Higgins, 2009). Empirical research findings showed that the conflict indeed resulted in chronic and intergenerational poverty (Bird, Higgins, & McKay, 2010).

2.4.3 Effects of liberalization policies on the cotton sector

The political unrest of the previous decades took its toll on the cotton sector: production levels fell to an all-time low of 2,000 tons in 1987 and Uganda was hardly exporting any cotton in 1988. The Economic Rehabilitation Program, introduced in 1987, included an 'emergency cotton production program'. The marketing, processing and export functions of the sector were completely liberalized in the following ways. The monopoly of the cooperatives was removed, and seed cotton marketing and ginning were opened to private sector competition. The Lint Marketing Board was transformed to the Cotton Development Organization (CDO); the CDO issued ginning and export licenses and oversaw managing a fund for collection, processing, distribution of cotton seed for planting. The CDO was also responsible for quality control. Cooperatives unions that were indebted to the government were given a debt relief, and unions had to sell of their excess ginning capacity (30 ginneries) to credit worthy private operators, and retain only one ginnery each (Sabune, 2005). The emergency program also included the revival of research and seed breeding under NARO.

These measures, coupled with high cotton world prices, seemed effective: production steadily rose from 26,000 tons in 1995 and 40,000 tons in 2001 (FAOstat; Sabune, 2005). However, the levels of the period mid-60s to mid-70s (on average 166,000 tons) were not reached (see Figure 2.9). According to Baffes (2009), the industry's key problem was low on-farm profitability; since research was performing quite well and marketing and trade environments were also friendly to growers. Cotton's low profitability relative to

other crops in Uganda has been confirmed by numerous authors (ibid). Key constraints here were low quality of cotton, and low use of purchased inputs due to a lack of rural credit. The latter was related to Uganda's liberalization policies. Liberalization of agriculture made the government withdraw financial and technical support of cooperatives, which until then heavily depended on government subsidy. This reduced operations of the cooperatives to provide inputs, price stabilization and marketing support to its members, as well as credit (Enzama, 2015). Lastly, the international market was not favourable, as the main focus of cotton production had shifted from East-Africa to West-Africa (de Haas, 2017b).

2.4.4 Shifting from cotton to sunflower

The edible oil sector had fallen to negligible levels in the 1980s, and Uganda was importing 98% of total edible oil in the country (Laker-Ojok, 1994; Anyanga, 2002). The government and its donors deemed the oil sub-sector a 'prime candidate for import substitution efforts' (IFAD, 2011:6). Reviving the edible oil sector would improve the intake of nutritious food and had positive effects on the wider economy. Edible oils are considered important for a healthy daily diet (WHO, 2015), but the domestic consumption of edible oils in Uganda was well below the intake of neighbouring countries (IFAD, 2011). Investing in the production of edible oils would make nutritious food more easily available at local markets. In addition, the edible oil sector held a potential of agrarian transformation. In 1990, agriculture constituted 53.3% of Uganda's GDP, and investments in the productivity of a food crop would imply that more small scale farmers would be able to improve their standard of living, generate a larger surplus to feed a growing urban population, and contribute to foreign exchange earnings through diversified exports (Laker-Ojok, 1994).

Sunflower was considered to have the greatest short run potential for revival of the edible oil sector, compared to the other available oil seeds – groundnuts, sesame, soy and cotton. First, the characteristics of sunflower are favourable: it has a high oil content (30-50%) and oil extraction was relatively easy (Turiho-Habwe, 1992). In comparison, soya had a complex extraction system, and sesame and groundnuts were foremost food crops: using them for their oil would extract food crops with oil content from the market (interview NARO extension officer, November 2014). Lastly, cotton seeds, used to produce oil, were only regarded a by-product of cotton production[4]; it would therefore make less sense to revive the cotton sector for the sake of oil production.

Second, sunflower is easily grown and has relatively low labour demands compared to other oilseed crops. It has its specific diseases, such as leaf spot and headrot, especially in higher rainfall areas, but it is not very prone to pests and diseases, and thus needs little pests and herbicides. It does need the application of fertilizer and nitrogen,

4 As explained in the introduction, the value of lint obtained from a ton of seed cotton is three or four times the combined value of the oil and feed cake that were derived from processing the seeds.

because it extracts considerable amounts of nutrients from the soil. Cotton, on the other hand, is more labour-intensive than sunflower; it is susceptible to many diseases, pests and weeds, and therefore requires large amounts of pesticides and herbicides throughout the growing season (Oremo, 2008; Enzama, 2015).

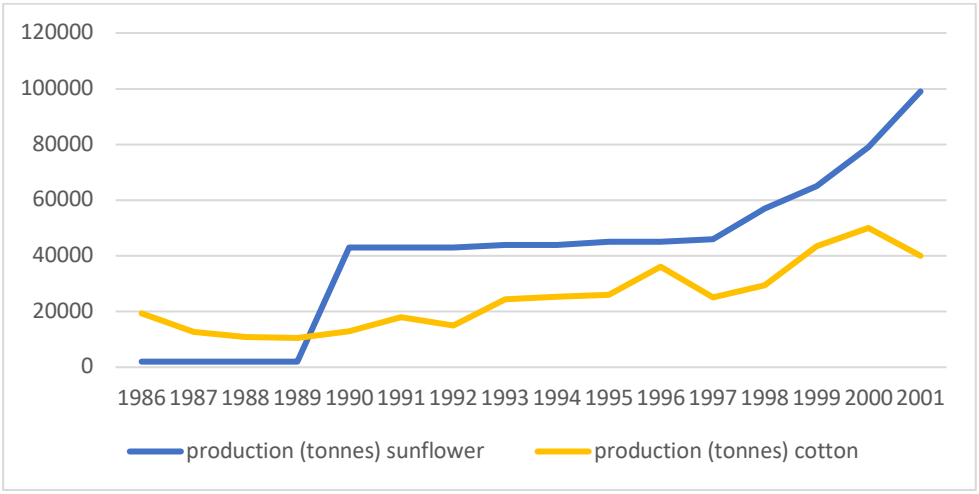

Figure 2.9 Sunflower and cotton production, 1986-2001
Source: FAO (2020)

Third, sunflower had potential for revitalizing the local economy in northern Uganda. The principal production area of sunflower in the country had been the semi-arid parts of Northern and Eastern regions. Agricultural investments in these regions were of great interest of the government and donors. This because of the historical concentration of economic activities and development in the south, combined with recent hardships in the northern and, to a lesser extent, eastern regions: the downfall of the cotton industry, civil war, livestock destocking and the AIDS pandemic (Laker-Ojok, 1994). Increasing sunflower production and processing would increase cash income for farmers, generate agro-based industrial activities and employment; and generally revitalize the local economy (Turiho-Habwe, 1992).

2.4.5 Needs assessment of the sunflower sector

In the early 1990s, a deliberate campaign was started by the government department of Agriculture, research, and NGOs, to popularize the growing of sunflower (Anyanga, 2007). Especially USAID was important in assisting the government to rehabilitate and redirect Uganda's agricultural institutional capability in food crop production; and sunflower was one of the crops selected as primary focus of the research part of MFAD (Johnston & Meyer, 2007).

At the time, there was a severe lack of sunflower seed to meet the demand for required plantings. Local seeds available were by this time highly mixed, lacking uniformity in maturation period, yield and oil content; and oil content was low. Low oil content did not command a profitable price, and this, in combination with a lack of seeds to crush, made oil mills operate at irregular intervals and underutilization of production capacity. All in all, this led to high unit costs of production for oil. Also, processors could not simply raise prices to cover costs of production because of the inflow of inexpensive Kenyan oil (Turiho-Habwe, 1992). Sustained sunflower production would thus on the one hand depend on farmers adopting improved production technologies (high oil yielding varieties, and improved farm practices), and on the other hand on increasing the capacity of existing oil mills to utilize sunflower at an economically profitable level. That would also lead to higher prices for farmers (ibid). The sunflower sector could thus only grow where the infrastructure could support a cash crop, where there were mills and an adequate marketing and transportation system.

The following actions were therefore undertaken for transforming the sunflower sector: investments in research and development, leading to the introduction of an improved sunflower variety, Sunfola; setting up distribution of this new seed to farmers; and investments in infrastructure and milling capacity to be able to process sunflower seeds into edible oils. I will discuss each of these aspects in detail below.

Research and development: introducing Sunfola

The research and development of sunflower was supposed to take place at Serere research station, with its focus on the country's semi-arid areas. However, due to the insurgencies in northern Uganda, most of the germplasm collections (used for research on improving varieties) were either lost or destroyed (Turiho-Habwe, 1992). Sunflower research activities had therefore moved from Serere to Namulonge in central Uganda. The national sunflower program was launched at Namulonge in 1988, with support from MFAD (Laker-Ojok, 1994)

As a result of these efforts, a new, thin shelled open-pollinated variety of Australian origin, Sunfola, was introduced by NARO in 1991. This was the first improved sunflower variety to be introduced in Uganda. Sunfola had a 10-25% yield advantage to local varieties, an oil content between 25 and 40%, and yields between 625-750 kg per hectare (Johnston & Meyer, 2007). Its thin shell made it possible to crush with a hand press at the village level. Farmers were not thus entirely depended on processors. A thin shell was also economically more suitable for mechanical milling in terms of energy requirements and durability of machines and spares (Oremo, 2008). Another advantage for farmers was that Sunfola was open-pollinated, so farmers could save the seeds for planting in subsequent seasons. Seeds should however be replaced after 2 to 3 years to prevent degeneration, although most farmers bought commercial seeds only once every 4-5 years (Laker-Ojok, 1994; IFAD, 2011). Also, yields could improve with using

the necessary inputs, but farmers were often still constrained in funds for purchasing these. Because of its higher oil content, Sunfola commanded a 25% price premium on the market. Meanwhile, hybrid varieties were also being tested at Namulonge research station (Laker-Ojok, 1994).

Making seeds available to farmers: distributing Sunfola

Sunfola was distributed to farmers via three main channels: 1) the government's Vegetable Oil Development Program (VODP), 2) the newly founded Ugandan Oilseeds Producers and Processors Association (UOSPA), and 3) Mukwano enterprises.

VODP was a government project funded by the International Fund for Agricultural Development (IFAD), which was approved in 1997, after developing the program over 8 years, together with the Ministry of Agriculture, Animal Husbandry and Fisheries (MAAIF). MAAIF was also IFAD's main implementing partner (IFAD, 2011). A motivation to start VODP was to shift farmers production from the declined cultivation of cotton to other oilseeds, such as sunflower and palm oil. This being part of the wider government's interest for economic recovery through agricultural growth. Its overall objective was to increase household cash income among smallholders by revitalizing and increasing domestic vegetable oil production, in partnership with the private sector. It had three (very different) subprojects: 1) the introduction of commercial palm oil production on Bugala Island in Lake Victoria; 2) the development of traditional oilseeds in Northern, Eastern and Western regions of Uganda; 3) research and development of essential oil crops, piloted in a variety of districts. In this first period, VODP sold Sunfola seeds to farmers as part of sub-project 2 (IFAD, 2011).

UOSPA was founded in 1995. UOSPA is a unique organisation with a mission 'to increase vegetable oil production, processing and utilization through provision of quality inputs' (Bindraban, Mutunga, Kamuhanda, Muyinda, & Agong, 2006). Unique in being a hybrid public-private organisation uniting farmers and processors; and being involved in the multiplication of planting material as a public actor. UOSPA bought breeder seed from NARO, and gave it to contracted farmers for the multiplication of Sunfola seed, with farmers in areas where the risk of cross-fertilization was low (Bindraban et al., 2006; Ton et al., 2010). Farmers were trained in agronomic practices, bulk marketing, post-harvest handling, and nutrition. Bulking was aided in setting up farmer groups and cooperatives, such as Alito cooperative (further discussed in Chapter 4). UOSPA also supplied famers with data about the processing industry, and aided in making connections between farmer groups and processors (Johnston & Meyer, 2007).

Some Sunfola was sold by Namulonge research station to Mukwano enterprises. Mukwano started as a family business of Asians who refused to leave the country in 1972 (a few hundred Asians remained at the time) and grew to one of the leading conglomerates in East and Central Africa. They started in the 1980s with a single

enterprise store dealing with merchandise and produce. In 1986, the company took on the manufacturing of soap and edible cooking oil. Up till then, Mukwano imported large amounts of palm oil from Malaysia, but a steep rise in world palm oil prices motivated Mukwano to venture into local sourcing and oil processing. In 1991, their first oil mill was opened in Kampala, and in the same year they started investing in contract farming (Laker-Ojok, 1994; Mamdani, 2009; URN, 2019). Farmers in northern, western, and eastern Uganda were supplied with Sunfola seeds by Mukwano, and the harvested crop was bought from them at a pre-agreed price. In various locations, Mukwano established wholesale depots for selling their soap and oil, and these centres acted as buying agents for sunflower (Turiho-Habwe, 1992). In addition, Mukwano created their own network of local village traders who penetrated deep into the rural areas to procure raw materials (Laker-Ojok, 1994).

The heavy investment in Sunfola seed distribution since 1991 was paying off: the area planted to sunflower increased from less around 5000 ha in 1989 to 52,500 in 1991 (FAO, 2020). The start of the VODP support program initiate a further slow increase from 54,000 hectares in 1997 to 78,000 in 2002. Both trends are clearly visible in Figure 2.9.

Processing seeds into oil: investing in infrastructure and milling capacity

As explained above, sunflower was not a subsistence food crop but needs to be processed, either by hand or by machineries. Oil mills were therefore an essential part of the value chain. The sunflower sector could only grow where the infrastructure could support a cash crop, where there were mills and an adequate marketing and transportation system.

As described above, Mukwano invested in a milling facility in Kampala, and in establishing a trade network in the rural areas. Anyanga (2002) mentions the installation of a number of oil mills in areas where sunflower growing was expanding (Lira, Apac (Lango), Gulu, Kitgum (Acholi), West-Nile and Tororo). He does unfortunately not mention the number of oil mills, or who is employing them. Since the mid-1980s, the catholic church had also been promoting sunflower (by importing seeds from Kenya) and oil extraction in several areas in western, eastern and northern Uganda. In Gulu and Kitgum districts (both Northern region), they installed two oil presses in 1983, but this had small significance (IFAD, 1997; in Oremo, 2008). Other NGOs were also funding procurement of small to medium size oil presses, as well as hand presses, for various individuals and groups (Laker-Ojok, 1994). In 1998, ram presses were introduced by a USAID funded project (the Agricultural Processing Machinery testing and Manufacturing project (APMP). They were to provide an incentive for producers to adopt to the newly available variety Sunfola and could fill an important niche in isolated areas. APMP staff instructed farmers on sunflower production practices and provided Sunfola, as well as training and follow-up on the mechanical operation of the ram press. Lastly, UOSPA was important in supporting oil mills and setting up infrastructure; for instance, by bringing farmers and mills together in joint workshops

to help mediate decisions about prices to be paid for sunflower. Millers were offered training and technical assistance with machine maintenance (interview UOSPA extension officer, October 2013).

2.4.6 Main takeaways of period 3, 1986 - 2002

The following are the main takeaways of period 3 (summarized in Table 2.3). During the 1990s, overall, Uganda achieved significant levels of poverty reduction with a focus on privatization and liberalization of the economy. Growth was however concentrated in the newly liberalized and labour-intensive coffee sector, and was unevenly distributed: urban biased (91.9% of the chronic poor live in rural areas) and with strong regional inequalities: in the conflict-affected northern Uganda, nearly 40% of the population was still experiencing chronic poverty. The Northern region lags due to several causes: the collapse of the cotton sector, cattle raids by the Karamojong, followed by a long-lasting civil war between the LRA (Acholi) and the government army.

Liberalisation policies did not proof very effective for the cotton sector, as the sector had always been strongly public-led. Also, world market prices were not favourable for the crop, and the sector is not revived to its former levels. This also meant that cotton oil production is low, and edible oils were mostly imported. The government made the deliberate choice to revive the edible oil sector, both for improving healthy food intake of the population, as well as the economic advantages such as import-substitution and agrarian transformation. Sunflower is chosen as alternative oil source. It is easily grown and processed and is mainly grown in northern and eastern Uganda. It therefore had the potential of revitalizing the local economy in northern Uganda after its recent hardships.

Edible oil production started to rise in the mid-90s as a result of efforts by the government and international donors. A new improved sunflower variety, Sunfola, is tested and released, and distributed among farmers due to joined investments of both the public and private sector: the government program VODP (public), the joined farmer and processor organization, UOSPA (hybrid, both public and private), and the large private processing company, Mukwano (private). In addition, investments are made by these same parties in infrastructure and milling capacity.

Table 2.3 Timeline period 3, 1986-2001

Year	Major political developments	Cotton	Sunflower
1980s	Northern region: cattle raids by Karamojong		
1986	Museveni elected president		
1987	Government: Economic Rehabilitation Program with a focus on liberalization and privatization	Production at an all-time low: 2000 tons Start of emergency cotton production program	
1988			Launch national sunflower program
1990s		Liberalization of the sector	
1991			Release Sunfola; Mukwano opens first oil mill in Kampala
1992			
1994	LRA starts attacking Acholi (Northern region)		
1995			Founding of UOSPA
1997			Start VODP
1998			Introduction manual ram-presses by UOSPA
2001		Production recovered to 40,000 tons	Production increased to 99,000 tons

2.5 Period 4, 2001 - 2016: peace in northern Uganda & establishment of the sunflower sector

The sunflower sector expands to full maturity in this period, facilitated by the end of the LRA war in 2006. I explore how this comes about and which external influences facilitated these changes. The reason I start this period in 2002, is because it signifies an important event in the sunflower industry: Mukwano introduces a new hybrid sunflower variety.

2.5.1 Government policies focusing on commercializing agriculture

In 2001, the Poverty Eradication Action Plan (PEAP) was accepted by Uganda's donors as Poverty Reduction Strategy Paper (PRSP); a PRSP being a requirement by the World Bank and IMF to keep receiving government support. The PEAP formed a policy framework for fighting poverty for the period 1997-2017, with an overall goal to reduce 'absolute poverty' to less than 10% of the population by 2017. Parallel with the PEAP a 'rural' version is introduced, the Plan for the Modernization of Agriculture (PMA), with the mission to 'eradicate poverty by transforming subsistence agriculture to commercial agriculture'. It had a strong focus on the private sector and envisioned poverty eradication through a 'profitable, competitive, sustainable and dynamic agricultural and agro-industrial sector' (Uganda, 2000a; in Ellis, Bahiigwa 2003). This focus implied that there was little governance influence on market prices; these were

set in response to supply and demand. There were no fixed prices for food crops and no government subsidies to either producers or consumers (Johnston & Meyer, 2007).

Within PEAP, the edible oil sector was recognized as one of the key entry points for transforming agriculture from currently subsistence to a more vibrant commercial status; especially sunflower (Oremo, 2008). The Ugandan government also recognized the implications of the LRA conflict for growth and development in the Northern region. In the PEAP, reference is made to the importance of improving security in northern Uganda and reducing regional disparities between northern Uganda and the rest of the country (Collinson et al, 2005; VODP, 2007; in Oremo, 2008).

2.5.2 The LRA war moves to Lango region, and ends in 2006

Meanwhile, in the period 2002/2003, Lango became more involved in the LRA war, with a series of deliberate and well-coordinated attacks on farms and camps with internally displaced people (IDP) (Oleke et al., 2005). [5] These attacks included (again) cattle rustlings. It was assumed that the rebels had exhausted food in Acholi land, and extended their war zone to Lango where food and human resources were still plenty (Kemirere, 2007). The attacks resulted in loss of income, and labour constraints as farmers were forced back into hoe cultivation (Bird et al., 2010).

A peace agreement between the LRA and the government was finally reached in 2006. In 2007, the IDP camps were forced to close to encourage people to return to their homes and communities, if these still existed. The war caused a strong reduction in farming, worsened infrastructure and complicated the work of service providers, which overall reduced the availability of commodities (Kemirere 2007). The estimated economic cost of the conflict – including the cost of military intervention, loss of livestock, physical assets, conflict-related health problems and death - was over 1.33 billion USD, amounting to 3% of Uganda's GDP (Kemirere, 2007).

2.5.3 State of the cotton industry

As Figure 2.10 shows, cotton production stayed more or less on the same level since the early 2000s, except for one peak in the 2011/2012 season, caused by record cotton world prices in 2011 (M. Ahmed, Ojangole, & Xenakis, 2014). Cotton never fully recovered to its levels of the 60s and 70s, due to several reasons. To start with, world market prices were often unpredictable (Tschirley et al., 2006). In addition, farmers had often replaced cotton with more profitable food crops; especially in central and western Uganda, cotton was replaced by coffee. Third, the earlier success of the sector reflected, at least in part, the fact that cotton was grown under forced labour conditions: it was the only crop that could generate cash in order for Ugandans to pay the poll tax mandated by the colonial government. Other key constraints identified were low quality, low level of domestic consumption, lack of cooperative movement, and high cost of credit (Baffes, 2009).

5 A total of 40 IDP camps were established in Lango until 2004, and 466,000 people in Lango were internally displaced (out of a total estimate of 1.6 million IDPs).

2.5.4 The processing industry introduces a new sunflower variety

The sunflower sector starts this period with the introduction of a new, hybrid, sunflower variety by Mukwano. The introduction of Sunfola had increased the volume of sunflower seeds in the market, as well as its quality and oil content, but these volumes were still not reaching Mukwano's demand (interview data, 2013). Mukwano therefore decided to search for a better seed variety, and in 2003 they were able to officially release a hybrid seed from South Africa, PAN 7351 (PAN), aided by the Serere research institute to conduct the adaptability and verification tests of the new variety (Anyanga, 2007).

Hybrid seeds had, compared to open-pollinated seeds (i.e. Sunfola), a superiority in seed yield, ability to stress, and uniformity. PAN 7351 had a 47% oil content and yielded about 1500-2500 kg per hectare (depending on the use of fertilizer). A disadvantage was that hybrid seeds could not be saved for the next year, since its pollination was done by hand. So, while hybrid seeds did improve yields, the seed had to be purchased each season rather than saved from the previous harvest (Turiho-Habi 1992).

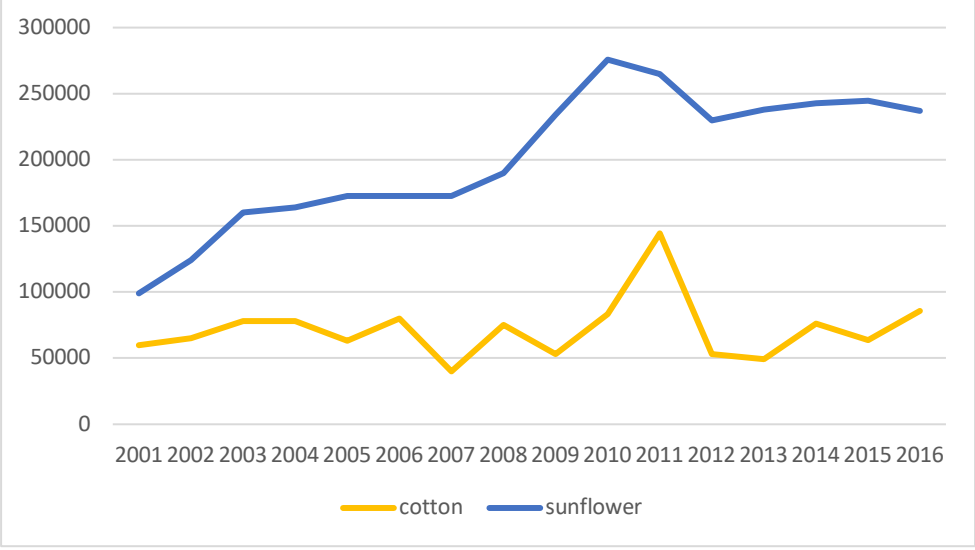

Figure 2.10 Cotton and sunflower production, 2001 - 2016
Source: FAO (2020)

In the first years following the release of PAN, Mukwano struggled to source the necessary amount of hybrid seeds from South Africa and could only contract a small number of farmers. This small number of farmers was also due to the LRA war; Mukwano started in the districts least affected by the civil war. USAID (2007) reports in 2007 that Mukwano worked with 7500 farmers, whereas 27,000 farmers were producing Sunfola and local varieties. Mukwano's contract with farmers comprised the following: Mukwano provided farmers with hybrid seeds and bought the farmers' sunflower

production. Input financing was not provided: farmers were to pay cash when orders were taken, two to three months before planting. The very first year, 2003, input finance was provided, but the practice was soon abandoned in 2005 due to farmers side-selling to local presses. At harvest, farmers delivered their seeds to a collection site operated by a site coordinator, where they received immediate payment. Site coordinators received a commission based on their groups' production (Johnston & Meyer, 2007). The release of hybrids increased the production of sunflower, as well as the area under production, but not substantially until the end of the LRA war in 2006 (see Figure 2.10).

Mukwano was aided in setting up the contract farming scheme by the Agricultural Productivity Enhancement Program (APEP) of USAID. APEP ran from 2003-2008 and was designed to increase commercialization of target commodities, which included sunflower, cotton and coffee. The objective was to enhance agricultural productivity by promoting the use of improved agricultural inputs and addressing marketing challenges by linking smallholder farmers to markets. APEP aided Mukwano in the introduction of PAN, and in addition, they gave support in organizing farmers into groups, setting up demonstration sites, and employing extension workers. Another component of APEP was to support cooperatives and producer groups. This component was managed by CLUSA (the Cooperative League of the USA) in which farmers organize into POs each with 20-30 members. About ten POs form a 'depot committee' which were responsible for finding a market for members' produce (World Bank, 2011).

The release of PAN created tension between UOSPA and Mukwano, an official UOSPA member. Sunfola was at the time the leading seed variety for the commercial production of sunflower, and UOSPA wanted Mukwano to promote Sunfola, instead of a new hybrid controlled by Mukwano. However, the quality of Sunfola slowly started to deteriorate over time, through intermixing with local varieties (VODP 2011). The price farmers received for hybrid seeds compared to Sunfola and local varieties also differed slightly; as processors rewarded the higher oil content of hybrid seeds (Johnston & Meyer, 2007).

The release of hybrid seeds by Mukwano made VODP decide to start distributing Sunfola for free, whereas at first farmers had to pay for the seeds. The program saw farmers switching to Mukwano's hybrid seeds, which demonstrated that farmers were willing to purchase a costly seed, which produced a higher yield and a higher price, compared to Sunfola. Over time, seed distribution was overall gradually reduced by VODP, and replaced by more a sustainable seed supply system by parties such as Uganda's National Agro-input Dealers Association (UNADA), UOSPA, and seed companies, and seed distribution via VODP finished in 2008 (VODP 2011).

2.5.5 The end of civil war: the sunflower sector expands and matures

The end of the LRA war gave ample opportunities for the sunflower sector to move forward, for both the private and public sector. In terms of the private sector, Mukwano

successfully expanded the number of farmers they were working with from 7500 in 2006 to 75,000 in 2015 (Vorley et al., 2015). The expansion in the number of farmers was, among others, possible because of expanding to former LRA war zones. Farmers, often getting back to their farms from IDP camps, were enthusiastic to get back into farming after the war and take up a new, easy grown, crop (I further study this expansion and the way Mukwano successfully integrated their contract farming scheme with local market practices in Chapter 5).

These developments led to the decision to move Mukwano's processing machineries, a 300-ton capacity oil mill, from Kampala to Lira in 2007 (interview data October 2013). Mukwano was not the only processor who decided to start milling in Lira. In total, the processing capacity in Lira expanded after the war from 4 millers with a capacity of 42 tons to 33 millers with a capacity of almost 1000 tons (interview data 2015) (Figure 2.11). Of these new mills, one stood out: Mt. Meru. This was a large conglomerate company like Mukwano, who started buying sunflower in Lango from 2009 onward. In 2010, they installed their own 300-ton processing plant. Mt. Meru's presence strongly increased competition for Mukwano. Mt. Meru was not working via a contract scheme, but instead bought Sunfola and PAN from village traders and Mukwano agents. In 2012, Mt. Meru tried to venture into an outgrower scheme as well, including the distribution of seeds. Until the end of the research in 2016, Mt. Meru was not yet successful. They had difficulties setting up their supply chain, and the second season of supplying seeds, their seeds failed to germinate completely, discouraging farmers (interview data, District Agricultural Officer Lira, December 2014).

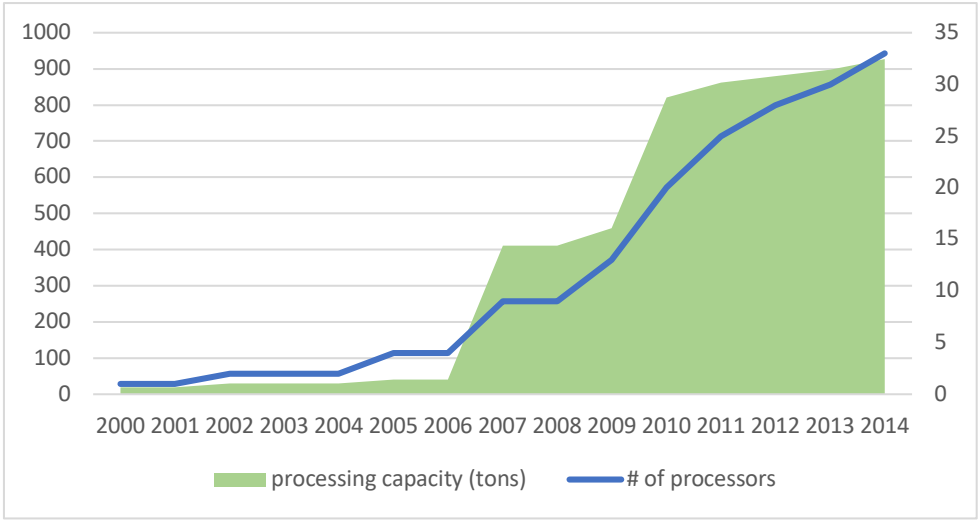

Figure 2.11 Development of sunflower processing capacity in Lira, 2000 – 2014
Source: Lira Chamber of Commerce, obtained December 2015

The momentum in the sunflower and wider oilseed sector led to the establishment of the Ugandan Oilseed Sub-sector Platform (OSSUP) in 2007. Key players in the sub-sector observed that, despite a clear domestic market for edible oils and feed cake, the absence of an effective link to agricultural producers constrained the expansion and viability of the subsector (Beyssac & Kamoga, 2012). OSSUP was set up to orchestrate the solving of industry challenges and to engage a wide range of actors in planning and managing production and trade (Vellema et al., 2011). The platform united large- and medium-scale processors (including Mukwano), farmers' organisations, financial institutes, NGOs, knowledge institutes and agricultural input providers. One of the platform's achievements was to end Mukwano's monopoly on hybrid seeds, pressured by traders, processors and farmers. From December 2007, part of the hybrid seeds were distributed by input dealers of UNADA (Ton et al., 2010; Vellema et al., 2011). Farmers who bought seeds via UNADA had the liberty to sell sunflower grains to any processor or middleman. Some of the small processors also purchased hybrid seeds from UNADA to sell to farmers (Oremo, 2008).

These developments aided Mukwano and UOSPA in overcoming their previous disagreements. Other achievements included innovation and network building by organizing a Research and Development Marketplace, where farmers and processors could see what technologies were available. Outscaling of technologies and service provision was also important, for instance through the provision of materials for on-farm drying. For service delivery, farmers' groups were important entry points (Vellema et al., 2011).

Technical assistance for growing sunflower was given by both private and public sector actors. Mukwano employed their own extension workers but was aided by several NGOs over time, such as USAID, SNV, and CLUSA. In addition, many programs of non-governmental organisations (NGOs), as well as the government and private actors, were focusing on the rehabilitation of agriculture in the area after the civil war. Vorley et al. (2015) recorded, for the period 2007-2011, a number of 50 NGO interventions around Lira, with a main focus on capacity building and service delivery.

2.5.6 Main takeaways of period 4, 2002 - 2016

The following are the main takeaways of period 4 (summarized in Table 2.4). In terms of politics, government policies in the form of the Plan for Modernization of Agriculture reconfirmed the edible oil sector as one of the key entry points for agrarian transformation. In addition, a peace agreement was reached between the LRA and the government in 2006, which gave ample opportunity for the sunflower sector to grow. Farmers were allowed to return from the IDP camps to their homes and were eager to pick up the farming of an easy-grown cash crop such as sunflower. The restoration of peace made it also easier for Mukwano to expand their area of contract farming.

In terms of technical developments, the introduction of a new sunflower variety by a private actor (in collaboration with the government's research facilities) was important. Mukwano introduced a new hybrid, high-yielding sunflower variety, PAN 7351, already before the end of the war, in 2002. The new variety slowly started replacing Sunfola, which created a rift between UOSPA and Mukwano. The successful expansion after the war made Mukwano decide to move their processing machinery from Kampala to Lira. This decision was instrumental for boosting agro-industrialization in Lira and its wide surroundings: processing capacity expanded from 4 millers to 33 millers in 2015; and networks of input distributors and buyers of sunflowers also diversified and expanded. The sunflower sector came to maturity, which was supported by technical assistance of both private and public actors; the latter existing of NGO interventions focusing on rehabilitating agriculture in the area after the civil war. Agro-industrialization of the sector is also supported by the set-up of a sub-sector platform in 2007, OSSUP. OSSUP orchestrated the solving of industry challenges and to engage a wide range of actors in planning and managing production and trade.

Table 2.4 Timeline period 4, 2001-2016

Year	Major political developments	Cotton	Sunflower
2001	Government: introduction of PRSP and PMA	Production stays at similar levels	# of processors: 2
2002-2004	LRA attacks in Lango		
2003			Hybrid PAN 7351 released, start of contract farming by Mukwano
2003-2008			APEP (USAID) support to Mukwano and cooperatives
2005			Mukwano starts building a warehouse in Lira
2005-2006			Start OSSUP
2006-2007	Peace agreement LRA, IDP camps close		Mukwano moves oil press to Lira
2007-2011			# of interventions in Lira area: 50
2015			# of processors: 33

2.6 Discussion & Conclusion

Uganda's processed edible oil sector has seen a major shift in the timespan of a century: from the successful production and processing of cotton for fibre and oil, to the downfall of this industry, to deliberately investing in the development of the production and processing of sunflower, which resulted in an even more thriving edible oil production (see Figure 2.12).

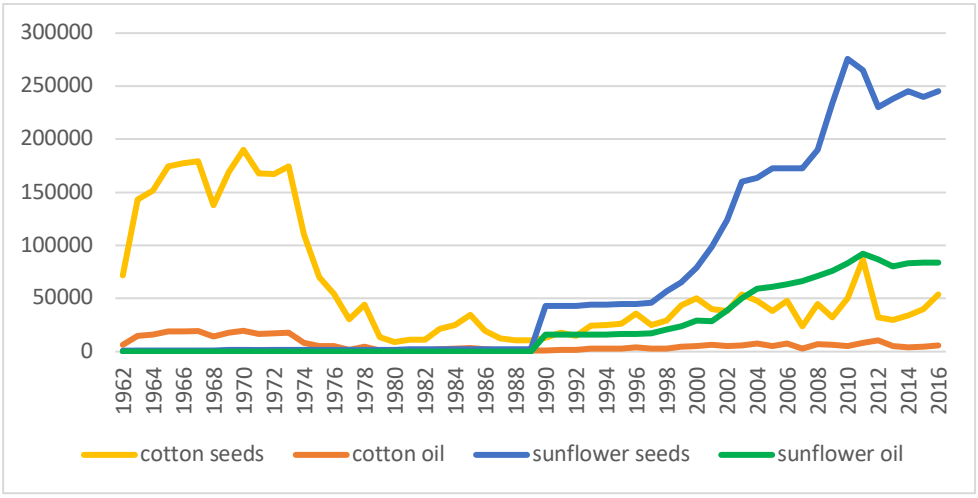

Figure 2.12 Overview of the production and processing of cotton and sunflower since Uganda's independence (1962 – 216) (tons)
Source: FAO (2020)

Both cotton and sunflower were introduced under colonial rule. The production of cotton was important for the British textile industry under colonial rule, and cotton oil was a by-product of this industry, processed by Asian businesses. The production of sunflower was however minimal after its initial introduction in the 1920s. Until 1973, the first half of Period 2, the cotton sector had been doing very well: Uganda was East Africa's top cotton producer and was self-sufficient in edible oils. A combination of political and economic factors caused the collapse of the cotton sector: a drop in world cotton prices; strong mismanagement of the cotton cooperatives, on which the sector was heavily depended for bulking and marketing; political violence by the Idi Amin regime and its aftermath strongly affecting the cotton seed processing capacity, as well as minimizing the country's seed research and distribution. The collapse of the cotton sector thus took place on all vital functions: prices, bulking and marketing, processing, as well as research and development. The cotton sector never revived to its former levels due to several reasons (elaborated on in 5.3): its pre-independence success was due to forced labour conditions; farmers, especially in central and western Uganda, had shifted to other cash crops; unpredictable world market prices; and a shift in global sourcing from East-Africa to West-Africa. The sunflower sector started increasing in the 1990s, when a deliberate choice was made by the government and international donors to revive the edible oil sector, favouring the production of sunflower over cotton.

Both cotton and sunflower were especially important for the local economy of northern Uganda. The importance of edible oils goes together with the historically disadvantaged political and economic position of this region, which can be traced back to colonial times. In terms of economics, the region was doing rather well until the 1950s, due to

wealth in cotton and cattle. By the 1990s however, the Northern region was severely lagging behind due to several causes: the nation-wide political violence and economic downfall of the 1970s and early 1980s, cattle raids by the Karamojong, the 20-year civil war between the LRA and the government army, and the collapse of the cotton sector.

This context chapter gave more insight in how this shift from cotton to sunflower took place, and which political, economic, and technical dynamics were influential for both crops. Below, I answer the main research question, *how political, economic and technical dynamics have shaped the current features of agrarian transformation in the sunflower sector in northern Uganda*. I discuss these features in the following order: technical, political, economic.

2.6.1 Technical dynamics

The technical aspects of sunflower were an important factor in making the crop favourable over cotton for reviving the edible oil sector. Cotton was not produced for its oil, which was only a by-product of cotton production. Sunflower, on the other hand, had a higher oil content, was easier processed, less labour-intensive, and was agro-ecologically well suited for growing in the Northern and Eastern regions.
The available sunflower varieties were not suitable for sector transformation, and the sunflower sector was therefore depending on the introduction of new seeds in the markets. The open pollinated variety Sunfola was introduced via the national research institute in 1991. A decade later, Mukwano was instrumental in importing the hybrid variety PAN 7351 from South-Africa. Making planting material available differed from the cotton sector. Where cotton seed was only distributed via cooperatives, sunflower distribution was a joined effort of public and private parties: UOSPA, VODP as well as Mukwano, and later also via input dealers and cooperatives.

2.6.2 Political dynamics

Political dynamics for cotton and sunflower were different. The government had a strong influence in the cotton sector. The sector was largely public-led: bulking, marketing and lint processing were done by cooperatives. The cooperatives were initiated by the government and were over the years increasingly under government control. Extension services, and research and development were also done by government research institutes. Only the processing of cotton seeds to oil was private-led, by Asian businesses. This might also be why liberalization policies in the 1990s were not very effective in such a public-led sector.

Political choices were also important for the take-off of the sunflower sector: in the late 1980s, the government and international donors made a deliberate choice to revive the edible oil sector. The choice for sunflower was partly on the technical grounds discussed above, but also on political grounds. It was an opportunity for economic

recovery in northern Uganda, a society still recovering from decades of violent conflict and economic decline due to the collapse of the cotton sector. After the end of the civil war, the sector was supported by attention of the international donor community to invest in rebuilding the agricultural sector. The sector further matured due to steering efforts of the multi-stakeholder platform OSSUP.

2.6.3 Economic dynamics

In terms of economic dynamics, historically, the eastern and northern economies had been strongly depending on cotton as its main cash crop, whereas farmers in the southern and western regions also grew coffee. This made the economic system vulnerable and the northern and eastern region were hit hardest by the collapse of the cotton sector. On the other hand, it made the region fruitful for the introduction of a new cash crop, sunflower. This introduction was aided by the decision of the conglomerate private company Mukwano to switch from importing palm oil to locally sourcing sunflower. Their investments in the sunflower sector, such as introducing a new hybrid variety, and moving processing equipment to the northern region, boosted the local economy and led to agro-industrialisation in the main hub for sunflower trade and processing, Lira. This created a strong local and regional market for the end-product of sunflower production and attracted investments of large processor Mt. Meru, and many smaller milling companies.

2.6.4 Concluding remarks

Concluding, the chapter shows that for the development and transformation of a sector, investments on all levels (seed development, production, bulking, marketing, processing) are important, can be a mixture of public- and private-led, and are influenced by technical, political and economic dynamics: a) the availability of enough improved planting material; b) momentum of the government and donors for the sector; and c) a willingness of the private sector to commit. This combination of features served as a catalyst for other actors transforming the sector, such as traders and processors. A common thread throughout the political, economic and technical features of agrarian transformation is that the steering and coordination of the sunflower sector was a mixture of public- and private-led initiatives. One specific firm, Mukwano, was central in catalysing production and processing of sunflower, but the company did build on processes already underway. The political and technical groundwork for developing the sunflower sector was laid since the late 1980s in cooperation between the government, international donors, research, UOSPA – a key hybrid public-private organization. In economic terms, Mukwano's first sourcing activities built on trader networks already present. Over time, several parties cooperated in finding ways forward through OSSUP. This combination of private and public initiatives in the sunflower sector might be one of the reasons why the sector has been successful. In addition, there was strong momentum for sector transformation in northern Uganda. Economically it was a region

hit hardest by the collapse of the cotton sector and it was a society still recovering from decades of violent conflict. Farmers were eager to go back to farming and sunflower provided a good opportunity with an easily grown crop.

The chapter has described the dynamic context in which the rest of the research takes place. It gave a rich overview of the context in which the organisational structures studied in the subsequent chapters are embedded: in a society recovering from civil war, and in interaction with a myriad of public and private policies and initiatives steering and coordinating the sector. It also gives evidence that there are ample opportunities in the context for market actors to take on the practice of bulking, sourcing from farmers in the rural communities affected by the collapse of the cotton industry and civil war. How they take on this challenge, and how institutions governing bulking transactions are made viable, is discussed in the subsequent chapters.


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'Filling trucks together is very important. If you don't have enough, you can refer a trader to someone else. We have our separate businesses, but we cooperate when we get a deal together'.

Trader doing both wholesale and retail, male, at Produce Lane. Lira, Uganda

CHAPTER 3

How institutions governing the economic middle in food provisioning are reinforced: The case of an agri-food cluster in northern Uganda

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3. How institutions governing the economic middle in food provisioning are reinforced: the case of an agri-food cluster in northern Uganda

3.1 Introduction

Produce Lane, an urban agri-food cluster in the town Lira, northern Uganda, is the local name of the phenomenon central to this paper. Every day of the week, Produce Lane bustles with activities. It is the main node for wholesale of regional cash crops such as sunflower, soya and sesame and serves as retail outlet of major food crops such as maize and beans. It is a 200-meter-long street containing 44 trade stores with a diverse group of almost one hundred traders and their support services. Traders at Produce Lane work under challenging circumstances such as insufficient infrastructure; unstable produce flows due to climate-led changes in rainfall patterns; and increasing competition with 'outside' traders. In addition, agriculture and society at large are still recovering from the twenty years long civil war between the Lord's Resistance Army (LRA) and government forces, which ended in 2006 (Enzama, 2015).

In this changeful and challenging context, Produce Lane offers an economic place to a large variety of actors and practices, and has been able to maintain a physical and organizational infrastructure for trading food for twenty years. Farmers, traders and other buyers consistently choose it as a site to do business. Produce Lane is consolidated in the everyday and multiple interactions with smallholder farmers seeking outlet markets, local consumers buying food, and larger traders and processors looking for raw materials. Although initially it seems chaotic, the variety of practices visible in Produce Lane appears to be highly organized. It discloses a degree of rigidity, while its dynamic context also necessitates a certain degree of flexibility, improvisation and adaption. How and why remains such a diverse cluster of situated trading practices intact? We are interested to understand through which processes this ensemble of actors and their trading practices consolidate the institutions governing an urban agri-food cluster.

To research how institutions governing food access are consolidated and carried forward, we combine an institutional lens with the study of practices of conduction (Legun & Bell, 2016). Legun and Bell (2016) offer the concept 'conducers' to categorize the economic actors at Produce Lane and focus on the usually messy though self-organized practices of conduction. Conduction includes practices such as sourcing, transporting, warehousing, retailing and trading. Our study develops an institutional perspective on how processes of conduction constantly self-reinforce an (in)formal institutional infrastructure in its social and material environment, and resultantly consolidate an agri-food cluster. In short, the central question is how a market institution, such as Produce Lane, persists in a changing environment (Greif & Laitin, 2004).

We relate the capability of Produce Lane to persist, or sustain itself, to processes of self-reinforcement and consolidation and use the notion of 'institutional viability', which reflects 'the capability of a set of empirical institutions, for being sustained within their environment, despite a wide range of external pressures and internal tensions' (6, 2003). Similarly, Greif and Laitin (2004) offer the notion of self-enforcing institutions, which accounts for endogenous stability of institutions. Looking at trade as an evolving configuration (Kingston & Caballero, 2009) recognizes that institutions spontaneously emerge and evolve due to both endogenous process or exogenous shocks.

To study empirically how the performance of everyday activities in food trading reinforces the institutions of a market place, we use a practice approach (Nicolini, 2012). The practices in our study are forms of action particularly related to bringing and assembling food to a place, such as sourcing, transporting, warehousing, retailing and trading. The analysis of practices in a specific context enables us to discover how self-organized arrangements consolidate expectations of actors internal and external to the agri-food cluster. It also reveals how durable relations are endorsed among economic actors either assembled in the same place, or spatially connected to this place. In combining our institutional analysis with a practice approach, we aim to unite rigidity and agency in market institutions of food provisioning.

We make an empirical contribution to the growing interest in understanding the economic middle of food provisioning (Legun & Bell, 2016); as Produce Lane fulfils an important brokering role between producers and consumers. This interest in the so-called 'hidden middle' – hidden partly because of scholarly interest in either producers or consumers of food at the extreme ends of the agri-food chain - emphasizes the contributions of intermediary actors, such as wholesalers, processors and logistical service providers, to food provisioning. It also confirms the vital role intermediary actors play within rural markets in the specific circumstances we study, i.e. rural Uganda, such as uneven quality of produce, fluctuating prices, and poor infrastructure (Sitko & Jayne, 2014; Reardon, 2015; Abebe et al., 2016). Markets under these circumstances are largely informally organized; our study also makes an empirical contribution to understanding and appreciating informal sector relations and institutions (Kinyanjui, 2010; e.g. Harris, 2016).

Our research complements two strands of literature that primarily analyse outcomes to explain the persistence of food cluster in a rural development setting: the economic benefits of network relationships (Fafchamps, 2001); and the advantages of collective efficiency (McCormick, 1999; Gebreeyesus & Mohnen, 2013). The importance of networks for economic action has been recognized for decades (M. S. Granovetter, 1973; Coleman, 1988), and research on the organization of market transactions of traders often focuses on their networks (e.g. Fafchamps & Minten, 1999, 2001; Rousseau, Gautier, & Wardell, 2015; Walther, 2015). Social capital and stable relationships create

trust, facilitate coordinated actions (Coleman, 1988), decrease transaction costs for receiving credit (Fafchamps & Minten, 1999), lead to larger sales and valued added for well-connected traders, and reduce risks of breach of contract (Fafchamps & Minten, 2001). Achieving collective efficiency is seen as a combination of unintended or incidental by-products of joint economic activity in clusters. This level of efficiency can rarely be attained by individual actors (Rogerson, 2001). Collective efficiency may be enhanced by the heterogeneity of firms and actors (Gebreeyesus & Mohnen, 2013) and has potential to increase market access and stimulate information sharing (Dijk & Sverrisson, 2003).

This literature considers outcomes as incentives for economic actors to collaborate within a physical architecture and in each other's vicinity, and to jointly organize market transactions with some degree of coordination. However, there is less attention for how a cluster reinforces itself as a collectively organized and widely recognized way of trading, and how it reproduces collective outcomes. Our study emphasizes the presence of distinct types of actors and, more importantly, their interdependencies for the everyday performance of the cluster. We therefore shift attention to understanding the ways in which these actors and their business practices are intertwined and bonded within and across place (Lauermann, 2013) and, subsequently, how an economic-spatial configuration of processes consolidates Produce Lane as an institutionally viable economic space (Jones & Murphy, 2010). Detecting these processes explains the collectively performed and the widely recognized way of trading in the middle of food provisioning.

The paper is structured as follows. Section 2 outlines the theoretical framework used to identify processes underlying the institutional viability of an agri-food cluster. We reconcile Greif's notion of self-reinforcement in the institutional analysis of trade with our methodological choice to study practices. Section 3 introduces the research area and the agri-food cluster, explains how we operationalize trade practices as 'organizing stable *produce and finance flows'*, and outlines the qualitative and quantitative methods used for investigating daily practices of conduction. Section 4 presents a descriptive account of how the group of intermediary actors assembled in Produce Lane manages produce and finance flows in the everyday trade of agricultural produce; and which rules and routines appeared important for managing produce and finance flows. Section 5 discusses that Produce Lane creates space for individual conducers to do their businesses, while the trade practices studied are collaborative, coordinated and regulated. These features set the stage for detecting the institutional properties of Produce Lane as-a-whole that explains its viability. In the final section 6, we draw conceptual and methodological conclusions based on the analysis of conducers organizing food access in a rural development setting.

3.2 Theory: a practice-based analysis of self-reinforcing market institutions

We combine an institutional lens with researching everyday practices of conduction as the sites where institutions are reproduced, modified and consolidated. Greif's perspective on institutions, based on theorizing trade, gives space for the dynamics of marketplaces and the agency of economic actors expressed in the practices of conduction. Greif (2006, p. 30) conceptualizes an institution as 'a system of social factors (rules, beliefs, norms and organizations) that conjointly generate a regularity of behaviour. Together these components motivate, enable and guide individuals to follow one behaviour among the many that are technologically feasible in social situations'. Greif considers that individuals on the one hand shape rules, beliefs, norms and organizations, and on the other hand need to be motivated to follow institutions.

In other words, institutions can be open to modification, and exist only to the extent that they are carried forward by integrated and standardized behaviour of individual actors (Scott, 1995). Reinforcing Produce Lane as an institution occurs when wholesalers and retailers inside, and traders, farmers and other actors outside Produce Lane consider modes of trading and doing business to represent a continuity of the same set of institutions (6, 2003). If this is no longer the case - i.e. if individuals act in a manner that does not reproduce associated rules, beliefs, norms and organizations - an institution is being self-undermined and might change (Greif & Laitin, 2004). Accordingly, the work of Fałkowski et al. (2017) on collective action suggests that individual economic actors are more inclined to participate in some form of collective performance, such as conduction, if they expect others to perform similarly and that performing practices collaboratively and interactively will be mutually beneficial.

Additionally, Greif emphasizes that institutions should be technically feasible in specific social contexts. In line with Djanibekov et al. (2013), we understand the category of conducers as 'searchers' using and possibly modifying existing institutional arrangements. They are capable of navigating whimsical conditions in the market place as well as fluctuations in readily available produce in the producer catchment areas (Roba, Lelea, & Kaufmann, 2017). Consequently, and like Djanibekov et al. (2013), our interest in food provisioning recognizes the importance of the natural environment (e.g. seasonality), the materiality of food (e.g. storage and volumes), and physical (e.g. roads and distances) and logistical infrastructures (e.g. transportation from local buying agents) for analysing how institutions emerge from evolutionary processes (Greif & Laitin, 2004; Meador & Skerratt, 2017). For a dynamic understanding of how institutions are consolidated, we analyse how an organizational configuration of actors and evolving practices, such as Produce Lane, emerges from and responds to not only its economic or social context but also to its material environment (Schatzki, 2005). Contextualized diagnostics of institutions, as proposed by Schouten et al. (2018), analyses institutions both in terms of their rule setting nature in food provisioning,

as well as their persistent and slow to change characteristics. Correspondingly, we set out to identify processes of self-reinforcement of the viable institutions in a specific marketplace and analyse this as the emergent outcome of interdependent and mutually constituting practices.

We consider social-material practices of conduction as analytical 'objects' whose study can demonstrate how institutions are enacted, consolidated and/or transformed through the everyday actions embedded within them (Jones & Murphy, 2010; Mangnus & Vellema, 2019). This practice-oriented approach offers methodological guidance for an analysis of the constant interaction between actor and structure: 'an institution is sometimes a structure beyond the control of individuals whose behaviour it influences, and at other times it is an outcome reflecting their actions' (Greif, 2006, p. 41). In the variety of practices of conduction in Produce Lane, economic actors in the middle of food provisioning reveal the collective capability to cope with external influences, handle internal tensions and in so doing sustain a set of empirical institutions.

Therefore, this research builds on the methodological project of practice-based approaches (Nicolini, 2017), which aligns with debates in different scholarly fields. In a contribution to economic geography, Jones and Murphy (2010) propose to investigate how a set of stabilized, routinized, or improvised practices consolidates an economic space. Interpreting everyday practices helps to understand how institutions in the middle of real food markets remain stable (Lauermann, 2013). In organization sciences, Nicolini (2012) argues that practices generate and reinforce institutions over time; studying practices will therefore give us insights in processes of self-reinforcement of a market institution underlying food provisioning and a trading system. Practices are meaning-making, identify-forming, and order-producing activities. They institutionalize activities and ways of doing through repetition: repeating practices furnish institutions, in order to become durable (Nicolini, 2012, p. 7). This is not mindless repetition; it also includes improvisation and interpretation.

A similar direction is suggested in the methodological contribution by Jansen and Vellema (2011) to performance-oriented technology studies, highlighting the use of skills, tools, techniques and know-how to accomplish a practical end, such as trading produce, and revealing how the performance of a set of related and sequential tasks is influenced by rules associated with specialization and divisions of labour in society. This perspective from technology studies is also reflected in the work by Arts et al. (2013), who describe a practice as not just one activity, but as an ensemble, or a complex whole composed of smaller elements. Task performance implies stability and continuity, as well as creativity and improvisation to deal with emergent problems or changes (Barber, 2007). Contexts in which practices of conduction are situated (Gherardi, 2012) shape the need to improvise, or, if external pressures are becoming very strong, the need to alter institutions. Performing a practice implies stability and continuity, as well as

creativity and improvisation to deal with emergent problems or changes (Barber, 2007). Analogously, Suchman's (1987) notion of 'situated action' relates structures of action to resources and constraints afforded by material and social circumstances.

Practices have a subject (or actor), object, and outcome; performing a practice transforms an object into an outcome (2012). We characterized the outcome of Produce Lane as organizing consistent flows of produce (object) and finance (a condition for obtaining produce) by conducers (subjects) – i.e. traders, wholesalers, retailers, and service providers - in a catchment area (Abebe et al., 2016; Legun & Bell, 2016; Roba et al., 2017). We determined the following daily activities through which the outcome is achieved: (i) sourcing and selling of produce, and (ii) accessing finance and distributing money. *Sourcing* is the first step in bulking, so that there is actual produce to sell. Produce is bought from farmers or traders outside Produce Lane, or from traders at Produce Lane. *Selling* produce includes finding end-markets for produce, market assessment and pricing of produce. This also includes quality and quantity assessment of produce. *Accessing finance* includes organizing access to several sources of money. *Money is distributed* to rural markets to buy produce from farmers, often through intermediaries.

These practices are embedded in the agri-food cluster central to this case study. Produce Lane has existed for some 20 years, despite external pressures such as violent conflict, changing climate, and increasing competition; and has responded to opportunities such as an increase in sunflower and soya production. Produce Lane attracted a variety of actors making a living in trading, and it is a source of employment and income for youngsters and women doing jobs related to trading. Produce Lane is a place known and recognized by farmers seeking a place to sell their produce, and external buyers looking for produce. Despite its mixture of actors, Produce Lane has been able to keep itself intact while being confronted with pressure from government and the competitive field of food trade. Hence, we investigate how the way of doing trade is continuously reproduced in the daily performance of practices of conduction assembled in Produce Lane.

3.3 Material and methods

Produce Lane, the agri-food cluster, accommodates around one hundred traders in the northern Ugandan town Lira. In this area, the population living below the poverty line of one USD/day is 43.7%, lagging behind the 25.8% national average (MoFPED, 2014). This is mainly a result of the twenty-year civil war between the LRA and government forces, lasting until 2006. In districts affected by the war, including several districts bordering Lira, agricultural production came to a near halt and population depended entirely on external agencies for food, health, and water. Since the end of the war in 2006, much support has been given by development organizations and the public Vegetable Oil Development Program (VODP) to recover production of main cash crops in the region, such as oilseeds (sunflower, sesame and soya). In addition, sunflower production has been

promoted by Mukwano, one of Uganda's main processors and trading companies, which started an outgrower scheme with farmers, located around Lira, receiving improved sunflower varieties to substitute import of palm oil due to high world market prices. In 2007, the company installed a sunflower processing plant in the area (Gildemacher et al., 2015). Since 2012, Mukwano started buying soya, to stimulate intercropping. All these investments led to a strong increase in oilseeds production and attracted smaller processors and one larger competitor, Mt Meru. Traded volumes increased in Produce Lane in recent years; it represents a strong example of a viable cluster of economic actors and practices of conduction in the middle of the food provisioning system.

The 200 meter of Produce Lane contain 20 buildings and 44 stores used for trade (Figure 3.1). We identify three types of traders (Table 3.1): *Retailers*, who only sell produce in small quantities to consumers, form the largest population at Produce Lane with 51 traders, and are mostly female (94%). Most retailers share stores with other retailers, or that of their husband's, which in that case is a wholesaler (see Figure 3.1). *Retail and wholesale (R&W)* are a diverse group combining wholesale and retail. *Wholesalers* are solely involved in wholesale. R&W and wholesalers are quite similar in terms of age, education, number of years at Produce Lane, and average number of people in one store (Table 3.1). However, rent of R&W's storage space is slightly lower (an average difference of 16 USD) and their store capacity is like that of retailers. Both variables indicate that their business size is smaller than that of wholesalers. Remarkably, most traders involved in R&W are women (92.3%). The street is also spatially organized by these categories: retailers are located at the two ends of the street, and in the middle; the largest wholesalers are located at the South end of the street; whereas smaller wholesalers and R&W are mostly located at the North end of the street (Figure 3.1).

Unskilled laborers support all traders in the cluster. *Porters*, always men, carry heavy bags with up to 120 kg produce. They load and off-load trucks, and carry bags of retailers outside in the morning, and inside again in the evening. Their payment is per bag, and the rate depends on the weight of the bag. *Cleaners*, always women, clean produce from dirt, such as sand or charcoal, which is skilful and laborious work. They are paid per bag, and their rates depend on the type of dirt.

Access to the cluster originated from earlier action-oriented research in the oilseed and edible oil subsector in Uganda (Ton et al., 2010; Vellema et al., 2011; Schoonhoven-Speijer & Heemskerk, 2013; Gildemacher et al., 2015). Data was collected during two field periods: November 2014 to April 2015; and November 2015 to February 2016. In most interviews, a research assistant was used to guide translation and interpretation of questions between the local language, Leb-Lango, and English. We used several methods for obtaining an in-depth and nuanced understanding of trade practices at Produce Lane: a survey on store level including 38 stores; 21 in-depth interviews with selected traders; participant observations; as well as secondary data on changes in

the oilseed sector over the last 20 years. Trade practices central to the case study were identified after exploratory fieldwork (observations and interviews) between November 2014 and January 2015 – e.g. sourcing, selling, accessing finance and distributing money.

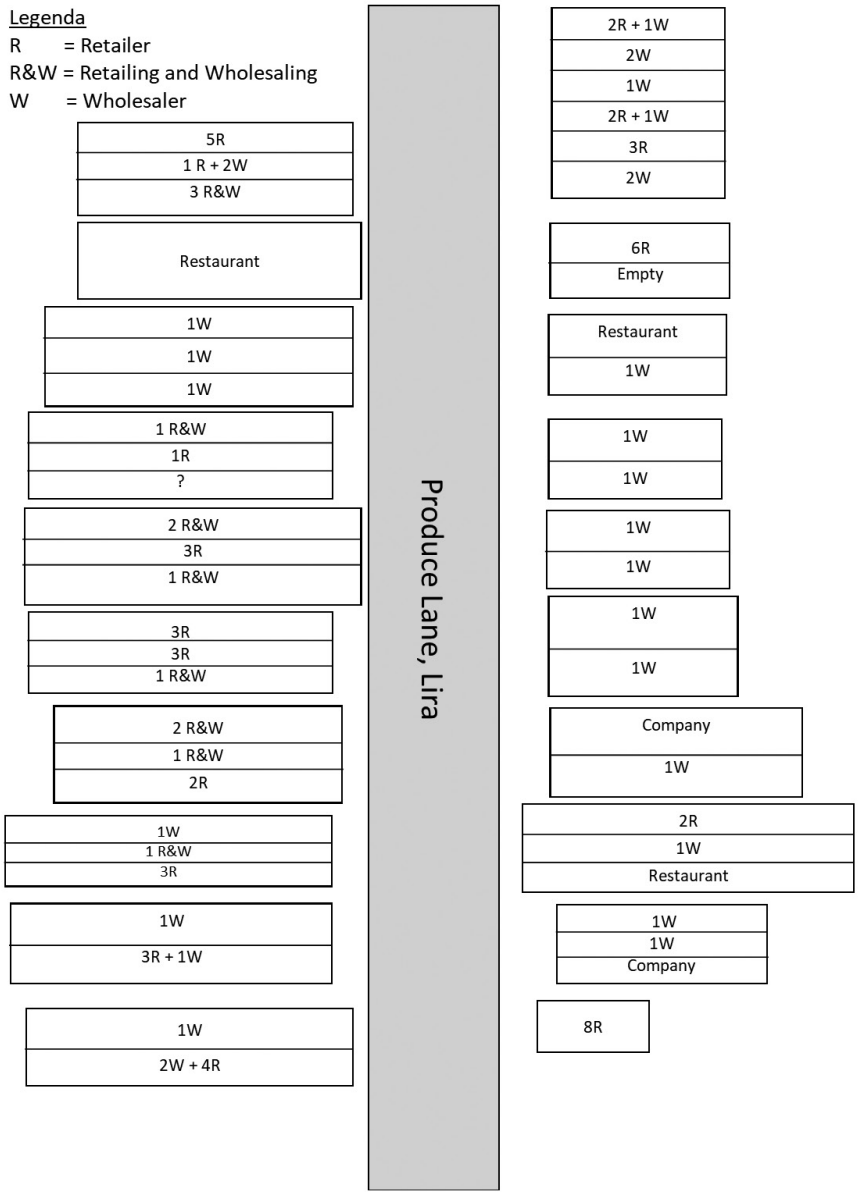

Figure 3.1 Map of stores at produce lane street, Lira, northern Uganda
Source: legenda based on own fieldwork November 2014 – April 2015. Map based on Google (n.d.). Retrieved June 10th, 2016, from https://goo.gl/maps/ iJuXT7X8Ym6FEMu96

Table 3.1 Basic descriptives of three types of traders at Produce Lane

Variables	Retail	Retail & Wholesale	Wholesale
Total number	51	12	29
Gender (% male)	6.0%	7.7%	76.0%
Age[1]	38.64 (11.91)	43.13 (7.30)	43.92 (10.09)
Education (in years)[1]	8.67 (3.93)	9.46 (3.78)	8.75 (2.61)
No of years on produce lane[1]	4.33 (2.60)	11.00 (5.89)	12.06 (5.95)
No of people in one store[1]	3.83 (1.70)	1.56 (0.73)	1.71 (1.12)
Average rent pp/month (USD)[1]	25.74 (12.52)	62.56 (25.14)	78.63 (41.04)
Capacity of store (tons)[1]	34.00 (29.84)	32.46 (26.20)	47.00 (43.09)
Average capacity pp (tons)[1]	8.62 (4.45)	29.06 (28.50)	42.18 (45.82)

[1]: mean (standard deviation between brackets)

Source: survey and interviews November 2014 – April 2015

We used a structured questionnaire (Russell, 2006) at store level to get an overview of types of traders present at Produce Lane. This included topics such as the number of traders per store, their age, and rent paid per store. The store level survey included 38 of 44 stores.[6] While conducting the survey, we also used open questions concerning the four trade practices. This gave us a rich overview of how practices were conducted by the several types of traders. A total of 21 in-depth interviews (Russell, 2006) about trade practices were held with a selection of all three types of traders, and were done by asking for concrete examples of performance. For instance, if a store was full of produce, we would ask when that produce was brought there, where it came from, how transport was organized, etc. All survey and interview data were collected at Produce Lane during daytime, when traders were 'performing trade'. We observed in detail actions such as (produce and money) transfers, quality checks, the use of notebooks, and the use of support services. While observing these practices, informal interviews with traders offered insights in the nitty-gritty details of their performance.

The survey at store level generated descriptives (Table 3.1) to distinguish between the three types of traders. Interviews and participant observation data were analysed using Atlas.ti. A coding scheme was made based on our theoretical framework as well as exploratory fieldwork, and included code categories for sourcing, selling, accessing finance and distributing money.[7] Detailed analysis of the results of coding led to a so-called 'thick description' (Geertz, 1973) of the trading practices assembled in Produce Lane. Coding, summarizing and analysing data gave first insights in issues around (informal) rules and routines consolidating produce lane. A second round of coding focused on these rules and routines.[8]

6 We did not reach a complete sample, as some traders refused to cooperate.

7 Codes used were the following: Sourcing included agents, buying produce, competition, transport. Selling included millers, Mukwano, consumers. Accessing finance included advance payments, agents, cheating, financing the business, working capital, other income, stocking produce, storage. Distributing money included advance payments and cheating. Lastly, we used several cross-cutting codes: challenges, (starting) trade relationships, family, and support services.

8 Rules and routines included the following codes: seasonality of trade, quality, setting prices, characteristics of crops, specialization, improvisation, and accessing Produce Lane.

3.4 Results: practices of conduction: organizing produce and finance flows

This section presents descriptive accounts of two sets of practices organizing produce and finance flows, which are central to everyday trade at Produce Lane. It focuses on how *produce* is sourced and sold, and how *finance* is accessed and distributed to put into use for trading. We start each set with presenting the practices of wholesalers, as they deal with the largest share of produce and finance flows. This is followed by describing the activities of retailers and R&W, which both relate and are complementary to those of wholesalers. Second, we describe how tasks and practices are distributed within and between groups and identify various forms of coordination *consolidating* produce and finance flows. Figure 3.2 gives a schematic overview of this configuration of produce and finance flows to, from and within Produce Lane. The final section examines the (in)formal rules and routines regulating, and further consolidating, Produce Lane as a site for organizing trade.

3.4.1 Organizing produce flows

Sourcing produce

For all wholesalers, the most important channel for getting produce was through their agents. These are intermediary traders with a store in rural communities receiving large sums of money from wholesalers to buy produce for them on commission. A wholesaler had on average 12 agents, and advance money ranging from 1350 to 7540 USD (source: survey data). Advances could be given out several times a month, depending on the moment in the buying season. For example, one of the largest wholesalers at Produce Lane had 14 agents and described their relationship as follows: '*I give them deposits, my vehicles to use, or money to hire a vehicle. After buying we will settle the balance*' (Interview 2015/01/ 22). Agents were entrusted with large sums of money. Wholesalers therefore built relationships with agents gradually and started working with agents on average 10 years ago. Building relationships started by first testing agents with smaller amounts, to examine how much they could handle.

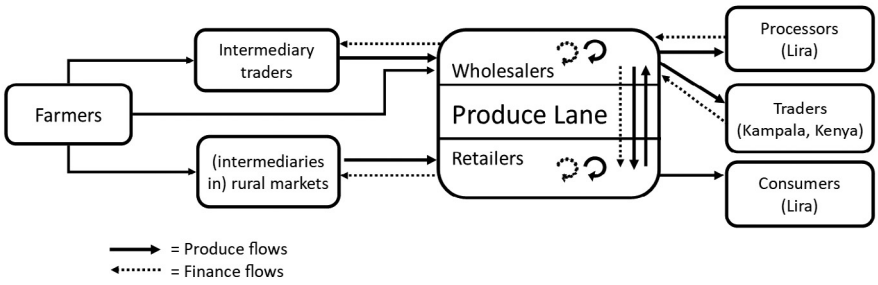

Figure 3.2 Overview of produce and finance flows to and from produce lane

Source: based on own fieldwork November 2014 – April 2015

Note: for the sake of overview, R&W traders are left out; the flows they use overlap with wholesalers and retailers.

Agents represented wholesalers in the village, which was strengthened by using means of transport. The larger wholesaler owned three trucks, with an average capacity of 20 tons, and employed three truck drivers. He bought the first truck in 2008, and paid on average 15,000 USD per truck, for which he used a bank loan. A truck was a large investment; only half of the wholesalers surveyed owned a truck. However, as this wholesaler explained, owning a truck gave a wholesaler flexibility to buy produce whenever and wherever he wants. Additionally, it was a way of transferring money to agents or searching for new agents.

Agents were not the only locally embedded actors through which wholesalers sourced their produce. Two-thirds of the wholesalers worked with other intermediary traders. This was more on an ad-hoc basis and without advanced payments. Intermediary traders or farmers also came directly to Produce Lane to market their produce or connect to wholesalers. One wholesaler explained that a friend connected him to an intermediary trader, who wanted to sell 20 tons of beans, and 20 tons of maize, and they agreed that he could bring the produce that afternoon (Interview 2015/11/10).

Retailers and R&W traders had substantially smaller capacity than wholesalers: in terms of storage available per trader, R&W's storage capacity was 60% compared to that of a wholesaler's average storage capacity, and retailers' storage capacity compared to 20% (Table 3.1).[9] This had consequences for how they sourced produce. R&W traders mentioned the use of agents, only their number was lower, two to five agents per R&W trader. They did not necessarily advance money, but their agents communicated when they had produce to sell. Then, an R&W trader hired a truck to pick up the produce, as none of them reported owning means of transport. Retailers did not work with agents at all.

Retailers and R&W traders used an outlet not mentioned by wholesalers: they bought produce at rural markets, where farmers sold their produce, mainly food crops. Traders went there themselves, or they were represented by relatives or friends. In the latter case, they provided the representative with money, which were amounts around 90 to 150 USD, including commission and transport refund.

Selling produce

Wholesalers sold produce using several channels. Sunflower and soya had a clear local market with smaller millers or large processing factories of Mt. Meru and Mukwano in town. A wholesaler explained that '*the factories [of Mukwano and Mt Meru] are an advantage, they provide steady markets … and they brought the market nearer*' (Interview 2015/04/14). At the same time, wholesalers complained: they had to compete with agents of Mukwano and Mt. Meru in the villages; and their trade depended on the quantity of seeds Mukwano distributed to farmers at the beginning of the season. Other outlets were large buyers coming from the capital, Kampala, or neighbouring countries,

9 We chose to compare the size of a business based on storage capacity and not throughput of volumes, as this was difficult to recall for retailers (who only sell small amounts).

who had connections with wholesalers at Produce Lane, especially for buying soya and sesame. Being present at Produce Lane enabled establishing these relationships. Several wholesalers mentioned their connections to buyers from Kampala, who passed by their store at Produce Lane.

As with buying, selling also happened on an ad hoc basis. One morning, we observed that traders from Jinja were referred to a wholesaler's store for maize. The traders agreed to collect it later that day, but to secure the produce, they already gave the wholesaler a deposit (personal observation, 2015/02/26).

Retailers mostly sold their produce in small amounts to local customers for home consumption. Occasionally, they sold one bag of produce, labelling that as 'wholesale'. R&W traders used retail as well but had a more significant share of wholesale. Compared to wholesalers, only a few of R&W mentioned having established relationships with buyers; wholesale was done ad-hoc.

Organizing produce flows involved a range of actors and connected different practices. Table 3.2 summarizes the practices of sourcing and selling produce. Wholesalers were the lead actors in Produce Lane, responsible for sourcing and selling the bulk of produce through carefully built relationships with agents (sourcing) and large buyers (selling). These relationships are determined by trust, which can be labelled as 'sunk transaction cost' (Fafchamps & Minten, 2001; Lyon, 2003): once incurred, it is in the interest of both parties to continue trading with each other because existing relationships reduce search and transaction costs. Wholesalers also developed skills to manage their businesses and invested carefully in tools such as means of transport. In addition, their capacity to link their individual businesses to national and export markets stimulated the growth of the cluster (e.g. Nadvi, 1999).

Table 3.2 Practices of organizing produce flows in Produce Lane

	Wholesale N=25	**Retail & Wholesale N=13**	**Retail N=50**
Aspects of **sourcing**			
Use of agents	Yes, long-term relations with traders including advance money	Yes, traders, sometimes advance money	No; but use of friends and family to buy in outside markets
Use of trucks	Owned and rented	Jointly rented	No
Other sourcing channels	Ad-hoc transfers	Ad-hoc transfers Outside markets	Outside markets
Aspects of **selling**			
Buyers	Large factories in Lira Buyers from outside the region Ad-hoc wholesale	Ad-hoc wholesale Local consumers	Ad-hoc wholesale Local consumers

Source: interviews November 2014 – April 2015

Retailers and R&W often lacked skills and (human and financial) capital to handle large volumes of produce, to invest in necessary tools such as transport, and to rent sufficient storage space. On the other hand, they were inventive to source in a way that fits their capacity: from rural markets, and in cooperation with others. And they maintained another important outlet of Produce Lane: local food retail. The combination of these distributed practices and collaborative processes consolidates Produce Lane as an entity functional to trade.

Consolidating produce flows at produce lane

Wholesalers did not mention cooperation with other wholesalers in the *sourcing* of produce, as they each have their own network of agents. Occasionally, they transported produce together with other wholesalers and shared the costs for fuel and truck rent. This cooperation was frequently mentioned by R&W traders; renting a truck together was a major option for organizing transport. Retailers were not able to hire transport.

Produce was also sourced at Produce Lane itself, through vertical linkages. Wholesalers (82%) passed by several stores of traders (both wholesalers and smaller traders) to buy produce, which had the advantage of sourcing one specific product easily. Prices in Lira were slightly higher than prices in the village.[10] On the other hand, transport costs were absent. Retailers also made use of buying produce at Produce Lane, for similar reasons.

Concerning sales of produce, wholesalers cooperated both within their group of wholesalers, and outside the group of wholesalers, with R&W and retailers. The truck capacity of buyers coming from afar was often such that one wholesaler could not fill it by himself; 90% of the wholesalers mentioned that they referred buyers to (all types of) other traders. One wholesaler emphasized that 'filling trucks together' is very important. '*If you do not have enough [yourself], you can refer a buyer to someone else*' (Interview 2015/04/10). We observed that R&W traders and retailers did some wholesale in this way. Some wholesalers gave examples of working together more structurally. '*During the season for beans, we send a truck to Kampala every week, we combine with two or three friends at this corner. Each gives 25 tons*' (Interview 2015/02/26).

Retailers cooperated and helped each other out with customers. We observed that a customer wanted to buy a larger quantity of groundnuts than the retailer had available. She then asked her neighbour to provide the rest of the groundnuts, and the money was divided between them. Another retailer mentioned that if she must run some errands for a few hours, other retailers would take care of her produce and sell it for her.

10 We calculated the following margins between farmgate price and buying prices at Produce Lane (in USD/kg): 0.04 for sunflower, 0.06 for soya, and 0.07 for sesame.

A last linkage between wholesalers and retailers in handling produce was that everyone used porters. Wholesalers paid them to load and unload their trucks, whereas retailers needed porters to carry bags with produce outside every morning, and inside every evening, as retailers sat in front of their stores behind these bags, thus displaying what they had on sale.

This pallet of collaborative processes 'smoothening trade' contributes to the consolidation of Produce Lane. All types of traders sourced produce from Produce Lane itself, and smaller traders helped to complete sales of wholesalers and their buyers by filling trucks together. The web of distributed tasks stabilized produce flows coming to and moving out of Produce Lane. Collaborative networks thus coagulate within the cluster (Dijk & Sverrisson, 2003), and affect individual as well as collective opportunities (Meagher, 2006). Moreover, we found tasks distributed beyond the boundaries of the cluster, exemplified by wholesalers using agents for sourcing produce in remote rural communities, or retailers and smaller wholesalers (R&W) sending friends and relatives to rural markets for purchasing produce.

Next, the paper describes the practices for organizing finance, which are of a different nature but equally generate conditions for consolidating Produce Lane.

3.4.2. Organizing finance flows

Accessing finance

Trading requires working capital to source produce and ensure payment of suppliers. Wholesalers accessed several sources of working capital: advanced payments from larger buyers, loans from other wholesalers, incomes from their own farmland, bank loans, and produce in stock. These sources had various functions, discussed in detail below: as starting capital at the beginning of the season, to smoothen transactions throughout the season, and to invest.

Half of the wholesalers (53%) maintained relationships with large buyers and received advances from them. One wholesaler received advance money from Mt. Meru a few times per season, to buy sunflower. These were amounts between 14,000 and 25,000 USD. He appreciated the large sums of money but mentioned that it can also be a disadvantage: '*you are tight to the company giving you advance and cannot sell their produce off to someone else [offering a better price]!*' (Interview 2015/02/ 20). Interestingly, a few days later he explained that he did not always use Mt. Meru's money directly for sunflower. He sometimes used part of it to buy something else first, and later bought sunflower with profits from earlier sales. Another wholesaler explained that relationships with buyers were built similarly to the way wholesalers' relationships with agents were maintained: *'they would pass by here. They first give me little money and start putting trust in me. Nowadays, they just call me, and transfer money to my account, they don't even come to give the money!*' (Interview 2015/04/10).

A consequence of wholesalers having the strongest relationships with buyers coming to Produce Lane, and thus with outside markets, is that they influence price setting. At the beginning of the second season, 2015, several wholesalers explained that they were not buying yet because their buyers had not yet given out their prices. Once they do so, the market is open.

Wholesalers could speculate with stocking produce at the end of the season, so to sell it off with a larger profit and to have starting capital for next season. One wholesaler was stocking his soya while awaiting higher prices – he bought soya for 0.46 USD/kg, the current price had increased to 0.53. He hoped prices would reach 0.61 cents. He explained that this is a meticulous process: *'it is the only way to make big margins, but it needs proper planning for a good price'* (Interview 2015/04/14). He explained that this profit helped him to reserve money for the next season. Another important source of starting capital was income of sales from their own cultivated crops. Most wholesalers owned farmland. They supervised farm laborers and were able to trade the whole year round. Lastly, some wholesalers mentioned getting a bank loan as a source of starting capital, although more often, bank loans were used for large investments such as storage space or a truck. A risk with getting a loan was however how to repay it. Wholesalers gave examples of traders who could barely repay their loans and had to forfeit their businesses.

Retailers had less sources of finance available than wholesalers. For instance, they could not stock produce, which required sufficient financial means. The difference in financial means became apparent when we investigated how retailers and wholesalers started trading. Wholesalers first gained a considerable amount of starting capital (on average 7500 USD) from, for instance, farming, or another business, and then started wholesaling. Retailers, on the other hand, started retailing because they did not see other options, as one retailer explained: *'I do not have a farm, so this is the only thing I can do. I didn't finish secondary school, but you cannot sit and wait for money. That's why I started trading'* (Interview 2015/02/10). Still, they needed some starting capital to buy their first produce, gained, for instance, from trading other products, or selling livestock. The financial capacity of wholesalers was an assurance for retailers and R&W as well: in the low season, they approached wholesalers for advance money. Another way of assuring stable finances for all traders, was borrowing small amounts of money from other traders at Produce Lane. This only occurred reported within the own group of traders, as it needed higher levels of trust.

Distributing money

Ensure that available finance is used for purchasing produce is crucial for trade. Advancing money for buying produce determined relationships between wholesalers and agents. Wholesalers described how their business depended strongly on agents,

due to growing competition for produce in the last five to ten years. Consequently, the risk of an agent returning advance money increased. One wholesaler complained about this breach of trust: *'one agent disappeared in 2013, I had been working with him for 8 years! I was used to him, [...] I treated him like family!'* (Interview 2015/01/26). If money was diverted, wholesalers tried to sort the issue with the agent, or it was taken to the police or the local district government. Another wholesaler explained how difficult it was to strike a balance: *'giving out advance is tricky, but you have to keep issuing it, otherwise you won't get anything!'* (Interview 2015/11/10). Due to these risks, some wholesalers invested in the relationship, such as helping agents with money for transport and lunch.

Since retailers neither had much money available nor received advances from outside buyers: *'... to get advance you need money yourself! You need some asset that is worth their money'* (Interview 2015/02/19). Another difference was that wholesalers were able to trade (almost) all year round, whereas retailers were involved in other activities when the season was low, such as farm labour. Retailers and R&W did not distribute large amounts to agents; they managed smaller sums to enable friends or family to buy produce in rural markets.

Summarizing, organizing finance flows ensures continuation of trade. Table 3.3 gives an overview of the practices organizing access to and distribution of financial resources. A prominent modality for organizing financial flows was via so-called 'advance money'. These 'loans' worked as informal contracts to ensure business transactions and limit opportunistic behaviour (Pedroza, 2013).

Due to the size of the wholesalers' businesses, they were trusted with large sums of money from companies, enabling them to advance money to intermediary traders in the region. They also showed know-how to cope with risks such as defaulting agents, and had other finance strategies at hand, such as farming, bank loans, and stocking produce. The financial capacity of wholesalers was an assurance for retailers and R&W: in the low season, they approached wholesalers for advance money.

Consolidating finance flows at produce lane

Organizing finance flows entailed subtle forms of collaboration and coordination. Within the group of wholesalers, small amounts of money were borrowed from other wholesalers. Amounts mentioned by wholesalers in interviews varied between 15 and 30 USD and we observed that this happened almost every day and smoothened transactions. For instance, if a wholesaler is short on money to repay an agent: *'it happens once in a while that I cannot pay my agents. ... I tell them to wait, and rush to friends'* (Interview 2015/02/26). Also, retailers mentioned that they borrowed money from other retailers daily. Hence, organizing finance flows relied strongly on ties *within* groups; as this might need higher levels of trust (Fafchamps, 2001). We

also observed linkages between groups, where retailers and R&W asked for advances from wholesalers to buy produce for them. One retailer explained that, if her business was low, she went to a bigger wholesaler and asked to buy produce for them in outside markets (Interview 2015/02/10). Additionally, two R&W traders mentioned receiving advances from a large wholesaler to buy sesame.

Another form of coordination related to sharing storage space and thus rental costs. One retailer explained that she invited friends to share her store, because she had trouble paying rent. Rents are paid bi-yearly, and average from 150 USD for retailers, to 470 USD for wholesalers (Table 3.1). All retailers and R&W shared storage space, and some smaller wholesalers as well. The latter mostly shared their store with their wife, who is in retail, and some of her friends.

The analysis of organizing finance flows indicates that coordination of interdependencies and distributed tasks contributes to handling unanticipated risks and smoothening trade. Wholesalers form the backbone of Produce Lane. Following Gebreeyesus and Mohnen (2013), they act as 'bridging enterprises' linking the cluster with the outside world. Our analysis of finance flows shows the importance of trust and well-established ties between wholesalers and their agents for the cluster. Informal networks in the cluster helped to mitigate the capital constraints of individual traders (Meagher, 2006). In addition, smaller traders serve as agents for wholesalers. This finding emphasizes the economic benefits of stability emerging from close ties and information sharing through social networks (Fafchamps, 2001). Consolidation of Produce Lane also transpires from sector-specific support services, grouping as a profession and performing in close proximity to one another. Correspondingly, Produce Lane reflects a web of connected practices for organizing produce and finance flows, which brings about underlying processes consolidating Produce Lane as collaborative and coordinated whole. These are visible in various forms of coordination between tasks distributed within and between groups.

Table 3.3 Practices of organizing finance flows in Produce Lane

	Wholesale N=25	**Retail & Wholesale N=13**	**Retail N=50**
Aspects of **accessing finance**			
Type of finance	Advance from companies Farming Bank loans Stocking of produce	Bank loans Farming	Unskilled labour
Aspects of **advancing money**			
Type of finance	Advance to intermediary traders	Sometimes advance	Money to friends and family for buying

Source: interviews November 2014 – April 2015

3.4.3. Consolidating produce lane: rules associated with trading

The description of organizing produce and finance flows exposes that everyday trade at Produce Lane relies on skilful performance of individual economic actors, but at the same time has a collective nature. The mixture of variation in running a business is commensurable with a joint interest in maintaining the collective capacity of Produce Lane to act as a trading hub. This is supported by rules and routines tailored to trading and creating a certain degree of predictability in the market. Rules and routines were driven by the nature of the profession and are contingent on the specific context. Below we discuss three areas of rule-setting: complying with basic quality requirements, balancing competition and mutual dependency, and representing Produce Lane collectively.

In a trade hub such as Produce Lane, the prime interest of buyers is in quantity rather than quality. Higher quality produce was not rewarded with a premium price (Vorley et al., 2015). Although basic quality standards needed to be maintained, quality was not an economic proposition for traders. Instead, traders were rewarded for higher quantities: one wholesaler explained that he received a premium of 0.0012 USD/kg if he sold 500 tons (or more) of sunflower in one season to Mt. Meru (translating to 600 USD extra per 500 tons). Trade was thus about ensuring a consistent flow of quantities of produce, contradicting results of non-food clusters, where quality improvements are necessary for achieving competitive advantage (Gebreeyesus & Mohnen, 2013).

Yet, basic quality standards needed to be maintained. Therefore, wholesalers and retailers assessed the quality of bags delivered at their stores. If quality was below standards, a buyer rejected the produce. Particularly larger oilseed processors and oil manufacturers, Mt. Meru and Mukwano, controlled moisture content of sunflower; if it was not well-dried, it weighed more, and processors risked paying more for this extra weight. A second quality issue, also related to quantity, concerned mixing dirt through produce. Traders blamed farmers for mixing produce with all kinds of dirt such as sand or charcoal, hoping to earn some extra money with the extra weight. Traders emphasized the importance of detecting these issues upon buying, so that produce was cleaned or dried properly before a deal was made. Some wholesalers trained their agents in recognizing these quality issues. If dirt was detected at Produce Lane, cleaners were hired to clean crops manually. Especially larger traders hired cleaners, whereas retailers were more likely to clean produce themselves.

The focus on quantity led to competition over access to producers and production areas. Wholesalers did indeed not source much produce together. Traders in Produce Lane deployed distinct strategies to attract the attention of customers: specializing in certain products (Dijk & Sverrisson, 2003), or investing in transport and storage and thereby increasing volumes. Several wholesalers explained that buying sunflower needed transport as well as employing agents. Sunflower was a crop sold by farmers in large volumes in a short time frame, and both agents and owned transport (as opposed to hiring) enabled sourcing

large volumes in a short time period. Owned transport was less necessary for sourcing soya, as its peak was less concentrated. One wholesaler mainly focused on soya and chose not to invest in transport, thereby saving money on the investment as well as maintenance. He maintained connections with traders in Kampala who knew him as a relying partner for soya. Retailers mainly focused on food crops such as maize and beans. The advantage was that these are traded in smaller amounts throughout the year, whereas oilseeds were more seasonal.

However, all traders depended on each other for selling produce (e.g. 'filling trucks together') and competition was therefore not fierce. This absence of fierce competition also had consequences for rules around setting up a store at Produce Lane; it was not difficult to start a business. Connections with, and recommendations of, friends or family had been important for establishing a store at Produce Lane for three quarter of the traders (survey data). However, one fourth of the traders surveyed at Produce Lane replied that the store was just empty, and they inquired if they could rent it. These answers did not differ between types of traders. In addition, for wholesalers, some level of 'trade skills' was important (although traders did not mention to be assessed by other traders on their trading skills). Quite some wholesalers mentioned that, before starting trade from Produce Lane in Lira, they were intermediary traders in the countryside. One wholesaler explained: *'I raised some good capital between 2000 and 2004, then I could start renting in [Lira]. Here there are many people who bring their produce, so your volumes easily increase. And it is easier to sell, you can access the markets fast'* (Interview 2015/04/14).

Lastly, we discuss the only formalized institution at Produce Lane: Produce Buyers Association (PBA). It was established in 2001 and represented all traders at Produce Lane and those from a wide area around Lira. Not all traders at Produce Lane belonged to the association, and especially for retailers the membership fee of 45 USD per year was too high. The association met a few times a year and dealt with the terms and conditions under which traders buy and sell. It made sure that members had a trading license and paid taxes; that quality standards were maintained. The PBA also addressed issues around alcoholism, diverting money, and safety. The association hired two security guards to protect Produce Lane at night, after some weighing scales and produce got stolen from stores. These kinds of measures confirmed the reputation of Produce Lane, which was important for attracting buyers, as the chairman of the PBA explained (Interview 2015/03/10). Furthermore, The PBA represented traders in meetings with the local government. Assembled in the PBA, traders tried to make agreements with the local government preventing Busia traders (traders coming from the town Busia, a town in the southeast bordering Kenya with plenty of cross-border trade) to buy in villages directly, but as far as we are concerned the government refused to do so. Lastly, the PBA addressed social issues, such as collecting money for burials.[11]

11 Burials in Uganda are an important social activity requiring large sums of money, so it is a custom to ask friends, family and colleagues to contribute.

Summarizing, the regulatory nature of Produce Lane is manifest in checking basic requirements regarding quality and in some form of collective representation in interactions with local governments as well as external traders. The existence of an association contributed to enforcement of rules (McCormick, 1999), and restricted opportunism (Harris, 2016). Interestingly, economic actors assembled in the agri-food cluster obeyed regulatory limitations for how to compete. Traders deployed distinct strategies to enhance their businesses, by specializing in certain products, strategically investing in transport or storage space. These strategies are closely related to the type of product traded at Produce Lane, and can be different in other types of clusters (see for instance Meagher, 2006). Yet, fierce competition seems absent in Produce Lane, since traders equally depend on each other for increasing volumes transacted; which confirms findings of Harris (2016) showing how informal competition erodes trust and weakens joint actions.

3.5 Discussion

Our descriptive account of practices of conduction, i.e. organizing produce and finance flows, exposes that the agri-food cluster in northern Uganda accommodated a wide diversity of actors and offered income and employment to wholesalers, retailers, and traders engaged in both retail and wholesale. The economic activities of traders attracted supporting professions such as porters and cleaners with desired skills for traders and benefiting the cluster (Harris, 2014). Despite numerous challenges, the organization of produce and finance flows to and from the cluster remained remarkably stable. The cluster of actors assembled in Produce Lane developed, used and reinforced the modes of handling produce and finance flows for more than twenty years. Traders themselves valued the benefits of being clustered (Harris, 2014) and recognized Produce Lane as an established institution for buying and selling produce, as well as outside actors such as buyers, the government, and competing traders.

We set out to understand how and why Produce Lane, a cluster of situated trading practices, persists in a changing environment. Through which processes do the ensemble of actors and their interdependent practices consolidate the institutions governing an agri-food cluster? We conceptualized Produce Lane as a self-enforcing institution (Greif & Laitin, 2004), which emerges from evolving practices of conduction assembled in a spatially bounded economic space. We theorized that institutions are consolidated to the extent that they are carried forward by the behaviour of individual actors, and that they should be feasible within their social, economic and material environment. Our practice-oriented analysis demonstrates that the practices of conduction assembled in Produce Lane are consolidated because they are *collaborative, coordinated,* and *regulated.* This is related to the reality of managing produce and finance flows under specific contextual conditions. Produce Lane as an organizational architecture creates space for individual conducers to do their businesses in an interactive and collaborative

manner. Some form of coordination of interdependencies and distributed tasks is vital for handling unanticipated problems, and for smoothening and continuing produce and finance flows. Practices are regulated through a set of both informal and formal rules reinforcing the organisational structure manifest in Produce Lane.

These institutional features of everyday practices of conduction set the stage for detecting the institutional properties of produce lane as-a-whole, which are conducive for how the ensemble of economic actors create and self-reinforce an urban agri-food cluster: how the cluster remains viable. We identify three types of properties: 1) accommodating a variety of practices, and thus actors and interests; 2) ordering distributed tasks without external controls while navigating a changeful socio-material environment; and 3) achieving social settlements using rules which emerged from the specialized tasks of managing produce and finance flows.

First, the variety of interdependent and mutually reinforcing practices is a main feature of Produce Lane. The cluster combines individual and collective performances of an ensemble of different types of wholesalers, traders and retailers. This links to the collective efficiency argument used in cluster literature, the competitive advantage of unintended and joint economic action (McCormick, 1999). Rooks et al. (2012) conclude that entrepreneurs with intermediate degrees of constraints appreciate two types of benefits of being in a cluster: heterogeneous sources of novel information (brokerage) needed for innovation and sufficient closure and bonding to avoid action problems (embeddedness). The performance of actors within a cluster or network depends on both open and embedded ties (e.g. Rooks et al., 2012; Walther, 2015); and the absence of fierce competition (Meagher, 2006; Harris, 2016). Our analysis, using a practice approach, expands on cluster literature that recognizes this heterogeneity in clusters (Gebreeyesus & Mohnen, 2013), and demonstrates that collective efficiency is reproduced in an agri-food cluster because it *accommodates variety.* The skills and financial capital of larger traders, their dependency on smaller traders for mitigating fluctuations in finance and produce, and internal as well as external task distribution are important for maintaining the cluster. This emphasizes that trading and conduction are never purely individual practices; rather, they are reinforced through mutually dependent practices jointly ensuring a consistent and large flow of produce at a recognized hub. Hence, accommodating a variety of practices appears to be a necessity for consolidating Produce Lane.

Second, Produce Lane as an economic space connects a variety of task-oriented groups (McFeat, 1974), which are organized around accomplishing specific ends, such as aggregating produce or making timely payments. These groups organize and interact to constantly solve (unanticipated) problems in the whimsical setting of agricultural markets. Proven performance in such a setting keeps task-oriented groups intact and reproduces institutions, even though knowledge and skills are distributed both

organizationally and spatially (Hutchins, 1995). Consequently, Produce Lane is *a self-organized form* - the emergence of order without external control (Nicolis, 1989) – embedded in the practices for arranging produce and finance flows that are adapted to specific local conditions. This emphasizes the situated and flexible nature of the market institution. Steering emerges from interaction, resulting in useful action (Kinyanjui, 2010) - the successful management of produce and finance flows for trade -, without a single actor having total overview of the complete situation. Hence, self-reinforcement of Produce Lane emerges from performance and is not imposed by a controlling agent.

Thirdly, Produce Lane is a self-regulated organizational form in which a variety of actors are capable of achieving social settlements. Over time, ordered and evolving trade practices have created a set of rules and routines fitting specific conditions. The ensemble of economic actors in Produce Lane constructs, uses, and transforms *a set of rules and routines* specifically relevant for the craft of food trade. This echoes Berndt and Boeckler (2009), who argue that market exchanges in clusters depend on socially agreed institutions which provide stability for various actors involved; because they are always accompanied by uncertainties arising from problems in exchange and competition. In Produce Lane, the rules attached to the daily practice of trading are both informal and formalized through a business association (the PBA). Informal and formalized organizing resembles an emerging guild (Schoonhoven-Speijer, Mangnus, & Vellema, 2017), with associated rules and 'interaction rituals' with symbolic significance (Lawrence, 2004). This ensures the coordination and internal enforcement required for effective collective action (Greif et al., 1994) - which makes Produce Lane more exclusive, gives different types of traders different kinds of positions in the cluster, and implies certain modes of control, within which traders can still make individual choices. A specific set of rules and routines draws organizational and spatial boundaries around the economic space, which adds to its institutional viability.

3.6 Conclusion

This paper demonstrates how everyday practices of trading self-reinforce an urban agri-food cluster. Produce Lane is larger than the sum of its parts: the exchange of agricultural produce and the necessary finance is materialized by interdependencies between large and small wholesalers, retailers, and their support actors. Arranging these exchanges (under unfavourable and fluctuating conditions) entails skill formation, building and maintaining complex relationships including task distribution, and constructing rules underlying routines, while leaving room for improvisation. Accommodating a variety of actors and practices is an essential condition for self-reinforcement: variety in the cluster is instrumental in achieving viability. Order coordinating these practices emerged within the cluster without external control, and the cluster is regulated through rules emerging from the tasks specifically related to the nature of Produce Lane.

We reached these insights by adopting a practice-oriented methodological approach for the study of a sustained agri-food cluster. A focus on practices offers methodological guidance for the analysis of institutions governing dynamic marketplaces, and the agency of economic actors expressed in the practice of conduction. It enabled us to study Produce Lane as a cohesive set of practices, which organize produce and finance flows, while considering not only a diversity of actors, but also a large variety of transactions and contracts between these actors. Integrating an institutional lens with researching everyday practices of conduction opens conceptual space for analysing the performance of real markets in food provisioning.

We typified three sets of properties to explain how a well-functioning cluster remains viable. Complementary studies are needed to unravel how institutional reinforcement of a cluster is contingent on its context. Harris (2019) adds a focus on the effects of land delivery and holding mechanisms on how informal production clusters evolve. Meagher (2006, 2007, 2010) shifts attention to the influence of politics and political reform on economic capacities, explaining how clusters can be vulnerable to fragmentation and involution in the context of liberalization, state neglect and political opportunism. As Meagher (IBID) shows, these kinds of pressures lead to increased competition, and new tensions around generation, class and gender; together eroding collective action. Consequently, enterprise networks were increasingly defined by an individual's portfolio of ties, rather than by collective arrangements at cluster level (Meagher, 2010). In addition, a comparative and historical analysis of different clusters may be able to further typify the variety of ways to creating and sustaining institutionally viable ways to organize trade.

As an ensemble of practices, Produce Lane fulfils an important brokering role in arranging consistent supply of food and financial flows between farmers, and local and regional food markets. Our research confirms the vital role intermediary traders can play within rural markets in a development setting. This insight has policy implications for the development of market linkages. In a context of liberalization, globalization and downsizing states, small firm clusters are regarded as a useful model for industrialization and employment generation in a development context (Meagher, 2007). However, interventions and service development models supporting clusters often impose formalization, which might disrupt processes of joint action (Kinyanjui, 2010; Harris, 2016). Moreover, instead of inducing new organizational models (which might also include contracts, commodity exchanges or collective marketing), institutional design might benefit from more hybrid models (Kinyanjui, 2010). These should build on viable institutions already present, with proven capacities to manage produce and finance flows under conditions of fluctuation and scarcity.


AON

'We formed the group to eliminate the middlemen. We pick the produce from our farmers and then we wait for better prices. We rent a store, only during the harvest time'.

Farmer group of Alito cooperative. Kole district, Uganda

CHAPTER 4

Navigating dynamic contexts: African cooperatives as institutional bricoleurs

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4. Navigating dynamic contexts: African cooperatives as institutional bricoleurs

4.1 Introduction

Agricultural sustainability depends on more than farming; it is as important for farmers to have a sustainable market outlet. In many rural areas in Sub-Saharan Africa this is not self-evident. African markets are portrayed as being pervasively imperfect (Markelova, Meinzen-Dick, Hellin, & Dohrn, 2009; Shiferaw et al., 2011). Poor infrastructure, weak institutions, policy failures and high transaction costs among other things, are thought to limit the poor from grasping the opportunities offered by a growing domestic demand for food crops and a rapidly globalizing agricultural economy (Kydd & Dorward, 2004; Dorward, Kydd, Morrison, & Poulton, 2005; Barrett, 2008; Shiferaw et al., 2011).

In the last two decades, cooperatives have become the centrepiece of pro-poor market development interventions in Africa. Cooperatives are presented as a solution to assumed institutional voids and market imperfections that constrain farmers from grasping economic opportunities (Devaux et al., 2009; Markelova et al., 2009; Poole & de Frece, 2010; Lemeilleur & Codron, 2011; Shiferaw et al., 2011; Fischer & Qaim, 2012; IFPRI, 2014; Trebbin, 2014). They are regarded as being capable of changing prevailing trade patterns by fixing what is supposed to be lacking in rural markets: scale, quality of produce and professionalism (Devaux et al., 2009; Kaganzi et al., 2009; Markelova et al., 2009).

However, how cooperatives foster market relations remains unclear. Research concerning the contribution of cooperatives in 'fixing' market failures for farmers focuses mostly on the impact of cooperative membership at the level of the individual farmer. A wide range of topics is covered such as the effect on farmers income, bargaining power, costs of marketing, access to market information, credit, inputs and extension services (Bernard & Spielman, 2009; Fischer & Qaim, 2012; Francesconi & Ruben, 2012; G. Abate, Borzaga, & Getnet, 2014; M. H. Ahmed & Mesfin, 2017).

Much of the empirical research on cooperatives focus on the 'design principles' that should guarantee beneficial outcomes for all members (Hagedorn, 2014; Donovan, Blare, & Poole, 2017). To exemplify, the following factors have been found conducive to cooperation: group size and homogeneity of membership; accountable leadership; trust among group members; economic feasibility; 'facilitators'; and the type of crop and market.[12]

12 Brass (2007), for example, concludes that the failure of agrarian cooperatives in the 1970s in Peru is a consequence of the class distinctions within cooperatives. In their study of farm supply and grain marketing Feng, Friis, and Nilsson (2016) find that the smaller the size of membership, the more social capital cooperatives in Sweden have. However, Totin et al. (2014) find that the larger and more diverse group of producers is best organized. Another group factor of importance is accountable leadership (Kaganzi et al., 2009). Mude (2007) explains how corruption, political opportunism and mismanagement reduce efficiency of coffee cooperatives in Kenya. Trust among group members is considered as the basis for reciprocity and emergence of cooperative behaviour (White et al., 1995; Poteete & Ostrom, 2004). However, contrary results are also found, Berdegue (2002), for example, observed that

According to us, these factors are not fully indicative of how a cooperative successfully organizes market access for its members. A focus on either the design or the impact of a cooperative at farmer level does not give us enough insight in how a cooperative achieves collective outcomes and how it remains a viable organization within a given context.

In Mali and Uganda, we observed a discrepancy between the organizational models promoted in development interventions and the diversity in practice of two well-functioning organizations. This to us highlights that many assumptions on how a cooperative should function do not correspond to what works in practice.

In view of the strong role given to farmer organizations in development programmes aimed at improving market access we believe that it is important to understand how cooperatives become organizations viable to cater to sustainable market relations. It is this research gap that we aim to address in this paper. Our study questions the idea underlying many policy initiatives that encourage the set-up of cooperatives; namely that to realize market access for smallholders, new formal institutions need to be designed. Instead, we seek to understand how a cooperative is built on already present market institutions, and how the specific socio-historically context shapes collaboration within the cooperative.

Accordingly, contrary to most of the research on cooperatives, we shift perspective from the effects of cooperative membership, to understanding how cooperatives organize sustainable market linkages, and as such contribute to agricultural sustainability. With this focus, we add to a small, diverse, and growing body within development literature that lays emphasis on the processes that reinforce organizations, rather than outcomes (Sidibé, Vellema, Dembélé, Témé, & Yossi, 2014; for instance Wertheim-Heck & Spaargaren, 2016; Mangnus & Vellema, 2019). We do so by studying the development and functioning of two African cooperatives in distinct contexts, Uganda and Mali.

To scrutinize an organization 'in development' we deem the approach of institutional bricolage as suitable. Institutional bricolage pays specific attention to how organizations adapt to, and develop within, a specific context (Cleaver, 2002). To our knowledge, institutional bricolage has not been used for studying the development and functioning of cooperatives in a rural African setting. In our study, we scrutinize the emergence, development and functioning of two cooperatives in Uganda and Mali.

close social relations prevented members of cooperatives in Chile from enforcing rules for fear of alienating friends and neighbours. Totin et al. (2014) emphasize the importance of clear sanctions. Cooperation should be economically feasible for farmers to invest effort and time (Mujawamariya et al., 2013). So called 'inadequate policies and disabling regulation' would undermine collective action (Hussi, Murphy, Lindberg, & Brenneman, 1993; Stockbridge, Dorward, & Kydd, 2003; Chirwa et al., 2005; Shiferaw, Obare, Muricho, & Silim, 2009). Lastly, staple crops are thought to be of too little added value to be commercialized through a farmer organization (Barham & Chitemi, 2009). Local markets are assumed to be easily accessible for individual farmers thus making group marketing unfeasible (Narrod et al., 2009; Poulton et al., 2010). Thorp, Stewart, and Heyer (2005) find that poorer farmers are often excluded. Oftentimes cooperatives payment systems do not align with farmer's needs (Milford, 2014). Many studies refer to dissolution of groups due to internal tensions or ceasing of subsidies from donors (Berdegue, 2002; Kasabov, 2016).

The two case studies show that for cooperatives to achieve their objective, they need to be able to strategically navigate in their specific context. With this paper, we therefore recommend development policy and practice to shift attention from fostering idealtype organizations to identifying and strengthening capacities needed to perform within a specific context. The following section – Theoretical Framework - positions the theoretical perspective underlying our study. This is followed by the Methodology section, where we operationalize the bricolage approach and describe our case study material. The case studies are detailed in the section Findings. In the Analysis and Discussion section, we answer the research question and describe the implications of our findings for development policy and practice. We conclude the paper with a reflection on the usefulness of the bricolage approach to study sustainable market linkages.

4.2 Theoretical framework

4.2.1 Depart from new institutional economics

Development interventions that encourage cooperation to organize market linkages for smallholders are, knowingly or unknowingly, often inspired by theories in New Institutional Economics (NIE). NIE can be regarded as a movement within the social sciences that unites theoretical and empirical research examining the role of institutions in shaping economic activity (North, 1987; Williamson, 2000; Coase, 2005). According to NIE institutions incentivize individuals to maximize their economic behaviour in socially preferred directions and enact sanctions to punish those who cheat or freeride on the collective action (Williamson, 2000). Following NIE, the organizations that manifest in practice are the ones that are economically most efficient given their specific context.

Building on this line of thinking development interventions specifically encourage cooperatives as efficient arrangements for farmers to access markets (Holloway & Ehui, 2002; Shepherd, 2007). Cooperatives are democratically controlled enterprises owned by a group of people who voluntarily participate. Members contribute financially, and exercise control through supervising the management. From a development perspective the cooperative is attractive as it responds to an ideology of bottom-up empowerment. The cooperative is owned, controlled and financed by its users, the farmers. Moreover, its design is inclusive; anyone should be allowed to become a member, and the governance and management structure encourages participatory decision-making (Bijman et al., 2011).

The preference for the cooperative as an ideal collective action arrangement stems from NIE's idea that rules and regulation, a clear authority and accountability structure, and the use of penalties against free riders are necessary for successful collective action (Gardner, Ostrom, & Walker, 1990; Ostrom, 2000). Moreover, NIE emphasizes the importance of transparency, clear conflict resolution, and resource allocation

mechanisms. The 'cooperative' principles fit within this logic. Cooperatives are regarded as arrangements that can efficiently, and formally, coordinate transactions for many smallholders in the 'imperfect markets' of Sub-Saharan Africa (Shiferaw et al., 2011).

However, several critiques can be raised towards NIE and the idea that sustainable market linkages are best crafted by archetypical organizations. First, NIE holds a de-contextualized notion of organization. Organizations induced by NIE inspired interventions are built on generic principles concerned with internal group factors. These interventions simply assume the cooperative to be a suitable market arrangement in the context of smallholders and imperfect markets, no matter the specific characteristics of this market (Mehta, Leach, & Scoones, 2001; D Rodrik, 2014). In this paper, we aim to unravel how even an archetype organization such as a cooperative is co-shaped by its environment.

Second, NIE seems to equate institutional viability with fixed and formal structures that are rather static, if farmers follow the procedures and statutes, the cooperative will provide them with sustainable access to the market (Rocheleau, 2001). In our case studies, we observed that rural markets and the arrangements to access markets are typically dynamic and membership of marketing arrangements evolved over time (M. Granovetter, 1985; Benjaminsen & Lund, 2002). Decisions are often made using implicit norms and habits which may not conform to 'modern' managerial concepts of transparent decision-making but are nevertheless effective. Our aim is to study the processes that lead to the viability of the case study cooperatives.

Third, the links between rules and decision-making structures within institutions and the outcomes produced in terms of more efficiency are not as simplistic as presented by NIE. Most local level organizations have multiple purposes and an evolving organizational structure. Authority and the social norms for resolving competition and conflict are rarely clear and consistent but diverse and subject to negotiation and compromise (Lund, 2001). In this paper we therefore pay close attention to the multiple purposes cooperatives might have and to the internal negotiation and decision processes.

Fourth, NIE maintains a very narrow conceptualization of social capital; namely as an asset that fosters cooperation. The fact that social capital is historical, place-specific, can be exclusive, and can actually constrain successful collective action, is neglected. NIE thinkers emphasize the importance of trust and social connections but are not able to explain satisfactorily how these lead to performing collective action. In this paper, we hope to come to an understanding of how social relations in both case studies foster or limit the performance of the cooperatives (Martin, 1993).

Fifth, NIE only has a partial understanding of peoples' motivations for collective action (Rocheleau, 2001). In real life, people have multiple roles and affinities, and their motivations for participating in an organization might change over time. Moreover, they make decisions based on both conscious and unconscious rationalities (Giddens, 1984; Douglas & Wind, 1987). In this paper, we aim to study how cooperative membership touches upon different livelihood ambitions of smallholders.

Our aim in this paper is to gain an understanding of how cooperatives organize sustainable market access. In a search for an approach that enables us to study farmer organizations as evolving organizations in dynamic and unique environments we propose to use Lévi-Strauss's (1967) concept of 'institutional bricolage', – shortly characterized as 'making do with whatever is at hand' – as described by Cleaver (2002). According to this approach, institutions are shaped by historical processes, the power relations which prevail in social life and worldviews. They are constructed both deliberately as well as in the practical iterations of daily life. In the next section, we elaborate upon the approach and how we aim to use it. Institutional bricolage departs from NIE in that it regards institutional formation as a socially embedded process rather than a deliberate and transparent managerial activity.

4.2.2 Institutional bricolage

An institutional bricolage perspective is a critical institutionalist approach that refutes the idea that prevailing institutions are an outcome of rational efficiency-seeking behaviour. Instead, it regards existing institutions as a bricolage of borrowed, adapted and combined institutions at hand in the processes of solving resource management problems by collective action (Cleaver, 2001, 2002; Cleaver & de Koning, 2015). These modified and new arrangements always fit into what is locally perceived as an acceptable manner of doing things (Galvan, 1997; Lanzara, 1999; Cleaver, 2001; Sehring, 2009).

In this line of thinking institutions are not fixed entities, but the results of what people do; institutions must be continually reproduced or re-enacted by people to exist (Lund, 2001). An institutional bricolage perspective also challenges the notion of collective benefits: it assumes that power and inequality always result in some people benefitting more from outcomes than others (Cleaver, 2005; Matose & Watts, 2010; Ribot, Lund, & Treue, 2010). The bricolage approach offers an understanding of organizations as embedded and evolving phenomena and aligns well with our aim to grasp the development and functioning of two cooperatives in two distinct contexts. It allows us to view cooperatives, even when a-priori designed for a specific purpose, as organizations that borrow and adapt from other arrangements, such as church associations, women's' groups or savings clubs.

We follow Baker and Nelson (2005) in operationalizing the approach of bricolage. Baker and Nelson (2005) conducted a review of research in which the concept of bricolage was used to clarify a phenomenon observed. They identified a triplet of dimensions

coming back in all studies, helpful for our study: making do, resources at hand, and combination of resources for new purposes.

Making do implies a bias towards action and active engagement with problems or opportunities rather than reflecting over questions of how to create an outcome given the situation at hand. In their study to firms and bricolage, Baker and Nelson (2005) observed an unwillingness to stick to the conventional usage of practices, ideas and standards. The entrepreneurs insisted on trying out new ways of doing this and left room for risk and failure.

Using **resources at hand** is a central theme in the different studies reviewed by Baker and Nelson (2005). It refers to both physical assets, as well as skills or ideas that are easily available, very cheaply or for free, rather than specifically acquired to construct a pre-designed project (Lanzara, 1999).One can think of the development of new ideologies based on elements of existing myths and world views (Chao, 1999); or the construction of new laws from fragments of existing ones (Hull, 1991). This also captures the role of external resource constraints.

Another central theme running through the studies Baker and Nelson (Baker & Nelson, 2005) reviewed is the **combination of resources for new purposes** for different applications than those for which they were originally intended or used (see Cleaver, 2002, 2005 for similar findings), . In his case study on a community association in Tukal, Senegal, Galvan (2007) shows how seven young adults founded an association. Their strong bond originates from the ritual of male circumcision they underwent together in their youth. However, the technocratic type of leadership they applied derived from their working experiences in Dakar. The only reason the local community legitimized this type of leadership was because the seven had also shown respect to the traditional norms and values. Combining resources for new purposes defies assumptions of linear rationality; it is about recombining existing elements rather than fabricating them from scratch (Baker & Nelson, 2005).

Using this framework, we trace the emergence and functioning of two cooperatives which were successful in establishing market linkages for their members in Mali and Uganda. We do so using the following questions: First: How did the case study cooperatives 'make do' with emerging problems or opportunities? Second: what were the 'resources at hand' used by the cooperatives? And third: how did cooperatives 'combine these resources for new purposes' to perform in a continuously altering environment?

4.3 Methods and research area

4.3.1 Methods

Our interest in cooperatives as arrangements to facilitate market access was triggered by our working experience in development aid. We closely witnessed the increasing attention in development policy and practice to farmer organizations as means of achieving development objectives. In the field we observed the discrepancies between the theoretical assumptions underlying the development interventions and the practice and the diversity of well-functioning organizations at local level. We aimed to achieve an enhanced understanding of the functioning of collective action organizations engaged in agricultural marketing by doing case study research.

Our paper follows a comparative case study design based on qualitative research methods (Eisenhardt, 1989; Yin, 2017). A case study is an intensive, in-depth study of a bounded phenomenon (Gerring, 2004). Case studies lend themselves to making cautious causal inferences about the mechanisms of influence on organizational development and performance. We selected two cases of cooperatives that were successful in trading: (1) cooperative Nyetaa Waale trading in sesame in Mali, and (2) Alito farmer group working in sunflower seeds in Uganda. The cases differ in terms of sector, location and the actors involved. However, they lend themselves for comparison as they both concern a group of people that aimed to collectively succeed in trading food crops produced for the regional market. Both organizations realized the tasks of procuring produce, organizing finance, transport, bulking and selling and aimed to continue doing this, even when circumstances changed. The first step in both case studies involved the construction of a time path of key events and critical moments in the development of the cooperative. By means of literature research and interviews with key-resource persons we traced how historical processes in the local context had contributed to the emergence of the cooperatives. Interviews helped us to understand how the organizations had adapted to changing circumstances over time.

Next, we participated in cooperative meetings and took part in activities related to the cooperatives' tasks to comprehend how the cooperatives functioned in daily practice. We then used the concept of bricolage to grasp how these organized sustainable market linkages. For organizing and analysing the data we followed the dimensions identified by Baker and Nelson (2005): making do, resources at hand and a combination of resources for new purposes.

4.3.2 Case studies

In northern Uganda, Kole, the Alito Joint Christian Farmers Society[13] (hereafter referred to as Alito) engaged in the marketing of oilseeds (sunflower and soy) as well as the production of crops for local food security (maize and beans). Alito was established in 1998 and grew from 5 to 5500 members in 2015, clustered into 161 farmer groups. The structure of the organization was bottom-up; they were organized in 161 farmer groups led by a lead farmer who represented the group at the annual meetings. Alito farmer group had several sub-committees: a production committee responsible for finance and administration; a marketing and processing committee for market information and bargaining with buyers on behalf of the group; a disciplinary committee to settle grievances; and a maintenance committee responsible for transport and machine operations. Any farmer could become a member of a small farmer group, the group should however be able to pay its annual contribution. The cooperative covered eight districts and was registered as a cooperative society. The cooperative warehouse and office were located in Kole district, northern Uganda, 30 kilometres from Lira town, the commercial hub for Lango region. The northern part of Uganda had seen a civil war from 1985 till 2005 between the Lord Resistance Army (LRA) and the government. The peace agreement in 2005, as well as changes in the international market, triggered investments in the oilseed sector (oilseeds form an essential part of the diet in this area) by major processing companies, non-governmental organizations (NGOs) and the government. This led to an increase in production and a stronger competition between traders for produce.

In Mali, Miena, Nyetaa Waale cooperative engaged in the trading of sesame in Miena, Koutiala district in South-East Mali. Koutiala is one of Mali's main cotton production areas. Cotton has been the major source of revenue for farmers for decades. All cotton producers are organized in cooperatives that supply the Malian state company, CMDT (Compagnie malienne pour le développement du textile, Malian company for the development of textiles). However, being dependent on cotton showed to have its drawbacks. At the beginning of the 1990s, cotton prices dropped dramatically and many farmers in the district experienced problems supporting their households. In 2000, farmers in Miena responded to a call from the crisis committee of the national farmers' organization SYCOV: by boycotting production they showed their discontent with low cotton prices and the management of CMDT. A drought occurred in the following season and many farmers had to sell their equipment and oxen to cope with the crisis. In 2003-2004, farmers took up cotton cultivation again but could not realize its full potential due to a lack of equipment. Many farmers could not repay loans they had taken out with their associations and a large number ran into debt. By 2006, many farmers in the district had abandoned cotton (Roy, 2010). To survive farmers started to look to cash crops other than cotton. In view of the increasing international demand, sesame offered an opportunity.

13 The group is called 'joint Christian' because the backgrounds of the founding members were both protestant and catholic. With 'joint' they want to demonstrate their close community ties, despite differences in religion.

A group of farmers in Miena organized to engage in sesame trading, first informally, and since 2010 formally as a cooperative. The cooperative had a board with 15 members. Seven of the board members had a specific function, such as secretary, cashier, responsible officer for collection, responsible officer for trading. Eight others were assigned delegate. The board members all belonged to a different cotton cooperative and sourced sesame from this cooperative. An ex-employee of the state cotton company was the external advisor to the cooperative and assisted with market linkages.

4.3 Findings

4.3.1 Alito farmer group in Uganda

Making Do

Alito was founded in 1996 by 5 farmers (3 men, 2 women) as an informal farmer group. The chairman (who is still the chairman today) was a clergy in church and mobilized the farmers. From the beginning the group relied on his experience and expertise in management. The farmers were motivated by the low prices paid by traders buying their produce and selling it in Lira town. They aimed to 'by-pass' these intermediaries and receive better prices. In addition, they intended to improve production practices.

From the start, the group received support from the Ugandan Oilseeds Producers and Processors Association (UOSPA). UOSPA was founded in 1995, an association focusing on increasing oilseed production, with both farmers and millers as members. UOSPA contracted farmers for the multiplication of an improved sunflower variety, and Alito was one of the groups chosen for seed multiplication (Ton et al., 2010). UOSPA also assisted Alito in marketing their sunflower seeds and provided them with extension services.

Between 1998 and 2004, the group prepared to officially register as a cooperative. UOSPA helped them to elaborate a statute. The official registration as community-based organization at both the district and the national level in 2004 made the cooperative officially recognized and more visible to development organizations. Indeed, the formal registration, as well as partnering with a well-recognized player such as UOSPA, helped to gain trust from donors. NGO's started to engage Alito in their development interventions. Making connections with NGOs was enhanced by the end of the civil war in 2005, after which many NGOs developed interventions for rebuilding the agricultural sector in northern Uganda. Over the years, Alito received assistance from at least seven NGOs, two governmental organizations, three international donors (such as FAO and the World bank), three seed companies, and one bank. Alito thus successfully engaged with the opportunities available.

Overall, the group has done well and owned several assets during the time of the research: one main store, and eight other stores (one for each cluster) are rented during harvesting time. The cooperative owned its own truck and rented extra transport when

necessary to collect the produce at the level of the cluster. Alito also employed four extension officers who provided technical advice and extension services to cooperative members. Lastly, Alito had its own motorized sunflower oil mill, with a capacity of 2 MT, which was granted by FAO in 2006 and started operating in 2007. The installation of the mill attracted more farmers to the cooperative, as it enabled the cooperative to give farmers a slightly higher price. Normally, they processed about one third of the sunflower seeds themselves and sold the rest to other millers in the area. Unfortunately, the oil mill was not functioning during the time of research, as some parts broke down. Spare parts were very hard to find, as the mill was already outdated when they received it (stemming from 1914) and spare parts were to be imported from Kenya.

Making use of resources at hand

The cooperative was initiated during the civil war period (1985- 2005). This context was of major influence on the operation, functioning and finally the structure of the group. To start with, due to the insecurities of the war, it was difficult to organize transport. In the first year after establishment the farmers sold their produce to the same traders they were aiming to by-pass. However, the traders were now offering them a better price because of the bulk they were selling as a group. As a group they also had a better position to negotiate. In addition, the founding members started in Kole, a district that was relatively little affected by the war. People would take refuge here and started farming in the area. After the war many of these farmers moved back to their own villages, taking home their knowledge and enthusiasm for working cooperatively. This offered Alito an easy opportunity to expand to other districts.

Alito's organizing structure was also opportunistic. Being organized in small groups is an advantage for the cooperative in terms of bulking; they can collect from groups of on average 30 farmers, instead of going from farmer to farmer. In addition, often donor programs from both NGOs and the government required farmers to be organized in groups. The small groups have another interesting feature: as much as 66% of the groups interviewed have one or more intermediary traders as their group member. Their proven skills and capabilities (e.g. Schoonhoven-Speijer et al., 2017) are a valuable asset for small group in the organisation of bulking.

However, the capability of acting in response to opportunities of *individual* farmers sometimes came at the harm of the cooperative: several members engaged in what is termed 'side-selling', marketing oilseed destined to the cooperative to traders and other buyers. There was competition for the sourcing of raw material, especially for sunflower. Survey data (own survey, 2015) showed that on average 75% of the farmers sell their sunflower and soya output seeds to Alito farmer groups. Two other main buyers are a big processing company with its own outgrower scheme (20%) and intermediary traders (15%). This while the reported price for sunflower received at cooperative was 7% higher. However, intermediaries and the processing company offered ready cash

to farmers, which farmers needed for pressing issues such as school fees, or upcoming emergencies like illness or funerals (See Milford, 2014, for similar findings among coffee farmers in Chiapas, Mexico). The cooperative's official rules against side-selling were as follows: if it happened once, farmers were pardoned and counselled by the clergy or other elderly members of the cooperative. If the same person side-sold for three seasons, he or she was expelled from the group. The enforcement of these rules was less straightforward. One the one hand members of the management committee stressed the importance of bulking enough produce. On the other hand, they understood the need of farmers for ready cash, which was something they could often not offer: 'we allowed farmers to side-sell their produce, so that they could use that money for domestic problems'. Within the small farmer groups, farmers also hold each other accountable as it profits the group to be reliable sellers to the cooperative. To solve the problem of side-selling, the management stimulated farmers to grow other crops next to sunflower and soy, which they did not need to sell to the cooperative. In this way, farmers could raise income or provide in their own food during the period that the cooperative was waiting for payment from selling crops. To this end, the cooperatives not only distributed seeds on credit to produce sunflower and soy, but also for maize and beans. The costs of the seeds were distracted from the money a farmer received when selling to the cooperative.

Combining resources for new purposes

The embodiment of using existing resources for new purposes was the clergy who mobilized his church network for trading purposes and was now chair of the executive committee. He provided counselling services for farmers who did not adhere to the rules. This was a source of morality that generated trust and commitment to leaders and each other (Enzama, 2013).

Another example were the extra functions the cooperative has been fulfilling over time. The main goals of the cooperative were bulking oilseeds, overcoming middlemen, and enhancing bargaining power to acquire higher prices. Alito trained its farmers to improve the productivity and quality of their oilseeds. However, as the survey showed, an important motivation for farmers to join the group was 'VSLA': village savings and loans association. This is a system where group members jointly saved money, which was reimbursed at the end of the year. During the year, members could borrow from the group savings with a small interest, to use for small emergencies.

In addition, the cooperative received a low interest rate loan of the Ugandan Development Bank (UDB). The loan was first received in 2014, and included a total amount of 100,000 USD, of which 25% was used for buying produce from farmers. Farmers could apply to receive an amount of the remaining 75% and could use the money as they saw fit. Some invested it in farming, by renting or buying extra land, or for farming inputs, but it was for instance also used for the payment of school fees.

The cooperative was responsible for distributing the money and reimbursing it to UDB. The cooperative management estimated that the loan increased the number of members; if individual farmers were to access a loan, the interest rate would be much higher than when receiving it from the cooperative.

4.3.2 Nyetaa Waale cooperative in Mali

Making do

Two people can be regarded as the founders of the sesame cooperative in Miena, Mali. The first is an ex-field officer, here called Adama, from the state-owned cotton organization CMDT living in the regional capital Koutiala. After Adama was laid-off in 2003 because of the reorganization of CMDT, he engaged in trading. He identified sesame as a crop with market opportunity. Due to increasing demand by traders from India and China the neglected crop attracted farmers to cultivate it on a larger scale. Within four years Adama built a network of big traders based in regional trading hubs and even in Burkina Faso. These sometimes pre-financed him to procure sesame from farmers. To collect the sesame at farmer level Adama used his contacts from his previous job at CMDT. He delivered planting material to the secretaries of cotton cooperatives and asked them to distribute it, and then collect the sesame produced. At the end of the season he picked it up. However, often he was confronted with the fact that the farmers had already sold his sesame.

The second founder of the cooperative is a farmer, named Seydou, who was the secretary of a cotton cooperative Adama was working within the municipality of Miena. Adama already engaged in trading sesame. In 2001 he sold his sesame on the market in Koutiala. The trader buying his produce asked him to procure sesame in the villages and pre-financed him on a weekly basis. As secretary of the cotton cooperative, he contacted the secretaries of other cooperatives in the district and asked them to help him out. He distributed money so they could collect the sesame for him. They were remunerated with a percentage of the profit. He aggregated all the sesame at his house where the trader picked it up. At this time the demand of the traders was still irregular, they called him whenever they were approached by traders or companies from India. Consequently, his payments to the farmers were also irregular. For the farmers money gained by sesame was a bonus, cotton still formed their major income source.

In 2005, Adama met a woman who informed him that there was a considerable number of sesame farmers in the municipality of Miena. She brought him into contact with Seydou. Together Adama and Seydou decided to form an informal group to collect and market sesame. This would provide Adama with a stable supply and offer farmers a guaranteed outlet.

In 2007 the group organized a district meeting in collaboration with the mayor to increase membership in their organization. Twenty-three of the 38 cotton farmer cooperatives based in the district participated. It was decided that all interested cotton cooperatives would have a representative on the board of the sesame association, either as a board member or as a delegate. Under the supervision of the ex-field officer they divided roles and responsibilities. The ex-field officer was appointed in the role of external advisor.

In 2008 the group concluded its first contract with a company that would buy 100 tons of sesame. However, the company did not respect the contract and the farmers were left with their sesame. The ex-field officer decided that in order to be able to fight such fraud it was necessary for the group to register as a cooperative. In 2010 the association was finally registered as a cooperative.

Making use of resources at hand

Closer scrutiny of the functioning of the cooperative makes clear how the group of farmers uses the resources at hand, thereby not always taking law and prescriptions too strict. In 2001, the cooperative law was revised in line with the principles of the International Labour Organization. Under this new law, groups could not any longer register as an association, only as cooperatives. Within two years more than 7000 cotton cooperatives were created. However, though the government required farmers to organize in cooperatives and operate according to the cooperative principles as framed by the law and international conventions, the shortfall in capacity to assist farmers created room for manoeuvre at the local level. Davis (Davis, 2000) found that cooperatives in Mali rarely changed board members, decision-making was seldom democratic, and 'elite capture' occurred more frequently as the secretaries gained more and more power. This local interpretation of the law is clearly reflected in the functioning of our case study cooperative. As explained by Adama: 'The farmers had selected board members who had never produced sesame. People trusted them because they had leadership positions in the district.' The influence of pre-existing relations is also reflected in the fact that few sanctions were in use, as one of the delegates formulated: 'We have all known each other for a long time, we are brothers. If something happens, it can be discussed, and the person won't be expelled.' From 2005 to 2011 cooperative members did not pay their yearly contribution as was stipulated in the statutes. If there were expenses, for example for the registration as a cooperative, every board member would contribute.

One of the rules of the cooperative was to buy from farmers who were members of one of the cotton cooperatives represented on the board. Nevertheless, oftentimes sesame was also bought from non-members. The distinction between trading for the cooperative and engaging in other trade relations was blurred and the formal cooperative rules were not always exercised.

The cotton cooperatives were engaged in shared learning, input dissemination and bulking of cotton. They had little experience in trading themselves. For this the members of the sesame cooperative copied expertise from local traders. Like local traders lacking their own working capital, the ex-field officer and president looked for a big trader willing to pre-finance procurement. After pre-financing was arranged, the president made several secretaries part of the board to start collecting sesame within their cotton cooperatives. He sent them money. The board members thus functioned like a network of collectors who, depending on their negotiation skills, gain an individual profit.

Combining resources for new purposes

Why did the farmers trust Adama? And why did they invite specifically the secretaries of cotton cooperatives to establish the cooperative? A side-step into the history of the cotton sector in Mali shows how the cotton cooperatives formed a sound base for the sesame cooperative.

Since its establishment in 1974 the state cotton organization CMDT forced- and facilitated- farmers to be organized in groups. To facilitate efficient input dissemination, knowledge transfer and cotton collection the cotton cooperatives are composed of farmers that lived close to each other. Secretaries played an important role in the management of cotton cooperatives. To this day the secretaries bear the responsibility for book-keeping and relation management with CMDT extension field officers. The established organization of cotton farmers thus lent itself perfectly for the bulking of sesame and the choice for a board composed of secretaries was a logical foundation for the new association. Secretaries were responsible to acquire information on the planned production of each of their members and as such were also easily informed about the availability of sesame in their cooperatives. Secretaries knew each other through meetings organized by CMDT. This combination of knowing each other, being informed, known by farmers and having management experience, made the secretaries well positioned to lead a sesame trading collective. In addition, the relationship of the sesame cooperative with Adama was similar to the relationship the cooperatives had with CMDT field officers. Without Adama it would have been difficult for the sesame farmers to access external stakeholders. Moreover, he brought in knowledge, inputs and cash. The established structure and social relations in cotton organization thus facilitated cooperation and were partly reproduced in the new sesame cooperative.

The establishment of the group as a formal cooperative also fostered changes in functioning. Over the years the relationship between the group and Adama changed. After the registration of the cooperative Adama established his NGO. Subsequently, he was approached by donors to support and monitor cooperatives that were part of their programmes. He gradually took on a role as a technical assistant for different development programmes. In his new role, he encouraged the cooperative to apply the rules and principles as prescribed by the cooperative law and gradually the organization

absorbed new organizational practices. Participation in the development programme, 'improving sesame commercialization for small scale farmers', which the cooperative was linked to by Adama required the application of rules like transparent budgeting and joint decision-making. The programme offered opportunities like access to trade fairs where they could meet other traders.

4.4 Analysis and discussion

In order to enhance our understanding of how cooperatives organize sustainable market linkages we traced the development and functioning in practice of two cooperatives that were successful in trading.

In both cases existing relations and brokering activities already present turned out to be of great influence on the emergence of the case study cooperatives. In Uganda the church network formed the basis for collaboration in oilseed trading. In Mali, the foundation for cooperation was a longstanding cotton network. Both cases show that existing institutional arrangements, relations and ways of collaborating were re-used for new objectives; namely trading oilseeds and trading sesame. In both cases, a leader that had the capacity to mobilize and guide farmers and who was able to facilitate linkages with external stakeholders such as traders and service providers, turned out to be essential. In Uganda this role was fulfilled by the church leader, in Mali this was realized by a collaboration between an ex-field officer and a farmer leader. Both cases also show a form of articulation with trading practices present in the context. In Uganda, two-third of the small groups have an intermediary trader as their member. In Mali, board members of the sesame cooperative copied expertise from local traders, functioning like a network of collectors.

In addition to these existing (market and social) arrangements, also several specific events encouraged the emergence of the cooperatives. In Uganda the civil war turned out to facilitate farmers to come together. The end of the civil war caused a surge in NGO support, as well as a broadening of the cooperative's network due to farmers returning to their homes. In Mali a crisis in cotton and an increasing demand for sesame encouraged farmers to shift to sesame and search for new market linkages. It was however the agency of the farmers to make use of the new opportunities offered, that resulted in success. Over time both organizations adapted to changing circumstances in order to continue realizing their objectives. In both cases, the registration of the organization as a formal cooperative turned out to be important for acquiring access to service providers and markets, both necessary for succeeding in the objective of trading. For formalisation, it was again key that members were alert to changes and emerging opportunities.

Adaptations of both cooperatives were a result of active problem-solving rather than following an a-priori designed plan. The management of Alito cooperative was for instance pragmatic in effectuating rules concerning side-selling and compromised for the sake of good relations with their farmers. In a similar way, the UDB loan was used in a pragmatic way. The UDB didn't set strict requirements of how to use the money, and the cooperative as well as individual farmers were creative in how to use it. In Mali similar practices took place; board members gained a percentage of the sesame they collected, and the cooperative bought from members as well non-members to fulfil its contract obligations. The formal procedures and principles for cooperation were secondary to pragmatism, in order to achieve collective objectives.

Our observations correspond with the findings of Porter and Lyon (Porter & Lyon, 2006) in Ghana, were researchers identified a diversity of collective action arrangements in one village. Effectively this had nothing to do with formality and transparency. Even temporal organizations, such as cooperative labour groups and community road-maintenance groups could be successful in realizing their objective. The researchers criticized donors that imposed formalization and expected groups to exist for a substantial period as stable entities. In Ghana's traditional informal group's membership, focus, rules, and external alliances shifted rapidly in response to changing social, economic, and political conditions in a way which was not anticipated by donors. De Weerdt (2001) observed a similar dynamism and fluidity in collective action in Tanzania.

Using the concept of bricolage, we recognized that both organizations were impactful because of their ability to respond to changes and opportunities. Success in trading was not achieved by following a prescribed set of procedures or adopting an ideal type of organization structure. It is therefore impossible to foresee where organizations will emerge and in which form. The cases showed that the reactive problem-solving and response to opportunities is of more relevance to foster market linkages than formal structures and procedures, often required or imposed by external interventions.

4.5 Conclusion

We took a critical institutionalist perspective, an institutional bricolage approach, to understand how cooperatives become viable organizations to cater for sustainable market relations. Institutional bricolage departs from NIE in that it regards institutional formation as a socially embedded process rather than a deliberate and transparent managerial activity. To analyse our objective, we studied the functioning and development of two farmer cooperatives in Uganda and Mali. Using a NIE lens, one could claim the two cooperatives to be efficient arrangements to manage the transaction costs in their specific context. However, our case studies showed that there is more that explains their existence and viability. The bricolage approach encouraged us to

specifically look at how the two organizations emerged, interacted with, and developed in their specific environment. This focus on emergence enabled us to see that in both cases the socio-historic context and specifically the organizational infrastructure existing turned out to be of great influence. A closer scrutiny of the internal operation of the cooperatives taught us the importance of informal relations, authority, and flexibility. Moreover, the bricolage approach encouraged us to study the agricultural and market environment allowing us to better understand the specificities of each cooperative. The ability to strategically navigate in a context was of crucial importance to successful collective action in both case studies.

Based on our findings we suggest development policy and practice to include a critical institutionalist approach when designing interventions aiming to enhance sustainable market access for small farmers. We recommend shifting attention to the ability of a cooperative to embed in a socio-historical shaped local reality, rather than to comply to an ideal-type organization, which is in line with recent research on institutional diagnostics (Schouten et al., 2018). Interestingly, both case studies also shed light on the role of support delivered by NGOs. Both cooperatives did not solely depend on development programmes but did make strategically use of services offered. The objectives of the collective were leading in the way the cooperatives engaged with these external services providers. This teaches us that for NGO's and development practitioners it is important to well understand the 'raison d'etre' of the groups they intend to support.

We realize that our study also has limitations. We took two successful cooperatives as a starting point for the use of a bricolage approach, while it might be interesting for further research to apply a bricolage approach to the study of cooperatives functioning less well. Scrutinizing the emergence and functioning of such cooperative might shed interesting light on why cooperatives are successful in certain situations but less so in others.

By focusing on how cooperatives use both old and new resources at hand to realize a collective objective, we shifted focus from the structure and its effects, towards the functioning of an organization. We conclude that, in these cases, achieving sustainability is not so much about putting the right institutions in place, as it is about the capacity of an organization to continuously navigate a certain context successfully, and make strategic use of both old and new resources. Cooperatives can provide sustainable access to markets only when they know how to 'bricole' i.e. when they are capable of forming and altering the way they organize farmers in such a way that they remain embedded within the local context, and at the same time comply with the requirements of an external market.

4

'We built the store, to get produce directly from the farmers. The distance to Lira is 80km, and production is a lot here. The store will boost production as it will save time and transport in bulking.'

Mukwano's extension officer, male. Apac district, Uganda

CHAPTER 5

From contract farming to contract trading: dynamics of enforcement in linking Ugandan sunflower farmers to corporate buyers

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5. From contract farming to contract trading: dynamics of enforcement in linking Ugandan sunflower farmers to corporate buyers

5.1 Introduction

Linking smallholder farmers to markets and agribusiness has been high on the food and nutrition security agenda. Ensuring a consistent flow of food as well as guaranteed access to nutritious and affordable food by low-income consumers is key to achieving Sustainable Development Goal 2 (SDG 2). At the same time, food provisioning systems are rapidly changing, due to urbanization, diversification of diets or effects of climate change. Offering formal contracts, usually accompanied with the provision of credit and inputs, dominates intervention thinking and policy directions (Barrett et al., 2012; Meemken & Bellemare, 2020). Central to this line of thinking, which exposes a bias towards high value or export crop production (Ola & Menapace, 2020), is the aim to arrange a direct relationship between farmers and downstream buyers, assumedly increasing efficiencies, enhancing farmers knowledge and building stable relationships in dynamic market environments. In this research, we unpack what this 'direct relationship' exactly entails, and how it evolves over time. Below, we first discuss how the literature concerning contract farming leads to this objective.

The classical political economy study of contract farming in Africa by Little & Watts (1994) emphasized how contracts create a lock-in for farmers in a relationship with its buyer. The idea of lock-in is based on the initial design of the contract for the sourcing of a single cash crop, usually with prescribed technological packages, one type of output-credit and only one (international) market available via the output channel of the buyer. A lock-in situation (Glover, 1984; Little & Watts, 1994) occurs when expected benefits for the farmer do not materialize: then, the farmer might be unable to terminate and could have to keep contracting with the company just to pay off loans. Other studies in the 1980s and 1990s, however, identified several difficulties in maintaining the 'status-quo' of the contract. Case studies expose the effect of so-called hold-up problems (Gow & Swinnen, 1998), where the buyer has to delay payments, and the seller is in its turn lacking key inputs. A widespread response of farmers to hold-up problems is to look for alternate buyers, commonly referred to as side-selling (Barrett et al., 2012; Mujawamariya et al., 2013). This latter perspective indicates that enforcement of contracts is not-self-evident, however, how contract enforcement takes place is under-researched.

A complementary perspective, anchored in New Institutional Economics (North, 1991; Williamson, 2000), emerged in the 1990s, which analysed the institutional shaping of contracts and explained contracts as a way to handle transaction costs. This literature is essentially based on Coase (1937), who argued that the choice to insource or outsource

(the latter requiring a contract) depends on the transaction costs present. Transaction costs in developing countries are often such that the buyer needs some assurance of quality and lower risks of procurement, whereas farmers profit from lowering the risks of price volatility, and including resource provision (Gow & Swinnen, 2001). Studies in this field focus on the contract design and the resource provision side of the contract, relating characteristics of the contract to different transaction costs for smaller and bigger farmers, (Key & Runsten, 1999). More recent studies use a transaction costs perspective for analysing farmer preferences for contract terms and conditions (Schipmann & Qaim, 2011; Michelson et al., 2012; e.g. Abebe et al., 2013) and the welfare effects of smallholder participation in CF (Barrett et al., 2012; Bellemare, 2012; Wuepper & Sauer, 2016). In this literature, the existence of contract farming is linked to imperfections or inefficiencies in contextual market conditions, which explains possible benefits for both farmers and companies. The focus of this literature is on the *initial* design and introduction of the arrangement, and much less on how contract enforcement evolves over time.

The overview of contract farming literature still leaves several research gaps. The literature adopts a strong focus on either initial contractual design, and farmer's preferences, or the outcomes of contracts for farmers, mainly measured in terms of incomes (Ton et al., 2018). Both depict contract farming as a fixed and immediate relationship between farmers and company, thereby often overlooking the issue of contract enforcement and how this evolves in dynamic market and social environments. The company and farmer might have to respond to changes in terms of volume, space, seasonality, transaction costs; leading to changes in the ways the contract is enforced. These observations argue in favour of an analytical approach attentive to the evolving nature of enforcement in contractual arrangements after the initial conception of the arrangement. The objective of this paper is to advance a contextualized understanding of the dynamics of contract enforcement, and to do so in African staple crop markets.

A study of contract enforcement asks for an empirical focus on the intermediary. In practice, contract enforcement is often executed by an intermediary between the contracting company and the farmer (Oya, 2012), sometimes labelled as 'contract agent' (Schipmann & Qaim, 2011). In contract farming literature, the intermediary has however not received much attention. The notion of intermediation is mentioned by Poulton et al. (2010), who conceive the contract itself as an institution intermediating between farmer and company, but they do not make explicit whom is responsible for intermediation. Literature investigating intermediary actors, such as collecting agents and village traders (Schipmann & Qaim, 2011; Michelson et al., 2012), service providers (Hellin, Lundy, & Meijer, 2009; Key & Runsten, 1999) and producer organizations (Barrett et al., 2012) or cooperatives (Mujawamariya et al., 2013; Milford, 2014), look at these actors from the choice perspective of farmers, or as a factor negatively affecting the contract through 'side-selling' by farmers (Alemu, Guinan, & Hermanson, 2021). We argue for a better understanding of

the precise role of intermediaries' in bulking and marketing produce, as well as logistics services, especially under circumstances in developing countries where transaction costs are high (Fafchamps, 2001).

Intermediation might include service provision in terms of technical support, as well as support in logistics and bulking and can be exercised by different organizational actors. In this way, the paper builds on a growing literature demonstrating the importance of conducers - wholesalers, intermediary agents and logistics firms as interface within the market (Reardon, 2015; Legun & Bell, 2016; Liverpool-Tasie et al., 2020). Our study presents how the relationship between company and contracted farmers, mediated by an intermediary, evolves in distinct phases (Barrett et al., 2012), highlighting the role of intermediation in contract enforcement, and discusses what type of contract seems fit and practicable for sourcing a local food crop.

We situate our study of contract enforcement in market for staple food crops. An empirical focus on local food markets offers a complementary perspective to the rich body of literature focusing on international or high-value cash markets (Ola & Menapace, 2020). Staple food crops have specific dynamics to which the contract has to adapt (Rousseau et al., 2015). We use a case study of a leading processing and food manufacturing company in northern Uganda, shifting from the import of palm oil to local sourcing of oilseed. The company initially started with a classic contract farming arrangement, locking in farmers. This included the distribution of hybrid sunflower seeds on credit, distributed by company agents, who were also responsible for aggregating the sunflower grains at harvest. Eventually, over a timespan of almost 15 years, both farmers and agents started 'side-selling', increasing risks and transaction costs of the agent model. The company has proven to be able to expand the population of farmers for sourcing oilseed under changeful conditions and in a competitive playing field, and now, interestingly, also included cooperative and traders as intermediaries. Our analysis attributes this expansion to choices made in intermediation, which reflect capacities to come to working mechanisms.

For analysing how the enforcement of contractual arrangements in the sourcing of staple crops in local food markets evolve and are reshaped in response to changes in market and agro-ecological environments, we use an 'institutional diagnostics' approach (Rodrik, 2010). Rodrik's approach is based on macro-economics, and complements fields in the social sciences that tent to concentrate on organizational fixes or treatments (Schouten et al., 2018). Rodrik argues for an 'experimentalist approach', which starts by identifying what works and what doesn't, within a specific context. Experimentation entails the identification of the most binding constraint in a given context and searches for locally suited remedies. In a similar way, we aim to discover 'what locally suited remedies worked' in terms of contracting arrangements between farmers, intermediaries, and a company, and what failed.

The rest of the paper is laid out as follows. In our methods section, we explain how we study changes in intermediation over time based on mixed methods, including interviews, desk research, and a double-layered survey among farmers and intermediaries. The results section traces how contractual arrangements evolved over time and distinguishes four periods in which conditions for the contract were set, the contract was offered, expanded, and tightened. In each period, the contract farming arrangement is influenced by, and adapted to, key events in the context. The company eventually opted for contracting intermediary actors, and the analysis of this last phase also includes a quantitative assessment of the consequences of this emerging form of intermediation for farmers. In the discussion section, we argue that under the circumstances of producing for a regional staple crop market, with high transaction costs and competition for volumes, contract farming shifts towards *contract trading,* and needs intermediation *cleverly articulated* with the institutional character of existing market infrastructures.

5.2 Materials and methods

5.2.1 Research area and case study

The study presents the case of a leading food manufacturing company that implemented and continuously modified the arrangements in its sourcing strategies in a challenging context of a society recovering from civil war: the Lango region in northern Uganda. Civil war between the Lord's Resistance Army and government forces strongly affected rural economies in northern Uganda in the period 1996-2006, and the Lango region was confronted with refugees, farmers leaving the rural communities, and disrupted market infrastructures (Oleke et al., 2005; Obaa & Mazur, 2017). In the last phase of the violent conflict, in 2003, Mukwano, an Asian family business, started the import and distribution of a hybrid sunflower seed from South Africa, PAN 7351 (PAN), aided by Serere Research Institute to conduct adaptability and verification test of the new variety (Anyanga, 2007).

PAN was introduced using a 'classic' contract farming scheme. Mukwano started their scheme in 2003 with 6000 farmers (Vorley et al., 2015) and approximately 30 agents (own calculations, based on Johnston & Meyer, 2007). The contract included the basic elements defined by Kuijpers and Swinnen (2016): a technology transfer – hybrid sunflower seeds – provided on credit, linked to purchasing agreement, and including extension services. In its original design, the contract farming scheme included a network of so-called site coordinators, or agents, responsible for distributing the hybrid seeds and aggregating sunflower grains at time of harvest.

The distribution of hybrid sunflower seeds stemmed from a decision to shift to the local sourcing of sunflower in 1991, due to high world prices for palm oil which they were importing at the time. In 1995, a first improved sunflower variety was introduced in Uganda, Sunfola, which was bought and processed by, among others, Mukwano. However, volumes were not reaching Mukwano's demand, which is why Mukwano

decided to the import of PAN. This hybrid had, compared to Sunfola, a higher oil content (47%), almost double seed yield (1500-2500 kg/ha, compared to 620-750kg/ha), and was more resilient to diseases and drought. It has however one disadvantage: the pollination of hybrid seeds is human-made, seeds cannot be saved for the next year (Johnston & Meyer, 2007), whereas Sunfola can be saved for a few seasons.

Mukwano successfully shifted from importing palm oil to the local sourcing of sunflower oil by setting up, maintaining and expanding their sourcing network over a timespan of almost 15 years. They were able to extend the number of farmers to 75,000, organized in farmer groups, and, in addition to that, an unknown number of individual farmers. These farmers were now managed by 370 agents; and Mukwano also added two other intermediary channels: traders and cooperatives. They did so while adapting to increasing competition for sunflower outputs by other processors, as the increase in sunflower production led to a substantial growth of the number of processors in the area. In 2006 there were 4 processors, which expanded to 33 in 2014, with a combined processing capacity of almost 1000 tons (interview data).

5.2.2 Methods

We use a case study approach (Yin, 2017) to contextualize the evolution of the company's sourcing strategy and to intensively assess a few variables along several qualitative dimensions (George & Bennett, 2004). Variables addressed in this paper are the elements of contract farming (provision of technology, credit, (technical) knowledge, and price agreements (e.g. Kuijpers & Swinnen, 2016)) in contract enforcement between a processing company, intermediaries, and farmers.

We used a mixture of qualitative and quantitative methods to understand which 'locally suited remedies' Mukwano applied in the process of intermediation; and to document the implications for farmers selling to Mukwano. Qualitative methods used were 1) 24 in-depth interviews with key informants, and 2) desk research of scientific literature, policy reports and research papers. The following key informants were used: 5 interviews with Mukwano staff - the former extension services manager, the current field operations manager, two extension officers (for Oyam and Apac), and Mukwano's zonal officer for West-Lango; 5 Mukwano agents; 10 interviews with other intermediaries - 3 Lira-based traders, 5 Apac-based traders (one of them being an agent for Mt. Meru, Mukwano's main competitor), and the chairmen of 2 cooperatives (Alito and a Mukwano-initiated cooperative, Angetta); and lastly 4 external expert interviews with SNV's inclusive business advisor, SNV's research consultant, Lira's OSSUP facilitators, and the District Agricultural Officer of Apac. Interviews were held in Kampala, Lira, or Apac district. Apac district was one of the first areas were Mukwano started contracting farmers and set up bulking facilities, and the company is still very active in the district, which is why we chose to do our qualitative interviews with traders and agents in that area.

Interviews and desk research information were both coded, using code schemes based on the above described aspects of contract farming, the three types of intermediaries distinguished, as well as other key contextual aspects such as the civil war and processing competitors. Analysing data from all sources let us to distinguish four phases along which we describe the results. For each period, certain external events in the context led Mukwano to adapt 'what works' to the new situation, while expanding the contract scheme during every period. In each period, we therefore first describe the context, followed by analysing how the contractual arrangements evolved.

In terms of quantitative methods, we did a two-layered survey, of which the first layer are the three channels of intermediaries used by Mukwano: their own agents, village traders and cooperatives – and the second layer the farmers belonging to these channels. Our area of study were four districts (Lira, Oyam, Kole and Apac) in Lango region, northern Uganda, in which all three types of intermediaries were present. The intermediary survey was mostly used as descriptive data for the describing the four periods and choices in intermediation, while the farmer survey is mainly used for describing the outcomes of intermediation for farmers.

The intermediary survey included the following: Mukwano agents (N=71), village traders (N=103); and farmer groups under Alito cooperative (N=54). Alito cooperative was established in 1998 by five members. Since then they grew to 5500 members in 2015. Alito used improved seeds for several crops, including Mukwano's hybrid sunflower seeds. Sampling was done as follows: agents and farmer groups were drawn at random from a list provided by respectively the processor and the cooperative. The traders' sample was drawn from the survey area at random (after estimating the total number of traders within one district).

The second layer of the survey, the farmer survey, included 318 farmers, divided in three groups: farmers under contract with the company via an agent (N=138), cooperative members (N=103), and a control group (N=78) presumably selling to traders. The first two sample groups were drawn at random from a list provided by the processor and the cooperatives, whereas the control group was drawn at random from the same area the other farmers were located. The latter group appeared to be slightly problematic. Upon analysing the data, the control group still included 42 Mukwano member farmers, and 4 Alito member farmers; leaving the number of actual control group farmers at 35. However, based on data of the Uganda World Bank Living Standards Measurement Study – Integrated Surveys on Agriculture (LSMS), we calculated that one out of six hybrid sunflower farmers is a non-contracted farmer,[14] which is similar to the ratio in our survey, where now one out of five farmers is a non-contracted farmer. It also shows the pervasiveness of the Mukwano bulking network and the ease in which non-contracted farmers can access sunflower seeds. However, we had to decide to only give descriptive data, as the size of the sub-samples renders a power too small for further statistical analysis.

14 in total in the surveyed area, there are an LSMS estimated 90,000 hybrid sunflower farmers; and Mukwano claims to be working with 70,000.

5.3 Results

This section tracks how the sourcing strategy and contract enforcement of the company evolved and distinguishes four periods in which (i) conditions to offer the contract were set (1991-2002), (ii) the contract was offered (2003-2006), (iii) sourcing is expanded (2007-2010), and (iv) contract enforcement shifted to intermediaries (2010-2014). Per period, we first map key events and describe the changing circumstances, and subsequently show how the contract evolved in this period. After describing the last phase, we look closer into the consequences of intermediation for farmers.

5.3.1 Period 1: setting conditions (1991-2002)

Mukwano's switch from importing palm oil to processing locally sourced sunflower took place in the context of other transitions in the edible oil sector. Until the 1970s, Uganda's most important oilseed crop was cottonseed, mainly produced in northern and eastern Uganda. The cotton sector completely collapsed in the 1980s, due to high world prices, mismanagement of cotton cooperatives, and especially political turmoil under the subsequent reigns of Amin and Obote (Doom & Vlassenroot, 1999; Oleke et al., 2005; Tschirley et al., 2006; Baffes, 2009). Since then, cotton has been replaced by sunflower at a large scale.

Unfortunately, as an aftermath of the political turmoil of the 1980s, northern Uganda was experiencing civil war at the time between the Lord's Resistance Army (LRA) and government army forces, which lasted for over twenty years (1994-2006). The LRA set out to end both the Museveni regime, and the marginalization of the Acholi people (a region in north-west Uganda); but over the years it became a war against the Acholi themselves, attacking civilians to recruit soldiers and steal resources (Doom & Vlassenroot, 1999). In addition, Karamojong pastoralists from Eastern Uganda intensified cattle raids in the 90s, dramatically diminishing cattle population in many regions (Oleke et al., 2005). The combined effect of civil war, livestock destocking, and the downfall of the cotton sector affected the local economy in northern Uganda: markets were difficult to access, and investments hindered. This resulted in loss of incomes and labour constraints as farmers were forced back into hoe cultivation (Higgins, 2009; Bird et al., 2010). These violent conflicts hampered the initial development of the sunflower sector.

In the 1990s, however, national government, in collaboration with international donors such as USAID and IFAD, endeavoured to revive the edible oil industry and invested in sunflower, already grown in northern and eastern Uganda at a small scale. Sunflower was preferred over cotton, due to its agronomic suitability for these regions, its comparative ease to grow, and its possible contribution to edible oils, an important element of healthy diets (Turiho-Habwe, 1992; Laker-Ojok, 1994; Anyanga, 2002; Johnston & Meyer, 2007). As part of these policies, an improved open-pollinated sunflower variety, Sunfola, was introduced in 1991, with 10-25 percent yield advantage to

local varieties, and 25-40% more oil content. Farmers in northern, western and eastern Uganda were supplied with Sunfola seeds by the Ugandan Oilseeds Producers and Processors Association (UOSPA), founded in 1995. The government also distributed Sunfola, via the IFAD-sponsored 'Vegetable Oil Development Project' (VODP), which ran from 1997 until 2012.

In this context, Mukwano decided to start local sourcing sunflower due to high world prices for palm oil. They established a processing facility in Kampala in 1991, the same year Sunfola was introduced. As a third channel, Sunfola was sold to Mukwano enterprises for distribution among farmers. Mukwano started establishing wholesale depots in various locations, which acted as buying agents for sunflower, as well as the sales of other Mukwano products like soap and oil. And Mukwano created their own network of village traders who penetrated deep into the rural areas to procure raw materials (Turiho-Habwe, 1992; Laker-Ojok, 1994): 11% of the company's agents started before 2003. For purchasing sunflower, Mukwano made use of already existing networks of village traders (Schoonhoven-Speijer & Vellema, 2020). Yet, the need to ensure a consistent supply of oilseed feeding their processing facilities induced the company's interest to install contracts with smallholder farmers as their key suppliers, in addition to oilseed purchased in local markets.

5.3.2 Period 2: offering the contract (2003-2006)

Under the above described uncertain circumstances, Mukwano set up a contracting scheme in the Northern region in 2003. The introduction of Sunfola seed increased volumes, quality and oil content of sunflower seeds in the market, but volumes were not reaching Mukwano's demand. The company therefore decided to import a hybrid sunflower seed, PAN 7531, from South-Africa for distribution among contracted farmers. Mukwano started their scheme in selected districts in the Lango region, namely Lira, Kole, and Apac, not bordering Acholi and less affected by the civil war.

In the initial scheme, Mukwano provided farmers with hybrid seeds as in-kind credit. At harvest, the cost of seeds was deducted from the farmers' returns. Farmers could also apply for inputs (fertilizer and herbicides) on credit. The contract specified that all produce must be sold to Mukwano. The contract also established quality standards, a floor price, free extension services, and the commitment of Mukwano to provide input seed in a timely fashion (Johnston & Meyer, 2007; Vorley et al., 2015). The contract was signed once and was binding whenever the farmer received seeds from Mukwano, or until one of the parties communicated it 4 months in advance. The contract was signed by the farmer and a Mukwano official and witnessed by the chairman of local government. The latter indicating that the local administrative authority could be mobilized to enforce the contract if necessary (Ton, Opeero, & Vellema, 2010). The contract allowed the company to take 'appropriate legal action in the event of side selling'. An example was given where the names of side-selling farmers were announced

on the local radio, during Mukwano's radio program (Johnston & Meyer, 2007). Also, police was used in at least one occasion to control free-riding (Ton et al., 2010). Binding farmers and controlling side selling to an existing network of traders and smaller millers processing Sunfola, were important features of this initial set-up.

Mukwano worked with agents for distribution of seeds and aggregation of grains at the time of harvest. In addition, they were channels for technical advice, setting up group training meetings, selling tarpaulins for drying sunflowers, and helping farmers transport their harvest. They also monitored farmers' production (Oremo, 2008). Agents were not employed by Mukwano, but worked on a commission basis, and one agent worked within one parish. They had to meet certain minimum educational and capability requirements, such as being a farmer, owning a bicycle, at least an 11th grade education level; and they signed a contract with Mukwano that established their responsibilities and commission structure (Johnston & Meyer, 2007). Already having trade experience seemed to be an important requirement as well: two-third of our sample was already working in agricultural trade before starting as a Mukwano agent.

In managing the logistics of the contract, extension workers and financially supported farmer groups were important. First, extension workers - official Mukwano employees, initially four – had 'traditional' extension tasks such as organizing demonstration plots and advising farmers as well as agents on how to grow hybrid seeds. In addition, they also had a role in terms of logistics and supervision: extension workers distributed the hybrid seeds to agents, and they supervised agents. In this role, they were labelled 'area coordinators'. Second, farmers were organized in small groups of 20-30 farmers to facilitate bulking. Each group had a 'lead farmer', and every agent was supervising 8 to 10 farmer groups. Mukwano was aided by setting up extension services, as well as organizing farmers in groups, through a USAID program, the Agricultural Productivity Enhancement Program (APEP), which ran from 2003 until 2008 (website USAID). Extension workers and farmer organizations brokered the relationships with farmers located in many rural villages across the area.

After two years, the company abandoned input credit to farmers rather quickly. they shifted to subsidizing half of the costs of the seed; farmers had to pay 3000 UGX/kg. After four years, all input finance was eliminated, and farmers were charged the full costs for the seeds at the beginning of the season (7000 UGX/kg at the time). Mukwano decided to do so, facing a risk of side selling seeds to traders. In addition, Mukwano did not see a need to offer in order to meet production goals (Johnston & Meyer, 2007). Farmers were enthusiastic to take up a new, high-yielding variety, given the state of the local economy. They even made advance payments for seeds: agents took orders of farmers at the beginning of the season, collected money, and issued an advance sales receipt. Agents then collected seeds from the company and distributed them to farmers (Ton et al., 2010). Mukwano provided direct finance to agents and provided cash advances for

purchasing harvest from farmer groups. These were short term (1-2 days) advances, given to a borrower 'well known to Mukwano, and who has made an investment in developing a relationship with the firm' (ibid, 2007:40). This confirms recent research on the use and role of credit in input purchase, where cash crop farmers rarely receive credit from processors (Adjognon, Liverpool-Tasie, & Reardon, 2017). However, finance is provided to agents, in order to enable procurement of grains in cash.

Another particular feature of the company's sourcing strategy was the agreement on a floor price at the beginning of the season, and to not raise this price during the season, even when shortage of local seeds would drive up prices offered by local millers (Johnston & Meyer, 2007). Nevertheless, farmers were still motivated to sell to Mukwano, and competition for produce was not high yet. Farmers had little access to markets, and sunflower was considered an industry that could provide opportunities (interview Mukwano Officer, February 2016).

Mukwano saw sufficient momentum for the sunflower sector and invested in a warehouse in Lira in 2005. Up till then, produce bought from intermediaries or traders would directly be transported to Kampala (Lira trader, April 2015). In addition, hybrid seeds were relatively easy to grow, as they needed little rain and little weeding (OSSUP facilitator, April 2015). On the other hand, under the circumstances of civil war, Mukwano was unable to expand their sourcing area. They started with 6000 farmers in 2003 and increased to 7500 farmers in 2006 (Johnston & Meyer, 2007; Vorley et al., 2015). Finding new avenues to increase the volumes available for processes became an important challenge that the company tried to address.

5.3.3 Period 3: expanding sourcing (2006-2010)

The year 2006 marked the end of the civil war and so-called 'internally displace people (IDP)' camps closed in 2007. Farmers were allowed to go home and pick up farming again (Oyam extension officer, December 2015). For Mukwano, this came as an opportunity to expand their contracting scheme, and the number of farmers increased from 7500 in 2007 to 54,000 in 2010 (Beyssac & Kamoga, 2012). The scheme expanded into other districts, such as Oyam, Otuke, Alebtong, and Amogo (interview chairman agents, February 2016). Mukwano's field operations manager explained that this expansion led to the decision to move their processing machineries from Kampala to Lira. In 2007, a 300-ton capacity oil mill is installed (interview October 2013). This increased processing capacity necessitated the company to arrange a reliable supply of oilseeds.

In parallel, momentum in the sunflower, and wider oilseed, sector led to the establishment of the Ugandan Oilseed Sub-sector Platform (OSSUP) in 2007. The platform united large- and medium-scale processors (including Mukwano), farmers' organizations, financial institutes, NGOs, knowledge institutes and agricultural input providers, with the goal to stimulate coordinated action in the sector. Actions of the

platform halted Mukwano's monopoly on hybrid seeds, pressured by traders, processors and farmers. From December 2007, part of the hybrid seeds were distributed by input dealers of the Uganda National Agro-input Dealers Association (UNADA) (Ton et al., 2010; Vellema et al., 2011). Farmers who bought seeds via UNADA had the liberty to sell sunflower grains to any processor or middleman. Some of the small processors also purchased hybrid seeds from UNADA to sell to farmers (Oremo, 2008).

Mukwano now had to compete with UNADA input dealers in seed distribution, and therefore made sure seeds were more easily available via their own channels. Instead of farmers paying for seeds in advance to the agents, agents started operating more like stockists themselves. Seeds were distributed to agents directly, so that farmers could buy seeds from agents in cash (Ton et al., 2010). This gave agents the opportunity to sell the seeds to individual farmers as well. On the other hand, the price of seeds was increased from 7500 to 11,000 UGX/kg. This might have been a strategy for Mukwano to receive some profits on the seeds; thereby compensating for not getting all the expected grains back (Mukwano officer, interview February 2016). Nevertheless, it ended Mukwano's monopoly on hybrid seeds and the contractual arrangement enforcing exclusive marketing of sunflower to the company ceased to exist (Ton et al., 2010). This led to several changes in the arrangements of intermediation, to ensure capturing most of the hybrid sunflower harvest.

Opening up the seeds market led to active cooperation with two other types of intermediaries: cooperatives and village traders. As Mukwano's field operations manager explained, *'we had to open up other channels, because we needed our grains back' (interview January 2015)*. Concerning cooperatives, Mukwano was aided by SNV Netherlands Development Organization (SNV) to organize farmers into cooperatives. Four larger cooperatives were established, representing a total of some 2000 farmers. In addition, Mukwano started cooperating with already existing cooperatives, among others Alito cooperative, which were used both for seed distribution and aggregation of grains and expanded its buying network to other intermediaries. The company collaborated with village traders primarily to aggregate grains, not for distribution of hybrids. Some of them were offered advance finance: in 2014, 15% of the traders reported to receive advance from Mukwano.

Another change in intermediation via agents and traders was that Mukwano decided to pay the market price for grains and, if prevailing market prices were higher than the floor price, prices were raised, thus compensating the higher seed prices. Moreover, the company decided to purchase and process two more crops, soya (since 2009) and maize (since 2010), without providing services, but diversification motivated farmers to keep selling to Mukwano, and crop rotation was seen as beneficial for soils (extension officer Oyam, December 2015). On the other hand, Mukwano was struggling to pay farmers in cash. Advance finance was still provided to agents, but produce was also bought

on credit (Mukwano agent Apac town, April 2014). Yet, according to Ton et al. (2010), efficiency in logistics and arranging payments were key to the company's strategy to sustain its position as dominant buyer. Opening up both the input market and the grains market led to less strict contract enforcement: Mukwano realized that the use of police and legal action against farmers was not a viable option and had adverse side-effects. Resultingly, the company considered alternate contractual arrangements to ensure a consistent supply.

5.3.4 Period 4: moving towards contract trading (2010-2014)

In addition to navigating the relationships with farmers and a network of traders and intermediaries, the company was confronted with intensified competition for access to oilseeds. The number of processors and their processing capacity grew (see Figure 5.1), and in 2010, a major competitor established another 300-ton processing plant in Lira. This large conglomerate company, Mt. Meru, was similar to Mukwano and started buying sunflower in Lango from 2009 onward. Mt. Meru did not contract farmers but bought Sunfola and PAN from village traders and Mukwano agents. Due to Mt. Meru buying from the latter, many agents were not able to pay back advance money, resulting in a debt of 400 million UGX in 2011 (interview Mukwano agent, April 2015). In respect to Mt. Meru buying hybrids from traders, one Lira-based trader, and supplier of Mukwano, explained that the first time he sold hybrids to Mt. Meru, Mukwano took the case to the police. However, the police argued that Mukwano did not have an official contract with the trader, and that he could sell hybrids to anyone. After that, the trader started supplying Mt. Meru, which advanced money to the trader (interview Lira wholesaler, April 2015).

In 2012, Mt. Meru ventured into a contracting scheme, including the distribution of seeds; however, until the end of the research, the company's contracting scheme was not successful. Mukwano, on the other hand, managed to expand from 54,000 to 75,000 farmers in this period, with the ambition to expand to 100,000 farmers in the coming years (interview field operations manager Mukwano, January 2015). The company was again aided by an NGO, CLUSA, to train farmers on 'conservation agriculture' between 2013 and 2015 (interview, Oyam extension officer Mukwano, January 2016). Mukwano responded to Mt. Meru's competition with several measures, aimed to make sourcing more difficult for Mt. Meru. Central to Mukwano's strategy were improved bulking logistics and increased control over agents.

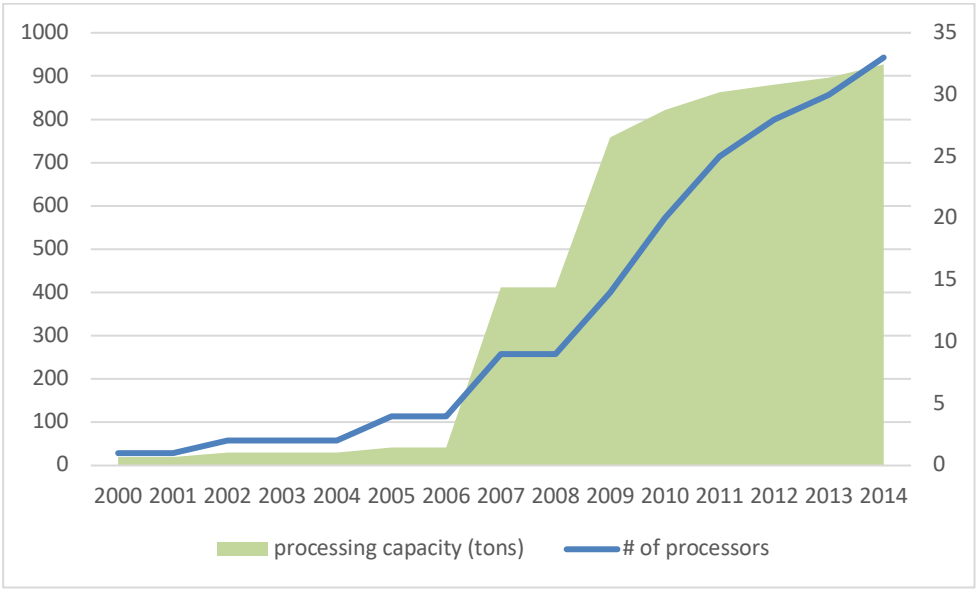

Figure 5.1 Development of sunflower processing capacity in Lira, 2000 - 2014

In 2014, Mukwano expanded their storage facilities in the villages by building collection, or 'marketing', centres (field operations manager, January 2015). A total of five stores were constructed in Lango (in Apac, Oyam (2), Dokolo, and Alebtong), with a donation from ABI trust (interview Apac extension officer, December 2015). These stores served to enlarge bulking capacity in the rural areas – the Apac store's capacity was 720 MT -, and to distribute hybrid seeds. Other functions attached to the stores could include a tractor hiring service, supply of bags and tarpaulins, and sales of other Mukwano products (soap, oil, and chairs) (District Agricultural Officer Apac, January 2015). Every store was equipped with tools to measure quality. Extension officers oversaw the collection centres.

Bulking remained the most important function of the stores, which saved transport time. For instance, trucks at the store could drive 4 or 5 times a day to collect produce from agents and farmers, instead of a truck having to go back and forth to Lira (interview extension officer Oyam, December 2015). Consequently, bulking was much less centred in Lira and agents were paid quicker. Without collection centres, off-loading in Lira could take up to one week, which implied delay in payment for agents and extra transportation costs because trucks stayed overnight. An interviewed agent living close to the store (Apac town, December 2014) explained that the collection centre saved him from renting his own store for the season. He now *'just picks the bags and brings them to the main store'*. He thought that the stores also benefitted farmers because especially large farmers brought their produce straight to the store, which enabled Mukwano to raise prices and to distribute extra's to farmers from these stores, such as soap. Traders, on the other hand,

experienced these new bulking centres as a threat for their own businesses (Lira based wholesaler, December 2014). Thus, investment in logistics closer to the farmers enabled Mukwano to keep more control over volumes and side-selling.

The largest change in intermediation were changes in the advance financing of agents. After experiencing debt in 2011, due to agents not repaying, Mukwano stopped making advance payments for a few seasons. Agents had to bring farmers' produce on (farmers') credit to the factory, receive money there, and then pay the farmers. In 2014, a new financing model was introduced: rather than pre-financing, Mukwano recommended several of its agents for a bank loan at Centenary Bank, providing information such as the capital an agent normally uses, and their trade capacity. The agent, rather than the company, had to provide security such as land or buildings, and the agent paid an interest rate (Vorley et al., 2015). This had several advantages for Mukwano: the company did not bare the risk of giving out credit, had less transaction costs, and it was made easier for agents to pay farmers directly in cash. Almost two-third of the agents surveyed applied for the loan.

According to one of the agents (Apac town, December 2014), the loan system was helpful, because buying sunflower needed substantial quantities of ready cash and the loan made this available. He found the conditions of the loan agreeable, and it was only for the buying season of two months. It also forced him not to use the money for other buyers than Mukwano: '*you cannot give cash to anyone, otherwise you will be arrested; and they will sell your house*'. Another agent (Ubuje sub-county, Apac, December 2015) confirmed the importance of direct cash payments for binding farmers. However, agents also experienced some disadvantages with this system, such as the interest on the loan, other bank charges for opening and keeping the account, or the bank refused their collateral or issued less money than what an agent applied for, which was the case for sixty percent of those agents surveyed. Therefore, other sources of credit were used, such as friends or relatives (25.5%), or alternative credit institutions such as Village Savings and Loans Association's (VSLA) (15.7%), whereas 28.2% of the agents reported not using any credit at all. Arranging access to finance enabled the company to bound agents to their sourcing strategy.

Seemingly, Mukwano tightened its control over their agents, while consistently buying via other intermediaries as well: traders and cooperatives. Relationship with traders seemed rather loose. Traders sold almost 40% of their sunflower grains through Mukwano, compared to almost 30% of the traders selling to Mt. Meru. Only 15% of traders selling to Mukwano reported to receive advance payment. This was similar to the percentage of traders receiving advance from Mt. Meru, 19%. These figures in terms of advance resemble the practice of Lira wholesalers. They also made a distinction between village traders with whom they worked for a long time and who always received advance (resembling Mukwano's agents), and village traders with whom they worked

on an ad-hoc basis (Schoonhoven-Speijer & Vellema, 2020). Also, several cooperatives acted as agents, as they received hybrid seeds to distribute to their farmers, and then sold them back to Mukwano. Cooperatives did, however, not receive advancements to aid in purchasing hybrids.

In addition, Mukwano tried to deal strictly with their own agents in giving out hybrids, who were expected to control side-selling. A small trader, who also dealt in inputs, explained that he used to give money to a neighbouring agent to buy hybrid seeds from him. However, the second season of 2014, the agent gave him back the money (interview village trader, Apac, December 2015). Indeed, only three percent of the agents sold seeds to others than farmers (traders and/or input dealers). A way of ensuring that farmers were not side-selling, was explained by one of the agents (Apac, December 2015): '*you apply for the seeds, but they will give you seeds according to your bags from last season. So, you have to keep working hard to get the grains back'*. An agent's performance in the latter season was thus leading for the volume of hybrid seeds he received for distribution in the next season. Some of the interviewed agents mentioned to give out 'promotions' in the last few seasons to encourage farmers to sell to them, such as 1 soap for 1 bag of sunflower, and 1 basin for 2 bags; and other things like cooking oil, T-shirts, and even bicycles. During the season, agents kept track of the volume of seeds given out and calculated how much grains they were supposed to get back per farmer. Agents also explained that they signed an agreement with Mukwano stipulating to sell their sunflower and their soy only to Mukwano. These measures seemed to pay off: not one agent reported to sell sunflower grains through another outlet than Mukwano (and the same holds for soya). However, agents might have been afraid to report side-selling due to the company's control measures.

In this fourth period, Mukwano faced increasing competition for produce. Its major response was to shift the emphasis of the contract, or the lock in, from farmers to a network of intermediating agents and village traders. Next, we explore the consequences of what we label as a shift from contract farming towards contract trading for the relationship between farmers and intermediaries.

5.3.5 Consequences of contract trading for the relationship between farmers and intermediaries

In this section, we explore the consequences of contract trading for the relationship between farmers and several intermediaries. The section is laid out as follows. We first look into the distribution of seeds (Table 5.1), secondly at the channels farmers use for selling back the sunflower grains (Table 5.2), and lastly strategies of the buyer concerning the transfer, such as the price for grains, location of transfer, and loyalty to the buyer (Table 5.3). In each table, the data is presented in three ways: per buyer, per channel the farmer is (or is not) a member of, and in farm strata. The latter gives insights in whether buyers make a difference between smaller and larger farmers, for

which the size of the farm in acres is used as a proxy. In terms of the channels, we consider farmers Mukwano member if they are a member of a Mukwano farmer group, and label them as 'contracted farmers'. Non-members were members who were neither member of a Mukwano group nor a cooperative member.

Seed distribution

All farmers in the sample grow hybrid seeds, we only came across 2% of farmers growing local seeds (including Sunfola). This means two things: farmers growing hybrid seeds were overrepresented in the sample (according to LSMS data of 2015, around 25% of the farmers in the area were growing non-improved seeds). However, it also shows how easily available hybrid seeds were via the Mukwano and the cooperative channel. Farmers did not use any other channel for hybrids.

Table 5.1 details the distribution of seeds. Of the farmers being a member of a Mukwano group, 97.5% purchased their hybrids via Mukwano, whereas Alito members mainly received their hybrids via the cooperative: 82% bought hybrids at the cooperative. So-called 'side-buying' is done by 21% of the cooperative members, who bought hybrids at a Mukwano agent as an individual farmer. Of the farmers not being member of any group, also 91.4% received hybrids via Mukwano.

Table 5.1 Overview of distribution of hybrid seeds: share of farmers, credit, volumes and prices

	Variable	Divided by member groups			Divided by farm size	
Buyer		**Mukwano**	**Coop**	**Non-member**	**0-2h**	**2+h**
	Hybrid seeds bought (%)					
Mukwano	75.4	97.5	21.5	91.4	67.9	82.7
Coop	25.0	2.5	82.3	2.9	31.3	18.8
	Seeds on credit (%)					
Mukwano	0.9	2.5	5.9	0.0	0.0	0.9
Coop	71.2	50.0	70.8	0.0	82.9	52.0
	Volume seeds (kgs)					
Mukwano	7.533	7.856	5.723	7.219	5.303	9.336
Coop	5.742	7.000	5.353	7.000	4.024	8.560
	Price for seeds (USD/kg)					
Mukwano	8.606	8.413	9.176	9.124	8.613	8.601
Coop	9.733	10.985	9.714	10.606	9.446	10.106

Note: traders and other are not included as source, as only 0.8% reported using this channel for accessing seeds.
Source: own survey data, February 2016

A large difference between retrieving seeds via Mukwano or via Alito, is that Alito farmers were able to receive their seeds on credit: 71.2%, compared to 5.9% of farmers buying seeds at Mukwano. Especially smaller farmers make use of receiving seeds on credit at Alito: 82.9%, compared to 52% of the households with a larger farm. Being able to receive seeds on credit might be a motivation for Mukwano farmers to get seeds at the cooperative: out of the small share of Mukwano farmers who bought seeds at Alito (2.5%), 50% did so on credit. Of the non-members, no one bought their seeds on credit. In terms of volumes, smaller farmers are again more likely to use the cooperative; they use on average 1.5 kg less seeds than farmers buying at Mukwano.

Concerning the price paid for seeds, it stands out that the price per kg for hybrid seeds is on average 1.1 USD/kg higher at the cooperative. Another interesting observation is that farmers pay a lower price when they buy via their own channel. Mukwano farmers pay 8.4 USD/kg for buying seeds at Mukwano, whereas Alito farmers and non-members pay on average 0.6 dollar more when buying seeds at Mukwano. At the cooperative, this difference is even larger: Mukwano farmers and non-members pay 1 dollar more per kg at the cooperative, compared to cooperative members. Farmers thus seem to be rewarded when buying seeds at their own channel.

In short, the distribution of seeds shows that hybrid seeds are easily available to both contracted and non-contracted farmers. Non-contracted farmers do however pay a slightly higher price for seeds, compared to contracted farmers or cooperative members. Smaller farmers are more likely to retrieve their seeds at Alito cooperative. Although prices for seeds are slightly higher there, it gives the advantage to get seeds on credit. This was also a motivation for some Mukwano farmers to retrieve seeds via Alito.

Selling grains

Table 5.2 shows via which channels farmers from the several member groups sold their hybrid sunflower seeds. Mukwano farmers were the least likely to side-sell: 97% of Mukwano farmers sold their hybrids back to a Mukwano agent; 3% sold via Alito, and 4% via traders. Alito members were side-selling a bit more[15]: 85% of produce went back to the cooperative, whereas 18% of the cooperative members sold their hybrids to Mukwano, and 6% to traders. The percentage non-members side-selling is highest, although still low: 86% sells their seeds back to Mukwano, and 14% sells to traders. Again, smaller farmers are less likely to sell via the Mukwano channel, and instead more likely to sell to the cooperative. The percentage of farmers selling to traders is similar for both smaller and larger farmers (around 6%). Mukwano farmers are thus rather loyal to their channel, while cooperative members and non-members spread their sales more.

15 Alito farmers bulk in farmer groups, and our farmer group data shows that also at farm group level, farmers side-sell: 22% of the groups reported side-selling. Of these side-sales, roughly 45% goes to Mukwano agents, another 45% is sold via traders, and a small share, 10%, is sold via Mt. Meru. Unfortunately, we don't have this data for Mukwano farmer groups; side-selling might occur at Mukwano farmer group level as well.

Table 5.2 Sales of hybrids seeds, compared per buyer and group member

	Variable	Divided by member groups			Divided by farm size	
Buyer		**Mukwano**	**Coop**	**Non-member**	**0-2h**	**2+h**
	Hybrid grains sold (%)					
Mukwano	73.0	97.0	18.0	86.0	66.0	80.0
Coop	26.0	3.0	85.0	3.0	31.0	20.0
Trader	6.0	4.0	6.0	14.0	5.0	7.0
	Volume hybrid grains sold (tons)					
Mukwano	2.322	2.364	1.271	2.549	1.537	2.966
Coop	1.606	2.370	1.604	1.750	0.723	2.948
Trader	0.696	0.790	0.422	1.301	0.467	0.873

Note: we left the 'other' channel out, since on average only 1% sold seeds via another channel than Alito, Mukwano, or traders.
Source: own data collection, February 2016

In terms of volumes, the sunflower sales of Mukwano farmers and non-members were comparable (around 2.4 ton), whereas Alito farmers sold on average 1.7 tons. This is in line with the smaller volume of seeds purchased by cooperative farmers. In terms of volume, Alito farmers were loyal to their channel: the volume sold by cooperative farmers to Alito (1.6 tons) was on average slightly higher than the volume sold by cooperative farmers to Mukwano (1.27 tons). Non-members also sold their highest volume to Mukwano agents, an average of 2.55 tons, compared to 1.75 tons to Alito, and 1.3 tons to traders. With the latter sales to traders, non-members were the ones selling the highest volumes to traders. However, it stands out that for all three groups, the volume sold to traders was lower compared to sales through the other channels. The latter might indicate that farmers use traders more for ad-hoc side-selling in case of emergencies (Mujawamariya et al., 2013), while selling the bulk of the hybrid sunflower to Mukwano agents or through the cooperative; depending on where hybrid seeds were received.

Strategies concerning the grain transfer

In Table 5.3 we further look into the services provided by buyers to farmers, in terms of price received for hybrid sunflower seeds, the type of money transfer (was it in cash, or with a delay), the transfer location (at the farm, the farmer group, or the buyer's store), and the loyalty of the farmer to the buyer (in the average number of years the farmer has been selling to the buyer).

Looking at price data, on average the prices given out by Mukwano and traders is similar, while Alito gives out a slightly higher price. Interestingly, Mukwano's price for members is 1 cent lower than the price reported by non-members, and 2 cents compared to Alito farmers. They might thus try to convince non-contracted farmers to sell to them with a

slightly higher price. The cooperative does the opposite: they give out a higher price for their own members. In terms of farm size, there are no notable differences in price for smaller or larger farmers selling to Mukwano or Alito. However, larger farmers selling to traders do report a price of 2 cents higher, compared to smaller farmers. Traders thus might prefer larger farmers, as they provide a larger bulk.

Table 5.3 Strategies concerning the grain transfer, per buyer and divided for group members

	Variable	Divided by member groups			Divided by farm size	
Buyer		**Mukwano**	**Coop**	**Non-member**	**0-2h**	**2+h**
	Price (USD/kg)					
Mukwano	0.274	0.269	0.299	0.288	0.271	0.277
Coop	0.286	0.273	0.285	0.315	0.284	0.288
Trader	0.277	0.271	0.294	0.269	0.266	0.287
	Money transfer: paid in cash (%)					
Mukwano	0.49	0.45	0.79	0.57	0.41	0.55
Coop	0.78	1.00	0.78	1.00	0.71	0.89
Trader	0.94	0.83	1.00	1.00	1.00	0.89
	Transfer location: farm (%)					
Mukwano	0.39	0.38	0.50	0.40	0.30	0.46
Coop	0.31	0.75	0.30	1.00	0.20	0.48
Trader	0.63	0.83	0.60	0.40	0.43	0.78
	Transfer location: member group (%)					
Mukwano	0.12	0.14	0.71	0.07	0.10	0.14
Coop	0.56	0.00	0.56	0.00	0.68	0.37
Trader	0.13	n.a.	n.a.	n.a.	0.14	0.11
	Transfer location: buyer's store (%)					
Mukwano	0.51	0.53	0.35	0.53	0.61	0.43
Coop	0.13	0.25	0.13	0.00	0.12	0.15
Trader	0.19	0.00	0.40	0.20	0.29	0.11
	Loyalty: years selling to buyer (yrs)					
Mukwano	7.39	7.58	6.39	6.80	6.94	7.75
Coop	3.89	2.25	3.87	2.00	4.61	2.67
Trader	3.19	5.00	2.00	2.20	2.29	3.89

Source: own survey data 2016

Did the new finance system indeed aid Mukwano agents in paying in cash? Farmers selling to Mukwano did report the least payment in cash: 49%, compared to 78% of cash payments at the cooperative, and 94% at a trader. Again, we see that Mukwano agents seemed to provide a better 'service' to non-members: of cooperative farmers and non-members selling to Mukwano, respectively 57% and 79% reported payment in cash, compared to 45% of the Mukwano farmers. In terms of farm size, smaller farmers reported receiving cash less often at Alito and Mukwano, whereby Alito and Mukwano are favouring larger farmers. At traders, on the other hand, larger farmers had to wait for their money more often. This might indicate that traders are less able to pay directly in cash when dealing with larger money transfers.

Another indication of a service provided to farmers is the location of the transfer. For Mukwano agents, the most used transfer location was the buyer's store (51%); while for Alito the bulking location of the farmer group is most important (56%). In other words, the farmer groups of Alito cooperative seem to have a more important role and function in bulking than Mukwano groups. Lastly, traders bulk most often at the farmer's home (63%). Again, Mukwano seems to favour non-members with transport: Alito farmers and non-members more often report the farm as transfer location, compared to Mukwano members. Comparing larger and smaller farmers, for all three buyer channels, produce of larger farmers is more often picked up at their home. Larger farmers are thus aided in transporting their larger bulk to the buyer.

Lastly, we investigated the average number of years a farmer has been selling through a channel. Mukwano agents have been sold to the longest, on average 7.39 years, whereas Alito and traders are both sold to a bit more than 3 years on average. Mukwano members were thus most loyal to their channel. Interestingly, smaller farmers have been members of Alito longer compared to larger farmers, whereas for Mukwano this was almost similar. For traders it is the other way around: larger farmers have been selling to traders for longer. This is in line with our earlier results.

Summarizing, it seems that every buyer has different strategies. Mukwano agents more often favour non-contracted farmers with higher prices and cash payments, in comparison to contracted farmers. Alito on the other hand, rewards their own members with a higher price, and is especially important for smaller farmers. Lastly, traders rewarded larger farmers with a higher price, and picking up produce at their own home. On the other hand, traders' payments for larger farmers are more often delayed.

5.4 Discussion

We set out explaining how contract enforcement between a large processing company and farmers evolved, and to examine the role of intermediaries in contract enforcement. The contract supported the shift of a leading food manufacturing company from importing vegetable oil to the processing of locally sourced sunflower seeds in northern Uganda. Contract farming is often studied as an 'enclave' of the production of a raw product for high-value markets (Ola & Menapace, 2020). We studied a contract farming scheme for sunflower - a crop produced, and further processed, for the domestic and regional food market. Our analysis of intermediation between company and farmers identifies 'locally suited remedies' for enforcing viable linkages between smallholder farmers to major corporate buyers. Locally implies that remedies fit a specific context and shows that a CF involving a food crop should not be studied in isolation. We found the following aspects of the context importantly influencing intermediation. Firstly, contract farming did not start in a 'vacuum', but in an existing domestic market for oilseeds. There was already a basic network of village traders, cooperatives and processors for buying local sunflower seeds and Sunfola; initiated in the 90s by government and international donor policies for reviving the edible oil sector. Secondly, starting the outgrower scheme at the end of a civil war period lead to motivated farmers, willing to start producing a new, easily grown crop; little competition at the start of the outgrower scheme; and easy access to cooperation with NGOs for organizing farmers and extension services. Thirdly, the expansion of the edible oil sector led to increasing competition with input dealers as Mukwano was forced to release their hybrid seed monopoly, as well as competition with processors, most notably Mt. Meru. This specific context lead to a transition from an ideal-typical contract farming arrangement to 'locally suited remedies'.

Analysing the evolving contractual arrangements employed in the context of staple food markets suggests that there is no necessity of a technology lock-in. Under the specific circumstances, the real contract appeared to have shifted toward the intermediary and the company, from contract farming to contract trading. The processor is mainly driven by quantity instead of quality of produce, which has consequences for the characteristics of the contract, the inclusion of farmers, and leads the processor to depend on more than one type of intermediary.

The first remedy involves a shift from contract farming to contract trading, enabling the inclusion of three types of intermediaries. The company started with an ideal-typical contract farming arrangement and eventually opted for an arrangement that we label '*contract trading*'. The company's contracting scheme started at the end of a civil war period offering an opportunity to motivated farmers, willing to start producing a new, easily grown crop. The company had little competition and found access to cooperation with NGOs for organizing farmers and extension services. For the processing company, it seemed less important to keep the contract model 'at all costs', but instead their

main priority was with bulking a constant flow of hybrid sunflower seeds in large volumes. The company abandoned input credit for farmers, decided to follow market prices during the season, instead of agreeing on a fixed price, and delegated contract enforcement - the task of ensuring that sunflower grains produced with Mukwano's hybrid seeds will flow back to Mukwano - to the contracted agent, who appeared easier to control. In contract trading, financial arrangements were concluded between company and agents, and agents bare the risk of this arrangement via a bank loan (part of the village traders also receive advance finance, but the risk of this arrangement still lies with the company). Under the contract trading arrangement, agents are strongly driven by a need for sufficient oil volume - to be able to pay back the loan, as well as to secure next season's inputs.

The shift from contract farming to contract trading has the following implications for farmers. Seeds are not exclusively available for contracted farmers; non-contracted farmers as well as cooperative members have access to hybrid seeds. The expansion of the edible oil sector led to increasing competition with input dealers, which generated pressure to abandon the company's monopoly on hybrid seed monopoly. The growing competition with processors urged the company to seek alternate contractual arrangements to ensure the consistent supply of raw materials. Hybrid seed leakage into the community meant more is produced in the market-shed. Moreover, agents seemed to have especially invested in getting sufficient volume back from non-contracted farmers with extra services such as higher prices, less delay in payments, and bulking at the famers' home. Increasing competition for produce is thus improving market conditions for farmers (Sitko & Jayne, 2014). In comparison, contracted farmers were yet loyal to company agents without these services. Our findings concerning cooperatives confirm their importance in the market for smaller farmers and their role in service provision. In the literature, traders are often labelled as 'exploitative', while in this case, 'side-selling' seems functional for farmers: it is an extra possibility to sell their seeds and expand their market access (Pokhrel & Thapa, 2007; Sitko & Jayne, 2014).

Second, the company smartly *invested in logistics*, with aid of the public sector. Extension workers were not only transferring knowledge to farmers, but also had an important role in supervising agents, and more recently, managing the marketing centres in the rural areas. These marketing centres were an example of smart investment in infrastructure, ensuring a constant supply of increasing volumes (achieved through increasing the number of farmers and intermediaries). Interestingly, both these aspects were supported by the public sector. In every period, Mukwano connected with NGOs, aiding them in training extension workers, as well as training and organizing farmers; and the marketing centres were also built using public support. These findings are in line with the increasing emphasis in the literature of middle actors such as transporters and logistics for the agricultural value chain (Reardon, 2015; Legun & Bell, 2016). This thus also holds for contract farming research.

The third locally suited remedy is *articulation with the local market*. The company's contracting scheme did not start in a 'vacuum', but in an existing domestic market for oilseeds. There was already a basic network of village traders, cooperatives and processors for buying oilseed and distributing planting material, which was initiated in the 90s by government and international donor policies for reviving the edible oil sector. Our contextualized analysis of evolving contractual arrangements shows how the company's business practices articulated with the existing infrastructure of traders and cooperatives and became part of existing local intermediation practices. This implies a blending of local and introduced institutions, which already started before the contract was introduced, by recruiting village traders, who later became agents. The way the company dealt with agents resembles our earlier findings of Lira wholesalers cooperating with village traders (Schoonhoven-Speijer & Vellema, 2020). Later, while pressured to release their hybrid monopoly, the company smartly integrated village traders and cooperatives into their own sourcing strategy.

Articulation with the local market made the production of hybrid seeds attractive for a more diverse pool of farmers. The cooperative channel was an attractive channel for smaller farmers: the cooperative price for seeds was slightly higher than that of agents, but this was compensated by a higher grain price. Moreover, the cooperative made seeds available on credit, which was also attractive for some contracted farmers. Traders, on the other hand, serve both smaller and larger farmers. Traders accept smaller quantities and payment is almost always in cash (Mujawamariya et al., 2013), the latter especially so for smaller farmers. Larger farmers are offered a higher price as well as bulking at the farmers' doorstep. Articulating with the local market also meant that a technical lock-in of farmers became much more difficult, as the company had to deal with competition for the product from other buyers. Instead, the company opted for contract trading, which fitted the institutional infrastructure accessed by farmers to sell their produce.

5.5 Conclusion

Literature on contract farming assumes a strong tenancy of contractual arrangements to either lock-in smallholder farmers or organize market transactions efficiently under difficult circumstances. We investigated how enforcement evolved in a contracting scheme, initiated during the last years of a civil war in northern Uganda, and including vulnerable smallholder farmers striking a balance between producing for food security or for commerce. Eventually, the leading food manufacturing company abandoned contracting farmers directly and moved towards contract trading after encountering multifaceted enforcement problems. A written contract alone proves insufficient to ensure a consistent flow of both produce and cash, linking farmers to buyers. Contract trading emerged as an arrangement that fits and is feasible in the context of staple crop markets with many alternate buyers and large numbers of farmers located in remote

rural communities. Intermediation, in terms of making the connection between farmers and buyers, is the critical control point for arranging and governing transactions, which requires careful analysis. Unpacking the dynamics of intermediation shifts attention from discussing whether farmers have access to markets, towards the conditions under which farmers are included in the market. Contractual arrangements articulate with locally embedded intermediation practices, creating smart linkages to local market channels. This importantly shapes the farmers' position to negotiate modes of payment, or to use competition for raw materials as a condition for reshaping the terms of inclusion in their favour. Therefore, involving intermediary agents and their situated practices in development endeavours is vital for catalysing local remedies for food and nutrition security.

'I collect produce from around and from my family, and then sell it to [intermediary trader] Jimmy. I have a small store which I recently built. I am only an agent to Jimmy, I do not sell to others. I received advance from Jimmy, but that is already cleared so I am now paid in cash'.

Small village trader, male. Apac district, Uganda

CHAPTER 6:

General conclusions

6. General Conclusions

In this thesis, I set out to enhance the institutional analysis of the governance of market arrangements in a dynamic context of food provisioning in northern Uganda. I did so by taking a dynamic institutional perspective bridging structure and agency. This perspective considers that an analysis of both structure and agency is needed to understand how institutions work and evolve, or in other words, become and remain viable within a specific context. My practice-oriented approach aids in understanding how institutions are produced and reinforced in daily activities of actors; and how institutions consolidate these same practices. Understanding the viability of institutions was pursued by looking at modes of governance underlying different institutional arrangements in food markets – visible in the practices of local intermediary traders (Chapter 3), and in the workings of newly introduced arrangements such as cooperatives (Chapter 4) and contract farming (Chapter 5), and by drawing attention to the fact that institutions are embedded within, and thus influenced by, their context. The central empirical focus of the thesis was bulking practices in the sunflower sector in northern Uganda, a sector marked by recent transformation in the last phase of civil war, a strong expansion in terms of numbers of farmers, produced volumes, networks of intermediaries and processors, and where food provisioning is governed by a variety of institutional arrangements (Chapter 2).

Below, I will start with discussing the answers to the research questions, leading to answering the main research question (6.1). Thereafter, the thesis' contributions to theory (6.2) and methodology (6.3) are discussed, and the implications for development policy and practice (6.4). The research closes with suggestions for new vocabulary concerning the analysis of agri-food markets (6.5).

6.1 Synthesis: What makes institutions viable?

The viability of institutions is contingent on the context in which they evolve and are historically rooted. The thesis therefore started in Chapter 2 with an historical analysis of the edible oil sector, thereby answering **research question 1: *Which (political, economic, and technical) historical dynamics shaped the contemporary features of agrarian transformation of the sunflower sector in northern Uganda*** (Chapter 2). In the past 100 years, Uganda has seen a shift in major processed oil crops: from cottonseed to sunflower. The chapter follows the history of cotton and sunflower in Uganda, both crops being introduced under colonial rule at the beginning of the 20th century. At the end of the 1980s, the cotton sector had completely collapsed due to a combination of factors: political rule and civil unrest in the 1970s and 80s causing economic decline and a standstill of technical support, a collapse of cotton cooperatives, and low world prices of cotton. At the start of the 1990s, the public sector, in combination with international donors, aimed to revive the edible oil sector, and started investing in the growing of sunflower. They did so with a particular focus on

northern Uganda, the area hit hardest by the collapse of the cotton sector. At the same time, Mukwano, a Ugandan conglomerate company, decided to shift from importing palm oil to the local sourcing of oilseeds for manufacturing edible oil.

The following three factors contributed to agrarian transformation of the sunflower sector: 1) the availability of enough planting material; 2) momentum of the government and donors for the sector; 3) a willingness of the private sector to commit. In 2016, at the end of my field research, the sunflower sector had become a thriving sector: after the end of the civil war, farmers were eager to commit to a new and promising crop and the conducive conditions served as a catalyst for other actors, such as traders and processors, to become part of the process transforming the sector.

Within this dynamic context, a local and (largely) informal ensemble of intermediary traders was able to become an institutionally viable market configuration for the trade of food. This cluster of 92 large and small traders in Lira, northern Uganda, called Produce Lane, evolved over more than 20 years in a context with much opportunity for the trade of (among others) oilseeds. However, Chapter 2 showed that the viability of this cluster was not evident: traders operated under circumstances of a society recovering from civil war, increasing competition for produce, and a challenging infrastructure. Produce Lane therefore formed an interesting case study to answer **research question 2: *How are institutions governing existing bulking practices of intermediary traders reinforced over time?***

Chapter 3 combines Greif's institutional lens – especially fit for the study of trade - with the study of interactive and collaborative practices of conduction, such as sourcing, transporting, warehousing, retailing and trading. Arranging exchanges of produce (under unfavourable and fluctuating conditions) entailed skill formation, building and maintaining complex relationships including task distribution, and constructing rules underlying routines, while leaving room for improvisation. The practice-oriented analysis demonstrated that traders and support actors were able to sustain the cluster and create continuity and stability because practices were collaborative, coordinated and regulated. Analysis of these practice identified three distinct *institutional properties* that contributed to the viability and sustained performance of the cluster, which were the following: 1) accommodating a variety of practices, and thus actors and interests; 2) ordering distributed tasks without external control while navigating a changeful socio-material environment; and 3) achieving social settlements using rules which emerged from the specialized tasks of managing produce and finance flows. These three properties, in this specific context of a food market, explained the institutional viability of the agribusiness cluster.

Comparing this cluster of intermediary traders with induced institutional arrangements studied *within the same context* exposes that the three institutional properties were also underlying the trading practices of cooperatives and company-led contract farming (Table 6.1 provides an overview). This underpins the importance of these properties for explaining the institutional viability in food markets in this particular context.

Table 6.1 Overview of properties generating viable institutions

Properties generating viable institutions		Empirical manifestation per case		
		Produce lane (Ch3)	**Cooperatives (Ch4)**	**Contract Farming (Ch5)**
1	Accommodating variety of actors, practices and interests	• Several types of traders (retail & wholesale) • Performance is both individual and collective • Variety of crops	• Collective is organised for multiple purposes • Variety of crops	• Three types of intermediaries • Variety of crops
2	Ordering distributed tasks *without external control*	• Within the cluster: filling trucks of buyers together • Beyond cluster: sourcing from agents and rural markets	• Initiated by a small group of key actors • Use of small farmer groups for bulking	• Sourcing from agents and other intermediaries in rural markets
3	Achieving social settlements through *rules emerging from tasks* and with room for improvisation	• Rules are both informal (around quality, access to cluster) and formalized (PBA)	• Pragmatism in social settlements • Formalisation once the coop was established	• First set-up was informal • Shift from contract farming to contract trading
4	Embedding and blending induced arrangements	• Wholesalers at produce lane learned their trade 'outside' produce lane	• Re-using existing institutional arrangements for bulking	• Re-using existing institutional arrangements for bulking

The first property, a*ccommodating a variety of practices and actors*, implies for the cooperatives that the collective is organised for multiple purposes: not only bulking, but saving, and seed multiplication. The contract farming arrangements accommodates a variety of intermediaries: its own agents, traders, and cooperatives. Interestingly, all three modes of governance bulk not only sunflower, but other food crops as well. Second, the task of bulking is not done individually, but *tasks are distributed*. All cases show that certain key actors are important for 'the groundwork' of bulking (wholesalers, founding members of cooperatives, Mukwano agents), but flows are 'stabilized' by processes of coordination and cooperation with many more actors (smaller traders – small groups of cooperatives – other intermediary channels). Knowledge and skills necessary for bulking are distributed both organisationally and spatially (Hutchins, 1995), without a single actor having total overview of the complete situation. Third, *social settlements* governing the bulking practice *emerge from the specific task at hand* and are both informal and formal. Interestingly, both cooperatives and the contract farming arrangement did not start as a formal arrangement, but arose from informal governance structures, which I will further elaborate on below. All chapters show that some form of formalized rule is necessary, but I saw an important amount of

pragmatism and improvisation in the everyday realities of enforcement. For both the cooperatives and the contract farming scheme, there is the possibility of side-selling by farmers in two ways: a blind eye is turned when farmers are selling to other buyers, and non-members are also welcomed to sell to the cooperative or the processor. The shift of Mukwano, the lead firm sourcing oilseed and manufacturing edible oil, from contract farming to contract trading is also an example of improvisation. These examples show that, through being pragmatic and through improvisation, rules and routines arise from the task performed, not the other way around.

As I argued in the general introduction (Chapter 1), the viability of institutions governing bulking does not only depend on 'in-house' assets and capabilities, but also on how actors organising bulking navigate the socio-economic and natural environment in which they operate. This is especially important for induced arrangements in a context of agrarian transformation, showing multiple ways for farmers to market their produce. I therefore studied two newly introduced institutional arrangements – two cooperatives, and contract farming, answering **research question 3**: ***How do newly introduced institutional arrangements – cooperatives and contract farming - become viably embedded within the existing context and respond to external pressures?*** Chapter 4 studied the capacity of two cooperative organisations, situated in Uganda and Mali, to navigate their changeful market environments, while Chapter 5 especially focuses on a contract farming scheme responding to external pressures.

In terms of becoming *viably embedded*, my main conclusion is that all organisational structures show some form of *blending with proven and sustained practices in the specific locality*. Through blending, institutions proven viable in the context are incorporated in the institutional set-up of an arrangement. Moreover, comparing the embedding of cooperatives in Uganda and Mali shows how similar properties are found across different contexts of agrarian transformation. In both cases, a combination of specific events, existing relations and brokering activities were of great influence of the emergence of the cooperative. The cooperative in Mali was established by a trader and led by secretaries of old existing cooperatives; in the Ugandan cooperative, the cooperative was established by a pastor with an existing church network. In addition, traders were embedded in smaller farmer groups. In both cases, farmers skilfully navigate their context, and adaptations to the organisational structure are the result of active problem-solving. Formalisation for instance turned out to be instrumental for acquiring access to service providers and new markets, both necessary for continuing the objective of trading.

Blending is also found in contract farming. For contract farming, the governance of relationships (over time formalized in contract trading) between the company and its intermediaries resembled the governance of wholesalers and village traders found in Produce Lane. Also, many Mukwano agents were already traders before becoming

agents of the company. Interestingly, proven practices also confirmed to be important for Produce Lane. The wholesalers who formed the basis of produce lane had to learn the skill of trade as village traders before establishing themselves as wholesalers in Lira town. Blending with proven practices is therefore added as a fourth process generating viable institutions (see Table 6.1).

Chapter 5, concerning the dynamics of contract enforcement, shows how an organisational structure *responds to external pressures*. I conclude that several aspects of viability discussed above prove to sustain a mode of governance over time; and the process of *articulation with local markets* is an additional strategy to successfully adjust to external pressures. With articulation I imply making use of an existing institutional arrangement for bulking, adding to the variety accommodated by the arrangement. Articulation with cooperatives and intermediary traders for instance proved to be a useful response to the release of the company's monopoly on hybrid seeds. In addition to articulation, improvisation and rules emerging for the specific tasks made the contract 'pivot' (Reardon et al., 2021) in a shift from contract farming to contract trading. The company's pivoting started with eliminating input finance for farmers due to side-selling of farmers, and finally resulted in shifting the contract to the intermediary entirely, in a response to increasing competition and side-selling of company agents. Lastly, the contract became firmly embedded in the material through smart investments in logistics. Mukwano's successful response to external pressures points at supply chain resilience (Pettit, Croxton, & Fiksel, 2010). The creation of smart linkages to local market channels importantly shaped the farmers' position to negotiate modes of payment, or to use competition for raw materials as a condition for reshaping the terms of inclusion in their favour.

With this research, I set out to answer the following **main research question: *what makes bulking practices of local food crops institutionally viable in dynamic contexts?*** In the case of Produce Lane, I defined the collective outcome of the ensemble of bulking practices of traders as 'ensuring a consistent supply of produce and finance flows'. Ensuring a consistent supply under difficult circumstances is not evident, and is the empirical manifestation of the viability of the selection of institutional arrangements studied. The making of viability is not an easy process and developed over at least 20 years.

The research identifies four core properties of institutionally viable food markets: 1) accommodating a variety of practices, and thus actors and interests; 2) ordering distributed tasks without external control; 3) achieving social settlements; and 4) blending and articulation with proven practices. Blending shows that induced arrangements in food markets do not exist in isolation or fill a void but become viable through blending with institutions already present. Institutions remain viable - successfully adjusting to external pressures – by articulating with local market arrangements. Blending and articulation take place because of the proven viability of these local institutions. It also took an inducive context of agrarian transformation, where key actors saw possibilities to start bulking.

A historical perspective on how a contract farming arrangement evolved over time gave an example of how these properties aid in responding to external pressures. Comparing the embedding of cooperatives in Uganda and Mali shows how similar properties are found across different contexts of agrarian transformation.

This general conclusion shows how institutions are not a fixed structure; and how agency is not only deployed rationally to get to individual solutions using this structure. Instead, institutions are subject to internal tensions and external pressures. Institutions therefore need to be produced and reinforced in practice through situated agency, while institutions simultaneously consolidate these practices. Combining a dynamic institutional analysis with a practice approach aided in understanding how structure and agency interact in market institutions of food provisioning.

6.2 Theoretical contributions to institutional thinking

My theoretical aim with this thesis was to enhance the institutional thinking around agricultural markets. In line with Nicolini (2012), I used a selection of institutional lenses for 'zooming in and zooming out': zooming in on the details of a practice in a specific place, followed by zooming out, following trails of connections between practices. The combination of institutional lenses aided in giving a rich overview of the consolidation of bulking practices producing and reinforcing structure, and detecting agency of traders, farmers, agents, support actors and processors. A historical background study showed how bulking practices are firmly rooted within, and constrained by, the context (Chapter 2). Integrating Greif's (2006) definition of institutions with researching everyday practices of conduction (Chapter 3) opened up conceptual space for analysing the performance of real markets in food provisioning. An institutional bricolage perspective (Cleaver, 2002; Baker & Nelson, 2005) proofed useful in understanding how farmers organized in a collective navigate contexts (Chapter 4). Cleaver (2002) draws attention to the fact that organizing a collective is a messy process shaped by individuals acting within the bounds of circumstantial constraints. Lastly, Rodrik's (2010) notion of institutional diagnostics and finding locally fit remedies proofed especially fit for analysing the evolvement of a contract farming scheme and its responses to external pressures.

Using multiple perspectives gave new theoretical insights for the study of agricultural markets in the global South: the importance of including the practice of intermediation, a reframing of collective action and coordination, and an appreciation for the materiality of bulking practices in agricultural markets. These insights will be discussed in more detail below.

6.2.1 Moving beyond binary thought lines: intermediary practices producing institutions

The thesis focused on the practice of bulking. Bulking is typically an activity, or practice, performed by an intermediary actor. In the literature, the intermediary is often ignored, both in theory and practice (Liverpool-Tasie et al., 2020). Schoonhoven-Speijer et al. (2017) argue that ignoring intermediaries stems from problematic binary thought lines concerning the transformation of farmer-market linkages: informal-formal, and void-arrangement. First, informality is linked to an imperfect, or underdeveloped, functioning of markets due to coordination problems, leading to high transaction costs and small returns (f.i. Fafchamps, 2001); whereas formalisation is supposed to influence development in a positive way (Casson, Della Giusta, & Kambhampati, 2010). Second, underdevelopment or the mere absence of formal institutions supporting market activities is also labelled as 'institutional void' (Khanna & Palepu, 1997). Intermediary traders are seen as both informal and the result of imperfect markets, and are therefore widely perceived to be a market channel to be avoided (Markelova et al., 2009). 'Elimination' of the intermediary trader channel is hinted at, after which both producers and consumers will profit from a transformed market structure. This is reflected in strategies of NGOs and policy makers by-passing traders by promoting collective marketing via cooperatives (cf. Shiferaw et al., 2011), or by forging contracts between smallholder farmers and buyers in end-use markets (cf. Barrett et al., 2012).

In contrast, this thesis gives ample evidence to go beyond these binaries though lines underpinning market interventions. The thesis shows that 1) intermediary traders and other intermediary actors importantly contribute to arranging food markets; 2) formal set-ups such as cooperatives and contract farming are a blend of informal and formal institutions; and 3) novel arrangements are not introduced in voids, but become incrementally embedded in historically grown institutions.

First, this research shows how the sustained presence, predictable mode of operation, and reliable outlet arranged by intermediary traders is far from 'imperfect'. They importantly contribute to the food availability dimension of food security (Chapter 3). The 'imperfection' of these market linkages is further challenged by the finding that induced arrangements borrow from, or incorporate, the market solutions institutionalized by informal trade dealing with the same challenges. The importance of intermediary trade is confirmed by a growing body of literature concerning how intermediary traders arrange access of smallholder farmers to food markets (Vorley et al., 2012; Sitko & Jayne, 2014; Rousseau et al., 2015; Minten, Assefa, & Hirvonen, 2017; Roba, Lelea, Hensel, & Kaufmann, 2018; Mangnus & Vellema, 2019; Liverpool-Tasie et al., 2020), presenting traders as a reliable, trustworthy market outlet.

In addition, an appreciation of the intermediary trader can be broadened to recognizing the importance of intermediation, in general. The research shows the importance of a myriad of traders (in retail, village traders, wholesalers) as well as support actors in transport and logistics, which can be summarized by the concept of 'conducers' (Legun & Bell, 2016). For instance, a large conglomerate company as Mukwano strategized specifically in investing in logistics as storage and transport (Chapter 5). Small and medium enterprises operating in the middle of the food chain are found capable of addressing asset shortfalls of small-scale producers, providing inputs, credit, information and logistics (Liverpool-Tasie et al., 2020). This confirms the importance of intermediation in the 'hidden middle' (Reardon, 2015) to both small-scale producers and firms, especially under circumstances in developing countries where transaction costs are high (Fafchamps, 2001).

My second point concerns the question whether making a distinction between informal and formal institution is a useful representation of agricultural food markets. This thesis shows that this distinction is not that straightforward. Trade at the Produce Lane cluster is barely formal, but, as I have argued above, highly functional, confirming the importance of informal market linkages (Liverpool-Tasie et al., 2020; Mulwa, Muyanga, & Visser, 2021). On the other hand, formalized arrangements – such as cooperatives and contract farming - reveal a certain amount of informality. The cooperative examples both show a certain pragmatism in rule enforcement. And the case of contract farming shows how an officially signed contract is not necessary to access the technology offered by the processor: both contracted and non-contracted farmers accessed hybrid seeds. Moreover, the lever of contract enforcement eventually shifted to the intermediary, but this was still a mixture informal and more formalized modes of contracting. These examples show that the exact form of a contract is not unambiguous, thereby attracting different types of farmers (Bellemare & Lim, 2018). This thesis shows that market linkages cannot be classified as either formal or informal, but take on blended forms emerging from the particular practice governed (6 & Richards, 2017). Aiming for formalisation is thus not the most important development strategy. Bernstein & Oya (2014) propose a shift from the degree of formality of markets by introducing the concept of 'real markets'. Following Hodgson (2006), this thesis gives weight to rather assessing whether an agreement creates stable expectations of the behaviour of others.

Third, the notion of institutional voids, and the related idea of introducing novel arrangements for filling institutions voids, overlooks the importance of the embedding of institutions in their local contexts. I concluded that the cooperatives (Chapter 4) and contract arrangement (Chapter 5) studied only became viable due to their embedding in the local contexts and the emerging articulation with established local trading practices. For instance, Mukwano's contract farming scheme, which was introduced formally in 2003, was central in catalysing the production and processing of sunflower, but the political and technical groundwork for developing the sunflower sector was laid

since the late 1980s. Moreover, informally, Mukwano already started sourcing sunflower in the 1990s, building on already present networks of intermediary trade. Over time, Mukwano's successful 'pivoting' (Reardon et al., 2021) in the contract arrangement, including intermediary traders and cooperatives, showed its resilience. This is what Cleaver (2002) describes as the process of bricolage ensuring the adaptation of a new institution, creating a more embedded arrangement. These findings confirm the relevance of using dynamic institutional approaches such as bricolage (Cleaver, 2002) and institutional diagnostics (Rodrik, 2010; Schouten et al., 2018) for the study of adaptations by market actors to changing market and other contextual conditions.

6.2.2 Reframing the collective: institutions reinforcing mutually constituted practices

The practice of bulking involves the aggregation of materials and is therefore inherently, in some form, part of a collective and coordinated activity. All three chapters show how mutually constituting practices generate this collective nature of bulking. The traders in Produce Lane show a collective performance of trade practices, and have a joint interest in maintaining the collective capacity of the cluster (Chapter 3); farmers are organized in cooperatives for collective marketing of their produce (Chapter 4); and a large processor makes use of both these collectives for effective sourcing of raw materials (Chapter 5). In the literature, the collective is thought to mitigate market efficiencies and is defined as a necessary *condition* facilitating access to, and participation in, agricultural markets. In the each chapter, concepts describing these conditions are discussed, being 'collective efficiency' (McCormick, 1999) for a cluster (Chapter 3), 'collective action' (Markelova et al., 2009; Shiferaw et al., 2011) for farmer organisations (Chapter 4), and coordination (Chapter 5) (Gereffi et al., 2001).

With this thesis, I adopted a *processual perspective* to understand how these collective conditions are achieved and reproduced in practice. This perspective shifts the focus from the collective as a condition to the collective as an outcome. In this way, the thesis is able to make several contributions to the conceptualisation of collectivity: 1) the emerging form of collectivity depends on the nature of the specific practice; 2) within a collective endeavour, knowledge is distributed; and 3) coordination of distributed tasks takes place both within one organisational form, and across organisational architectures.

First, the findings in the thesis show that the content of the tasks explains how actors organize themselves. Interestingly, task performance can both be individual and collective: traders in Produce Lane (Chapter 3) form a diverse collective of individual entrepreneurs, who perform tasks both individually and collectively. In a similar way, the effective bulking of cooperatives (Chapter 4) depends on a blend of individual choices of farmers about which crop to bulk with the cooperative, small farmer groups side-selling to other buyers, and the organisation of logistics by a small management team. In other words, the emergence of collectivity relates to the specific practice, or

task, performed (McFeat, 1974). Collective action or coordination are then emergent organisational outcomes, rather than fixed and induced organisational forms (Adjei, 2014). The thesis shows that collective activities in bulking have a greater chance of surviving if their form accommodates both collective and diverse individual interests and institutional preferences.

Second, the thesis highlights the relevance of uncovering the more hidden processes of coordination in markets: no single actor has complete knowledge of all the steps involved in a specific process of bulking (Jansen & Vellema, 2011). This implies a web of relationships and mutual dependencies, on which the collective performance in trading depends (Nicolini, 2012). These mutual dependencies can be described with the concept of 'distributed cognition', implying that knowledge about a specific task is not confined to an individual; rather, it is distributed across objects, individuals, artefacts and tools in the environment (Hutchins, 1995). In Table 6.1, I present examples of task distribution in each of the cases. Collective action literature also discusses dependencies, but only in terms of the problem; farmers are then dependent on each other in a collective for mitigating market efficiencies and, subsequently, enhancing farmers' access to agricultural technologies and both input and output markets (Markelova et al., 2009). The notion of distributed cognition shifts attention to dependencies in market *solutions*; and thereby gives a possibility to come to tailor-made solutions within a specific context. It also draws attention to the fact that solutions require specific knowledge and an ability to improvise in order to collectively solve unanticipated problems in the whimsical settings of agricultural food markets (Vellema et al., 2022).

Third, and in line with the discussion above, coordination of this distributed tasks takes place both within one organisational form, and across organisational architectures. Using Nicolini's metaphor of zooming out, the contract farming arrangement (Chapter 5) cannot be captured in one organisational form, but shows a composite whole of produce and finance flows, involving what I labelled 'contract trading' with several types of intermediaries: (in)formal contractual arrangements with both company agents and informal traders, cooperatives, and ad-hoc buying. Interestingly, it is difficult to capture the specific mode of governance of contract farming in one kind of 'governance typology' (Fernandez-Stark & Gereffi, 2019). Chapter 5 shows a blend of modes of governance varying from spot markets to more integrated forms: an institutional landscape that exists of a great diversity of interconnected market solutions. The concept of coordination, 'the integrating of the separate efforts of many individuals' (Grant, 2002; in Rousseau et al., 2015) then seems less appropriate. Connections made through bulking are not rooted in individual actions but established by a web of bulking practices. This is what Nicolini (2012) describes as 'mutually constituting practices': a nexus, or network of practices, from which alignment emerges in a way similar to the movements of a flock of birds, acting sensibly without fully understanding how the whole works, with constantly changing linkages.

6.2.3 Appreciating the material: institutions accommodating the materiality of trade

In this thesis, I explain social phenomena by studying how processes of organisation become institutionalized. However, the social should not be studied without losing touch of the concrete and material nature of activities (Nicolini, 2012). Institutions that emerge are constrained and mediated by the material context. This links to Suchman's (1987) notion of 'situated action', which relates structures of action to resources and constraints afforded by both social and material circumstances. As I argue in Chapter 3, an interest in food provisioning should recognize (like Djanibekov et al., 2013) the importance of the natural environment (e.g. seasonality), the materiality of food (e.g. storage and volumes), physical (e.g. roads and distances) and logistical infrastructures (e.g. transportation from local buying agents). Taking materiality into account is essential for analysing how institutions emerge from evolutionary processes (Greif & Laitin, 2004; Meador & Skerratt, 2017). In the literature on agricultural markets, these material and physical aspects are recognized as coordination problems that explain increased transaction costs. Coordination problems typical for agricultural trade in Africa are, amongst others, small transactions on scattered farms, long distances between sellers and buyers – compounded by poor quality roads, and variability of production (Barrett, 1997; Fafchamps, 2001). An understanding of the complexity of coordination problems in a value chain helps to understand the 'form' the governance of the value chain takes (Gereffi et al., 2005). In this way, Rousseau et al. (2015) come to the conclusion that, given the specific coordination problems, intermediary trade is a relevant way of organizing shea nut supply chains in Burkina Faso. Governance thus arises from the specific practice, or task performed (6.2.2), and is therefore constrained by a specific materiality.

This thesis confirms the importance of understanding these material, physical and spatial dimensions of trade, and how articulation with that context influences which institutions arise (Mangnus & Vellema, 2019). Shedding light on the materiality of trade adds to the literature in several ways. It argues for 1) a shift in focus from the technical aspects of farming to that of the hidden middle; thereby showing 2) an appreciation for mundane, localized, technical solutions (as opposed to new technology), including an appreciation of skilfulness of intermediaries.

First, the thesis shows the importance of the technical aspects of intermediation. Under circumstances of atomized supply – small farms scattered over large areas - and poor roads, the practices of storage and transport are vital for a constant supply of produce and finance. Illustrative for this point is that traders at Produce Lane talked about their 'stores' in the villages when referring to their agents. In addition, Mukwano owes it successful expansion also to 'simply' investing in a combination of storage space in the village and logistics supervision by extension agents. This shows how material objects both participate in the accomplishment of practice and make it durable over

time (Nicolini, 2012). Much of the literature on market solutions, however, adopts an exclusive social and organisational perspective in addressing coordination problems in markets. This thesis demonstrates the technical finesse of bulking practice related to the materiality of food provisioning.

Second, shedding light to the technical and material dimensions of performance in the hidden middle of food provisioning leads to an appreciation of the 'mundane' logistics of food supply (cf. Legun & Bell, 2016). These logistics, which ensure consistent flows of food and finance, are not evident, and this thesis exposes the skilfulness of intermediaries to handle storage and transport; but also the use of skills, tools, techniques and knowledge for assuring quality and keeping records, and for instance use storage as an investment strategy. Research (as well as policy and practice) might focus more on understanding these forms of 'mastery' rooted in everyday practices, expressed in the capacity to carry out a social and material activity (Nicolini, 2012) rather than adopting a strong focus on innovations or novelties.

6.3 Methodological contributions to institutional diagnostics

In terms of methodology, I aimed to enhance institutional diagnostics and provide tools of how to make institutional viability researchable. I draw lessons concerning three topics: practice, configurations, and context. The institutional viability of bulking practices was made insightful using a practice-oriented and configurational perspective, and the contingency of these on the context. The thesis argues that institutional diagnostics can be enhanced by taking practice and 'configurations' as units of analysis, and by considering how practice and configurations navigate dynamic contexts.

6.3.1 Focusing on practices producing institutions

Practices produce and reinforce institutions, while institutions consolidate practices. The thesis shows how taking a daily practice as unit of analysis aids in understanding how practices institutionalise activities and ways of doing. Unravelling the working of institutions from daily practices is no easy task. It requires a careful analysis of what people do and how, in this case, bulking is performed. Methodologically, this was strongest developed in Chapter 3, researching a cluster of traders. Getting to a description of processes implied a careful iterative process of going back and forth between data collection and analysis, and data analysis and writing. In terms of data collection, researching daily practices led to zooming in on the performance of the practice that very day: what do you have in your store today, where did the produce come from, how did it arrive, how did the transfer take place, to whom are you going to sell? Such questions require qualitative data techniques, although supplementing them with quantitative data was also useful. Proofing the variety at produce lane was aided with quantitative data, which combined with qualitative data showing how this variety is accommodated.

Zooming in on practices of actors shaping an organisation also shows the importance of not taking that organisational structure for granted, the so-called organisational fix. Chapters 4 and 5, concerning cooperatives and contract farming, both show that the organisational structure *follows* from the bulking practice of farmers and processors, and is adapted to external pressures. In terms of methodology, research should thus focus more on processes of how interventions work, evolve, and become embedded. This requires analysis of processes underlying how the organisation of food availability is produced and reinforced and fits the specific practice under scrutiny. This is an important contribution to the interventionist' focus on choice, design, inputs and outcome (as reviewed in the Introduction chapter); or, in recent years, studying efficiency through randomized control trials (Banerjee & Duflo, 2012). A practice lens make it possible to shift focus from the evaluative question whether the intervention worked, to using the realist question how did it work, for whom and under what conditions (Ton, Vellema, & de Ruyter de Wildt, 2011). A practice perspective draws the eye to appraising the evolving practice of organising food provisioning with a special eye for how this depends on the skills and capabilities of actors, performed in daily practices.

6.3.2 Configuring multiple processes

The study of institutional arrangements often focuses on a single arrangement in isolation. This thesis is unique in studying traders, cooperatives and contract farming in parallel, which led to the conclusion that arrangements blend and articulate with each other. This contributes to outlining a configurational approach, which implies that there are multiple generative processes or mechanisms at work at the same time. Studies geared towards a better understanding of market linkages and market solutions should thus study how several arrangements interact and subsequently constitute of composite whole or a viable configuration. The thesis also shows that these interactions can be both of a social and a material nature. The material aspect of bulking adds a dimension to this configurational perspective, which opens space to enrich social analysis with the contributions of material processes, such as seasonal fluctuations or the materiality of volume in aggregating produce. This leads to the methodological choice of taking 'configurations' of arrangements as unit of analysis. A configurational focus considers that several practices in the same vicinity or value chain blend and 'mutually constitute' each other.

6.3.3 Navigating dynamic socio-material contexts

Institutional diagnostics entails a thorough understanding what contexts, in which institutions are embedded, are 'good at' (Schouten et al., 2018), as well as a focus on how external pressures are dealt with. The institutional bricolage approach (Cleaver, 2002) used in this thesis proofed especially useful for studying how actors and practices become embedded while making use of whatever is at hand in the context. The thesis

argues for defining embedding as both social and material, which is an addition to the bricolage approach. This should be combined with a scrutiny of the history and evolution of an institutional arrangement (Mangnus & van Westen, 2018). External pressures were studied by paying careful attention to how an organisational structure originated and evolved, using interviews and secondary data. This especially became visible in Chapter 5. The periodization was aided by the historical overview of Chapter 2. This historical perspective does two things: first, it is vital for understanding the current functioning and organisation of bulking (Chapters 4 and 5). In terms of methodology, researching how a mode of governance came into being does not start at the date of formalization, but years earlier. A historical perspective thus makes embedding, but also configurations more visible; how, for instance in the case of Mali, a cooperative is based on a trade network. Second, a historical perspective shows how an institutional arrangement is not fixed, but constantly evolving and adapting, responding to pressures, to remain viable (Chapter 5).

6.4 Reflections for further research

The theoretical and methodological contributions offer a starting point for exploring future lines of research. I suggest comparative research on bulking practices in food markets; and propose to expand the focus to other types of markets and to the terms of inclusion of farmers in bulking practices.

The bulking practices studied in this research were selected because of their sustained presence in the context; in other words, they are governed by viable institutions. Complementary studies could focus more on how institutions react under internal tensions and external pressures. Internal tensions for instance relate to issues around power and competition within a bulking arrangement, and external pressures might address political reforms, and climate changes. These kinds of tensions and pressures could cause erosion of the collectivity achieved. The task of comparative analysis is to explain why institutional arrangements governing bulking are successful in certain situations but less so in others. In addition, comparative and historical analysis of bulking practices in different contexts may enable to further typify the variety of ways to creating and sustaining institutionally viable ways to organize trade.

The research specifically contributes to the governance of food markets and concludes that it is necessary for induced arrangements in staple food markets to articulate with existing bulking practices. For the study of food security, it is important to shift the focus to other practices in the food chain vital for accessing food, such as these of retailers and vendors (Mwango, Kaliba, Chirwa, & Guarin, 2019). Another shift could imply to study crops produced for international markets; are these value chains acting as closed enclaves, due to higher quality standards for instance? Or do they still blend with local practices to enhance their viability?

My last recommendation concerns the inclusion of farmers in food markets. What does the viable embedding of institutional arrangements mean for the position of farmers in food markets? In the examination of contract farming, I touch upon the conditions under which farmers are included in the market, and it would be interesting to further expand on this in the future.

6.5 Implications for policy and practice

This thesis shows how viable institutions governing food markets are historically configured and embedded in specific contexts; and how reinforcing institutions depends on constantly evolving skills, capabilities and practices of actors in the hidden middle. This has the following implications for development policy and practice: development practice should start from what is already present, aligning with locally emerging practices, and this leads to an appreciation of intermediary trade. Second, the research has implications for inclusion. Third, the research leads to reflection on the influence of public policy and practice on development processes.

6.5.1 Start with what is already present

Instead connecting farmers to markets by introducing new 'organisational fixes', interventions concerning market linkages should start from the contextualised skills, capabilities and practices of actors involved in the bulking of food crops. This suggests a focus on blending on blending development strategies with local practices of intermediaries. Ambitions of 'building new institutions' should be lowered; also, because institutions evolve in long-lasting processes. development practice could benefit from more hybrid models, building on viable institutions already present, with proven capacities to manage produce and finance flows under conditions of fluctuation and scarcity. Hybrid models should start from a richer understanding of how coordination problems are tackled and how to have room for the dynamic nature of markets and their contexts. This understanding then leads to more precise recommendations for market interventions. Embedding development interventions in existing and proven practices might also increase the likelihood of interventions being continued after the intervening agency has left due to the viable embeddedness of these practices.

More specifically, I argue for involving rather than excluding intermediary traders in development interventions, as their practices seemed vital for all three arrangements studied. For instance, contract trading emerged as an arrangement that fits and is practicable in the context of staple crop markets with many alternate buyers and large numbers of farmers located in remote rural communities. Involving intermediary agents and their situated practices in development endeavours is vital for catalysing local remedies for food and nutrition security, and has proven its worth in the recent Covid-19 pandemic (Wegerif, 2020; Van Hoyweghen, Fabry, Feyaerts, Wade, & Maertens, 2021). Schoonhoven-Speijer et al. (2017) elaborate on the idea of 'trade schools', giving recognition to trade as a

skillful and organized profession, and granting intermediary traders a position in strategies aiming at a public goal, namely access to sufficient and healthy food for all. Establishing trade schools might lead to innovations in the rules and arrangements in food markets, thereby enhancing mechanisms creating transparency and predictability.

6.5.2 Implications for inclusion

An appreciation for intermediary trade might also have consequences for thinking and policies around inclusion. As I conclude in Chapter 5, unpacking the dynamics of intermediation shifts attention from discussing whether farmers have access to markets, towards the conditions under which farmers are included in the market (Thorpe, 2018; Schouten & Vellema, 2019). The articulation with locally embedded intermediation practices – which I labelled a property of viable institutions - creates smart linkages to local market channels. This importantly shapes the farmers' positions to negotiate modes of payment, or to use competition for raw materials as a condition for reshaping the terms of inclusion into their favour.

6.5.3 Reflections on the influence of development policy & practice

Taking a historical perspective and how modes of governance evolve over time also sheds light on development policy and practice. Agrarian transformation is a combination of public and private steering, both in setting up conditions for agrarian transformation (Chapter 2), as well as the organisation and steering of market channel. This links with Mazzucato's (2013) argument that the public is more important for the private than is often assumed. A large conglomerate company, such as Mukwano, was able to reach such scale due to conditions shaped by public policies and resulting from partnering with other private and public actors (Sitko, Jayne, Burke, & Muyanga, 2017), acting collectively in the OSSUP platform.

On the other hand, the role of intervention strategies of development organisations might be more modest than often presented. Both chapters studying newly induced arrangements show how development organisations entered once the mode of governance had become more formalised. In the case of both cooperatives, formalisation was a conscious strategy to be able to easier attract donors and benefit from support. Rather than 'introducing new institutions', in these cases, the contribution of donors is rather found in supporting, or 're-arranging', already proven modes of governance. This also has consequences for inclusion: if donors start working with formalised organisations, they might overlook those smallholders who have more difficulties in making the connection to markets channels controlled by these organisations. Especially for these farmers, intermediary trade might turn out to be vital, which is again an argument for appreciating the practices of intermediary traders; and to shift attention from fostering ideal-type organisations to identifying and leveraging capacities needed to perform within a specific context.

6.6 Final reflections: towards a new vocabulary

Food security depends on more than farming. This thesis examined how food materials become available for processing and marketing and focused on the intermediating practices of bulking. Bulking relates to broader social science questions about governance and market arrangements underlying food provisioning. The research aimed to understand how institutions governing food markets remain viable over time, while being embedded in the dynamic contexts of Uganda's sunflower sector. Institutional arrangements studied in parallel included a cluster of intermediary traders, cooperatives, and a contract farming scheme linking farmers to a large processing company. The thesis studied the viability of institutions starting with a practice perspective, as practices produce and reinforce institutions, while institutions consolidate practices. My conceptualisation of institutional viability thus bridges structure and agency in food provisioning. The thesis concludes that induced market arrangements in staple food markets only become viable if there is space for blending with institutions already present in the context, such as those governing informal trade. Likewise, institutions remain viable - successfully adjusting to external pressures – by articulating with local market arrangements.

'Mainstream' vocabulary concerning the governance of market arrangements, exemplified by a focus on ideal-typical formal arrangements and institutional voids, has proven to be insufficient for describing the dynamic processes in food markets arranging the availability of food. Combining a dynamic definition of institutions and a focus on socio-material embedding in this thesis led to a more dynamic vocabulary, summarized in Table 6.2. In this way, the thesis makes an important contribution to the upcoming institutional vocabulary used when studying modes of governance in agri-food markets.

Table 6.2 Towards a new vocabulary in analysing agri-food markets

Section	Mainstream vocabulary	Dynamic vocabulary
	Theory	
6.2.1	• Traders are imperfect or exploitative	• Traders are skilfully mastering a practice
	• Informal-formal	• Blending of both in real markets
	• Void-arrangement	• Embedding, articulating and re-arranging
6.2.2	• The collective as condition	• Collective formation as outcome of performing specific tasks
	• Coordination (integrating the separate efforts of individuals)	• Distributing cognition within and across organisational forms, alignment
6.2.3	• Social and organisational perspective on addressing coordination problems	• Social-material interactions
	Methodology	
6.3.1	• Design or outcome	• Practice
6.3.2	• Single arrangements	• Configurations
6.3.3	• In isolation	• Socio-materially embedded

The findings shift attention in development and intervention thinking from an exclusive focus on induced organizational models to the traits and emergent blending of institutions in local food markets. And it shifts attention to actors in the so-called 'hidden middle' – hidden partly because of a scholarly interest in either producers or consumers of food at the extreme ends of the agri-food chain – such as wholesalers, processors, organized farmers, and logistical service providers. Studying their daily practices shows their skillfulness, creativity and improvisation in ensuring a consistent supply of produce and finance flows, which importantly contributes to a sustained provisioning of food under conditions of scarcity and volatility. A practice approach helped to understand how solutions arise from the tasks performed. Such inventive and configurational solutions might not fit orderly binaries such as informal-formal, and void-arrangement, but instead show the necessity of blending, embedding, articulating and re-arranging institutions in their socio-material contexts.

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'I do not have a farm, so this is the only thing I can do. I didn't finish secondary school, but you cannot sit and wait for money. That's why I started trading'.

Retailer at Produce Lane, female. Lira, Uganda

English summary

Sustainable Development Goal 2 envisions to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture by 2030. These global ambitions assume that most small-scale agricultural producers are included in, and benefit from, agricultural food markets. Development policy and practice aim to facilitate the connection of farmers to markets via newly introduced 'institutional arrangements' referring to the introduction of, for example, cooperatives and formal contracts. The literature on institutional arrangements leaves several gaps. First, an exclusive focus on either the origin, initial design or outcomes of institutional arrangements pays less attention to how institutional arrangements actually work and remain intact in specific contexts and how these evolve over time. Second, studies on induced institutional arrangements have a strong focus on enhancing sustainability in high-value markets or global commodity chains. However, a focus on the engagement of farmers with domestic food markets is highly relevant for understanding the conditions of ensuring local food and nutrition security. And third, a strong focus on the introduction of novel arrangements – with the underlying arguments of modifying imperfect markets or filling institutional voids – might overlook market solutions already present within the context, organized by locally embedded actors in the so-called 'hidden middle'. These might be particularly fit to navigate conditions of scarcity, seasonal fluctuations and disparity in specific local contexts of food provisioning.

This thesis addresses these gaps with the aim to analyse how both locally organised and induced institutional arrangements work, evolve, interact and are embedded in a dynamic context of food provisioning in northern Uganda. The research focuses on the sunflower sector in northern Uganda, a sector marked by recent transformations in the last phase of a civil war, a strong expansion of the sector in terms of numbers of farmers, produced volumes, networks of intermediaries, processors, and food provisioning is governed by a variety of institutional arrangements. The thesis investigates a selection of embedded or emerging institutional arrangements: informal trade, cooperatives or contract farming.

The working and evolution of institutions can be studied with the concept of institutional viability, which bridges both structure, or macro, and agency, or micro perspectives on institutions by developing a meso-perspective. Institutional viability is the capability of an institution to be sustained within its environment, despite internal tensions and external pressures. The notion of internal tensions enables to investigate how institutions are shaped and reinforced through agency, and at the same time consolidate regularity of behaviour within a specific mode of governance. The notion of external pressures lays emphasis on the importance of the embeddedness of institutional arrangements within changeful and challenging contexts.

Governance, embeddedness and response to external pressures are studied using a practice perspective. The daily practice of actors are meaning-making, identity-forming and order-producing sets of activities. Order-producing implies that the practice is where institutions are shaped and reinforced, while institutions consolidate these same practices. In addition, the performance of a practice is shaped by its social and material context. The specific practice central to this thesis is the practice of bulking, which entails how food materials become available for processing and marketing. Investigating the performance of bulking reveals how a particular mode of governance is shaped and reinforced through the daily activities of actors, their role in governance processes, and the context in which they are situated.

This leads to the following main research question: **what makes bulking practices of local food crops institutionally viable in dynamic contexts?** In addition to answering the research question, the thesis has the theoretical objective to enhance institutional thinking around agricultural markets; and the methodological objective to enhance institutional diagnostics.

The research question is answered using the following research design. To understand the complex whole of the daily work of actors in bulking, their role in governing bulking, and the embedding of bulking in socio-material contexts, the practice needs to be studied from different angles. This is achieved with a 'zooming in – zooming out' approach, employing a selection of institutional lenses. A historical perspective is used to understand which historical dynamics shaped the contemporary features of agricultural transformation of the sunflower sector in northern Uganda (Chapter 2); Greif's economic history perspective is combined with a practice approach to understand how institutions governing the bulking practices of intermediary traders are reinforced (Chapter 3); institutional bricolage and institutional diagnostics help to unravel how newly introduced institutional arrangements become viably embedded within socio-material contexts (Chapter 4) and respond to external pressures (Chapter 5). Combined with the use of mixed methods, the chapters lead to an understanding of what makes bulking practices of local food crops institutionally viable in dynamic contexts.

The historical analysis in Chapter 2 describes the political, economic, and technical dynamics, which shaped the contemporary features of agrarian transformation of the sunflower sector in northern Uganda. In the past 100 years, Uganda has seen a shift in major processed oil crops: from cottonseed to sunflower. At the end of the 1980s, the cotton sector completely collapsed due to a combination of factors: political rule and civil unrest in the 1970s and 80s causing economic decline and a standstill of technical support, a collapse of cotton cooperatives, and low world prices of cotton. At the start of the 1990s, the public sector, in combination with international donors, aimed to revive the edible oil sector, and started investing in the growing of sunflower. They did so with a particular focus on northern Uganda, an area hit hardest by the collapse of the

cotton sector. At the same time, Mukwano, a Ugandan conglomerate company, decided to shift from importing palm oil to the local sourcing of oilseed for manufacturing edible oil. The following three factors contributed to agricultural transformation in the edible oil sector: 1) the availability of enough planting material; 2) momentum of the government and donors for the sector; 3) a willingness of the private sector to commit. In 2016, at the end of my field research, the sunflower sector had become a thriving sector: after the end of the civil war, farmers were eager to commit to a new and promising crop and the conducive conditions served as a catalyst for other actors, such as traders and processors, to become part of the process transforming the sector.

The in-depth case of a (largely) informal institutional arrangement in Chapter 3 detects the processes that made this arrangement viable. This cluster of 92 large and small traders in Lira, northern Uganda, called Produce Lane, evolved over more than 20 years in a context with much opportunity for the trade of (among others) oilseeds. However, Chapter 2 shows that the viability of this cluster was not evident: traders operated under circumstances of a society recovering from civil war, increasing competition for produce, and a challenging infrastructure. Chapter 3 combines an institutional lens with the study of interactive and collaborative practices of conduction, such as sourcing, transporting, warehousing, retailing and trading. Arranging exchanges of produce (under unfavourable and fluctuating conditions) entailed skill formation, building and maintaining complex relationships, including task distribution, and constructing rules underlying routines, while leaving room for improvisation. The practice-oriented analysis demonstrates that traders and support actors were able to sustain the cluster and create continuity and stability because practices were collaborative, coordinated and regulated. The analysis relates this to the following institutional properties of the cluster: 1) accommodating a variety of practices, and thus actors and interests; 2) ordering distributed tasks without external control while navigating a changeful socio-material environment; and 3) achieving social settlements using rules which emerged from the specialized tasks of managing produce and finance flows.

The subsequent chapters shift attention to two newly introduced institutional arrangements: cooperatives and contract farming. Chapter 4 studies the capacity of two cooperative organisations, situated in Uganda and Mali, to navigate their changeful market environments. The analysis uses an institutional bricolage approach and concludes that the cooperatives became viably embedded through a blending with proven and sustained practices present in the specific locality. Through blending, institutions proven viable in the context are incorporated in the institutional set-up of the cooperative arrangement. Moreover, comparing the embedding of cooperatives in Uganda and Mali shows how similar properties are found across different contexts of agrarian transformation. In both cases, a combination of specific events, existing relations and brokering activities were of great influence of the emergence of the cooperative. The cooperative in Mali was established by a trader and led by secretaries of

old existing cooperatives; in the Ugandan cooperative, the cooperative was established by a pastor with an existing church network. In addition, traders were embedded in smaller farmer groups. In both cases, farmers skilfully navigate their context, and adaptations to the organisational structure are the result of active problem-solving. Formalisation for instance turned out to be instrumental for acquiring access to service providers and new markets, both necessary for continuing the objective of trading.

Chapter 5, concerning the dynamics of contract enforcement, shows how an organisational structure *responds to external pressures*. Similar processes generating institutional viability found in the analysis of the informal cluster of traders were integrated into the mode of governance in contract farming. Resultingly, the governance of relationships between the company and its intermediaries resembled the governance of wholesalers and village traders found in Produce Lane, which was over time formalized in contract trading. Many agents of the company had been traders before becoming agents of the company. In their effort to ensure a consistent flow of produce, the company accommodated a variety of actors and articulated its business with the existing institutional arrangements for bulking in local markets. In addition to articulation, improvisation and rules emerging for the specific tasks made the contract 'pivot' in a shift from contract farming to contract trading. This shift was further consolidated through smart investments in logistics, which points at the company's capacity to respond to external pressures and build supply chain resilience. The creation of smart linkages to local market channels importantly shaped the farmers' position to negotiate modes of payment, or to use competition for raw materials as a condition for reshaping the terms of inclusion in their favour.

The general research question is answered in Chapter 6. The thesis concludes that the conceptualisation of institutional viability bridges structure and agency in food provisioning. Induced market arrangements only become viable if there is space for blending with institutions already present in the context, such as those governing informal trade. Likewise, institutions remain viable - successfully adjusting to external pressures – by articulating with local market arrangements. The collective outcome of bulking practices is defined as 'ensuring a consistent supply of produce and finance flows'. Ensuring a consistent supply under difficult circumstances is not evident and is the empirical manifestation of the viability of the several institutional arrangements studied. The making of viability is not an easy process and takes time: institutional arrangements developed over at least 20 years. The research identifies four core properties of institutionally viable food markets: 1) accommodating a variety of practices, and thus actors and interests; 2) ordering distributed tasks without external control; 3) achieving social settlements; and 4) blending with proven practices. The latter shows that induced arrangements in food markets do not exist in isolation or fill a void but become viable through blending and articulating with institutions already present in local food markets. This shows that institutions are not a fixed structure

and that agency is not only deployed rationally to get to individual solutions using this structure. Instead, institutions are subject to internal tensions and external pressures. Institutions therefore need to be produced and reinforced in practice through situated agency, while institutions simultaneously consolidate these practices. Combining a dynamic institutional analysis with a practice approach aided in understanding how structure and agency interact in market institutions of food provisioning.

Using multiple institutional lenses gave new theoretical insights for the study of agricultural markets in the global South around intermediation, collective action and coordination, and the materiality of bulking practices. First, the thesis shows the importance of including the practice of intermediation and emphasizes how intermediary traders and other intermediary actors importantly contribute to arranging food markets. Second, it makes several contributions to the conceptualisation of collectivity and draws attention to the distributed nature of knowledge and tasks within collective endeavour. Third, shedding light on the materiality of trade adds to the literature and shifts focus from the technical aspects of farming to that of the hidden middle; thereby emphasizing the skilfulness of intermediaries, and showing an appreciation for mundane, localized, technical solutions (as opposed to new technology). Theoretically, the thesis overcomes two common binaries in the literature: that of informal – formal (where informal often equals imperfect) and void – arrangement. Findings show how formal set-ups such as cooperatives and contract farming are a blend of informal and formal institutions. In addition, the research shows how novel arrangements are not introduced in voids but become incrementally embedded in historically grown institutions.

In terms of methodology, the thesis aims to advance institutional diagnostics and provide tools to make institutional viability researchable. The institutional viability of bulking was made insightful using a practice-oriented and configurational perspective. A practice approach helped to understand how solutions arise from the tasks performed. Such inventive and configurational solutions might not fit orderly binaries such as informal-formal, and void-arrangement, but instead show the necessity of using new vocabulary such as the blending, embedding, articulating and re-arranging of institutions in their socio-material contexts. The thesis argues that institutional diagnostics can be enhanced by taking practice and 'configurations' as units of analysis, and by considering how practice and configurations navigate dynamic contexts.

The research has the following implications for development policy and practice. First, development practice should start from what is already present, aligning with locally emerging practices, and this leads to an appreciation of intermediary trade. Second, the research shifts attention from studying whether farmers have access to markets, towards conditions under which farmers are included in the market. Third, the research leads to reflection on the influence of public policy and practice on development processes.

Concluding, the thesis shifts attention in development and intervention thinking from an exclusive focus on induced organizational models to the traits and emergent blending of institutions in local food markets. And it shifts attention to actors in the so-called 'hidden middle' – hidden partly because of a scholarly interest in either producers or consumers of food at the extreme ends of the agri-food chain – such as wholesalers, processors, organized farmers, and logistical service providers. Studying their daily practices shows their skilfulness, creativity and improvisation in ensuring a consistent supply of produce and finance flows, which importantly contributes to a sustained provisioning of food under conditions of scarcity and volatility.

Nederlandse samenvatting

Duurzaam Ontwikkelingsdoel 2 (SDG2) beoogt het wereldwijd beëindigen van honger en ondervoeding in 2030, door middel van toegang tot veilig, voedzaam en voldoende voedsel, en het promoten van duurzame landbouw. Deze wereldwijde ambities veronderstellen dat kleinschalige boeren in ontwikkelingslanden toegang hebben tot, en profiteren van, agrarische markten. Op deze manier kunnen boeren bijdragen aan het behalen van SDG2. Ontwikkelingsbeleid en -programma's hebben daarom tot doel om boeren te helpen de link te maken met de markt via het introduceren van zogenaamde 'institutionele arrangementen'. Een institutioneel arrangement kan bijvoorbeeld lidmaatschap van een boerencoöperatie zijn, of een contract tussen een groot verwerkingsbedrijf en de boer. De academische literatuur over institutionele arrangementen vertoont verschillende hiaten. Ten eerste ligt de nadruk vaak op ofwel het ontwerp, of op de uitkomsten van institutionele arrangementen. Daardoor is er minder aandacht voor hoe een institutioneel arrangement precies werkt, in stand blijft en zich ontwikkelt in een specifieke context. Ten tweede hebben studies naar institutionele arrangementen vaak een focus op producten voor de exportmarkt, zoals cacao en koffie. Voor het behalen van SDG2 is juist aandacht voor gewassen die geproduceerd worden voor de lokale voedselmarkt van belang. Deze focus draagt ook bij aan het begrijpen van de condities die bijdragen aan lokale voedselzekerheid. Ten derde kan men, door het benadrukken van het introduceren van nieuwe arrangementen, over het hoofd zien welke marktoplossingen al aanwezig zijn in de lokale context. Vaak zijn deze oplossingen georganiseerd door actoren die opereren in het zogenaamde 'verborgen midden' van de voedselketen en die sterk zijn verankerd in de lokale context. Deze actoren zouden wel eens heel geschikt kunnen zijn voor het navigeren door lokale omstandigheden zoals schaarste, wisselende seizoenen, en ongelijkheid.

Dit proefschrift probeert deze hiaten op te vullen, en heeft als doel om te analyseren hoe institutionele arrangementen werken, zich ontwikkelen, interacteren met andere arrangementen, en hoe deze ingebed zijn in een specifieke context van voedselvoorziening in noord-Oeganda. Dit proefschrift onderzoekt een selectie van lokaal ingebedde en nieuw geïntroduceerde arrangementen: informele handel, boerencoöperaties, en contract landbouw. Het onderzoek richt zich op de zonnebloemsector in noord-Oeganda, een sector die gekenmerkt wordt door allerlei historische en recente ontwikkelingen zoals het einde van een burgeroorlog, een sterke uitbreiding van de sector wat betreft aantallen boeren, geproduceerde volumes, het netwerk van tussenhandelaren, en de verwerkingsindustrie.

Hoe instituties werken en zich ontwikkelen heb ik bestudeerd met het volgende concept: 'de levensvatbaarheid van instituties' (*institutional viability*). Dit concept slaat een brug tussen verschillende perspectieven op instituties: het '*structure*', of macro, perspectief aan de ene kant, en het '*agency*', of micro, perspectief aan de andere kant. Een macro perspectief ziet een institutie vooral als iets statisch, een vastliggende regel.

Zo'n regel is bijvoorbeeld dat je bij een groen stoplicht mag doorrijden, en bij een rood stoplicht moet stoppen. Een micro perspectief focust op actie en invloed, oftewel de mogelijkheden die iemand heeft om met een bestaande structuur om te gaan. Je moet eigenlijk stoppen bij rood; maar op de fiets gaat men daar vaak iets soepeler mee om. Kijken naar de levensvatbaarheid van een institutie draagt bij aan een meer dynamisch, of meso, perspectief. Dit gaat over vragen als: hoe ontstaat een institutie, hoe blijft, door het gedrag en de acties van individuen, een institutie in stand, of hoe kan een institutie veranderen, of wellicht zelfs verdwijnen?

Institutionele levensvatbaarheid wordt als volgt gedefinieerd: de capaciteit van een institutie om, in een specifieke context, in stand te blijven, ondanks interne spanningen en/of druk van buitenaf. Het idee van interne spanningen maakt het mogelijk om te onderzoeken hoe instituties gevormd en versterkt worden door *agency*; en hoe instituties zorgen voor voorspelbaarheid van gedrag. Een behulpzaam begrip hiervoor is '*governance*', of besturing. Een institutioneel arrangement – een set van instituties bij elkaar - zoals een coöperatie of een contract 'bestuurt' dus hoe boeren toegang hebben tot de markt. Het idee van druk van buitenaf benadrukt het belang van de inbedding van institutionele arrangementen in een specifieke, uitdagende, en veranderende context. Deze drie elementen – besturing, inbedding in de context, en het omgaan met externe druk – zijn bestudeerd door middel van een zogenaamd praktijk perspectief.

Een praktijk perspectief richt zich op de dagelijkse activiteiten en handelingen van actoren, en gaat ervan uit dat dagelijkse activiteiten betekenis geven, identiteit vormen, en voor een bepaalde orde zorgen. Het zorgen voor orde impliceert dat de dagelijkse praktijk de plek is waar instituties gevormd en versterkt worden; en op hun beurt bevestigen instituties de dagelijkse praktijk. Tegelijkertijd is er ook ruimte voor improvisatie. Daarnaast wordt het uitvoeren van dagelijkse activiteiten ook vormgegeven door de specifieke sociale en materiele context. In dit proefschrift staat de praktijk van bulken centraal: het bij elkaar brengen van volume van landbouwproducten. Het bulken van productie gaat eigenlijk simpelweg over hoe verbouwde gewassen, in dit geval zonnebloemzaden, verzameld worden om verkocht, verwerkt en op de markt gebracht te kunnen worden. Het onderzoeken van hoe bulken precies uitgevoerd wordt laat zien hoe een specifiek institutioneel arrangement gevormd en versterkt wordt door de dagelijkse activiteiten van actoren, hun rol in het besturen van een arrangement, en de context waarin ze gesitueerd zijn.

Dit alles leidt tot de volgende **hoofdvraag** van het onderzoek: *'wat zorgt ervoor dat de praktijk van het bulken van lokale voedselgewassen in een dynamische context institutioneel levensvatbaar wordt'*? Doel van het onderzoek was om deze onderzoeksvraag te beantwoorden, en daarmee bij te dragen aan 1) de institutionele theorie rond agrarische markten in ontwikkelingslanden, en 2) de methodologie waarmee instituties onderzocht en gediagnosticeerd worden.

Voor het beantwoorden van de onderzoeksvraag heb ik het onderzoek als volgt ontworpen. Omdat het bestuderen van dagelijkse praktijken complex is, heb ik verschillende invalshoeken, of lenzen, gebruikt. Op die manier kun je de praktijk van verschillende kanten bekijken, en kun je als het ware in- en uit zoomen. Ik heb voor elk hoofdstuk een andere institutionele lens gebruikt. In Hoofdstuk 2 hanteer ik een historisch perspectief, om te begrijpen hoe de huidige zonnebloemensector tot stand is gekomen. In Hoofdstuk 3 heb ik een economisch perspectief met een praktijk perspectief gecombineerd, om te begrijpen hoe de dagelijkse praktijk van informele handelaren instituties vormen en versterken. In Hoofdstuk 4 en 5 heb ik twee institutionele lenzen – institutionele bricolage en institutionele diagnostiek – gebruikt om te begrijpen hoe van buitenaf geïntroduceerde institutionele arrangementen levensvatbaar worden in een specifieke context (Hoofdstuk 4) en omgaan met druk van buitenaf (Hoofdstuk 5). Hoofdstuk 4 zoomt in op twee coöperaties, terwijl Hoofdstuk 5 inzoomt op een contract met een groot verwerkingsbedrijf. Om het onderzoek te doen heb ik verschillende onderzoeksmethoden gebruikt, zoals interviews, een vragenlijst, het observeren van de dagelijkse praktijk van bulken, en het bijwonen van vergaderingen. Hieronder vat ik de 4 empirische hoofdstukken kort samen. Het onderzoek vond plaats in het stadje Lira en haar omgeving. Lira ligt in noord-Oeganda en is een regionaal knooppunt voor de handel in zonnebloemzaden, en het verwerken van deze zaden tot zonnebloemolie.

De historische analyse in Hoofdstuk 2 beschrijft hoe politieke, economische, en technische ontwikkelingen in Oeganda hebben bijgedragen aan de agrarische transformatie van de zonnebloemen sector in noord Oeganda. Hiervoor heb ik 100 jaar teruggekeken; in deze periode is het zwaartepunt van de zogenaamde eetbare oliesector verschoven van katoen naar zonnebloem. Katoen en zonnebloem zijn allebei geïntroduceerd door Groot-Brittannië tijdens hun koloniale bewind. Katoen werd in de eerste plaats verbouwt voor de textielsector, maar katoenzaden kunnen geperst worden voor de olie, wat de belangrijkste bron van eetbare olie was tot de jaren 80 van de vorige eeuw. Aan het eind van de jaren 80 stortte de katoensector volledig in, door een combinatie van factoren: het politieke bewind en de maatschappelijke onrust in de jaren 70 en 80 (o.a. onder Idi Amin) zorgden voor een enorme economische achteruitgang en stagnatie van technische ondersteuning van katoenboeren; katoencoöperaties functioneerden niet meer door wanbeheer; en lage wereldmarktprijzen voor katoen. Aan het begin van de jaren 90 besloten de overheid en internationale donoren om samen de eetbare oliesector nieuw leven in te blazen. Er werd besloten om in zonnebloem te investeren in plaats van katoen. De keuze voor zonnebloem was vooral strategisch voor noord-Oeganda, het gebied wat het hardst getroffen was door het ineenstorten van de katoensector, waar ecologisch gezien zonnebloem goed verbouwd kon worden, en wat ook economische hulp kon gebruiken in verband met de burgeroorlog die er toen woedde. Tegelijkertijd was er een groot privaat Oegandees verwerkingsbedrijf, Mukwano, dat besloot over te stappen van het importeren van palmolie naar het lokaal inkopen van zonnebloemzaden en die zelf te verwerken tot zonnebloemolie.

In dit hoofdstuk concludeer ik dat drie factoren hebben bijgedragen aan een succesvolle agrarische transformatie van de eetbare oliesector: 1) de beschikbaarheid van genoeg zaaigoed; 2) momentum bij de overheid en donors om in de sector te investeren; en 3) de bereidheid van de private sector om zich te verbinden aan de zonnebloemsector. In 2016, aan het einde van mijn veldonderzoek, was de zonnebloemsector een florerende sector: na het einde van de burgeroorlog committeerden boeren zich graag aan een nieuw en veelbelovend gewas, en de genoemde drie factoren hadden een katalyserende functie voor andere actoren, zoals handelaren en andere verwerkingsbedrijven, om te investeren in de zonnebloemsector.

In deze dynamische context, die ik beschreef in Hoofdstuk 2, is het informele handelaren gelukt een institutioneel arrangement op te zetten voor het bulken van zonnebloemzaden (en allerlei andere gewassen). Dit is niet vanzelfsprekend: de handelaren werkten onder lastige omstandigheden, zoals de sociale en economische nasleep van de burgeroorlog, een toenemende competitie voor landbouwproducten, slechte wegen en boeren die vaak over grote gebieden verspreid zijn. In Hoofdstuk 3 heb ik de processen bestudeerd die ervoor zorgen dat zo'n informele organisatie, onder deze lastige omstandigheden, in een periode van 20 jaar tot stand is gekomen en in stand blijft. Het ging om een cluster van 92 grotere en kleinere handelaren, gevestigd in één straat in Lira, genaamd '*Produce Lane*'. Ik heb bestudeerd hoe handelaren dagelijks de praktijk van bulken uitvoeren, wat zaken beslaat zoals inkoop, vervoer, kwaliteitscontrole, opslag, verkoop en detailhandel. Dit heb ik gedaan door middel van een vragenlijst onder de handelaren, interviews, en het dagelijks observeren van deze activiteiten. Het organiseren van handel (onder lastige en wisselende omstandigheden) bracht verschillende aspecten met zich mee, zoals specifieke vaardigheden, het opbouwen en onderhouden van complexe relaties met een specifieke taakverdeling, het opstellen van regels, en tegelijkertijd ruimte laten voor improvisatie. Ik concludeer dat de handelaren in het cluster in staat waren het cluster in stand te houden omdat dagelijkse praktijken waren gebaseerd op een goede samenwerking, coördinatie en regulatie. Dit relateer ik aan de volgende institutionele eigenschappen van het cluster: 1) ruimte geven aan een verscheidenheid van praktijken, actoren en belangen; 2) het creëren van orde in een context van 'gedistribueerde taken', vaak zonder duidelijke externe controle; 3) het hanteren van spanningen en schikken van zaken met behulp van regels die voortkomen uit de specifieke praktijk.

Hoofdstuk 3 ging over handelaren die zelf, vanuit hun dagelijkse activiteiten, tot een institutioneel arrangement zijn gekomen. In de daaropvolgende hoofdstukken 4 en 5 heb ik gekeken naar het functioneren van arrangementen die geïntroduceerd zijn, en al een duidelijker bestaand ontwerp hebben: coöperaties en een contract met een groot verwerkingsbedrijf. Hoofdstuk 4 vergelijkt twee coöperaties, een in Oeganda en een in Mali, en kijkt naar hoe zij levensvatbaar zijn in hun specifieke context. Hiervoor gebruikte ik een zogenaamde 'institutionele bricolage' benadering, een benadering die

behulpzaam is om te kijken of en hoe instituties worden aangepast aan een specifieke situatie en context. Ik heb ten eerste gekeken naar hoe beide organisatievormen zijn ontstaan. In beide gevallen was een specifieke combinatie van gebeurtenissen, al bestaande relaties en al aanwezige activiteiten van bulken van grote invloed op het tot stand komen van de coöperatie. De coöperatie in Mali werd bijvoorbeeld opgezet door een succesvolle handelaar, en de coöperatie in Oeganda werd geïnitieerd door een kerkleider met behulp van zijn bestaande kerkelijke netwerk. Ook interessant is dat beide begonnen als informele groepen van boeren, die pas in een later stadium formaliseerden tot coöperatie. Formaliseren was vooral instrumenteel om toegang te krijgen tot diensten van ontwikkelingsorganisaties en nieuwe markten. Ik concludeer dat de coöperaties levensvatbaar blijven omdat er mengvormen ontstaan met andere instituties. Dit betekent dat de coöperaties bijvoorbeeld succesvolle en duurzame manieren van organisatie overnemen van handelaren. Interessant is te zien dat dit in zowel Mali als Uganda gebeurde. In Uganda bijvoorbeeld was de coöperatie onderverdeeld in kleine clusters van boeren, waar handelaren vaak onderdeel van waren. Op die manier kon zo'n klein cluster gebruik maken van de expertise van de handelaar om hun productie te bulken.

In Hoofdstuk 5 ligt de nadruk op het omgaan met druk van buitenaf, en hoe dat invloed heeft op institutionele levensvatbaarheid. Hiervoor gebruikte ik een 'institutionele diagnostiek' benadering. In dit hoofdstuk heb ik het contract tussen boeren en een groot verwerkingsbedrijf van zonnebloemzaden bestudeerd. Het bedrijf, genaamd Mukwano, distribueerde veredelde zonnebloemzaden aan gecontracteerde boeren, die hun oogst vervolgens verkochten aan het bedrijf. Voor het verspreiden van de zaden, en het weer opkopen van de oogst gebruikte Mukwano zogenaamde agenten, die betaald werden met een deel van de opbrengst van de oogst. Interessant genoeg leek de relatie van het bedrijf met hun agenten veel op de relaties van de handelaren op *Produce Lane* en hun tussenhandelaren, die ik bestudeerde in Hoofdstuk 3. Daarnaast waren agenten zelf vaak al handelaar geweest. Net als bij de coöperaties ontstaan er dus mengvormen van nieuwe en lokale instituties voor bulken. Dit zorgt voor een betrouwbare en constante toevoer van zonnebloemzaden. Tegelijkertijd had het bedrijf te maken met druk van buitenaf, zoals toenemende competitie in de markt. Om te zorgen dat de toevoer van zonnebloemzaden constant bleef, breidde Mukwano het opkopen uit van hun eigen agenten naar lokale handelaren én coöperaties (onder andere de coöperatie bestudeerd in Hoofdstuk 4). Dit label ik 'articulatie' met de lokale markt. Deze nadruk op opkopers zorgde er ook voor dat het zwaartepunt van het contract verschoof van de boer naar de tussenpartij: een verschuiving van contractlandbouw naar contracthandel. Deze verschuiving werd verder bestendigd door slimme investeringen in logistiek. Op allerlei manieren wist het bedrijf dus slim om te gaan met druk van buitenaf, daarbij steunend op al bestaande marktoplossingen. Interessant genoeg had dit ook positieve effecten voor boeren: omdat het contract richting de tussenpersoon verschoof, hadden boeren makkelijker toegang tot de zaden, en het gebruik van verschillende typen van tussenpersonen gaf de boer ook meer keuze in het verkopen van zaden.

Hoofdstuk 6 geeft antwoord op de algemene onderzoeksvraag: wat zorgt ervoor dat de praktijk van het bulken van lokale voedselgewassen in een dynamische context institutioneel levensvatbaar wordt'? De thesis laat zien dat het concept 'institutionele levensvatbaarheid' inderdaad een brug kan vormen tussen een macro- en micro-perspectief op instituties, wat betreft voedselvoorziening. Ik concludeer dat geïntroduceerde markt arrangementen - zoals coöperaties en contracten – alleen levensvatbaar worden als er ruimte is voor vermenging van geïntroduceerde instituties met instituties die zich al bewezen hebben in de specifieke context. Zoals bijvoorbeeld de institutionele arrangementen van informele handelaren, die ik vond in Hoofdstuk 3. Ten tweede concludeer ik dat instituties levensvatbaar blijven wanneer ze 'articuleren' met de lokale markt. Ik heb dit bestudeerd met gebruik van een praktijk perspectief. De uitkomst van de (vaak collectieve) praktijk van bulken definieer ik als 'het zorgen voor een constante aanvoer van voedselproducten en geldstromen'. Zorgen voor een constante toevoer onder lastige omstandigheden is niet vanzelfsprekend, en laat zien dat een institutioneel arrangement niet zomaar levensvatbaar wordt. Dit is een ingewikkeld proces en heeft tijd nodig. De institutionele arrangementen die ik bestudeerde zijn allemaal ontwikkeld over zo'n 20 jaar of langer. De casussen laten samen vier eigenschappen van institutioneel levensvatbare voedselmarkten zien: 1) ze geven ruimte aan een variatie van praktijken, actoren en belangen; 2) ze creëren orde in een context van 'gedistribueerde taken', vaak zonder duidelijke externe controle; 3) ze hanteren spanningen en schikken zaken onderling; 4) ze mengen met lokale praktijken waarvan de levensvatbaarheid al bewezen is.

Vooral dit laatste punt, het vermengen van nieuwe en bestaande instituties, laat zien dat nieuwe organisatievormen, zoals coöperaties en contracten, niet op zichzelf staan en leemtes in de markt opvullen, maar juist levensvatbaar worden door zich te verhouden tot, en vermengen met, al aanwezige oplossingen in de lokale voedselmarkt. Dit laat zien dat instituties niet alleen vaststaande, in steen gebeitelde, structuren zijn, en dat *agency* meer omvat dan het individueel omgaan met deze structuur. Een institutie is onderhevig aan interne spanningen en invloeden van buitenaf; en de *agency* van actoren is van belang voor het omgaan met deze spanningen en het mogelijk aanpassen van instituties. Met deze conclusies laat ik zien dat het combineren van een dynamisch perspectief op instituties met een praktijk perspectief inderdaad helpt in het begrijpen van de interactie tussen structuur en *agency*. En ik betoog dat deze benadering van belang is voor het beter begrijpen van instituties die de toegang tot voedselmarkten regelen.

Met dit onderzoek lever ik verschillende bijdragen: aan theorievorming in sociale wetenschappen wat betreft landbouwmarkten, aan de methodologie waarmee deze bestudeerd worden, en aan ontwikkelingsbeleid en -praktijk. Deze drie aspecten ligt ik hieronder verder toe.

Wat betreft de theorie lever ik een bijdrage aan drie concepten: bemiddeling (tussen de boer en de opkoper), collectieve actie, en het materiële aspect van bulking. Ten eerste laat de thesis het belang zien van de praktijk van bemiddelen of makelen tussen de boer en de opkoper, een activiteit die vaak onderbelicht is in de literatuur. De resultaten van de thesis benadrukken juist hoe tussenhandelaren en andere actoren een belangrijke bijdrage leveren aan het organiseren van voedselmarkten. Ten tweede draagt de thesis bij aan het denken over collectieve actie, onder andere door het belang te laten zien van processen die gedistribueerde kennis en taken toch laten bijdragen aan collectieve inspanningen. Ten derde belicht een praktijk perspectief het materiële aspect van voedselproducten op de markt brengen. Het verlegt ook de aandacht van het technisch ondersteunen van boeren (bijvoorbeeld door middel van verbeterde productietechnieken) naar het belang van het ondersteunen van de technieken en vaardigheden van tussenpersonen. Het materiële aspect meenemen in het onderzoek zorgt ook voor het waarderen van alledaagse, lokale, technische oplossingen, in tegenstelling tot de introductie van nieuwe technologieën of institutionele arrangementen. Wat institutionele theorie betreft biedt de thesis een alternatief voor twee gangbare manieren van of-of denken binnen de literatuur: informele versus formele instituties (waar informeel vaak staat voor imperfect), en 'institutionele leegte' (wijzend op de complete afwezigheid van instituties) versus institutioneel arrangement. In plaats van informeel óf formeel laat de thesis zien dat een formele set-up, zoals coöperaties en contracten, een mix is van informele en formele instituties. Daarnaast laat het onderzoek zien dat nieuwe arrangementen niet in een leegte geïntroduceerd worden, maar juist ingebed zijn in en vermengd raken met al aanwezige instituties in een specifieke context.

Wat betreft methodologie heeft het proefschrift een bijdrage geleverd aan het onderzoekbaar maken van institutionele levensvatbaarheid. Institutionele levensvatbaarheid is inzichtelijk gemaakt door middel van een praktijk perspectief en een zogenaamd 'configurationeel' perspectief. Een praktijk perspectief helpt om te begrijpen hoe oplossingen en instituties voortkomen vanuit het uitvoeren van een specifieke taak. Deze oplossingen zijn inventief en 'configurationeel', oftewel een samenstelling van informeel én formeel, nieuw én oud; en voldoen daardoor niet aan de gangbare of-of suggesties zoals formeel-informeel en leegte-arrangement. In plaats daarvan laat de thesis het belang zien van het gebruik van nieuwe, meer dynamische concepten hiervoor, zoals vermenging, navigeren, inbedding, articulatie, en herschikken van instituties in hun socio-materiele context. Het proefschrift beargumenteert dat de institutionele diagnostiek baadt kan hebben bij een focus op praktijk en 'configuraties'; om deze als eenheid van analyse te nemen, en te kijken hoe ze navigeren in een dynamische context.

Het onderzoek heeft de volgende consequenties voor ontwikkelingsbeleid en -praktijk. Ten eerste, ontwikkelingsbeleid zou veel meer moeten beginnen bij wat er al aanwezig is, door het waarderen van, en goed aansluiten op, lokale praktijken. Bijvoorbeeld de activiteiten van informele handelaren, in plaats van retoriek als 'het

uitsluiten van de tussenhandelaar'. Ten tweede, het onderzoek verlegt de aandacht van het bestuderen óf boeren toegang hebben tot de markt, tot het bestuderen van de condities waarop boeren deelnemen in de markt. Ten derde, het onderzoek leidt tot een reflectie op wat precies de invloed is van publiek beleid op ontwikkelingsprocessen. De casussen van de coöperaties en het contract laten zien dat publieke partijen zoals ontwikkelingsorganisaties deze niet uit het niets hebben opgezet, maar aanhaakten op al bestaande processen.

Samenvattend verlegt dit proefschrift de aandacht in ontwikkelingsdenken van een exclusieve aandacht voor het opzetten van nieuwe arrangementen, naar ontrafelen van hoe al aanwezige instituties markttoegang organiseren, wat voor eigenschappen zij hebben, en hoe deze zich vermengen met nieuwe arrangementen. Het proefschrift verlegt ook de aandacht naar de actoren die met deze instituties werken – het 'verborgen midden' genoemd vanwege de weinige aandacht die ze krijgen in de literatuur – zoals groothandelaren, verwerkers, georganiseerde boeren, en logistieke dienstverlening. Het bestuderen van hun dagelijkse praktijken laat hun bekwaamheid zien, hun creativiteit en vermogen tot improviseren in het organiseren van voedselmarkten. Hiermee leveren ze een belangrijke bijdrage aan een duurzame toegang tot voedsel, terwijl ze kundig navigeren door lokale omstandigheden zoals schaarste, wisselende seizoenen en ongelijkheid.

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'It always seems impossible until it's done'
Nelson Mandela

Proposition 4 belonging to this thesis reads: *a PhD's individual successes and failures both have collective roots*. In other words, my PhD is not my individual achievement, but has collective roots, for which I am very grateful. Without them, this PhD would indeed have been impossible! Words of thanks and acknowledgements are therefore in order.

First, my supervisors. Sietze Vellema, without you this thesis simply wouldn't be here. Thank you for taking on this adventure with me, after my initial question to supervise a PhD project. Over the course of the PhD, it seems to me that we moved from supervision to cooperation, trying to understand together how to use institutional theory and practice theory (or methodology, or approach, or...) for understanding processes of how food markets work. I have thoroughly enjoyed this process! Your enthusiasm for these concepts was always contagious, and you have taught me to be very precise in how to understand the concepts you use, and how to write about them. Moreover, your kind nature and constructive feedback, combined with a dose of humour, never made me doubt myself and my abilities as a researcher. Also, I very much appreciate your patience and sympathy with the things I was struggling with, both within and outside the PhD. I hope that we can continue exploring the 'wild world of institutions' in the future!

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'Experience: that most brutal of teachers. But you learn, my God do you learn'
C.S. Lewis

In my experience, doing a PhD is both very rewarding and very challenging. Rewarding, because it is a rare opportunity to dive deep into topics you are interested in, want to learn more about, and are committedly trying to enhance. I truly enjoyed this process until the very last sentences written down in Chapter 6. On the other hand, you are doing this in a challenging academic environment, always feeling, justified or not, a pressure to perform and show your excellence. Juggling these two extremes is already an arduous task, and sometimes became nearly impossible when life threw in a couple more challenges. Dealing with all this would not have been possible without dear friends within academia, understanding the academic world, but also my family and friends outside academia, knowing me very well, and helping me to put things in perspective. Thanks!

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About the author

Mirjam Schoonhoven-Speijer was born in 1984 in Utrecht, the Netherlands. After completion of her secondary education at Gymnasium Camphusianum in Gorinchem in 2002, she enrolled at the Radboud University Nijmegen to study Medicines. After two years, however, she switched to the bachelor Cultural Anthropology and Development Studies, which included a three months internship in Ecuador at the fair trade cocoa cooperative Kallari. The switch to Social Sciences proved to be successful: she proceeded in 2009 with a Research Master's in Social and Cultural Science, also at the Radboud University Nijmegen. This led to a summer school in Development Economics at the London School of Economics, and 4 months of fieldwork in Kenya, doing research on the influence of fair trade certification on risk behaviour of Kenyan coffee farmers. Eager to learn more about both development practice and knowledge development, in 2011, Mirjam successfully applied for the Advanced Master in International Development (AMID), also at Radboud University Nijmegen. The AMID is a traineeship for talented young professionals in the development sector, and included a placement as Strategy Officer for the Agricultural sector at the head office of the Dutch NGO SNV in The Hague. After this year, she worked as a junior consultant at the Royal Tropical Institute (KIT) Amsterdam, which included short field missions to Ghana and Uganda. Keen to understand even better how development interventions in agricultural markets work, she had started writing a research proposal for the NWO Research Talent grant together with Sietze Vellema, which was granted during the summer of 2013. In 2014 she started with her PhD project at the Knowledge, Technology and Innovation group of Wageningen University. The thesis included 10 months of fieldwork in Uganda, and a short but very inspiring research visit to the Agricultural, Food and Resource Economics department of Michigan State University, to work together with Prof. dr. Thomas Reardon.

Currently, she is working as an independent research consultant, and her research focuses on making food available for consumers, including (informal) trade, wholesale, cooperatives, processors, and services as finance, extension, transport and storage. Questions of how actors make markets work for them remain her key focus: as well as how institutions governing practices are reinforced by actors, within a certain context. With her broad background in social sciences, she studies these topics interdisciplinary, using both quantitative and qualitative methods.

Mirjam Schoonhoven-Speijer
Wageningen School of Social Sciences (WASS)
Completed Training and Supervision Plan

Name of the learning activity	Department/Institute	Year	ECTS*
A) Project related competences			
Technography: Researching technology and development (CPT31306)	CPT, WUR	2014	6
Research proposal	KTI, WUR	2013	6
STEPS Summer School	IDS, UK	2014	3
Discussion group 'how to study institutions and practices in markets'	KTI, WUR	2014	1.5
Interdisciplinary window: institutions and societal transformation (CPT57802)	WASS, WUR	2018	2
Practice-based approach master class	WASS, WUR	2018	0.5
Research visit at Michigan State University (MSU) with WASS junior research grant	Agricultural, Food and Resource Economics, MSU, USA	2017	3
B) General research related competences			
WASS Introduction course	WASS,WUR	2014	1
'Trading oilseeds in northern Uganda: how ordered and skilful practices of traders link farmers to markets'	AFHVS/ASFS annual conference, Pittsburgh, USA	2015	1
'The institutional viability of rural markets: how trade practice in Lira, Northern Uganda enable and sustain access to food'	ISS, 14th Development Dialogue Conference, The Hague, the Netherlands	2016	1
Techniques for Writing and Presenting a Scientific Paper	WGS, WUR	2015	1.2
Qualitative Data Analysis with Atlas ti: A hands-on practical	WASS, WUR	2015	1
Project and Time Management	WGS, WUR	2015	1.5
C) Career related competences/personal development			
Writing grant proposals	Wageningen in'to Languages	2018	2
Training 12 enumerators during fieldwork	n.a. (fieldwork Uganda)	2016	2
Total			**32.7**

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

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