Getting her money’s worth?

An Exploration of Women’s Integration in the Palm Oil Value Chain and the Effects on their Household Food Security

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Getting her money's worth?
Abstract

Global palm oil consumption is on the rise and is expected to double in 2050. Because of the high proportion of rural smallholders integrated in the chain and the cash income that this generates, the palm oil sector has been accredited for its potential pro-poor impacts. In Ghana, a growing number of particularly women are shifting from food crop farming to being the main producers of the country’s palm oil in small-scale mills, raising the question how this affects a household’s food security. While research has found that women are key actors in providing household food security and that increased cash income does not by definition guarantee the food security of smallholders, little is known about the relationship between the gender-specific integration into small-scale processing and its impacts on household food security. Hence, this thesis aims to unravel how the integration of women into the oil palm value chain affects their household food security. By means of semi-structured interviews, observations and focus group discussions with oil-palm processors, their spouses and institutional actors, this thesis found that gendered incentives spur the increased integration of women in the sector as independent small-scale processors. Especially the independent nature of the work attracts women as they can combine the work with childcare, housework and trade. Simultaneously, this independence leaves these women particularly vulnerable to risks within and beyond the oil-palm industry, including food insecurity. As women shift their attention from food crop farming to processing, they become more dependent on their insecure income to buy foodstuffs in an increasingly expensive food market. Consequently, this research found that while the processor’s household still engages to some extent in food crop farming, the shift towards oil palm production considerably alters the ways in which they access food and can impede its availability. Therefore, the increased integration into independent and small-scale oil palm processing makes these households more prone to experiencing food insecurity during the year. Based on these conclusions, the author stresses the need to evaluate value chain integration not only by changes in income, but also with regard to its trade-offs within and beyond the value chain, including the impacts on household food security and the role of gender in the allocation of risks and benefits.

Keywords: Small-scale oil-palm processing, Food security, Value chain integration, Gender, Rural livelihoods, Ghana
Foreword

First and foremost I want to thank my thesis supervisor Mirjam Ros-Tonen for her thorough support during the write-up of this thesis and for her guidance throughout the whole research process. In addition, I would like to show my appreciation to Mercy Derkyi and her team for looking over my interview guides, providing me with feedback, inspiration and connections in the field. I would also like to express my gratitude to all my research respondents who endured my endless questions, welcomed me into their homes and entrusted me with rich information that is the foundation of this thesis. In particular, thanks to Mr. Samuel Tetteh, District Assembly man of Darmang and Abompe, who introduced me in the mills to the processors, their spouses and the community chief. Last, but not least, I owe special thanks to Akua Boatemaa Danquah for her commitment to this research project from conducting the interviews and focus groups in Twi, transcribing and translating them in English, to guiding me through life in the Kwaebibirem District and putting up with my obruni peculiarities.
## Abbreviations

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<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>CSR</td>
<td>Corporate Social Responsibility</td>
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<td>CPO</td>
<td>Crude Palm Oil</td>
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<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>FFB</td>
<td>Fresh Fruit Bunches (of the oil palm tree)</td>
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<td>FPE</td>
<td>Feminist Political Economy</td>
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<tr>
<td>GAD</td>
<td>Gender And Development</td>
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<tr>
<td>GHS</td>
<td>Ghanaian Cedi (unit of currency)</td>
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<tr>
<td>HH</td>
<td>Household</td>
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<tr>
<td>MoFA</td>
<td>Ministry of Food and Agriculture</td>
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<tr>
<td>Obooma</td>
<td>Obooma Farm Products Limited (Medium-scale oil palm processor near Darmang)</td>
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<tr>
<td>OPRI</td>
<td>Oil Palm Research Institute</td>
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<tr>
<td>PKO</td>
<td>Palm Kernel Oil</td>
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<td>VCC</td>
<td>Value Chain Collaboration</td>
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<tr>
<td>WAD</td>
<td>Women And Development</td>
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<td>WID</td>
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1. Introduction

1.1 Problem statement and justification of research

1.1.1 Researching palm oil

The oil palm tree is a single-stemmed tree that grows in humid areas below 1000 m near lakes or watercourses with reasonable rainfalls (Gilbert 2013: 159). A mature oil palm bears large, plum-sized fruits that grow in large bunches, called ‘fresh fruit bunches’ (FFBs) (see figure 1.1). These individual fruitlets consist out of an outer skin, the pulp containing the palm oil and a central nut that consists out of a shell and a kernel. When processed, the pulp of these fleshy fruits yields solid, edible, orange-red crude palm oil (CPO) and the kernel yields solid, yellowish edible oil called palm kernel oil (PKO). The crop has an economic lifespan of 25 years during which it provides year-round and predictable yields (Oxfam 2015: 7). Palm oil trees grow in the worldwide ‘palm oil belt’. This belt runs through the tropical regions of South America, Asia and Africa. In Africa, this belt runs through the southern latitudes of West Africa into the equatorial region of Central Africa.

Figure 1.1: A processor showing me the oil palm’s fresh fruit bunches

The global demand for palm oil is on the rise and increasing each year with 6% (FAOSTAT 2016). Following this trend, the demand for palm oil will double in 2050 (Oxfam 2015: 2). This growing demand for palm oil is connected to its broad range of uses from soaps and cosmetics to cooking oil and foodstuff ingredients and the recent increased popularity of biofuels (Fold and Whitfield 2012: 8, Oosterveer et al. 2014: 222, IISD 2014: 235). In addition to being extremely versatile, palm oil has been identified as up to 10 times more land-efficient than other major vegetable oil sources (e.g. soya, rapeseed and sunflower oil) and has a significantly higher carbon stock than other vegetable oil crops that are replanted annually (Oxfam and AidEnvironment 2014: 7, Murphy 2014: 3). As a result, within the context of land-use change and climate change (see Rockström et al. 2009), oil
A.A. Vos

Palm is an important and strategic crop that has the potential to meet the demand for vegetable oils in an efficient and climate-friendly way (Sayer et al. 2012). Furthermore, because of the high integration of the rural poor into the value chain, palm oil has a high potential for pro-poor impacts (UNEP 2011: 3). In other words, the growing demand for palm oil and the steady increase in production that follows this trend may present various opportunities for the development of local communities and national economies. However, this optimism needs to be put in perspective as current palm oil production models stand at the root of numerous conflicts on both local and global scales. Many organizations, scholars and activists have flagged issues that accompany palm oil production, including deforestation and the accompanying biodiversity loss (e.g. Fitzherbert et al. 2008, UNEP 2011, IISS 2014, Oxfam 2015, WWF 2016), land right violations (e.g. Oosterveer et al. 2014, Oxfam 2015, Zuckerman 2016), exploitation of workers, disregarding women’s rights (e.g. Oxfam 2015, Amnesty International 2016), outright violence against environmental and human rights activists and local farmers (Zuckerman 2016) and endangering local food security (e.g. Oosterveer et al. 2014, Anderman et al. 2014, Oxfam 2015).

This research aims to provide further insights into the relationship between an expanding oil palm market on the one hand and the risks it may present on the other hand. More specifically, this study focuses on the expanding smallholder palm oil production and processing in Ghana by exploring the connection between the significant integration of women in the value chain and their households’ food security and makes the trade-offs within the smallholder palm oil sector explicit.

1.1.2 Why Ghana?

The oil palm cultivated in Ghana, Elaeis guineensis, is native to the region and is the most important member of the oil palm family in terms of production and economic yields (Gilbert 2013: 159). Palm oil trees mainly grow in the tropical South of the country and 80% of it is cultivated and processed by independent small-scale farmers and processors (MASDAR 2011: 14, Adjei-Nsiah et al. 2012: 212, Asante 2012: 11, Gilbert 2013: 160). This implies that they operate independently and have (relative) autonomy to decide on their own production and marketing strategies since they are not organized under contract schemes (MASDAR 2011: 3). Accordingly, the sector provides employment for over two million men and women especially in Ghana’s rural areas (MASDAR 2011: 77). As a result of the sector’s potential for employment creation and the rising national, regional and global demand for oil palm, the Ghanaian government has been keen to use its oil palm industry as an instrument for economic growth, employment generation and poverty alleviation (ibid.).

Historical land tenure arrangements and the societal embeddedness of oil palm have had a significant impact on the current structure of the palm oil sector in Ghana. Because the British colonial administration left pre-colonial communal land tenure arrangements intact, Ghana did not have vast stocks of land available to use in large-scale agriculture (Gyasi 1994: 392 and Fold and Whitfield 2012: 12). In addition, palm oil and palm oil production is embedded in the Ghanaian cuisine and daily life routines. As a result, palm oil has been for centuries an integral part of the local economy to meet domestic needs (Fold and Whitfield 2012: 13). The combination of these two factors accounts for the remarkably high concentration independent small-scale oil palm farmers and processors in the Ghanaian palm oil value chain. This is evidenced by the fact that the top 6 large-scale mills in Ghana purchased on average 43% of their FFBs from independent smallholder farmers (MASDAR 2011: 53-62), while Golden Agri-Resources Ltd in Indonesia, the world’s largest palm oil company, only uses contract farming and its own company estate for its FFBs production (RSPO 2014). More recently, medium and large-scale mills in Ghana source even more of their palm fruits from independent smallholder farmers (F. Swanzy 2016, personal communication). In addition to
this, the area under independent smallholdings has well exceeded the area under estates: estates occupy in total no more than 50,000 ha, while independent smallholdings occupy 300,000 ha (MASDAR 2011: 47). Altogether, oil palm is the fifth largest crop in the country in terms of area planted, and this area keeps on expanding (MASDAR 2011: 63, Osei-Amponsah et al. 2012: 49). Moreover, the increasing number of independent smallholder farmers on the one hand and the embeddedness of oil-palm processing in the daily lives of the rural population on the other hand, is deeply connected to the increasing number of small-scale mills or ‘Kramers’ in the region. Independent processors can purchase the palm fruits directly from independent farmers in the locality, process it to palm oil for home consumption and sell the oil to small buyers that in turn sell the it in the bigger markets in Kumasi and Accra (Osei-Amponsah et al. 2012: 52). As a result, oil palm constitutes a vital and increasing source of employment within rural communities for both men, who mostly cultivate FFB, and women, who mostly process FFB into palm oil.

1.1.3 Why a focus on women?

Women represent a significant proportion of the workforce in the Ghanaian palm oil value chain. In addition, women constitute the majority of smallholder farmers in general and produce the 80% of staple food crops (MASDAR 2011: 115, FAO 2003). Moreover, women have also been identified as key actors to ensure household food security (e.g. Baden et al. 1994, Allen and Sachs 2007, Mehra and Hill Rojas 2008, FAO & the Asian Development Bank 2013). Therefore, the integration of specifically women in large value chains can radically change the way the household accesses food, but also the quantities, diversity and quality of the food that is accessed and how this changes over time.

At the same time, the palm oil sector constitutes to be a crucial income source for women. In most cases, women are in charge of buying the palm fruits, processing the oil palm fruits into palm oil and of selling the product in the local and even international markets (see for example FAO 2002: 1, Osei-Amponsah et al. 2012, Adjie-Nsiah et al. 2012). More specifically, studies conducted in Ghana’s Eastern Region have identified 80% of small-scale processors (in the Eastern district) as female (see Osei-Amponsah et al. 2012: 52, Ofusu-Budu and Sarpong 2013: 364). This resonates with MASDAR’s findings that women have an important role in Ghana’s palm oil sector, especially in the Eastern region, the research location of this study (2011: 123). The central question of this study focuses therefore on how women’s participation in palm oil processing affects their household’s engagement in direct food production for their households.

1.1.4 Why a focus on food security?

Food security is ‘the most basic labor of care’, a mental and manual labor that remains in most societies a woman’s responsibility (Allen and Sachs 2007). It constitutes the satisfaction of the most basic human needs: the availability of and the access to good quality and diverse food products. Consequently, food security presents one of the basic preconditions for human wellbeing and by extension inclusive development (Gupta et al. 2015: 546). In addition to this, food security remains a critical issue for the rural population of the global South (IFAD, 2013a cited in Ros-Tonen et al. 2015: 524). Smallholder farmers are among the most marginalized and food-insecure members of rural society (ibid.). Ros-Tonen and colleagues discuss that governments, especially in Ghana and South Africa, have focused on the integration of the rural population in value chains with the private sector, assuming that this would ‘increase their income and overall food security’ (Bitzer 2011 cited in Ros-Tonen et al. 2015: 524). The authors state that although positive effects on income, productivity and innovation capacity have been identified, there are also a variety of risks connected to the increased integration of smallholders into global value chains. These risks include a decreased
dietary diversity and as a result food security (e.g. Ecker et al. 2012, Oxfam 2014, Anderman et al. 2014). In other words, the integration of smallholders into cash cropping schemes may increase their monetary income but does not by definition their food security, seeing that it does not guarantee the availability of and access to good quality and diverse food products. On the contrary, a negative correlation has been identified between increased cash cropping and food insecurity (see Anderman et al. 2014). In other words, food security presents an interesting and relatively straightforward indicator for addressing possible pitfalls in value-chain integration and broader agricultural development.

1.2 Research Objectives and Questions

The small-scale oil palm sector represents a vital source of employment in the local communities in Ghana’s Kwaebibirem District and, in particular, among women who process the majority the country’s palm oil in small-scale mills or ‘Kramers’. Consequently, my research project zooms in on this expanding small-scale oil-palm processing in the region. It unravels the opportunities and risks the work presents to these female processors and their households. Since the high majority of these women shifted from food crop farming to (part-time) processing, this study aims to answer how the integration of women in the palm oil value chain affects their household food security. To answer this main question, the following sub questions were addressed: (1) how are women included in the palm oil sector, (2) how do households who engage in small-scale processing, experience the state of their food security, and lastly, (3) how do small-scale oil palm processors and their spouses perceive the effects of their processing activities on their household food security?

1.3 Thesis Outline

The next part discusses the theoretical framework of this thesis. It outlines the broader theoretical and epistemological perspectives that guide this research and inform the choice and interpretation of the key theoretical concepts in turn that frame the research questions and operationalization. The third chapter lays out the research methodology that has structured this thesis from the theoretical operationalization and the analysis of research findings to the practical implementation of data collection methods and sampling techniques. Chapter Four elaborates on the political and socio-historical context of this study through an outline of the interplay of land ownership, independent small-scale oil palm farming and processing and government interventions. Next follows a detailed account of the empirical outputs of this thesis. Chapter Five presents the research findings that pertain to the first research question: how are women included in the palm oil sector. The sixth chapter illustrates the findings surrounding household food security and in doing so answer the second and third research questions of this thesis. Finally, chapter seven concludes with a synthesis of the research findings, answers the main research question, reflects on the theoretical implications of the study, provides suggestions for further research and ends with policy recommendations that arose from the conclusions of this thesis.
2. Theoretical framework

2.1 Overarching ontologies and epistemologies

This chapter outlines the theoretical framework that has framed this study and inspired its research questions. It starts by providing a concise description of the overarching critical realist perspective followed by an exploration of the linkages with (feminist) political economy debates.

Critical realism holds that social reality exists independently from our experience. That is to say, social forms and institutions construct our experiences and interpretations, but our experiences and actions in turn reinforce, reframe or transform these institutions (see Jessop 2005). In more Marxist terms, ‘Men [sic!] make their own history, but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past’ (Marx 1852: 1). As a consequence, understanding social reality is possible through analysis since we have ‘internal’ access to these social phenomena. However, this requires a reflexive and iterative process, as this analysis may be fallible (Sayer 2006: 43).

Critical realism divides social reality into observable facts (the empirical); the events that caused these facts (the actual); and the power structures and mechanisms that enabled or reproduced these events (the real) (Bhaskar 1975 in Steinmetz 1998: 176). As a result, the role of the researcher lies in uncovering the connections between these three spheres of social reality. This research identifies the empirical as (1) the ways in which women are included in the palm oil value chain as small-scale processors, (2) their contribution to their households’ food provision and (3) the state of food security in their households. Next, this study establishes the actual as agricultural development policies including the idea of ‘cash cropping for food security’ and the drive for pro-poor value chains, local norms and values concerning the gendered division of labour and land access. As a result, this study has aimed to explore the real: how the palm oil value chain as a structure shapes and reinforces trade-offs associated with food security and the ways in which the gendered division of labour within the value chain plays a part in this.

To explore these trade-offs and power relations, I will employ a feminist political economy (FPE) lens. FPE focuses on the gendered nature of economic processes (e.g. Mutari 2000, Estes 2004, Ray and Waylan 2014). In the 19th century, FPE scholars and activists have addressed women’s exclusion from the (formal) economy. Currently the focus has shifted towards women’s inclusion into paid employment: how women’s formal employment is segregated both vertically and horizontally (Sarma 2009). In doing so, FPE bases itself on Marx’s political economy that focuses on the production and distribution of benefits and burdens and how these material forms of production shape the changing social realities (Wolf 1982: 8, 21). However, while Marx ignored the role of women entirely in his writings (see Sayer 1991), FPE adds an indispensable gender perspective to his political economy. Within development studies and practice, this focus on women within the economy has sparked the emergence of the ‘women in development’ (WID) approach in the 1970s that focuses on the specific inclusion of women’s issues and needs in development projects (see Collier 1988, Moser 1993). However, this approach was criticized by various scholars as being too narrow and for not addressing the root causes of gender inequalities (e.g. Bradshaw et al. 2013). These critiques gave rise to the women and development (WAD) movement in 1975. The WAD approach emphasized exploitation of women within the capitalist system and called for the recognition of women’s knowledge and for the acknowledgement of the special roles that women have always played in the development process (Conelly et al. 2000: 60). Key in this process was to (1) make mainstream bureaucracies more responsive to women’s needs and to (2) ‘strengthen bonds
among women through active, autonomous local groups and networks’ (ibid.). Both the WID and WAD approaches were criticized for their limited transformatory potential. Consequently, the GAD (gender and development) approaches, which emerged in the 1980s, put ‘women’s empowerment’ at its core by focussing on challenging gender relations that systematically subordinate women (see Reeves and Baden 2000). When positioning this study within these debates, the question how women are included in the palm oil sector is critical as it aims at understanding the value chain as an institution that shapes gender relations and affects food security.

2.2 Inclusiveness and Inclusive Value Chain Collaboration

2.2.1 Studying inclusiveness and inclusive development

The term ‘inclusiveness’ has become a buzzword among development institutions, scholars and workers, as it has taken on various meanings in diverging contexts. On the one hand, inclusiveness is used to measure development outcomes, in particular the extent to which the various groups in society benefit from economic growth (e.g. De Haan and Thorat 2013) or overall policymaking (e.g. Hickey, Sen and Bukenya 2014: 5). On the other hand, inclusiveness is used as a measure for stakeholder involvement in the formulation of policies, for example the degree of participation of stakeholders in decision-making (e.g. Silver, Scott and Kazepov 2010: 456) or the degree of equal recognition of stakeholders’ concerns and ambitions (e.g. Cheyns 2011). In sum, the concept of inclusiveness is often used to determine the degrees of inclusion of all stakeholders within decision- and policymaking and/or the degrees to which social and material benefits are equally distributed across income groups, genders, ethnicities, regions, etcetera. In doing so, the concept of inclusiveness tends to be a panacea for development actors to indicate a social component of particular strategies that will yield positive development outcomes. These positive development outcomes range from stronger and more effective public institutions (e.g. Ritzen, Woolcock and Easterly 2000: 3) and increased political legitimacy (e.g. Silver, Scott and Kazepov 2010) to a more balanced and equitable value addition along the value chain (e.g. FAO 2015: 1) and overall poverty reduction (e.g. World Bank 2011).

However, various scholars have challenged the popular view that inclusion uniformly leads to positive development outcomes (e.g. Hickey and du Toit 2007, Laven 2010 and Mosse 2010). As Hickey, Sen and Bukenya (2014) put it, ‘being included on adverse terms in dominant political, economic, and social orders can be disempowering for weaker groups […] who become incorporated on subordinate terms and may be denied the agency that can come from operating beyond the confines of hegemonic formations’ (ibid.: 6). Such notion of ‘adverse inclusion’ adds an important relational dimension to inclusiveness as it takes into account the power relations that underpin poverty and exclusion (ibid.). Accordingly, inclusiveness can be employed to explore and evaluate the process of inclusion. For the purpose of this thesis, inclusiveness refers to (i) growth that leads to a deconcentration of wealth, (ii) increased levels of public participation in governance structures, (iii) greater equality regarding knowledge transfers, capacities and income, specifically for groups that are marginalized and excluded from access to social amenities and opportunities (Gupta, Cornelissen and Ros-Tonen 2015). In other words, inclusiveness challenges economic, political and social exclusion and is therefore, by definition a relational concept that requires a relational approach. This implies identifying and studying the underlying structures and processes in palm oil processing that perpetuate, maintain or transform marginalization as the products of ‘historically developed economic and political relations’ and ‘as an effect of social categorization and identity’ (Mosse 2010: 1156). Focusing on inclusiveness therefore entails paying attention to mechanisms and actors that produce trade-offs between different levels of decision-making between
(1) individual and collective well-being, (2) different well-being domains (i.e. material, socio-relational and cognitive wellbeing) and (3) future and present well-being (Pouw and McGregor 2014).

As a result, the focus on inclusiveness in this research implies that I have aimed to study and assess the process of the inclusion of women in the palm oil value chain as independent small-scale processors. In other words, the main theme of this research has revolved around how these women are included in the value chain as opposed to whether they are ‘included’ or ‘excluded’. In addition, this research question requires a relational approach to gender. Therefore, this study will not focus on women as an isolated subject, but take into account the context in which they live and work. Consequently, coming to an understanding of inclusiveness within the palm oil value chain has multiple dimensions. This study has therefore sought to clearly define and delineate inclusiveness within its particular context by devising a concrete and detailed operationalization. The following section will first elaborate on how this research is positioned within the debates on the inclusion of rural communities in (global) value chains and subsequently introduce this study’s particular operationalization of inclusive value chain collaboration (Appendix A). The section concludes with a brief outline of the main forms of value chain collaboration in the palm oil industry.

### 2.2.2 Inclusive value chain collaboration

Value chains refer to the structures and networks that integrate the production and distribution systems within local, regional and international markets (Gereffi et al. 2005: 79). Value chains that connect the local, rural population with international markets are often considered a great tool for ‘economic development, employment creation and poverty alleviation’ (ibid.). More specifically, the collaboration between different actors within a chain is often seen as a ‘win-win situation’ as they would allow for capitalizing on collaborative advantage’ assuming that (1) ‘these partnerships have the potential to act as drivers for upgrading’ and (2) ‘that they reduce transaction costs for smallholders (Laven and Jaskiewicz 2015: 1). Within this thesis, smallholders farmers are defined as individual farmers who are connected to a milling company or work independently and have a maximum of 5 hectares of their land attributed to oil palm production and a maximum yield of 5 metric tonnes of FFB per ha (Ofusu-Budu and Sarpong 2013: 351, 385). Small-scale oil palm mills are in turn defined as having a maximum productivity of 3 tonnes per hour (ibid: 382). Within Ghana’s oil palm value chain, partnerships such as the different smallholder schemes between farmers and processors or between processors and buyers are examples of such collaboration (also see Section 2.2.3). Key objectives of these collaborations include capacity building, credit schemes, support for rehabilitation, intensification and diversification (ibid.: 2).

Several governments, influential development institutions and practitioners share this assumption that integrating ‘the poor’ in international markets is a good tool for poverty alleviation (Anderman et al. 2014: 541). The latest ‘African Transformation Report’ (see ACET 2015) and Jeffrey Sachs’ popular End of Poverty (2005) are examples of this school of thought. This instrumental view, however, tends to ignore the ‘diversity among smallholders, power imbalances between value chain actors and sustainability issues’ (Ros-Tonen et al. 2015: 3). Consequently, this notion is contested by scholars (e.g. dependency theorists) and civil society organizations (e.g. Via Campesina). These actors emphasize local production-consumption cycles, traditional values and local knowledge and diversity and argue that connecting the poor and marginalized to these international markets through extensive value chains, can result in increased dependency and vulnerability, loss of biological and dietary diversity, and increased gender inequalities (see Ros-Tonen et al. 2015, CSM international 2016).
The idea of inclusive value chain collaboration (VCC) provides a response to both perspectives. On the one hand, it acknowledges the potential of value chains for poverty alleviation, but criticizes regular value chain analysis by amplifying its narrow focus. Where value chain analysis solely focuses on power constellations and governance arrangements within the value chains, inclusive VCC includes non-commodity production, sustainability issues, and horizontal collaboration with non-chain actors (Ros-Tonen et al. 2015). In doing so, inclusive VCC aims to provide a framework for inclusiveness that takes into account a great diversity of stakeholders both directly and indirectly connected to the value chain. While the focus of this study is on independent small-scale processors within the palm oil value chain, it is also deeply concerned with the impacts on the food security of both chain and non-chain members of their households. Consequently, the scope of this research extends beyond the limits of the palm oil industry into the household realm as it explores the risks and opportunities integration in the value chain poses to household food security.

In order to assess the inclusiveness of the VCC itself, this research has employed a specific operationalization of inclusive value chain collaboration. This operationalization is based upon previous research, in particular Laven and Jaskiewicz (2015), and a review of existing literature that aims to unravel the dimensions of inclusiveness (e.g. Gupta, Pouw and Ros-Tonen 2015; Gupta, Cornelissen and Ros-Tonen 2015; Gupta and Vegelin 2016). During the course of the research, the operationalization has been further refined. Inclusiveness within the value chain collaboration is analysed through six key dimensions. Firstly, the alignment with the processors’ reality, that, for the purpose of this research, entails the processor’s aspirations, their heterogeneity¹ and their educational and professional background. Secondly, the terms of engagement of the collaboration: this depends on the type of contract, the criteria that need to be met in order to enter into a collaboration, the incentive structures that are in place, if the processors feel that they have a voice in the decisions that affect them and the kind of grievance systems that are in place. A third dimension of an inclusive value chain collaboration concerns the equitable access between men and women to markets, credit, information, inputs, capacity building and risk sharing. Fourthly, the space for inclusive innovation through (a) technical support or extension and (b) the co-production of knowledge. The co-production of knowledge implies that the processors’ so-called ‘local knowledge’ on best practices is recognized and used for innovation purposes and continuous learning by means of a recurring evaluation of processing practices. The fifth dimension of inclusive value chain collaboration, environmental sustainability, reviews the impact of the landscape of the processing activities and if the collaboration educates the processors on how to reduce the pollution of oil-palm processing. Due to time and financial constraints, this study has not focussed much on this fifth dimension. Finally, the sixth dimension relates to access to information on the risks associated with inclusion. Within the context of this study, I have concentrated on health: whether processors have access to information on the health risks associated to processing, health insurance schemes and whether they use protective gear. Appendix A presents these dimensions in a detailed operationalization table that also includes the indicators of these six dimensions and their variables.

2.2.3 The palm oil value chain: partnerships and collaborations

The section above already positioned the concept ‘inclusiveness’ within the more general notion of value chains and value chain collaboration. This part zooms in on the typical palm oil value chain and the types of collaborations and partnerships that characterize the interaction between the farming and the processing within the palm oil enterprise. Currently, five types of models for palm oil development prevail globally: (1) company estates, (2) smallholder schemes or ‘joint venture arrangements’, (3) nucleus estate schemes, (4) out-grower schemes or ‘contract farming’, and (5)

¹ In terms of gender, age, ethnicity, landownership, social status, etcetera.
independent smallholders (Oxfam and AidEnvironment 2014). Within first model, the independent company estate, palm oil production is entirely done and managed by the company itself: the company owns the land, cultivates and processes the FFBs and takes all commercial risks (ibid.: 17-21). In short, this is not an example of value chain collaboration between different actors for the palm oil production. In Ghana, there is no evidence of this type of company that is independent from external supply (MASDAR 2011: 81), therefore this model will not be included in the description below. Nevertheless, the fourth chapter will elaborate on the context of palm oil development in Ghana including the reasons why Ghana does not have any company estates.

Within smallholder scheme partnerships, the smallholder farmers are mostly allocated an area of land that is owned by a medium to large-scale plantation or milling company and the smallholder must supply this company with all the FFBs from this land (MASDAR 2011: 136). In other cases, the model can be based upon land-lease contracts, in which community-based land rights are leased to the company for a limited amount of time (Oxfam, AidEnvironment 2014: 22). In all cases, the company develops and manages the overall plantation of FFBs, but the smallholders share the commercial risks and benefits of the collaboration (Oxfam and AidEnvironment 2014: 19). This type of palm oil production is based on large-scale industrial land conversion accompanied by relatively high productivity and land efficiency, incomes for communities through relatively stable employment or/and a stable sale of FFB to the company, and a possibility for community investments by the company in CSR-type programmes (ibid.: 20). Risks include land conflicts, reduced food security, loss of cultural identity and traditional livelihoods, marginalisation of women, unfair revenue sharing and bad labour practices (ibid.). In addition, there is a risk for large-scale conversion of high carbon stock areas in the case that tropical rainforests, which have a carbon stock of 4 to 384 Mg per hectare, are cleared to plant oil palm plantations, which have a carbon stock range of 2 to 60 Mg C/ha (Kho and Jepsen 2015).

Nucleus estate schemes involve smallholder farmers who cultivate FFBs on land that belongs to the estate after acquisition of the land (Ofosu-Budu and Sarpong, 2013: 360). In other words, the company gains access to the community or government-owned land through a lease and develops the plantings for smallholders. These smallholders are in turn bound by contract to this medium to large-scale company, are obliged to sell their produce to said company, and are supervised in their planting and crop management techniques by this company (ibid.). Although there is more room for community engagement compared to the previous VCC model, the company still controls all market access, access to inputs and finance (Oxfam and AidEnvironment 2014: 19). Opportunities and risks are largely similar to the smallholder scheme model, except that there are more possibilities for smallholder development support through knowledge, inputs and finance provision and simultaneously a larger risk for the exploitation of these smallholders (ibid.: 20).

The out-grower scheme is based on a grower who operates on land not owned by the plantation or milling company. However, the grower and a particular plantation and milling company sign a contract whereby the grower supplies all his fruit to the mill (usually close to his land) and the milling company may provide inputs and extension services on credit (MASDAR 2011: 136, Ofosu-Budu and Sarpong 2013: 361). In the case of out-grower schemes, the milling company or estate is medium to large-scale. Within this type of collaboration, the smallholder farmer remains relatively dependent on the estate that limits the farmer’s decision-making control over the property. The out-grower contract includes the right of the estate to ‘take over the management of the out-grower farm if the farmer fails to honour the terms of the agreement until the loan has been cleared’ (ibid.). On the other hand, the plantation is managed by the smallholders and there are more possibilities for community engagement (Oxfam and AidEnvironment 2014: 19). This also means that the
commercial risks primarily fall on the shoulders of the out-growers themselves (ibid.). Opportunities of this model include the possibility for diverse landscapes, freedom to choose on land use, the possibility for diversified cropping systems, and the potential for smallholder development support through knowledge sharing, inputs and finance provision (ibid.: 20). Potential risks include the limited capacity to develop and manage plantations, possible exploitation of smallholders, reduced local food security due to large-scale land conversion into oil palm plantations (see De Schutter 2009, Oxfam and AidEnvironment 2014: 21), marginalization of women and lastly, an uncontrolled small-scale expansion of high carbon stock areas (Oxfam and AidEnvironment 2014: 22).

A final model for oil palm cultivation is the independent smallholder scheme. Here smallholder farmers have full land-use autonomy and are fully responsible for the development and management of their plantation. Since independent smallholders are self-organized, self-managed and self-financed, they can sell their produce on the open market and, as a consequence, bear full commercial risk. (MASDAR 2011: 136, Ofosu-Budu and Sarpong 2013: 361). As for their collaboration with chain and non-chain actors, independent smallholders can receive extension services from the government and private agencies when sought (Ofosu-Budu and Sarpong 2013: 361). Generally, they are less productive because of the limitations in access to other services, their lack of access to finance and higher open-market input costs (ibid.). As a result, independent smallholders use low-yielding planting materials, less fertilizer, etc. Besides the limited capacity to develop and manage plantations and unreliable market access, other risks of this model include (1) the uncontrolled small-scale expansion on high carbon stock areas due to the settlement of smaller and unregistered farms on forest land or even protected areas (Oxfam and AidEnvironment 2014: 12) and (2) the marginalisation or even exclusion of women because of unequal access to land and, if present at all, unequal access to extension services (ibid.: 15).

Notably, Oxfam and AidEnvironment (2014) do not mention reduced food security as a possible risk within independent smallholder schemes as opposed to the other previously mentioned partnership types following the assumption that land-use autonomy automatically leads to crop diversification and therefore 'increased availability of food' (2014: 28). Opportunities of independent smallholdings involve high autonomy and flexibility, freedom of land-use and crop choices, possibility for diversified cropping systems and diverse landscapes (ibid.). In addition, these smallholder farmers are not bound to any company or processing mill, but can choose to whom they sell their FFB. In practice, these farmers tend to sell their fruits to large-, medium- and small-scale processing mills. As a result, independent smallholders are the only source of FFBs for small-scale processors and the latter need to compete with medium- and large-scale mills that source their FFB from independent smallholders.

In the Ghanaian oil palm sector, the independent smallholder scheme represents the majority of VCCs between producers and processors (Ofosu-Budu and Sarpong 2013: 362). In total, these independent smallholders are estimated to represent approximately 60% of Ghana’s oil palm producers, according to Opoku and Asante (2008 cited in Osei-Amponsah et al. 2012: 49) and 70% according to Ofusu-Budu and Sarprong (2013: 362). The other main oil palm production systems in Ghana constitute the nucleus estate scheme (approximately 2% of all smallholder producers) and the outgrower farmers (approximately 28% of all smallholders) (Ofusu-Busu and Sarprong 2013: 362). The major palm oil estates’ generally source from a variety of partnerships: nucleus estate schemes (NES) are popular –MASDAR reports that 32% of all FFBs are sourced through NES (MASDAR 2011: 53 - 62). Moreover, all of the country’s major palm oil mills purchase FFBs (in varying

2 GOPDC, TOPP, BOPP, NORPALM (MASDAR 2011: 51).
proportions) from independent smallholders in comparison to other plantation systems (see MASDAR 2011: 81). The report concludes that 43% of all FFBs processed by Ghana’s major estates are sourced from independent smallholders (ibid.: 53-62). In addition, independent smallholder farmers also sell a significant proportion of their FFBs to small-scale mills that are easily accessible within their communities (Ofosu-Budu and Sarpong 2013: 363). Consequently, independent smallholders farm the majority of Ghana’s FFBs, which they then sell to nearby small-scale processors who in turn process 80% of Ghana’s oil palm. Chapter four further elaborates on this and the changing trends in Ghana’s oil palm sector.

2.3 Food security

Various scholars and institutions agree that food security represents a definite concern when it comes to the palm oil production (e.g. Anderman et al. 2014, Oosterveer et al. 2014, Oxfam and AidEnvironment 2014, Ros-Tonen et al. 2015). On the other hand, Beggs and Moore (2013) found in their case study on small-scale palm oil production in Costa Rica that while the increased palm oil production had significantly geared the local agricultural production from food crops towards exclusively oil palm altering the availability of locally produced foods, ‘producers were eager to emphasize the dietary benefits of increased earnings thanks to oil palm’ (ibid.: 26). Despite these findings, the authors emphasized the potentially negative impacts of oil palm production on future food security. Inspired by these diverging findings, this study has employed the concept of food security to explore the trade-offs relating to household food provisioning within the palm oil sector. Food security has been brought forward and defined in the World Food Summit in 1996 as existing ‘when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life’ (FAO 2016). Food security has thus three pillars: (1) food access, (2) food availability, and (3) food utilization, referring to safety, nutrient value and cultural aspects of food intake. Below I will give a concise overview of these pillars and reflect briefly on the interconnectedness of gender, cash cropping and food security. The operationalization table in Appendix A provides a more detailed breakdown of how this research has studied food security.

Food access refers to both the economic and physical access to foodstuffs and the relative security of this access (FAO & the Asian Development Bank 2013). As a result, access to food can be achieved through families’ own production, income through (self-) employment that allows for food purchases, and social transfers from public or private organizations or NGOs, solidarity within families or communities (ibid.: 13). Food availability refers to having sufficient quantities of food available on a consistent basis (FAO 2016). Food availability thus has a dimension of quantity and time. Anderman and colleagues (2014.: 545) have carried out research on food availability in a research site in rural Ghana through a survey that asked ‘which months in the past year a household had enough to eat’. In doing so, the research team measured ‘the ability of households to obtain it [food] through various channels including own production, stocks, purchased or food transfers from relatives, neighbours, governments or donors’ (ibid.). In addition, a comprehensive overview of how to measure food availability identified a set of five common experiences across cultures indicating insecure access to food: (1) anxiety/uncertainty about whether the food budget or supply would be sufficient to meet basic needs; (2) perceptions of inadequate quality or quantity of food; (3) reductions of adult food intake; (4) reduction of child food intake; and (5) coping actions taken by the household to augment the food budget or food supply (Coates 2003 cited in Swindale and Bilinsky 2006: 1450).

Food utilization refers to the safety and quality or nutrient value of the food intake and whether it is perceived as ‘culturally appropriate’. Ruel (2003) argues that for measurement purposes, food group
diversity is best used to define dietary diversity. Which food groups should be measured, should be defined locally (ibid.). Thirdly, the authors conclude that international cut-off points to define high and low dietary diversity are very likely to be meaningless: these cut-off values need to be defined based on the local context. Lastly, Ruel found that ‘a 7-day recall may be the longest reference period achievable from a practical point to minimize memory error’ (ibid.: 3924). The FAO, in contrast, uses a 24h recall period for even less memory error, but the organization similarly seeks local validation of food groups (Kennedy, Ballard and Dop 2010: 10, 16). In their study in south-central Ghana, Anderman and colleagues (2014) found the following food groups relevant: cereals, green leafy vegetables, vitamin A vegetables and tubers, other vegetables, white roots and tubers, vitamin A fruits, other fruits, meat, eggs, fish, legumes, dairy, and oils and fats (ibid.: 545).

Women are generally responsible for household food security worldwide. This also holds true for Ghana, where they are at the same time increasingly integrated in the palm oil value chain, mostly as small-scale processors (see FAO, 2002: 1, Osei-Amponsah et al. 2012, Adjei-Nsiah et al. 2012). This value chain integration can present a risk for food security as less time and land is reserved for subsistence farming and farmers become more dependent on their fluctuating income to purchase foods from a market subject to increasing and volatile food prices (see Anderman et al. 2014, Ros-Tonen et al. 2015 and Kumi and Daymond 2015). Simultaneously, women face discrimination in all three pillars of food security: they are typically discriminated as food producers, wage workers, self-employed workers and even in forms of social transfers organized by the government or within their own community or family (FAO and the Asian Development Bank 2013: 13). As such, the marginalization of women in their communities and the wider political economy of food production are directly linked to their capabilities to provide food security to their households (ibid.). This in turn challenges Oxfam’s (2014) assumption that independent smallholders do not face the risk of decreased food security despite the identified risk of marginalization of women (see above).

2.4 Conceptual scheme

Figure 2.4 aims to provide insight into how this research has connected the theoretical concepts of inclusive value chain collaboration and food security. In doing so, this conceptual scheme gives a visualization of the main research question of this study, namely how the integration of women in the palm oil value chain affects their household food security. The figure demonstrates how the integration of women in the oil palm sector as oil palm processors comes with risks and opportunities depending on the inclusiveness of the chain. These risks and opportunities in turn impact the ways in which households access food, the diversity of the food that they access and the food that is available to them.

Figure 2.1: Conceptual scheme
3. Methodology

This research is embedded in a critical realist perspective (Chapter 2). Consequently, this research aims to unravel and understand the experiences and interpretations of the respondents themselves. In doing so, I have aimed to identify the underlying structures that construct and reinforce these experiences and actions. This particular ontology has led to a more qualitative perspective on knowledge building, as I am primarily interested in the views of my respondents. As Hesse-Biber phrases it, ‘the researcher’s respondent becomes “the expert” – it is his or her view of reality that the researcher seeks to interpret’ (2010: 455). This epistemology has in turn shaped my choices for my research design, how I operationalized my key concepts, my units of analysis and observation, the sampling techniques and data collection methods that I employed, the ways in which I analysed my data and lastly, how I dealt with ethics during fieldwork and data analysis. Below I will provide an in-depth account of these various components of my research methodology. The chapter concludes with the inherent limitations of this research and a brief reflection on my positionality and how this influenced the research methodology.

3.1 Research Design

This study employs a qualitative approach to answer its research questions. This means that the methods used are associated with a more qualitative perspective on social reality and knowledge building. By means of semi-structured interviews and focus group discussions, I have aimed to give space to the respondents to elaborate on their own experiences and perceptions on small-scale palm oil processing, food production and their household food security. In doing so, the research process has been rather open-ended since new themes and questions might prove to be important that had not been considered before going to the field (see Bryman 2012: 412). This ‘open-endedness’ of the research process surfaces at various stages of the research design, which I will outline below.

This study is guided by abductive reasoning: it has used the data of qualitative research to serve as inputs for theory (Morgan 2007: 71). Although theory has also informed the operationalization and questions in the first preparatory phase, the data collected in the second phase served as the principal input for the final phases. In other words, I have aimed to ground a theoretical understanding of the contexts and people I studied in the perspectives that form their worldview (Bryman 2012: 401). In order to do this, I have first searched to explore the general context of (1) women’s integration in the palm oil sector, (2) the different roles in providing food security to the members of their household, and (3) the meaning that both men and women give to the inclusion of women in the sector and the consequences for food security. In practice, this translated into interviewing both the processors and their spouses in the exploratory phase of the research. The insights that I gained from these interviews served to inform and shape the questions for the secondary actors in organizations associated with the oil palm sector, such as the Ministry of Food and Agriculture (MoFA) and the Oil Palm Research Institute (OPRI). Furthermore, the insights from all interviews informed the focus group tools and sampling in the third phase of the research. This third phase that revolved around the focus group discussions with the processors, subsequently served to (1) deepen my understandings and inform my initial thematic analysis and (2) to validate this initial analysis together with the respondents through discussions and activities. Following this, in the fourth phase I have conceptualized the data collected and grounded a theoretical understanding through thorough analysis. The last part of this thesis project involved the actual writing of the thesis in which I have integrated theory, methodology and empirical evidence into comprehensive whole.
Figure 3.1: Flow chart of the research design (Key – In red: research stages, in light blue: ‘deskwork’, in dark blue: data collection, in grey: sampling)

In summary, each of the research phases contains several sequential steps that inform, shape and refine the research instruments of the next step. As a result the data analysis is not confined to one specific phase, but present throughout most research phases. In doing so, I have aimed to create contextually relevant methods that are well integrated in the research process to increase their (internal) validity. Key to this qualitative approach is the space for flexibility, evaluation and adaptation according to observations and the inputs of the respondents themselves. As such, this space or ‘open-endedness’ is a precondition for the exploratory aims of this research and the
qualitative approach in general. In the next subsections I will elaborate on the various components of my research methodology and discuss how this open-endedness is not solely confined to the development of the research instruments, but extends to the operationalization, sampling methods and sizes used, the choice of data collection methods and the data analysis.

3.2 Units of Observation and Analysis

3.2.1 Unit of Analysis

This research revolves around small-scale oil palm processors and their household food security. As a result, the unit of analysis of this research constitutes the households of the processors, with a focus on their production and consumption patterns and food security. In other words, the emphasis of this study is on the impact of processing on the household’s farm and food production and consumption, the latter particularly regarding the quantities and types of food consumed. In order to analyse this, data was collected from several units of observation: the processors, their spouses, their workplace (the Kramer) and institutional actors.

3.2.2 Units of Observation

I have sourced the data for this research from four diverging units of observation. The primary unit of observation constitutes the small-scale processors active in Ghana’s Kwaebibirem district. These are overwhelmingly female (>90%) and working exclusively independent from any company. Therefore, this study has sought to incorporate a gender perspective throughout all stages of the research. In practice this translated into an explicit focus on the impact of gender on the opportunities and obstacles that these processors encounter, the social roles that they embody, and how this impacts the food security of their households. The second unit of observation consists of the spouses of these processors. Since I was keen to uncover food security dynamics within the households, it was essential to also speak with spouses of processors about how food security dynamics relate to the processing activities of their wives. This was particularly interesting since most of these respondents were fulltime farmers and could provide detailed information on the changing farming practices and how these have affected household food security. Thirdly, I have conducted several observations at the processors’ workplaces, the milling site or Kramer. I have visited all the eight Kramers in the villages of Darmang and Abompe and observed, among other things, the type of mill, the varying practices to process the oil, the types of people present at the Kramer and the materials that they were using. The aim of these observations was to complement the data and to serve as inspiration for probing during the interviews.

Finally, these processors do not stand alone in the sector and the terms of their inclusion is often dictated by a broader social structure that presides over the palm oil sector. Institutions such as the Ministry of Food and Agriculture (MoFa) and the chieftdom of a particular community have the potential to play a significant role in shaping and reinforcing this socioeconomic structure. That being the case, these institutional actors constitute the fourth and final unit of observation of this study. I conducted semi-structured interviews with two extension agents at the MoFA, a senior researcher at the Oil Palm Research Institute (OPRI), the Chief farmer (who is also a Kramer owner), the Chief of Darmang (who is also a Kramer owner) and the production manager at a medium-scale mill. The following sections further elaborate on how the selection of the respondents and the data collection techniques employed.

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3 See Appendix A
3.3 Sampling

3.3.1 Sampling methods

Data collection was based on three different sampling techniques employed at two separate points in the research process (Figure 2.1). Sampling within this research aimed to strategically select respondents that are directly relevant to answering the research questions (Bryman 2012: 418). This allows for flexibility and openness as the criteria for strategically selecting respondents may change depending on the course of the research (see for example Hood 2007).

The selection of study sites was derived from a generic purposive sample. My aim was to gain access to small rural communities with a variety of Kramers in or just outside the community. Based on a literature review and conversations with my local supervisor, I could narrow down the Eastern region as being most suitable for my study. A PhD student, who also does her research within the inclusive VCC project and works with my local supervisor, was able to connect me to one of her contacts in the area: the district assembly representative of Darmang and Abompe. Based on this contact, I was able to get relatively easy access to my research population: when I arrived at the research location, the district assemblyman would introduce me in every Kramer in both communities (four in Darmang and four in Abompe). In this process, the assemblyman became the ‘gatekeeper’ to my research population (Bryman 2012: 151). On that account, the study sites were not selected randomly, but strategically: based on my own criteria (small rural community with a variety of Kramers) and the accessibility to the research population.

Next I selected the respondents for phase two of the research based on a stratified purposive sample (Bryman 2012: 419). I looked at three particular subgroups of interest: (1) the small-scale oil palm processors who work regularly in the Kramer, (2) the processors’ spouses, (3) institutional actors who (a) can provide key information on the socioeconomic dynamics and historical trends in the local oil palm sector and (b) have the potential to influence the practices of the processors and the opportunities and risks that they face. These institutional actors came from the MoFA, OPRI, District Assembly, community chieftaincy, district chief farmer and Obooma (a medium-scale mill) (Section 3.2.2). Half of these actors were also Kramer owners.

Each subgroup provided a different kind of information that is relevant to the research. The first subgroup of processors gave me insights into (1) their involvement in the palm oil value chain, (2) their household food security and (3) how these two might correlate. The second subgroup provided insights into (1) primarily the household food security, (2) changing farming practices that affected this food security, (3) how the processing practices of their oil-palm processing wives changed the food security and the farming practices of the household. The last subgroup provided key contextual information: changes over time, future projections, the roles and responsibilities of various organizations in the palm oil sector, risks and opportunities, and the overall structure of palm oil production in the locality and Ghana in general. Considering that I looked for different kinds of information from each subgroup, I created different interview guides for each group (see Section 3.5.1 and Appendix B).

Finally, I sampled respondents for the focus group discussion, based on the interviews that I had with the processor subgroup and the processors’ husband subgroup. According to the richness of the information that they could provide, they were purposively selected to participate in one of the focus group discussions, referred to as generic purposive sampling.
3.3.2 Sample sizes

The selection of study sites was based on convenience sampling. I selected only two communities because these were easily accessible through established contact with the assemblyman. These communities proved to be a very rich data source because of the quantity (eight in total) and diversity of the Kramers present (see Chapter 4 for more information on these Kramers).

The sample sizes of the subgroups one (processors) and two (their spouses) are based on data saturation, once it became apparent that no new themes, questions or answers came up during the interviews. When this occurred, two additional interviews were conducted to make sure that this happened because the data was saturated and not because of one particular interview. This approach translated into a sample size of 24 processors in subgroup 1 and 9 spouses in subgroup 2, both excluding the preliminary interviews in the exploratory phase. Since both subgroups are relatively homogeneous and the questions were relatively specific, this could be a reason that data saturation occurred quite fast (Bryman 2012: 426). The sample size of subgroup 3, the institutional actors, was based on convenience and accessibility. I reached out to the contacts that I established a month earlier during the learning platforms of the inclusive VCC project and interviewed those whom I could reach, and who were willing and available for an interview. This resulted in a sample size of seven institutional actors.

The sample size for the focus groups was based on a mix of literature review and convenience. Various handbooks and studies recommend a sample size between six and eight for focus group discussions (e.g. Kitzinger and Barbour 1999, Carlsen and Glenton 2011, Morgan 1998a in Bryman 2012: 507). In this way they would ideally be large enough to have a lively discussion on a variety of perspectives and small enough so that everyone could have a say. In practice, I invited ten respondents (seven processors from subgroup one and three spouses from subgroup two) to participate in each focus group in the hope that at least six would show up. In the end, however, a total of nine respondents participated in the first focus groups and another seven in the second one (see Figure 3.2 and 3.3 respectively).

Figure 3.2: Focus group discussion with group 1

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4 Before starting with data collection, I attended the yearly learning platforms of the WOTRO project on inclusive value chain collaboration (https://inclusivevcc.wordpress.com). This time, one of these platforms took place in the Kwaebibirem district, which allowed me to make vital contacts with important stakeholders and possible change agents in the palm oil value chain.
Adaptability is key to determining the sample sizes for the various data collection methods. The principle of data saturation is inherently based on the information that emerges in the field and undesirable as well as impossible to control beforehand (Bryman 2012: 426). Likewise, sample sizes based on convenience can, in most cases, only be determined in the field because the researcher depends on the person’s willingness and availability to participate in the research. Moreover, respondents can often only be contacted to participate during the data collection phase based on existing connections. Purposive and convenience sampling leaves room for these people, who may prove to be key informants, to be contacted as well.

Figure 3.3: Focus group discussion with group 2

3.4 Data collection methods

3.4.1 Semi-structured interviews

This research employed a different interview guide for each of the subgroups (processors, their spouses and institutional actors). The guide for the processors focused on their inclusion in the value chain and their household food security. For the interviews with the spouses of the processors, I focused primarily on the household’s food security and changing farming patterns. Finally, I would ask the institutional actors about contextual information regarding both the local palm oil sector and the food security dynamics in the locality. The questions in all three interview guides are based on the indicators established in the operationalization of this research (see Appendix A). These questions were later revised and adapted after the preliminary interviews to make the questions more relevant to the realities of the respondents and their wording more understandable.

Language played an important role in structuring the interview. The interviews with the processors and their spouses in the communities were conducted in Twi and the interviews with the institutional actors were conducted mostly in English with some exceptions in Twi (for the village Chief and the assemblyman). For the interviews conducted in Twi, I entirely relied on my research assistant. In order to maintain control and the ‘right’ focus, these interviews were more structured in a questionnaire format with specific, but (mostly) open questions. Although my research assistant,
Akua, knew what the research was about and broadly what kind of information I was looking for, she, obviously, did not have the same background in social sciences. Consequently, I felt that it was necessary that I would be in control of probing and asking additional questions where necessary throughout all interview stages. This implied a considerable amount of translation during the interview that would interrupt the ‘flow’ of the conversation and could bore the respondent. To minimize this, we both had a paper copy of the interview guide so that Akua could translate the questions directly from her copy, and would then summarize the respondent’s answer to me. I would subsequently jot down this answer on my copy while thinking of a follow-up question that Akua would then translate back to the respondent. In this manner, I could (to a certain extent) manage the conversation and ask follow-up questions where necessary, without losing too much time writing down the answers (see also Section 3.7.2). Moreover, I recorded every interview that Akua transcribed later. It took a few interviews to get to this format and for Akua to feel comfortable with the questions, but after three preliminary interviews we were able to conduct them and preserve a certain flow to the conversation. The interviews with processors took between 45 and 90 minutes, with a median of 59 minutes. The interviews with the spouses took between 30 and 45 minutes, with a median of 35 minutes.

Figure 3.4: Conducting an interview with a processor (from left to right: processor respondent, myself and research assistant Akua with the Kramer in the background)

The interviews guide for the institutional actors was less structured and based on fewer and more general, contextual questions (see Appendix B). This created more space and flexibility to ask follow-up questions and make the interview more conversational, while giving the respondent more space to give particular insights that I would have missed if the interview had been more structured. These interviews ranged from 45-90 minutes with a median of 1h05 minutes.

3.4.2 Participant observation: observer as participant

For the purpose of this research, I took the role of an ‘observer-as-participant’ (Gold 1958 in Bryman 2008: 410-1). The observer-as-participant researcher is mainly an interviewer; there is some observation, but rarely, if any, participation (ibid.). Within this role, the researcher is more involved than the ‘complete observer’ who only observes and does not interact with his or her research participants, but less involved than the participant-as-observer who is engaged in regular interaction and participates in their daily lives. Since I did not live in Darmang or Abompe, but would visit the communities on a daily basis for interviews in the Kramers and inside people’s
homes, I grew into the observer-as-participant role. Because the communities were relatively familiar with outside researchers visiting them, the people seemed to be more curious than suspicious of me. After talking to the processors in the Kramers, they would show me the machines, the way in which they worked and even asked me to take photos of them. In this manner I could observe my surroundings through my ‘interviewer’ role without feeling too much like an intruder. These observations would thus take place on a daily basis when I visited the Kramer. Especially in between interviews or after the last interview in a particular Kramer, I could walk around and make photos of the site and the people at work. See, for example, Figures 3.5 and 3.6.

Figure 3.5: Visiting Kramer 1 in Darmang

Figure 3.6: Visiting Kramer 6 in Abompe
3.4.3 Focus group discussions

This research held separate focus group discussions with the processors and their spouses, who together represent the unit of analysis of this research (i.e. the processors’ household). The focus groups aimed at (1) discussing the issues, themes and questions that popped up during the interviews to gain further insights and to (2) validating preliminary conclusions. In doing so, the focus group format provided an appropriate platform for the respondents to clarify and justify their own views and experiences to their peers, generate their own questions, and pursue their own priorities (Kitzinger 1995: 299). The exploratory phase had shaped the discussion questions and the activities, along with literature on how to conduct focus groups to gain insight into food security dynamics through participatory proportional pilings (see IFCR 2006, ACF International 2010, Hoddinott 2002). Since the sample for the focus group is relatively homogenous as most people share the same background and at times even shared daily lives, it was relatively easy to find a ‘common ground’ in the discussion (Hydén and Bülow 2003: 311).

The focus group discussion consisted of four parts with a 15-minute break in the middle (see Appendix B for more detail). In total the discussion took three hours for the first one and two and a half hours for the second focus group. Akua would moderate the focus groups and translate the transcriptions afterwards. In this manner, the discussions would not be interrupted and we would not lose too much time with the translations. She had conducted the interviews for the past weeks and had become very familiar with the content and format of the research. In addition, she had assisted other focus groups as well (as part of the PhD research of my local supervisor). For the focus groups themselves, I made a detailed focus group guide (see Appendix B) and discussed this extensively with Akua beforehand.

![Figure 3.7: Output of the participatory proportional piling for income](image-url)
Figure 3.8: Output of the participatory seasonal calendar (key – H=harvest, P=plant, I=increasing, D=decreasing, L=low and H=high)

Figure 3.9: Output of the participatory proportional piling for obtaining food
Getting her money’s worth?

**Figure 3.10**: Output of the participatory proportional piling for food consumption (key – \( A = \) a lot, \( L = \) less)

**Figure 3.11**: Output of the participatory proportional piling for sources of expenditure
3.5 Data analysis

The initial thematic analyses consisted of writing analytic memos during and immediately after a day of interviewing based on information that I considered unexpected, possibly important. I also searched for themes by looking at repetitions, similarities and differences, missing data and theory-related material (see Ryan and Bernard 2003 in Bryman 2012: 580). Saldaña (2009: 44) describes this kind of analytic memo writing as ‘dumping your brain’ and Thornberg and Charmaz (2014: 163) as ‘creating an intellectual workplace for the researcher’. In practice this meant scribbling down codes in the margins of my hard-copy data and in my field notepad during the interviews and writing in my notebook in the evenings. This analysis also involved a very initial drawing of connections between different answers, formulating further questions that I wanted to address and reflections on my research progress and my own positionality.5

The final analytical phase, marked ‘thematic analysis’ in the flow chart (Figure 3.1) consisted of (1) transcribing the open and semi-structured interviews and the focus groups and (2) coding these transcriptions along with my field notes, photos and focus group outputs (see figures 3.7-11) in Atlas-ti. Using this software, I have discerned underlying basic themes through open coding and subsequently created a thematic network to (1) visualize and analyse the connections between these codes and (2) identify organizational themes that organize the basic themes into clusters of similar issues (Attridge-Stirling 2001: 388). This thematic network subsequently served as a mind map and the backbone of the empirical chapters five and six of this thesis.

3.6 Ethics and limitations to the research

The choice and practical application of research methods and techniques is not only informed by academic literature on research practices, but also by ethical principles and practical limitations to the research, which are addressed in this section.

3.6.1 Ethical principles

Voluntary participation in research

Voluntary participation in research implies that participants are free to withdraw from the research at any time and that they are at all times aware that they are participating in a research project, i.e. that the research is entirely overt (see Bryman 2012: 153). Voluntary participation in research is relatively straightforward when it comes to conducting (formal) interviews and surveys: the role of the researcher, the research participant and the nature of the activity is clear. However, when it comes to participant observation, the roles and the demarcation between research and ‘pure conversation’ may become blurred. The researcher may observe people at work and take notes of people’s activities who in turn may not be free to ‘withdraw from this at any time’. Consequently, this may present an obstacle to true ‘voluntary participation’.

During data collection, the assemblyman introduced me to the people working in the Kramers and ‘convinced’ these processors to let me interview them. Due to my inability to understand Twi, I could not determine how much of an impact the assemblyman had on peoples’ willingness to participate. However, it seemed like people were able to decline if they were too busy or did not

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5 Positionality refers to a type of active reflexivity before, during and after data collection to recognize and take account of one’s own position in the field in relation to that of the research participant and the research context. These reflections should not only be an implicit component of the research process, but need to become explicit in the writing up (see McDowell 1992, Rose 1997 and Darling 2012).
want to talk to me, but mostly, they themselves appeared to be curious and would not object to an interview. Before taking photos, I would always ask permission, especially when there would be people in the shot. At first, I expected resistance to me taking photos, but to my surprise, the processors themselves would ask me to take their photos and would encourage me to show it ‘to my people back home’. Lastly, in the introduction of all interview guides (see below) and the focus groups, it was mentioned that the respondent could choose not to answer a question or could stop the interview at any time.

**Informed consent**

Voluntary participation implies that the research participants know at all times that they are part of a research project and that they consent to this. To be fully informed, the researcher needs to be proactive in (1) outlining his or her identity as a researcher, (2) what the research is about, (3) who is involved in undertaking it and (4) who is financing it in a way that is meaningful to the participants (see Bryman 2012: 138). To explain all this ‘in a way that is meaningful to the participants’ provides the researcher with a ‘grey area’ where s/he is personally responsible to judge what information is meaningful and what information is not.

In this study, my role as an outsider was very obviously overt primarily because of my white skin colour. In addition, I believe that, because of my younger age (24), I seemed more approachable. Wherever I went, people knew I was there for a specific reason and would often come to me and ask what I was doing there. Whenever I would enter a new Kramer, the assemblyman would introduce me as a student doing research on benefits and risks of oil-palm processing. When sitting down with a research participant, Akua would start the interview by thanking the respondent to take part in the research and introducing us as students doing ‘project work’.

Since project work is something common in Ghana that (bachelor) students need to do before getting their degree, most respondents seemed to be familiar with this concept. Introducing the research as project work was also a way of managing expectations: it was clear to the respondents that we were not financed by or in any way connected to the government; that our research would not have a major impact or bring concrete benefits to the community; and that we would not pay them for participating in the research. In addition, by framing the study as project work, I aimed to make the whole interview less official and a bit more informal with the aim being to reduce the power imbalance inherent in the research relationship (see for example Etherington 2007, Bryman 2012: 411 and Mikkonen, Merja and Hill 2016). Following the introduction, Akua would ask if it was okay to record the interview on my phone in order to make sure that we would capture everything, emphasizing again that confidentiality would be assured and that only she and I could access the recordings for research purposes only.

For the interviews with the institutional actors, I changed the wording of the introduction (see Appendix B) because the aim of the interview differed from the interviews with the processors and their spouses (see Sections 3.4.1 and 3.5.1). In addition, I wanted to phrase it in a more official language that resonated with the work of these respondents. In practice this meant that I would also introduce the study as research for my master’s degree and that it forms part of the larger WOTRO study (with which they were familiar considering that they had participated in the learning platforms).

As with the other interviews, I would also ask the permission of these institutional actors to record the conversation. Again, this was not a problem for these respondents.

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6 See introduction to the interview guide in Appendix B
The introduction of the focus group involved (a) a brief explanation of the research project, (b) an outline of the aims of the focus group, and (c) assurance of confidentiality. Since the participants in the two focus groups had already participated in the interviews, the explanation of the research project was rather short. It stated that the project was about the connections between working as a small-scale processor and how this influences access to food, its availability and diversity. The aim of the focus groups was formulated as to discuss what was said in the interviews and to further deepen my understandings of their work as processors and how they experience food security. Then it was asked if it was okay for everyone that we would audio record the discussion and that only Akua and I would access it and use it for research purposes. Furthermore, it stated that nobody would be mentioned by name in any of the research outputs, except for the institutional actors. Finally, we asked if there were any more concerns regarding the confidentiality of the focus groups. In both cases everyone gave their consent to be recorded and had no further concerns.

**Safety in participation**

Various measures were put in place to ensure that no respondent would be harmed during the course of this research. This implied that (1) confidentiality of the participants should be assured throughout the whole research process, including the research outputs (I will elaborate on this below), and (2) the disturbances caused during data collection should be minimized. To minimize the disturbances to the research participants, we made sure that (a) the interviews did not take longer than 90 minutes, and were ideally 1 hour, (b) we did the interviews in the homes and workplaces of the respondents so that they did not need to move somewhere else, (c) if it appeared that the respondent did not want to answer a certain question, we would not probe them, and (d) while we conducted the interviews within the workplace or home of the respondent, we would make sure that it was at some distance so that others could not hear us. At the same time, after or before the interview, if others were curious, they could ask any questions and see the interview guides. As for the focus group discussions, these took place in the church of the Abompe community on a Saturday afternoon (after farming) and Sunday afternoon (after church). The assemblyman escorted the people coming from Darmang (1.3 km further) in a trotro (collective taxi).

**Privacy**

The privacy principle entails ensuring the confidentiality and anonymity of human respondents at all times. This implies using pseudonyms, cutting quotes that are too identifying, guarding my notebook, recordings, phone, transcripts and computer. Seeing that the topic of my research or the questions that I asked did not appear to be sensitive, I decided that I could ask people’s names and phone numbers so I could contact them if I had further questions or if I would like to invite them to a focus group. It was subsequently communicated to the respondents that these were the only reasons for getting their contact information and that I would be the only person who would have access to it. This information was then written on the interview guide along with the notes that I took during the interview. The interviews themselves were numbered so that I could match them with the recordings and in the transcription the name of the respondent was replaced with this number. Since the interview guide was relatively structured, answers to the questions were not so different that they could identify particular respondents to outsiders. All the data collected is saved on a private Google Drive that only I can edit and Akua can view during the time that she is transcribing the recordings.

**Trust**

I attempted to create an environment of trust by means of the introduction before the interviews and focus groups. Since managing expectations was an important component of this introduction, I attempted to not give the respondents the impression that they would be compensated for their participation or that my research would impact the (absence of) extension that they received from
the government or other actors. However, I did give a piece of soap at the end of each interview and focus group discussion as a token of appreciation following the advice of both Dutch and Ghanaian researchers. In between the focus group the participants would also receive a snack and a drink during the discussion. Lastly, before, during and after each interview and focus group discussion, the research participants could ask me questions or voice their concerns.

### 3.6.2 Positionality and limitations to the research

A central facet of the analysis throughout the research process involved reflecting on my own positionality and considering how my own position in the field, my identity and background, influenced the course of the research. The most important factor that influenced this research deeply is the fact that I am a complete outsider to my research population. During my limited time in the field I was able to pick up on some customs and social practices, but since I did not live in the research location, I did not fully come to grips with the cultural context. Because I did not share a cultural common ground, appearance or language, I relied heavily on Akua not only for translation purposes, but also to probe in a way that made sense to the respondents and to interpret my observations or the answers to interview questions. To reduce this dependence on Akua and to have some control over the interview process, I decided in the preparatory phase to give more structure to my interview guides. This meant shifting from my original idea to conduct open interviews towards conducting semi-structured interviews with many specific, but open questions with room for probing. Subsequently, I decided to shift from surveys, my original idea for the second research phase, to focus groups since focus groups would provide me a more in-depth understanding of the information gathered through relatively structured interviews. Moreover, since I am an outsider, I relied heavily on the assemblyman to gain access to my research population. This resulted into a situation in which we would visit the Kramers and he would talk to the people working there and presented me with someone whom I could interview. Hence the assemblyman was essentially my gatekeeper, but at the same time I could not assess how much of a selection bias he had. To counter this, I insisted that I wanted to visit all the Kramers in the community to at least have a complete census of all the Kramers, also the ones that he may not know that well. Finally, because of this cultural and language barrier, I relied on Akua’s translated transcriptions for the analysis. As a result, indigenous or local typologies or categories, metaphors and analogies and linguistic connectors are by definition lost in translation (Bryman 2012: 580). On the other hand, I believe that the fact that I was a complete outsider did make it easier for me to gain access to respondents and institutions: since my presence provoked some curiosity, people seemed to be eager to talk to me and to participate in an interview. In addition, I could probe more freely and more directly with institutional actors, but also with the other respondents since I ‘did not know anything’.

Other factors that influenced the course of this research were my limited practical research skills or experience in conducting fieldwork, including interviews and focus groups. As such I relied heavily on advice from my supervisors and (academic) literature, especially for the focus group activities. The fact that I have limited knowledge and no experience with quantitative methods or data analysis, along with my background in cultural anthropology, also influenced my choice for a more qualitative research design. Secondly, the limited time that I was present in the field has influenced the research findings. Since I returned immediately after the data collection phases, I did not have the opportunity to go back and follow up on questions or disparities that popped up after the final analysis phase.
3.7 Assessing the quality of this research

As this research is mainly qualitatively oriented, Guba and Lincoln’s (1994) quality criteria are used to assess the ‘trustworthiness’ and ‘authenticity’ of this research. Trustworthiness is made up of four criteria: (1) **credibility** that entails how acceptable the research findings are to the members of the social world in which the research is conducted. Respondent validation and triangulation are key methods to increase the credibility of the research. Next comes (2) **transferability**, which entails the quality and richness of the accounts of the research context and population and the degree to which they allow for other researchers to ‘make judgments about the possible transferability of findings to other milieus’ (Bryman 2012: 392). Transferability parallels the external validity criteria for quantitative research, but it recognizes that because of (a) the specific timing of the study in a particular social, political, economic or climatic context and (b) the particular design of the research instruments according to the research population, findings can never be completely generalized. The third aspect of trustworthiness is (3) **dependability** or the possibility to ‘assess the degree to which theoretical inferences can be justified’ (ibid.). Guba and Lincoln (1994) propose that complete records should be kept of all phases of the research process in an accessible manner so that potential auditors can determine the dependability of the research findings. Dependability parallels the reliability criterion for quantitative research, taking into account that different researchers could come to different conclusions within qualitative research. The last facet of trustworthiness is (4) **confirmability**, which means that personal values or theoretical inclinations have not overtly swayed the conduct of the research and its findings. The confirmability of the research should be checked by the auditors of the study. Confirmability parallels the objectivity criterion for quantitative research, yet it recognizes that personal values and theoretical inclination will always influence the course of the research and creates a space for reflexivity.

Authenticity, in turn, refers to the ‘wider social and political impact of the research’ and has therefore a strong link to action research thinking and practice (Bryman 2012: 393). Guba and Lincoln (1994) propose five criteria for authenticity: (1) **Fairness**, or if the research represent the different viewpoints of the different members of a social setting, (2) **Ontological authenticity**: if the study support members to have a better understanding of their social milieu. Next, (3) **Educative authenticity** that focuses on the impact of the research on members to better understand the perspectives of other members of their social milieu. Fourthly, (4) **Catalytic authenticity** that refers to the impact of the study on social change and if it has stimulated the members to engage in action to change their circumstances. Finally, (5) the **Tacital authenticity** of a research assesses if the study has empowered members to take steps necessary for engaging in action.

This research has incorporated various measures to increase its trustworthiness and to a certain extent its authenticity. First, to ensure the credibility of the research findings, the focus group discussions created space for respondent validation. In addition, by means of multiple units of observation and data collection instruments, I was able to triangulate findings and increase the depth of the research outcomes. Secondly, the following chapters provide a comprehensive account of the research findings that can inform other researchers who conduct research on similar topics or in the same area. By means of this elaborate account, these researchers can judge whether the findings of this research can be transferred to another context. Thirdly, the various transcripts, visuals, questionnaires etcetera, can be found in the appendix of this thesis. This thesis, in turn, is accessible online on the website of the inclusive VCC project to the general public. Fourthly, the fact that the entire research process, from the proposal writing to the writing of the thesis, is guided and assessed by two supervisors and a second reader ensures a high dependability and confirmability of the research findings. To a certain extent, this research also adhered to a certain extent to Guba and Lincoln’s authenticity principle. I designed this research to be as fair as possible and create space
for different respondent groups to give their perspectives through stratified purpose sampling. In addition, I aimed to increase the ontological and educative authenticity of this research by means of focus group discussions that would partly serve to validate findings from the interviews.

3.8 Conclusions

This chapter has elaborated on the research methods that structured the course of this research, illustrating its qualitative orientation towards knowledge building and reality. This is evidenced in the exploratory character of the study and the way in which this was translated into the operationalization, sampling techniques, data collection methods, and analyses. Throughout its phases, this study has incorporated flexibility and open-endedness according to local realities or findings. In doing so, I have attempted to create a space for the research participants to shape the course of this research with the aim being to make the research instruments as locally relevant as possible and increase the internal validity of the research findings. Because of the qualitative orientation of this research, the quality of this study was assessed using the criteria developed specifically for qualitative research by Guba and Lincoln (1994).
4. Research Context: Ghana and the Kwaebibirem

This chapter provides a comprehensive account of the socioeconomic, institutional and historical contexts of the oil palm sector in Ghana based on literature review and key respondent interviews. It does so to give an understanding on how these contexts have shaped the emergence and evolvement of the Ghanaian palm oil industry.

4.1 National developments of the palm oil value chain

4.1.1 Colonial encounters

The oil palm tree, *Elais guineensis*, is native to Ghana and not introduced by the colonial government such as cocoa in 1871 or groundnuts in 1830 (Elbehri and Benali 2013: 53). Before oil palm gained the status of a ‘cash crop’ alongside its subsistence purposes, palm oil was regarded as a ‘communal economic resource, to be enjoyed freely by all members of the community’ (Gyasi 1994: 392). The custodian of the land (mostly the village chief) could grant anyone (including strangers) the right to harvest the fruit for sale, but in this case the custodian would receive a share of the sale or some kind of tribute for communal obligations (ibid.: 394). In the nineteenth century land sales and tenancy arrangements became more ingrained in local land tenure systems seeing that palm oil and kernels became increasingly lucrative export products, which sparked the growing demand for agricultural land (ibid.). Ghana started its palm oil exports in 1820 as a direct result of the demand generated by the industrial revolution in Europe (Agbodeka 1992 in Gilbert 2013: 159). The palm oil trade was deliberately encouraged by the English colonialists and became the principal cargo for former slave traders and ships after the abolition of the slave trade (Gilbert 2013: 159, FAO 2002: 5). However, palm oil export in the Gold Coast collapsed in the 1860s and 1870s following the discovery of mineral oil and the opening up of large-scale European oil palm plantations and mills in Indonesia and Malaysia (Adjei-Nsiah et al. 2012: 214). As a result, the oil palm industry in Ghana has mainly been in the hands of smallholder farmers and processors (Gyasi 1994: 392). By the time of independence in 1957, Ghana had only one estate, while Malaysia (that also gained independence in 1957) had 57 active estates (Fold and Whitfield 2012: 8).

4.1.2 Post-independence: 1957 - 2000

Because of its disadvantageous position in the foreign trade for oil palm, Ghana ceased to export palm oil from 1960 to 1990 and directed its industries towards domestic consumption and production remained in the hands of smallholder farmers and small-scale processors (Fold and Whitfield 2012: 8). In their comparative study on the Ghanaian and Malaysian palm oil industry, Fold and Whitfield (2012) attribute this ‘stagnation’ to four main factors: (1) the initial forms of development, (2) the lack of a legacy of plantation cultivation, (3) land tenure arrangements and lastly, (4) the degree of embeddedness of palm oil in the local society.

Because the Ghanaian oil palm sector is ‘dominated’ by small-scale production with so-called ‘primitive processing techniques’ and high transport costs, palm oil exports declined and failed to regain its importance in international trade post-independence (Fold and Whitfield 2012: 10). Ghana does not have experience with large-scale plantations in either the pre-colonial or the colonial period because of internal political insecurity triggered by inter-tribal warfare on the one hand and rivalry among the European colonizers seeking territorial hegemony on the other hand (ibid. 12). In addition, the British Crown did not favour plantation systems by fear of dispossessing the landowners and provoking local opposition and the colonial government believed that the local small-scale farming systems were economically more resilient than a foreign-introduced plantation.
system (Gyasi 1996). As a result, agricultural production in Ghana did not adopt the plantation system. As Ghana’s pre-colonial communal land tenure systems were left intact, post-independence governments did not have large tracks of land available for large-scale agriculture. Lastly, the high social embeddedness of palm oil in the daily life routines of Ghanaians, has also restricted the large-scale industrial production of palm oil (Fold and Whitfield 2012). Because of the significance of palm oil for domestic consumption within the local economy, smallholders ‘want to retain the option of selling to the domestic consumption market’ (ibid.: 13). Therefore, large- medium and small-scale mills compete for FFBs and smallholders tend to choose a specific variety of oil palm (ternera) that is better for domestic consumption but not so desirable for industrial use because of its lower oil contents (ibid.). In sum, because small-scale oil palm farming and processing is so engrained in Ghanaian society – its history, land-tenure arrangements, economy and culture – independent smallholder farming and small-scale processing remained the primary sources of Ghanaian palm oil.

Figure 4.1: Water bottles refilled with palm oil for domestic use on a local market
Figure 4.2 (right): Red-red, local dish based on a palm oil and bean stew, fried plantains and fish

However, in the Ghanaian palm oil industry, an industrial sub-sector co-exists alongside the small-scale sub-sector. This industrial sub-sector is characterized by economies of scale, higher productivity in both farms and mills, and better quality of the extracted palm oil (MASDAR 2011, Fold and Whitfield 2012). Ghana’s industrial sector consists of eight medium-scale mills and four large-scale estates that include both a plantation and a processing mill. From the 1960s to the 1970s, post-independence governments attempted to construct large-scale estates with a view to appropriating export revenues to meet their development needs (Fold and Whitfield 2012: 14, Akiyama et al. 2001 cited in Elbehri and Benali 2013: 53). This resulted in four large-scale estates

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7 Small-scale mills have a capacity of processing 1 – 3 metric tonnes of palm oil per hour and process annually between 2000 – 5000 tonnes of FFBs (MASDAR 2011: 51). Ghana has approximately 400 small-scale processing units (Fold and Whitfield 2012: 14).
8 Medium-scale mills have a capacity of processing 5-30 metric tonnes of palm oil per hour and process annually 15 000 – 30 000 tonnes of FFBs (MASDAR 2011: 51). In descending order: Juaben Oil Mills, Obooma Oil Mills, Ayiem Oil Mills, WAOPP Oil Mills, Ashanti Oil Mills, Adansi Oil Mills, AhwiaNkwanta Oil Mills, Anyinase Oil Mills (Ofusu-Budu and Sarpong 2013: 363)
9 Large-scale estates have a capacity of processing 30 – 60 metric tonnes of palm oil per hour and process annually between 70 000 – 140 000 tonnes of FFBs (MASDAR 2011: 51, Ofusu-Budu and Sarpong 2013: 363)
that include both a plantation and a processing mill and have a production of more than 30 metric tonnes of palm oil per hour (Ofusu-Budu and Sarpong 2013: 363). These include GOPDC (Ghana’s Oil Palm Development Company), TOPP (Twifo Oil Palm Plantation), Norpalm and BOPP (Benso Oil Palm Plantation). In the 1990s and early 2000s all four estates were entirely or partially privatised (MASDAR 2011: 21, Fold and Whitfield 2012: 14). Currently, GOPDC, BOPP and Norpalm are entirely privatised and TOPP is based on a public-private partnership (MASDAR 2011: 52, Fold and Whitfield 2012: 15, Ofusu-Budu and Sarpong 2013: 363). Foreign companies, including Unilever, now own the majority of shareholding of these estates.

All of these estates source their palm oil through VCCs with smallholder farmers, out of which a significant amount work as independent smallholders. The FFB yields of these independent smallholders are significantly lower due to lower yielding planting materials and husbandry practices\(^\text{10}\) (Ofusu-Budu and Sarpong 2013, Oxfam 2014). The MASDAR study reports that the yield level of estates in Ghana are up to three times higher than the yield levels on independent smallholdings (2011: 48). Apart from the higher FFB yields, the large-scale industrial estates are also more productive in terms of CPO output: the average oil-extraction rate of these estates are twice as high as those of smallholder farmers (Ofusu-Budu and Sarpong 2013: 383). However, 55% of Ghanaian palm oil is cultivated by smallholders (Ecorys & CDC 2010 cited in Whitfield and Fold 2012: 14) and small-scale processors process 60% of Ghana’s palm oil (Opoku and Asante 2008, cited in Osei-Amponsah 2012: 49). This translates into a little under 300,000 hectares of land that is being occupied by independent smallholdings as opposed to a little under 50,000 hectares by estates (MASDAR 2011: 47).

In sum, independent smallholders play a significant role in the Ghanaian palm industry in both CPO processed and the total area for cultivation as opposed to the large-scale industrial modes of production that predominate in East Asia. The economic productivity of independent smallholders, in terms of their yield levels (both in FFBs and CPO), is however significantly lower than that of the industrial estates, which makes the average cost per production higher for small-scale processed CPO (Ofusu-Budu and Sarpong 2013: 383 and MASDAR 2011: 64). That being the case, the Ghanaian palm oil industry does not meet the national demand, leading to a substantial import of the commodity.\(^\text{11}\)

4.1.3 Recent developments: 2000 to present

As a result of (1) the national deficit of oil palm, (2) the increasing global demand, (3) the need to diversify economic growth and, (4) the potential for regular employment and rural poverty reduction, the Ghanaian government has undertaken various initiatives over the past decades to expand the palm oil industry and its productivity. In 2002 the government launched its Presidential Special Initiative on Oil Palm (PSI-Oil Palm). The PSI-Oil Palm formed part of a bigger economic development initiative: four President’s Special Initiatives targeted four different sectors, namely textiles and garments, salt mining, cassava starch production and oil palm. All PSIs were based on a public-private partnership in which the state provides financial and technical support to smallholder farmers and small-scale private businesses (Asante 2012: 10). Based on the received government support, the smallholders and small businesses could organize themselves and raise private investments to jumpstart the industry or to facilitate its expansion (ibid.). As described in Sections

\(^{10}\) Husbandry practices in this case refer to specialized scientific techniques to cultivate crops in order to increase their productivity and overall efficiency (IFC 2011: 19).

\(^{11}\) Ghana produced approximately 130,000 MT of palm oil, while the national fats and oil requirements are estimated at 252,432 MT. Therefore Ghana has imported about 150,000 MT of oils and fats of which 94% in the form of palm oil (Opoku and Asante 2008, cited in Osei-Amponsah 2012: 49).
4.1.1 and 4.1.2, the acquisition of large tracks of land is difficult because of Ghana’s land tenure system. Most of the oil palm-planted area is therefore occupied by scattered, small-scale independent farmers. Therefore, the initiative presented a model that would aggregate small-scale farmers and landowners into modern, large-scale processing and export companies. While these companies would be managed by professionals to ensure efficiency, the farmers would own most of the company’s shares (Asante 2012: 17). The Ministry reports that 20,000 ha of small-scale farms have been cultivated under the PSI-Oil Palm (Ministry of Food and Agriculture 2012). However, due to conflicts and politics among the administrative and political elite, the project was halted in September 2006 (see Asante 2012).

From 2006 to 2012 the AFD (Agence Française de Développement) has been funding various projects in Ghana’s palm oil industry amounting to a total of €10.15 mln (AFD 2015). One of the most important outcomes of this partnership was the research for and the development of Ghana’s new Master Plan for its palm oil sector (by MASDAR consultants) that the Ministry of Food and Agriculture had launched. The outcomes of this plan have been (1) an extensive research document on the Ghanaian palm oil sector (including a detailed socio-economic study) and (2) a detailed concept note on ‘viable’ projects based on this research and recommendations. These projects focus on both large- and small-scale oil palm cultivation and processing, support services and industries, basic supportive infrastructure and new legislative measures (see MASDAR 2011: 219 - 226). The implementation of this master plan would extend over the next 15 years (until 2025) (ibid.: 221). However, this plan has not seen any implementation yet (pers. comm. Mr Swanzy, OPRI, September 2016).

Currently, the Oil Palm Development Association of Ghana (OPDAG) is cited as the next key actor to ‘champion a direction for the oil palm industry in Ghana’ (pers. comm. Mr Swanzy, OPRI, September 2016). OPDAG was launched in 2015 and managed by its director Samuel Avaala Awonnea. In addition to directing OPDAG, Mr. Avaala is the estate manager of BOPP and the chairman of the Ghana National Interpretation Working Group of the Roundtable on Sustainable Palm Oil (RSPO) (CMTevents 2016).

4.2 Timeline of palm oil production in the Kwaebibirem District

The palm oil industry started gaining ground in Kwaebibirem District in the 1960s with the establishment of the Oil Palm Research Institute in Kusi in 1964. In addition to this, there used to be an ‘Agric research centre’ of the University of Ghana in the district (currently called Forest and Horticultural Crops Research Centre - FOHCREC). This research centre was also established in the 1960s. The presence of these research institutes attracted the establishment of Ghana’s first and only fully state-owned farm for oil palm in the early 1970s near Nkwantanang. Likewise, GOPDC Ltd (Ghana Oil Palm Development Company Limited), currently Ghana’s largest palm oil producer is situated in Kwae and Okumaning, both located in Kwaebibirem District.

These key actors stimulated palm oil production and processing in the region directly in the sense that Obooma and GOPDC in particular engaged many farmers in the area through outgrower schemes and nucleus estate schemes (see Section 2.2.3). Within these schemes farmers were given inputs, but could only sell their fresh fruit bunches (FFB) to the company with which they had a contract. In this manner knowledge and necessary inputs to start an oil palm plantation were transferred to the local population. However, these farmers also started selling many FFB to smaller mills. These smaller mills started to pop up in the area because of the increasing demand for palm oil that also attracted smaller buyers to the region. This situation became untenable for the
companies who subsequently decided to move from outgrower and nucleus estate schemes to mostly independent smallholder schemes. With the latter, farmers are free to sell to whomever they want, but they do not receive any trainings, inputs or support from their buyers. Consequently, a vast market opened up for small-scale processors who could now legally purchase the FFB of the oil palm farmers in their communities. Increasing amounts of FFB are now sold to these processors because (1) they could often offer money right away, (2) the mills were close by so the farmers did not have to arrange transportation, and (3), these processors were often household or family members. As a result, many households now engage in both cultivating oil palm (mostly the husband) and processing the FFB into palm oil (mostly the wife). This was confirmed by almost all respondents who lived in nuclear households (see Chapter 5).

![Figure 4.3: Mapping key institutions in the Kwaebibirem District (source: Google Maps 2016). Key: In red – key actors in the oil palm sector: GOPDC = Ghana Oil Palm Development Company; OPRI = Oil Palm Research Institute, OBOOMA = medium-scale mill; FOHCREC = Forest and Horticultural Crops Research Centre.; In blue – research locations Abompe and Darmang.]

Both processors and respondents from key institutions expected that the oil palm industry would further increase and that more and more land would be dedicated to oil palm cultivation. They saw oil-palm processing as the most lucrative and secure source of employment that is still easily accessible. On top of this, oil palm plantations were deemed (1) more resilient to increasing environmental pressures than food crops and (2) a good retirement plan because once you have an oil palm plantation, the palm trees will yield relatively profitable FFBs for up to 30 years.

### 4.3 Key characteristics of the study area

The Eastern Region is situated in the southeast of the country and in the midst of the tropical palm oil belt and has therefore the best land for producing oil palm in Ghana (Asante 2012: 14). As a result, the region has the highest percentage of area allocated to palm oil cultivation in the country (see Figure 4.1). The socioeconomic study that is part of the MASDAR report found that the palm oil workers in the Eastern Region all judge to have good access to health and educational facilities
Kwaebibirem District (see Figure 4.4) is one of the 21 districts in the Eastern Region and has been referred to as ‘the centre of oil palm development in Ghana’ (MASDAR 2011: 63). Oil palm, cocoa and citrus are the region’s main cash crops of the region (Ghana Statistical Service 2014: 3). Agriculture in general is the main source of employment in the area as the soils and climatic conditions are conducive for the production of a variety of food and cash crops (ibid.). The 2010 census showed that the activity status for men and women in the Kwaebibirem district is relatively similar: women seem to be significantly integrated in the workforce, although slightly less than their male counterparts. There are however some substantial gender disparities in the types of activities or occupations, type of industry and type of employment sector (Ghana Statistical Service 2014: 37-39).

Figure 4.4: Area under palm oil cultivation by region in % (source: MASDAR 2011: 47)

The district is part of the Akyem Abuakwaa chieftaincy (of the Akan ethnic group) whose overlord is the Okyenhene (Ghana Statistical Service 2014: 3). The district falls under Oseawuoo, one of the four of the Akyem-Abuakwa States, with the Oseawuohene as the divisional head (ibid.). The Akans constitute the largest ethnic group in the district, followed by Ewe, Ga-Adangbe, Mole Dagbon and the Guans (ibid.). The majority of people in the district identify themselves as Christian (85%), followed by 8% atheists and 5% Muslim. The remaining 2% are traditionalist or identified as ‘other’ (ibid.).
4.4 Conclusions

Throughout Ghana’s history, oil palm has been deeply engrained in its society and (in)formal economy. This chapter provided an account of the interplays between this particular socio-economic and political context and the evolvement of the palm oil sector in Ghana, outlining the origins of the country’s current socioeconomic and political palm oil landscape. In addition, this chapter has addressed the roots of the substantial proportion of independent smallholders and small-scale processors. Despite various government interventions over the past decades to upscale the palm oil industry, smallholders and small-scale processors remain the primary producers of Ghana’s palm oil. The Kwaebibirem district epitomizes this: the great demand for FFBs of GOPDC and Obooma attracts many local smallholder farmers to engage in oil palm cultivation. Despite the huge demand from these mayor players in the national oil palm industry, small-scale oil palm farmers also sell to a growing market of independent small-scale processors within their own communities. Accordingly, small-scale oil palm mills or ‘Kramers’ have multiplied over the recent years. On that account, the oil palm sector represents vital employment for the rural population of the Kwaebibirem, particularly in terms of cultivation and processing. While the men are mostly engaged in the farming of FFBs, the women are increasingly integrated as independent small-scale oil palm processors. In most cases, increased engagement in oil palm cultivation and processing has implied a shift from food crop cultivation (mostly maize, cassava, yam, cocoyam and plantain) to cash crop cultivation of oil palm. The next chapter elaborates on this study’s research findings on the integration of women as processors and the perceived opportunities and risks that accompany this shift, in particular regarding the food security of their households.
5. Situating women in oil palm-based livelihoods

Women generally take on the role of small-scale processor within the palm oil sector. Studies conducted in the Kwaebibirem District report that approximately 80% of small-scale processors are women (e.g. Osei-Amponsah et al. 2012: 52, Ofusu-Budu and Sarpong 2013: 364). During fieldwork observations in the small-scale mills of Darmang and Abompe, I observed an even higher proportion: at least 90% processors were female, and this is also reflected in the gender composition of the interview respondents (see Table 5.1). In addition, the absence of men working as small-scale oil palm processors was confirmed during the interviews. When asked about gender differences in access to buyers, inputs or finance the overwhelming response was that this question did not make much sense since “there are no men working here”, “women are the sole processors” or that “processing is a female business”.

Table 5.1: Gender composition of respondents

<table>
<thead>
<tr>
<th>Respondent group</th>
<th>Women</th>
<th>Men</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent small-scale oil palm processors</td>
<td>22</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>Spouses of processors</td>
<td>0</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Institutional actors</td>
<td>1</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>23</strong></td>
<td><strong>17</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

Therefore, this chapter presents the findings of this research that delve further into (a) women’s integration into palm oil production and (b) the impact of this integration on their livelihoods and that of their households. I will elaborate on the preconditions and motivations for entering in the independent small-scale oil-palm processing enterprise and the challenges that these processors experience. Throughout this chapter, specific attention will be given to the role of gender and how it affects the factors that pull and push people into the small-scale processing enterprise. In doing so, I will explore how gender relates to (1) how and why people gain access to small-scale oil-palm processing, and (2) the particular challenges and opportunities that processors experience.

5.1 Women’s integration into palm oil production

According to the findings of this research, I have conceptualized the integration of women into oil-palm processing in terms of two interrelated aspects: firstly the accessibility of the oil-palm processing enterprise and secondly, women’s own motivations for entering the business. In other words, women’s entry into the palm oil sector as processor is determined by how easy it is for them to become an oil palm processor and whether they perceive processing as an attractive employment. For the purpose of this thesis, a high level of accessibility implies that: (1) the criteria of inclusion (e.g. gender, age, wealth, educational background, land ownership, etc.) are limited, (2) the work is based a loose contract with space for secondary activities since most are involved in secondary activities and general housework and childcare, (3) the work allows for differences among processors and, lastly, (4) the work aligns with people’s capabilities (e.g. physical strength, specific knowledge). Furthermore, processors’ own motivations for entering the enterprise are based on the incentives that the work offers to them. These motivations are shaped by outside elements that push them into the business (i.e. a lack of other options) on the one hand, and particular qualities of small-scale processing that pulls them into the business, on the other. In sum, this section describes and reflects upon the various aspects of women’s integration into oil palm production. This implies looking at who gains access to small-scale oil-palm processing, how they gain access, why the overwhelming majority of them are women and why they chose to be an oil palm processor.
5.1.1 Criteria of inclusion

Overall, respondents agreed that anyone could be a processor provided that s/he has an initial capital to buy FFBs and pay the milling fee (also see Box 5.1 below). Some respondents also added that the initial capital should also be enough to pay the Kramer labourers who chop the fruit bunches and pick the fruit from the bunches. Although there was some discussion about the exact amount of initial capital one would need, most respondents agreed that this was around 500 - 600 GHS.\(^\text{(12)}\) This initial capital mostly comes from peoples’ own savings since there is limited to no access to credit or finance from banks, associations or other institutions (Section 5.2.1 elaborates on the contact with institutions). In addition, respondents stated that although no specific skills or educational background is needed, it is essential to seek knowledge from experienced people.\(^\text{(13)}\) Most importantly, before starting, one needs to know the right price of the FFBs to avoid running at a loss. The rest of the techniques to process oil from the palm fruits one would learn during the work from colleagues at the Kramer, through one’s own experience or from family members who are also engaged in processing. Next to the initial capital and necessary knowledge, having ‘a passion for the work’, ‘strength’ and ‘determination’ were regarded as preconditions for being a successful processor seeing that the work was often described as very arduous and dirty. Because of the hard nature of the work, elderly respondents (55+) reported that they would like to decrease their workload or entirely stop working. Other respondents stated that they would like to employ more labourers to do the heavy work\(^\text{(14)}\) (see Section 5.2. for the future objectives of processors).

Another aspect that is essential to being a successful processor is having clients or buyers for your oil. Most respondents said that access to buyers was easy: there are enough buyers, especially in the lean season, from August to October, when there is not much oil available on the market (also see Section 5.2.1). These buyers come to the Kramer on Mondays and Thursdays to collect the oil (see Figure 5.2). As a result, there is no need to arrange transportation for the oil nor does one need to have a lot of connections to sell the oil. The Kramer, in turn, is nearby and often even within the communities. On average, it takes processors 10-15 minutes to walk from their houses to their workplace.

\(^{12}\) 500 - 600 GHS is approximately €108 - €133 (01/04/2017)

\(^{13}\) Highest education level among processor respondents according to prevalence: JHS or Junior High School for youth between 12-15 years old (58%), no education (21%), primary education (13%), SHS or Senior High School (4%) and Islamic School (4%). Analysis showed that there is no significant difference between the education levels of female processors and their (male) spouses.

\(^{14}\) This heavy work includes the carrying of FFBs, water and oil and the continuous stirring of the oil on open fire.
All in all, the processor respondents concluded that it is very easy to start one’s own processing enterprise. Nevertheless, the initial capital of 500 – 600 GHS presents an obstacle for people to enter into the small-scale oil-palm processing sector, especially for youth and other people who have not the possibility to self-finance this capital. These people are, however, not excluded from palm oil production, but often work as labourers in the Kramers. In this manner they attempt to save enough money to later become an independent small-scale processor. Elderly processors who do not have the money to employ many labourers also face obstacles to remain working as a processor on account of the physical strength that the work demands. As such, while processing is generally perceived as very accessible to all, it does present financial barriers and age limitations. As Figure 5.8 demonstrates, none of the processors interviewed were younger than 25 or older than 65. Most processors are aged between 35 - 49 and 50 – 65, while their spouses were generally a bit older. Observations at the Kramers confirmed these findings.

In sum, the criteria of inclusion are relatively low except for the fact that the work is arduous and requires physical strength, which excludes the elderly who cannot keep up with the hard work and cannot finance labourers to work for them. In addition, the initial capital to start the business is significant and needs to be self-financed. Therefore, independent small-scale oil-palm processing cannot be regarded as a ‘poor women’s’ or ‘poor household’ option.

5.1.2 Secondary activities and heterogeneity among processors

The processors clarified that one of the benefits of being an independent processor is that they can combine their work with their secondary activities. This implies that the work is also accessible to part-time farmers, storeowners, market women and housewives and mothers with young children. In this last case, most respondents had their younger kids (0-6 years old) present at the Kramers, where they would mostly play, sleep or get breastfed (see Figure 5.4). They stated that if they would not work independently, they would not be able to care for their children at the same time.

As for the other responsibilities, farming, trading and housework\(^{15}\), working independently allows the processors to work according to their own schedule. As a result, four out of five respondents work part-time as a processor (less than four days per week), while one out of five spends five to six days per week in the Kramer. On average, the respondents work a little under three days per week as a processor. Figure 5.5 (see below) provides a visualization of the weekly schedules of the processor respondents within this study. It also reflects this balancing of other responsibilities and the high diversity of processors’ schedules.

\(^{15}\) Housework includes, but is not limited to: cooking, cleaning, laundry, fetching water, childcare and working in the homegarden.
Image 5.4: Children at the Kramer

On Monday every single processor can be found in the Kramer since this is the day the buyers come and pick the oil up at the end of the day. The next day, almost half of the respondents stated that they ‘rest’, although that this often means that they are at the house doing housework. About a third goes to their farms and one in ten continues to work at the Kramer. On Tuesday it also market day in Kade, so another 10% goes to the market in Kade to trade and/or to buy foodstuffs for the household. On Wednesday the majority of respondents works in the Kramer and about one third spends the day in their farms. A few respondents reported that they work in their provisions store on Wednesday. Thursday is another busy day in the Kramer as 75% of respondents are preparing their oil for the buyers that come and pick it up at the end of the day. The remaining respondents ‘rest’ and one respondent cited that she goes to the farm. On Friday, the three out of five processors spend the day at the house, while one in five goes to the market. The others mostly work at the Kramer and one respondent spends the day at the farm. Saturday is a farm day for most processors, while the ones who do not have land available work at the Kramer or spend a day at the house. On Sunday all respondents go to church. In sum, Monday, Wednesday and Tuesday are busy days at the Kramer to prepare the oil for the buyers who come and pick it up Monday and Thursday afternoon. The days after delivering the oil to the buyers, on Tuesday and Friday, most respondents take a rest day at the house to recover, while other work at the farm or go to the market since Tuesday and Friday are the big market days in Kade (district capital). Religion is an important aspect of life in Darmang and Abompe (as well as for the whole of Ghana), therefore respondents unequivocally stated that they only attend church.

Figure 5.5: Weekly schedule of independent processors (n=24)
There is, however, a significant difference between the number of days processors spend in the Kramer and their household situation. Processors who are married work on average two and a half days per week in the Kramer, while (female) processors who are single, widowed or separated spend on average a little under four days in the Kramer. This correlates with the fact that half of single, widowed or separated women do not have a farm and solely depend on their earnings as an independent small-scale oil palm processor, while every single married processor has access to land and cultivates food crops and/or oil palm (see Figure 5.8 below). On that account, independent small-scale processing offers an important flexibility that allows women to balance their work schedule according to their particular needs and responsibilities.

**Figure 5.6: Household situation of independent small-scale oil palm processors (n=24)**

<table>
<thead>
<tr>
<th>Household Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear household</td>
<td>67%</td>
</tr>
<tr>
<td>Single mothers</td>
<td>33%</td>
</tr>
<tr>
<td>Widowed</td>
<td>12%</td>
</tr>
<tr>
<td>Separated</td>
<td>8%</td>
</tr>
</tbody>
</table>

**Box 5.1: A small-scale processor’s work space - the Kramer**

A Kramer is a small-scale oil-palm processing site and named after the milling machine that is used to press the fruits. This machine in turn inherited its name from the Belgian engineer who was the first one to establish a small-scale mill in the district in 1982 (Nana Yeboah 2010, cited in Osei-Amponsah 2012: 52). During the course of the field research I visited a total of eight Kramers, four in Darmang and four in Abompe. I could roughly divide these eight Kramers up in three different types based on their size, the amount and the type of people working there, the utilities available and the type of milling machine and the milling fee.

**Kramer types**

Kramer type 1 is small: it has less than 10 people working in it and no or very few labourers. There is no running water available and the milling machine is and the fee for using the appliances and machine is relatively low (around 10 - 30 GHS per drum). The Kramer machine employed tends to be a hand-spindle press with digester (operated manually) or a hydraulic press with digester. Kramer type 2 is medium-sized: there are between 10 and 20 people working on the site, with some labourers present. The milling fee ranges between 30 - 60 GHS per drum. The milling machine is mostly a digester screw press or a hydraulic press with digester. The bigger Kramer, type 3, has more than 20 people working (but never more than 40) and at least half of them are labourers. These Kramers often have running water at the site, but charge up to 80 GHS per drum. They operate the digester screw press.

**Types of people working at a Kramer**

There are generally three types of people in a Kramer (depending on its size): the owner or caretaker, the processor and the labourer. The processor is always independent and pays ‘rent’ to use the machine and the Kramer’s utilities. Depending on her capital and the size of the Kramer at which (s)he works,
(s)he has a more active or more passive role in the actual processing of the fruit. Labourers are tied to the processor by informal contracts and minimal pay. They do not have (yet) the steady capital you need to be an independent processor. Labourers are hired to do the more physically demanding work (chopping the FFBs, fetching water, boiling the FFBs, carrying the oil and boiling the oil) or the less physically demanding but more tedious work (picking the fruits from the bunches). Generally, it are the male labourers to do the first and female labourers and children to do the latter (also see Image 5.7 below).

The involvement of the Kramer owner in the actual processing activities is partly related to the size of the Kramer, but not entirely. Owners from larger Kramers have mostly a more management role or are completely absent and have a caretaker and the owners from smaller Kramers are mostly processors themselves. In these smaller Kramers, processors tend to feel that they have a voice in decision-making and often told me that when they advise the owner on something (e.g. the price of the oil, certain practices, etc.), that s/he accepts it. This was different in the bigger Kramers, where the owner generally takes on a more authoritarian and managerial position. In these Kramers the respondents more often reported that they did not feel that they had a say in decision-making, and revealed that they just abide by the rules and if they would refuse they would need to leave the Kramer. From the eight Kramers that I visited, only one smaller Kramer had a female Kramer owner. She had reportedly the first small-scale Kramer in the community and was supported by an NGO to set it up about 30 years ago. Since there is little to no monitoring and evaluation or extension from the government or other actors, the Chief Farmer saw a key role for these Kramer owners to ensure environmental standards, health standards and social standards (such as prohibiting child labour) in the Kramer.

Figure 5.7: Female and child labourers picking the fruits from the bunches
5.1.3 Connecting land access to processing

This brings us to a last aspect of why ‘anyone can be a processor’, namely that you do not need to have access to land in order to be a processor. Throughout the interviews it came up that most respondents believed that access to land is unequal between men and women. Although three out of ten stated that as long as you have the money, men and women could equally gain access to land, seven out of ten reported that it was easier for men to gain access to land since “only the men have the strength to work hard on the farm”, “because men can work harder than women”, “because farming is solely for men” or “because men have enough money to buy land”. All respondents linked ‘having land’ directly to farming and the cultivating of food crops and oil palm. They mentioned that this farming, especially the harvesting, requires strength and energy that only men have. Following this reasoning, it is more useful for men to have access to land since they can actually work the land. Women can help with the farming, but they are most useful in other areas that do not require such strength such as petty trade, housework and processing oil palm: “in the Kramers, the processing is at slower pace. So when you are tired, you relax. So this is more workable for the women” or, as the chief farmer of the area, puts it:

“It is not always true, but traditionally, certain types of work are typically reserved for the women, you see. We see women to be not as strong as men. So anything that involves hard work [farming], it is reserved for the men. When you go to the market, you only see women doing these small small things. So it has become... mostly a practice” (Chief farmer, processor and Kramer owner).16

The senior scientist from OPRI connected the unequal access to land further to the reason why almost exclusively women venture into small-scale processing:

“… By virtue of the cultural systems here, it is easier for men to gain access and dominance over the land than for women. Now, because of the men having so much dominance over the land and the farming activities, we realise that women do not have so much control over whatever income that comes out of that action. So for the women, it is also a way to survive. They see that, okay, processing, this is an area where a lot of men, they don’t go into it. So for us to be comfortable and survive in that area, we will try to diversify into this processing. Where there is not so much interest of the men. So this pushes a lot of women into the processing, where they can also get their money” (Senior scientist at OPRI).17

Figure 5.7: Land tenure according to marital status (=24)

16 Interview 3.3, Kade, 14th of September 2016.
17 Interview 3.4, Kusi (OPRI offices), 16th of September 2016
In short, the fact that processing does not require access to land lowers the bar for landless people to also engage in small-scale oil-palm processing, increasing its accessibility for women in particular. This becomes apparent in Figure 5.7 that shows how all married processors have access to land and balance their work as a processor with their work as a farmer to help their spouses, who are in most cases a full-time farmer, while female processors who are the head of the family, do not always have access to land. This is mostly true for single mothers, separated or widowed processors do have access to land from their deceased husband or if they shared the title deed with their ex-husband.

5.1.4 Women’s motivations

During the interviews there has been some disparity between processors who described their work as the “best option” or “the only option available” in their locality. The respondents who described small-scale processing as the best option in the community often cited that it is the most lucrative employment. In most cases they shifted from petty trade into processing because it has a “higher profit margin”. In some cases the processor shifted from running a provision store to processing because of theft and a low profit margin. (Interestingly, starting up a provision store is a recurring future aspiration for 30% of the interviewed processors, see Section 5.2.2). In these cases, the respondents chose processing because they judged it to be the best alternative amongst other options available. On the other hand, about half of the respondents mentioned that they chose processing because it was “the only lucrative work in the area”, “the only work in the community”, “because the farming business is not profitable anymore” or because “your money is fixed”. Unlike the others, these respondents did not feel that there were other viable alternatives available to them from which they could choose. They felt that they were pushed into processing as the only way to support their household. Overall, the processor respondents perceived processing as a relatively lucrative and reliable way for them to get cash income within their locality. Other means to get a cash income (e.g. through a provision store, selling fabric for clothes, sewing, etc.) were not seen as attractive since customers tend to buy on credit and in the end “you never get all your money”. The community chief and the assemblyman both cited that processing allowed women to have their own income, and the research scientist from OPRI argued that processing is a means for women to gain control over their income:

“… It gives them more control over the resources and everything. Because whatever money that comes from processing, the husband does not come and ask you how much did you get from it. But if it is a farm, you go and harvest, the money goes to the man. Not the women. So it is the man who gives you whatever he gives you. But with the processing, the women have some control over their money” (Senior scientist at OPRI).

Production manager at Obooma stated that the men are not interested in small-scale processing because for them, it is not so profitable as compared to other alternatives:

“When you process what you get out of it. For women, whatever they get... Let me say it like this, they will be okay with it. But for the men, the head of the family... When you work in the Kramer, you don’t earn so much. So you can’t take care after your kids and the family as well” (Production manager at Obooma).

18 Interestingly, palm oil is also often bought on credit causing conflicts between the processors and their clients, see chapter 5.2.1, but still it is considered as a secure income
19 Interview 3.4, Kusi (OPRI offices), 16th of September 2016
20 Interview 3.1, Darmang (Obooma milling site), 26th of August 2016
In other words, farming continues to be the most important and highly regarded occupation within the communities. As stated in the previously, this farming business is predominantly a male business in which women take on the role as ‘secondary farmers’. In this context, independent small-scale oil-palm processing constitutes the most lucrative and secure alternative available to women in the communities. Apart from being lucrative and secure, processor respondents cited that they also chose this profession because they value their independence:

“Since the Kramers are for the people themselves, like me, if you have any business, you need to have proper interest in it. Other than going to work for somebody. When it is for somebody, you know, you don’t take proper care of it. But when it is you own, at least you have... Ownership” (Chief farmer, processor and Kramer owner).

In addition to having ownership over their own business and deciding upon their own work schedule (see Section 5.1.2), processors also mentioned that they do not like working with other people because they do not want to share their profits, out of fear of being cheated or to have misunderstandings. In addition, these respondents stated that because they were independent they could consume their own oil, have an additional business selling the palm kernel and one respondent said that being independent allowed her to use the palm oil to make soap.

5.2 Impacts of small-scale oil-palm processing on livelihoods

The previous section has focussed primarily on the accessibility of independent small-scale oil-palm processing and the factors that push and pull particularly women in the enterprise. This section continues to address this notable integration of women into processing and broaden the scope towards the impact of this integration on the livelihoods of these women and their households. In doing so, I will shed light on the opportunities and the challenges that the processing enterprise presents to both the processors and their households. In addition, I will reflect on how processing shapes their future aspirations.

5.2.1 Opportunities and challenges for processors

Opportunities

Processor respondents indicated that a key advantage of being involved in processing is the possibility to increase their own cash income and to support their spouse. When asked what processors and their spouses did with this additional cash income, many reported that they save the extra money to accomplish their future aspirations (see Section 5.2.2). However, most respondents felt a growing need for cash to cover their increasing living expenses. Increased prices of education, utilities (particularly electricity) and food prices in the market were cited as main expenses. Consequently, when asked what processors and their spouses did with the extra cash income, they reported that they did not have anything left after paying their dues. Despite the fact that education fees takes the largest chunk out of the household budget, both processors and their spouses see the schooling of their children as one of their most important achievements and an investment in their own future. Alongside these opportunities associated with processing, respondents report many difficulties and risks to being a small-scale oil palm processor. These risks consist of mainly structural challenges that are rooted in a web of institutional shortcomings, socioeconomic inequalities and a lack of social capital.

21 Interview 3.3, Kade, 14th of September 2016
22 Social capital is conceptualized in terms of bonding, as intra-community ties, bridging, as extra-community networks, and linking with state or private institutions (see Woolcock and Narayan 2000)
Key areas of vulnerability

A small-scale oil palm processor is typically independent. In fact, in the research locations Darmang and Abompe, small-scale processors are exclusively working independently. This implies that the processor is self-organized, self-managed and self-financed. Although the processors consider this advantageous because they can keep all the profits, at the same time this independence implies that they bear full commercial risk of their business. Consequently, when the processor falls ill, has an accident or when a buyer defaults, s/he often nothing to fall back on. This makes the small-scale processors very dependent on (1) the informal contracts that they have with their buyers, (2) their ability to self-finance their capital and (3) their own health. In addition, (4) the volatile demand and supply and (5) the limited extension in terms of monitoring, evaluation and regulations with regard to health, the environment, learning and innovation exposes small-scale oil palm processors to increased risk.

Many respondents, including the community chief of Darmang, complained that most buyers buy on credit and that they sometimes do not pay them at all. If a buyer defaults or takes too long to pay them, processors have limited options to claim their money since the contract between them and the buyer is typically based on trust and a phone number. As the Chief farmer puts it:

“For example, I am a buyer and I’ve come down and I want to buy some oil from you. But I don’t have any money. [So I will ask you] Let me go and I will bring it [the money] back. Maybe on trust you release the oil to me. How do you know that I will come back? There is no formal documentation. Nothing. It is a matter of just… ‘this is my telephone number’. Let’s say I come from Kade, how do you know that I am telling you the truth? How do you know if I am really from Kade? […] So like me, as I have decided, I collect my cash before I give you the oil. If you can’t give me the money, forget about it. But the others, they really need to release their oil and get their money, so they need to agree to the terms of the buyer” (Chief farmer, processor and owner).

Since the majority of business between processors and their clients is based on these kind of informal contracts, only one respondent stated that she would take buyers to court if they refused to pay. Some respondents reported that the Kramer owner would act as an arbitrator between them and the buyers. However, most respondents felt powerless in this kind of situation. Although I have stated in the previous section that processors have easy access to buyers, having reliable costumers is less ‘easy’ under these circumstances. Most experienced respondents with more than 10 years of experience as a processor reported that they have developed good customer relationships with their buyers. These processors generally have fixed buyers and therefore rarely any problems with buyers who default or delayed payments for their oil. Processors with less than five years of experience tend to have more problems with buyers who default or do not pay in time. When asked what their future aspirations were, some of these processors mentioned that they hope to have reliable buyers in the near future. In addition to the informal contracts, the Chief farmer also pointed at two other causes of the low negotiation power of processors. Firstly, processors need to get their money quickly seeing that they are entirely dependent on their own earnings to finance their capital to buy new FFBs to process. Delayed payments for the oil often implies that the processors cannot continue processing as they have no money to buy new FFBs. Secondly, processors need to release their oil because they do not have storage facilities. Since they do not have storage facilities, they have a limited capacity to negotiate better prices and therefore ‘need to agree to the terms of the buyer’. As a response to this, some respondents said that they wanted to establish a fixed price

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23 Interview 3.3, Kade, 14th of September 2016
across Kramers and communities to increase their collective negotiation capacity. However, during the interviews with processors it came up that processors rarely communicated across different Kramers and they did not communicate at all with processors from different communities. Consequently, launching this ‘fixed price initiative’ proved difficult. Another consequence of the lack of communication between processors of different Kramers and communities is that when a buyer ‘cheats’ a processor (i.e. did not pay her for the oil), the buyer can easily go to the next Kramer and do the same thing. Despite these risks that processors face with their buyers, the income that they get from processing is still regarded as more secure than the income from other employment options for them in the community.

Next to a commonly disadvantageous client relationship, access to finance constitutes a second challenge for independent small-scale oil-palm processors. As stated above, processors have limited access to finance or credit to start up, expand or protect their businesses. Six out of 24 respondents said that they had access to credit from rural banks or the local credit union of which half actually received credit. The other half stated that the interest rates were too high. The other eighteen respondents said that they did not have access to any form of credit or finance. The respondents who did not receive external financial support entirely rely on self-finance through their savings from their own profits. Most of these respondents did state that they would like to get some kind of financial support to boost their businesses. All institutional actor respondents agreed that (individual) access to appropriate credit is a problem. Most banks and the credit union do not give out loans easily to processors and if they do the terms are disadvantageous to the processors. The extension agents from MoFA stressed that if the processors would organize and set up an association that is recognized by MoFA, they would have no problem getting access to finance. In order to do so, the association needs to democratically appoint an executive and have a constitution. The executive then needs to present his or her passport pictures, contact details and the constitution and the minute book of the association to the MoFA. When these criteria are met, the registration can take place the same day. Despite these seemingly easy-to-meet-criteria, there were no organizations or associations in the communities. Although most processors stated that if there would be such an organization in their community, they would be interested to join. The main reason they mentioned for wanting to join a processors association was access to financial support. The MoFA officials in turn believed that there were no associations because the processors did not want to invest time and money in it:

“To come as a group. Their main problem is that... Somebody will say ‘oh I don’t have time ‘o, I don’t have time to go for a meeting’. Even when it is once a month. And the contribution too, you know that they need to contribute. This contribution becomes a problem to some of them” (Felix Fiano, MoFA extension officer).

The OPRI officer agreed:

“You have to pay these monthly dues and all that... You know, people will tell you, ‘we will join, we will join’, but when the commitment begins to come... To pay those dues, do this and that. It collapses. Because with anything you need to start up for a while before the benefits begin to come. If you don’t have a structured organization how can you do anything, you see?

24 Interview 3.2, Kade, 13th of September 2016
But before you come to that level, you have to pay dues and put in time and energy. That is what, maybe, they won’t do” (Senior scientist at OPRI).

A third area of vulnerability for the processor is the absence of a social security system in case of emergency, e.g. in case of a fire, a death (and the need to organize a funeral), a storm that destroys their FFBs, theft, etcetera. Although most respondents did state that they have access to the national health insurance, they felt that it was inadequate since it still required a significant patient contribution each time you visited the hospital. As a result, when the processors feel sick they go to the pharmacy or take a painkiller. Most of the respondents mentioned sickness as a major potential obstacle to achieving their goals. To avoid getting sick, the processors try to have a balanced diet and taking enough rest. In addition, the respondents said that if there were to be an association for them, this association could also function as a self-organized social security net. One Kramer did have a welfare system in place that was organized by the Kramer owner. Each processor paid welfare dues and when somebody’s family member died, they would receive some money.

Fourthly, oil palm is a seasonal crop with a peak season from February until June and a lean season that starts off in August and lasts until October/November. As a result of this particular seasonal nature of oil palm production, processors and institutional actors report an unstable pricing for palm oil, unstable market and an unstable supply of FFBs for the processor. The national demand for oil remains quite stable throughout the year. Therefore during the peak season, when there is a lot of palm oil available, buyers pay a relatively low amount for the oil. While during the shorter lean season, when there is not that much oil in the market, the processors can sell their oil for more money. Processors state that this lean season is the most profitable period in the year for them as opposed to the peak season and the months in which there are (almost) no FFBs to process (January, July, November, December) or during the peak season (February, March, April, May, June). In addition, various respondents reported that during the peak season, it is more difficult to get buyers because there is so much oil available everywhere and since the supply in the lean season is lower, it is easier to get clients to buy their oil. Furthermore, apart from the seasonal changes in the supply of FFBs, the FFBs supply is also affected by the competition for FFBs between small-scale processors and medium and large-scale processing companies in the area (especially Obooma and GOPDC). As stated in Sections 2.2.3 and 4.2, these medium and large-scale processing companies also primarily source their FFBs from independent smallholder farmers. While initially, small-scale processors had easier access to the FFBs from smallholder farmers because they live in the same communities and know each other, the bigger companies started to compete with these processors when they shifted from an outgrower system to sourcing from independent smallholders (see Section 4.2). These companies started to offer a higher price for the palm fruit and also started to provide transportation to their processing site from the farmers’ land. As a result, smallholder farmers have more incentives to sell their palm fruit to the bigger companies and various processor respondents complained that it is often difficult to get access to FFBs even during the harvest periods.

Lastly, the small-scale oil-palm processing industry has limited to no contact with institutions. Neither the processors nor the institutional actors whom I interviewed reported any system of monitoring, evaluation or regulations with regard to health and safety standards, the environment, learning and innovation. The only sporadic contact that some processors have with institutions consists of inspections from the Food and Drug Board to check sanitation and hygiene in the Kramers (this is done annually or bi-annually depending on who answers the question). In this

Interview 3.4, Kusi (OPRI offices), 16th of September 2016
inspection, processors report that they advise that the processors need to keep the place organized and to put the FFB on a rubber or plastic to keep out dirt and insects. Furthermore, a processor told me that they advised her to wash the fruits before boiling them. Most of the time the processor remember that “once some people came”, but this was a long time ago and they did not remember who those people were. What most processors do recall are the inspections for the Sudan IV dye. This is a cancerous chemical used to give palm oil a more appealing red colour. The processors, however, say that they would never use this chemical and that it are the buyers of their oil who add the chemical. In principle, when the chemical is detected in the oil, they trace it back to the buyer, who in turn blames the processor. To determine who is the culpable, a sample is then taken from other oil from the processor, if this test comes back negative the buyer will be fined. In addition to being the only mentioned contact with institutions, this is also the only rule that is actively enforced. Another regulation that is in place, but not enforced is the use of car tires as fuel for boiling the fruits. The smoke from these car tyres causes unhealthy and polluting fumes and while it is prohibited to use them, it is still a practice in most Kramers in the communities. Another fuel that is used is wood and the fibre that is separated from the palm fruit during the extraction of the palm oil.

Other issues that are not regulated for small-scale processing are waste disposal and safety measures. As can be seen in Image 5.4, processors often work on bare feet and without protective gear near fires with young children on their back or in the near vicinity. One respondent had her foot burned because she stepped in a puddle of hot fibre that she could not see because it was dark at the time. Other respondents reported being drowsy after a day of inhaling the fumes. Another respondent said that she was asthmatic and gets heavy attacks when she gets home after a day at the Kramer. Health and safety measures and waste disposal are, however, regulated for medium- and large-scale mills by the EPA. The medium-scale mill uses exclusively the fibre and shells from the FFBs as biofuel and has two ponds for its waste disposal with a partial treatment system. In addition, workers receive trainings on safety practices and wear some protective gear. During my visit to the mill I saw them wearing safety boots and helmets, but no mouth caps.

### 5.2.2 Future aspirations

During the interviews I asked the processor respondents what they wanted to achieve in five years’ time and if they saw themselves continuing this work. Most respondents said that they wanted to support the education of their children, support their husbands, cater for their children and grandchildren. In addition, many stated that they wanted to build a house, buy land or expand their farmland and one wanted to establish an oil palm plantation to secure her supply of FFBs. About one third of processors wanted to open a provision store in the future. These processors explained to me that processing oil palm allowed them to save up in order to achieve these goals. As for processing itself, the answers were mixed when I asked if they saw themselves working in the Kramer in five years time. As Figure 5.9 shows, processors were equally divided among those who wanted to continue working as a processor and even scale up there activities and those who wanted to decrease their workload and/or eventually stop working entirely as a processor.

![Figure 5.9: Future aspirations of processors regarding processing activities (n=24)](image-url)
Overall, age, years of experience or number of days they worked in the Kramer did not show any significant correlations with their future aspirations in terms of their processing activities. The only aspect that did pop up was the marital status of the processor. As can be seen in Figure 5.9, the majority of single, widowed or separated processors wanted to decrease or entirely stop their activities as an oil palm processor. In contrast, the majority of married processors wished to continue and/or scale-up their processing activities.

Figure 5.10: Future processing aspirations of processors according to their household type (n=24)

The reasons most cited for wanting to stop processing were that the work was physically too demanding, that it was not profitable enough and one respondent said that the fumes at the Kramer were ‘too much’. In addition, these respondents often stated that their children will have completed their education by then so they do not need to pay the school fees anymore and therefore do not need to work that hard in the Kramer.

5.3 Conclusions

This chapter has presented the findings of this study and explored who typically gains access to small-scale processing, how they gain access, why the overwhelming majority of them are women and why these women chose to be a (part-time) oil palm processor. In order to do this, this section has examined the accessibility of the small-scale oil-palm processing enterprise and its incentives for the processors. Independent small-scale oil-palm processing is relatively easily accessible since (1) no specific prior skills are required, except for being able to work hard, (2) no specific knowledge or education is needed prior to the work, except the right price for FFBs when you are buying your first stack of bunches, (3) both your inputs and your buyers are relatively easy to access, (4) it is easy to gain access to a Kramer facility to process as long as you are able to pay the milling fee and (5) these Kramers are also physically easy accessible since they are so close to the community. Moreover, (6) the fact that being an independent processor allows you to balance your work schedule their work schedule according to their particular needs and responsibilities is perceived as a key benefit and lastly, (7) you do not need to have access to land in order to be a processor, which especially draws single mothers and women who are widowed or separated to small-scale processing. Consequently, the work allows for differences among processors, for example those who have access to land and those who do not, those who have young children and those who have not and those who are married and those who are not. As a result, the work is relatively accessible for various segments of the community that otherwise tend to be excluded from remunerative work. Oil-palm processing presents for this reason an important incentive for women to earn their own cash income while keeping up with their other responsibilities. This is not so much an incentive for the men in the communities who have land on which to farm, that is still
regarded as the most important work in the locality. Accordingly, it is mostly women who integrate in the oil palm value chain as independent small-scale processors.

Furthermore, this chapter has reported on the impact of this integration on the livelihoods of these women and their households. Apart from being relatively accessible for women and providing them with some control over their cash income that they can use to pay for their children’s education or save to open a store in the future, working as an independent small-scale oil-palm processing comes with a score of challenges. This is because these processors have a lack of social capital especially in terms of bridging with other Kramers and communities and linking with institutions. This absence of communication and organization decreases the negotiation power of processors and leaves them in a disadvantaged position in their dealings with buyers and financial institutions. It also offers them no buffer against market fluctuations and competition with medium- and large-scale mills. Lastly the lack of contact with government institutions leaves them in a vulnerable position with increased risk for their own health and safety and for the environment on which they depend.

However, the work as an independent small-scale oil palm processor does provide enough incentives to be one of the main sources of employment for women in the communities. Most processors decided to venture into the business because it would allow them to reach their personal aspirations and their professional ambitions. In other words, processing oil palm provides them with a cash income that they can use to pay the bills, educate their children, build a house, start a provision store, buy land to expand their farming business or to set up an oil palm plantation. Despite these advantages, processors have mixed feelings about the industry. While it provides them with the opportunity to gain cash income, have control over it and spend it on their children’s education and save up for their future goals, the work is very arduous and takes its toll on the processors. In the end, about half of the processors want to continue or even increase their processing activities and the other half want to decrease or entirely stop processing in the next five years.

The next chapter further discusses the opportunities and risks that accompany the integration of women in small-scale processing by zooming into their household food security. It explores and assesses (1) how processors and their spouses experience food security and (2) how they perceive the impact of their shift towards processing on their food security.
6. Food security

In the introduction of this thesis I asserted that while the shift from subsistence farming towards integration in cash-based global value chains can provide smallholders with increased cash income, it does not guarantee increased food security. In other words, while the integration in the palm oil value chain as a processor may provide increased cash income, it does not always imply increased or stable availability of foodstuffs and access to good quality and diverse foodstuffs in the community. In the case of this research, I focussed on how the integration of women in oil palm production has impacted the ways in which households access foods, and how they experience the availability of goods and the diversity of their food intake. Hence, this chapter focusses on how the respondents perceive and experience food security and explores the linkages with their processing activities. In doing so, I will elaborate on the perceived effects of the integration into processing on the three pillars of food security: food access, food availability and dietary diversity. Furthermore, this chapter looks into the changes over time and the respondents’ future prospects on food security in their community.

6.1 Experiencing food insecurity

This section presents the findings on experiences with food insecurity that came up during the individual interviews with both the processors and their spouses (N = 33). In doing so, it lays out the key vulnerabilities that processors and their households encounter with regard to food security and describes the concrete signs of food insecurity in their communities.

6.1.1 Anxieties about food access and food availability

The interviews revealed that about half of the respondents sometimes worried about one or more of the following: (a) having to eat a smaller portion or (b) not being able to eat a variety of foods or their preferred foods. They cited a lack of financial resources to buy (enough) food and having to rely solely on their farm for food. In addition, the late harvest and failed crops were also cited as reasons for their anxieties. In spite of this, all respondents said that they could always obtain some food on credit when they did not have money or foods from their farm. As a result, the respondents did not perceive themselves as food insecure, since they were always able to obtain some food – be it from their farms or on credit in the markets. When looking closer at the respondents who reported having occasional anxieties about food access, availability and diversity, some interesting correlations came up. Firstly, as Figure 6.1 shows, households with more household members tend to worry considerably more about their food security.

![Figure 6.1: Anxieties over food according to household size (N = 33)](image-url)
In case of the oil palm processors this implies that female single-headed households, which generally consists of less household members, reported considerably less anxieties over food security than their married colleagues (Figure 6.2).

Another factor that influences anxieties over food to a certain extent is the type of land tenure. As Figure 6.3 indicates, households who are involved in sharecropping (abuna or abusa)\(^26\) are more likely to experience anxieties over their food security than households that have their own land.

In sum, 17 out of 33 respondents reported that they occasionally worry about having enough kinds of food. Family size, marital status and land tenure (sharecropping versus ownership) appear to have the most influence on whether or not respondents experience anxieties about food. Most of these respondents have developed coping strategies such as eating a smaller meal, buying food on credit or only eating the foods that they can harvest from their own farm.

### 6.1.2 Struggling to obtain food: food availability during the year

In addition to the worries related to food, almost 91% of respondents (N = 33) reported that there are months in a year that they struggle to obtain enough foodstuffs. This struggle is connected to three main aspects: (1) their own irregular/diminished farm yields, (2) the high food prices in the

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\(^26\) In the case of an abusa arrangement, the owner takes one third of the proceeds and two-thirds is for the caretaker; in case of abunu the tenant farmer and land owner share the proceeds equally (Quaye et al. 2015).
market and (3) no/reduced income from oil-palm processing. All of these aspects are very much connected to the seasonality of food crops and oil palm crops. Most respondents referred to the first aspect when asked why they struggled to obtain enough food in certain months. They explained that these irregular and/or diminished farm yields were occurring due to a prolonged dry season. Normally the rainy season begins in March and ends mid November but due to climate change impacts, the rains only start in July/August, with some irregular rainfall in March (also see Codjoe et al. 2013: 20). As a result of this drought that now continues into March, April, May and June, there is not enough water in the soil for crop growth, which increases the risk of crop failure (also see Gyampoh, Idinoba and Amisah 2008). In addition, some respondents mentioned that they struggle to obtain enough food in those months that they are ‘waiting’ to harvest. During the making of the seasonal calendar in the focus groups the respondents agreed that this mostly occurs in January, February, May, June and July depending on the particular food crop. In addition, the respondents who do not have a (large) farm and depend on the market for their food intake told me that during these months in which the harvest is not yet due, the food prices on the market spike. Consequently, these respondents also struggle more to obtain enough foodstuffs for their households. Finally, oil palm is a seasonal crop with a peak, a lean and an off-season. As a result, there are months in a year that processors receive little or no income from processing (January, June, July, November, December), some income (February, March, April) and a lot of income (August, September, October) (also see Section 5.2.1). During the first two periods, the months in which processors cannot get any or only a little income from processing, they generally struggle more to obtain enough foods for their households.

![Figure 6.4: Percentage of respondents that struggle to obtain enough food for their households during the year (N=33)](image)

Figure 6.4 shows the low food availability as reported by the respondents. It demonstrates that respondents are particularly prone to be food insecure in the months June and July. During these months the three aspects of limited food availability coincide: the prolonged dry season, the high prices in the market due to the limited supply and the off-season for oil palm.

### 6.2 Linking small-scale oil palm production to food (in)security

The previous section outlined the most eye-opening findings that arose from the interview data with both processors and their spouses (exclusively farmers) with regard to risks to food security and experiences with food insecurity. This section positions the previous findings within the three pillars of food security (access, availability and dietary diversity) and relates these to the context of
small-scale oil palm production. It will do so based on the open interviews with institutional actors (N = 7) and two focus group discussions and activities with processors and their spouses (N = 16).

6.2.1 Impacts of oil palm production on food access

This section describes and reflects on how households that are (partly) involved in small-scale oil-palm processing access foodstuffs, why they do so, and how this changed over time. In order to do so, I will present the results of the proportional pilings done within the focus groups (as detailed in Section 3.5.2) on (1) the main sources of food, (2) the main sources of income, and (3) the relative importance of food in the household budget. By means of proportional piling I aimed to uncover the relative importance of each category and I explored the changes over time and future prospects of the respondents regarding these topics. In addition, the interviews with the processors and their spouses and the institutional actors provide further insights into the reasons behind these food access dynamics.

The sources of food were defined in both focus groups as ‘farmland’, ‘market’ and ‘gifts’. Figures 6.5 and 6.6 show that, although both groups identified similar trends for the past and the future, there was a stark difference in current sources of food between the two focus groups. When asked why there was such a difference between these two groups, the participants of focus group 2 said that this particular year had been a bad year for the processors, hence the relatively high reliance on their own farmland and on food gifts. These processors told me that if I had asked them the same questions the year before, their answers would have been similar to those of the first focus group. However, they see this situation as temporary and continue to foresee that the market will be their greatest source of food in the future. Overall, it is clear that the participants rely much less on their own farmland and more and more on the market for food. The reason for this is clear: they are shifting their attention from subsistence farming towards processing for a cash income. The role of gifts as a source of food is relatively stable and minor, but become more important during times of difficulty.

The shift from subsistence farming towards market-oriented production as the main source of food for the household is directly related to the increasing importance of oil-palm processing activities. Respondents stated that they increasingly rely on the market for food because they spend relatively less time in their fields and home gardens to cultivate foods and rely more on their income from processing to satisfy their needs. In addition, respondents increasingly convert their lands to oil
palm cultivation. When the canopy of the oil palm trees closes after approximately five years, they cannot use this land for food-crop farming anymore. As the scientist at OPRI puts it:

“[Me: So if I understand you well, most of the processors now are not accessing food through their lands, but through their cash income from processing?] S: Yes, and they now go and buy [their food in the market]. You know, the oil palm farmers cannot cultivate food crops anymore. [They] just get the money from the palm and then go and buy [the food]. So actually, if you look at the food crop market in the Kwaebibirem district, [the prices are] very high and foodstuffs are expensive because so many people need to buy food instead of growing it” (Senior Scientist at OPRI).

The respondents gave various reasons for this ‘shift in attention’ from food crop farming towards oil palm cultivation and processing. First, there were ‘environmental’ reasons including infertile lands, irregular rainfall, an extended dry season and the increased need for expensive inputs. In these cases, converting to oil palm cultivation and processing for cash can be seen as a strategy to prevent food insecurity due to a decreased availability of foods from one’s own farmland. Second, households gave ‘economic’ reasons for their shift, namely that cultivating and processing oil palm is more lucrative than food cropping and that they therefore prefer to invest more time and resources in oil palm. Some respondents who mentioned lucrativeness, also mentioned that oil palm trees are more resilient to climatic change and that they do not need a very fertile soil to grow. Third, oil palm trees are seen as a good investment for later as they yield fruits for decades and after that you can even sell the tree itself. Despite this shift from farmland to the market as a main source of food and the subsequent decline of food crops cultivated for household use, farming remains a key ‘back-up’ for food provision. During both focus groups all respondents agreed that while food crop farming may not be the principal source of food, it would continue to remain a key activity within the community. In addition to this, several institutional actors stressed the importance of food crop farming for secure food access:

“There are less food crops grown in this district, yes. It will come to a time that we will not have food to eat. Because they have used all of their land for oil palm plantation... […] They think that they get more money. Well, they get money, they get money. But they have to consider the food they are going to eat. Because after you get the money, you are going to use the money to buy food. Why can’t you leave some of your land for food cultivation? Do you see? But what they have in their minds ‘oh, if you have palm oil, you have more money’!” (MoFA extension officer)

“... The clever ones they try at least apart from the tree crops to also grow some food crops at least in their home gardens. But some of them no. And they just consider the palm, palm, palm. And then this [not having enough money to buy foods on the market] is what can happen.” (Chief Farmer)

During the focus group a proportional piling on sources of income revealed a corresponding shift from crop sales towards processing as main source of income. Another minor source of non-cash income were gifts and one group also added trade to the list of income sources. Figures 6.7 and 6.8 show similar disparities between the two groups as the proportional piling on food sources. While

27 Interview 3.4, Kusi (OPRI offices), 16 September 2016.
28 Interview 3.2, Kade, 13 September 2016.
29 Interview 3.3, Kade, 14 September 2016.
past experiences and future prospects show corresponding views on the role of food crop sales and processing earnings, the current situation differs between both focus groups. As stated above, since the second group experienced a collective setback in their processing businesses, they relied much more on their food crop sales for their income than the first group. Altogether, all focus group participants agreed that food crop sales would become less and less important as a source of income, while processing would become the main source of income. Nevertheless, all respondents did foresee that farming would continue to be the second most important source of income.

Finally, the focus groups explored what their income was spent on. The main expenditures of the households were defined in-group as education (20-40% of the household budget), food (20%), labourers (9-15%) and utility bills (5-15%). Minor expenditures were social gatherings and gifts, household items, medical bills and travelling expenses. Although there was some variation between the two focus groups, food expenses were in both groups seen as the second most important one. This had not changed over the years, although one focus group stressed that the cost of education was steadily increasing taking more and more of the household budget. Furthermore, an additional year ranking, in which the respondents were asked to rank the food prices for each of the past five years, revealed that the respondents experienced a high increase of food prices in the market in Kade. These increasing food prices were further confirmed in the interviews with the institutional actors and through interviews with respondents who experienced occasional anxieties over economic access to food (see Section 6.1.1).

In conclusion, all respondents identify a shift away from food crop farming towards a cash-based market system. This is evidenced in the proportional pilings where the market is identified as the main source of food in ‘normal’ and future situations and where processing is steadily becoming the main source of income instead of food crop sales. This shift is stimulated by the view that the oil palm business is more lucrative than the farming business and that food production is decreasing due to environmental changes. Particularly the prolonged dry season and infertile lands are mentioned as key causes of declining yields. In these cases, converting to oil palm cultivation and/or processing can be regarded as a coping strategy.
6.2.2 Impacts of oil palm production on food availability

As stated in Section 6.1, there are recurring issues regarding food availability in the communities. This is evidenced by the fact that over half of the respondents occasionally experience anxiety about the availability of food on their own lands as well as about the lack of financial means to buy food on the market. Secondly, nine out of ten processors and their spouses stated that there are months in a year that they struggle to obtain enough foods for their households. In other words, the availability of sufficient food throughout the whole year is an issue for the majority of households that are partly involved in independent small-scale oil-palm processing. This section subsequently presents and reflects on how this inadequate food availability is related to the integration of these households in oil palm production.

Over 70% of farmer respondents30 (N = 27) expressed that environmental factors (in particular the prolonged dry season and irregular rainfall, but also to some extent soil depletion and pest infestations) have significantly decreased their food crop yields compared to five years ago. Many of these respondents stated that as a coping strategy they started planting oil palm trees on their land because these are perceived as more resilient against these climate impacts. Aside from that, they also more lucrative than regular food crops. After three years when the canopy of these trees closes, it becomes impossible to intercrop with regular food crops at all. Currently, 86% of the respondents who farm (full-time or part-time) and process oil palm also cultivate oil palm trees. As a result, while growing oil palm instead of food crops can be a coping strategy for reduced food crop yields, it also effectively shifts focus from food crop farming towards more cash crop farming. This corresponds with the finding in the previous section that the market, instead of peoples own’ land, is becoming the main source of food. However, this gradual shift from more subsistence-based farming to more cash-based farming may in itself present risks for food availability in the processors’ households. Figure 6.9 shows that respondents who grow oil palm tend to worry more about having enough food for their households.

![Figure 6.9: Anxieties over food according to cultivating oil palm (N=33)](image)

Furthermore, Section 6.1.2 demonstrated that there are months in a year during which a significant proportion of the respondents struggle for food. Up to 41% of the respondents said that they struggle to obtain enough food for their household particularly in June and July, mainly due to the prolonged dry season that causes a late and diminished harvest. However, since the households rely

30 Farmer respondents: processors and their spouses who also farm, either fulltime (spouse) or parttime (next to oil-palm processing activities.)
more and more on their processing income (Figure 6.7 en 6.8) and the market (Figure 6.5 and 6.6) for their food, it seemed interesting to look at the linkages between the months respondents struggle for food and the relative revenues from their processing activities over the year.

Figure 6.10 shows that the spikes in diminished food availability seem to correlate with the average amount of money that they typically make from processing throughout the year. When processors cannot make any money from processing, they tend to struggle more for food than in times during which they earn a moderate income. When their processing earnings are highest, they do not mention any difficulties to obtain enough foodstuffs. As a result, despite additional processing earnings, most respondents still report being food insecure during particular months in the year. This seems to imply that the cash income from processing cannot counter limited food availability in these months.

![Figure 6.10: Percentage of respondents that struggle to obtain enough food for their households and the average revenue from processing during the year](image)

### 6.2.3 Impacts of oil palm production on dietary diversity

Next to impacts of oil-palm processing on food access and availability, this research explored the food consumption patterns within the community according to the pre-established food groups (see also Section 2.1). Already in the interviews it became clear that most respondents had very diverse diets. When asked what food groups the respondents ate yesterday and today, almost all of them could tick most food group boxes. This was further confirmed during the focus groups. When asked what they eat now more since their household was involved in processing, the participants responded that they eat a bit more chicken and that they can buy more rice and eggs to please their kids. Although the processors and their spouses themselves did not note such a difference in their diets or in the types of food that they access since they started processing, the institutional actors did mention some differences. For example, the chief farmer stated that people who rely more on the market for their food intake increasingly bought non-traditional foods:

“Well, it [engagement in oil palm] changed it [the diets of people]. Because, if you were to be having your own plantain from your farm, you would come and take it home and eat it. You

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31 Side note: this revenue is not exact, i.e numerical, but based on an ordinal scale (none/medium/high) according to the testimonies of the respondents. This graph can therefore not be regarded as an exact figure but more as an indication between the correlation of processing revenues and food availability during the year.

32 Based on today’s and yesterday’s intake of these food groups: staples, cereals, roots and tubers, vegetables and fruits, poultry, meat, fish, eggs, legumes, nuts and seeds, dairy products, oils and fat, sugars, beverages.
would grow this plantain, cassava, cocoyam and all those things. But if you don’t go there or if you don’t have [a farm], and you got money, when you go the market, you buy rice, garri, kenke and all those things, which is not traditional” (Chief Farmer).33

The MoFA extension officers argued that people who solely rely on their cash income for food do not have enough money to buy the variety of food that they would otherwise get from their farms:

[Mrs. B] It is less, it is less [diversity of people’s diets]. Because if you are a farmer, you have a lot of food to eat. You don’t need to go and buy. But nowadays they need to even buy cassava, my sister. How many people can buy this cassava? And after that go and buy meat, tomatoes,... But for those who have the land for their food crops, they only go to the market to buy meat. But for those without, they buy everything. [Mr. F continues…] There are some people who have contomere [spinach], tomatoes and all that. But most of them don’t have. (extension officers with MoFA).34

Finally, when inquiring about food safety, most respondents stated that they have never been ill because of what they ate. Some respondents did state that they felt ill after eating street foods when they worked late at the Kramer and did not have time to cook.

6.3 Conclusions

This chapter explored the food security dynamics in oil-palm processing households. It has done so, first, by looking into the experiences and perceptions of processors and their spouses of the state of food security in their households. Second, this chapter has positioned the three pillars of food security within the context of increased small-scale oil palm production over time. Key findings were that, although most households continued to rely on their land for food and income, the increased integration into processing did profoundly change the ways in which they access food. As households are shifting the focus of their economic activities towards oil palm cultivation and processing, they rely more and more on cash income and on the market to gain access to food. This shift is inspired by the increased need and desire for a cash income and by decreased food productivity as yields decline due to climatic changes. Accordingly, (partial) conversion to oil palm production is presented as a coping strategy to increase households’ resilience against these declining yields and the subsequent decline in income and anxiety about food security. However, half of the respondents experience occasional anxieties over food access and availability. Large households with more than four members in particular reported anxieties about not having enough or sufficiently varied foods in the house. Despite the increased income from their processing activities, most respondents expressed that they experienced these anxieties because of a lack of financial resources. The months during which most respondents experience these anxieties coincide with the months in which they earn no to limited revenues from their processing activities. As a result, it appears that the increased reliance on cash income from processing and relatively expensive food markets cannot counter limited food availability during the ‘vulnerable’ months. Nevertheless, the respondents foresee processing as the most important source of income in the future and, accordingly, the market as the most important source of food.

33 Interview 3.3, Kade, 14 September 2016.
34 Interview 3.2, Kade, 13 September 2016
7. Synthesis and Conclusions

7.1 Answers to the research questions

This study has sought to answer the question as to how the integration of women in the palm oil value chain affects their household food security. In order to do so, the previous chapters have provided in-depth responses to the three sub questions of this thesis, namely, (1) how are women included in the palm oil sector, (2) how do households who engage in small-scale processing experience the state of their food security, and, (3) how do small-scale oil palm processors and their spouses perceive the effects of their processing activities on their household food security. After an introduction to the research topic (Chapter 1), and outlining the theoretical framework (Chapter 2), methodology (Chapter 3) and context (Chapter 4), the research questions have been addressed in Chapters 5 and 6.

Chapter Five addressed the inclusion of women in the Ghanaian palm oil sector as independent small-scale oil palm processors. In doing so, it provided a comprehensive account of who typically gains access to small-scale processing, how they gain access, why the overwhelming majority of them are women and why these women chose to be a part- or full-time oil palm processor. The chapter found that the work has specific qualities that make it accessible to particularly women in the communities who otherwise tend to be excluded from remunerative work. These ‘gendered incentives’ are threefold: firstly the fact that the work does not require access to land, which is reportedly harder for women, especially the ones without husbands. Secondly, the work is independent, which means that the processors can balance their work schedule according to their needs and additional duties that this study has referred to as ‘gendered responsibilities’. These responsibilities include housework, trade and childcare. Lastly, while the work is often described as arduous, it remains doable for women and does not require ‘male strength’ in the same way as cash crop farming does. Chapter Five also presented and reflected upon the impact of the integration into oil-palm processing on the livelihoods of both processors and their households as a second aspect of women’s inclusion in the palm oil sector. The most important opportunity and pull factor of the processing profession is that it provides processors with cash income. This cash income is regarded as increasingly important to cover increasing living costs, especially the school fees for their children, but also to save up for future goals such as building a house, opening a provision store or to buy additional land. Despite these advantages, a striking 46% of respondents wanted to decrease or entirely stop their processing activities in the near future because of the substantial challenges that they experience. These challenges boil down to a lack of organization and communication between processors and Kramers, which decreases their negotiation power and leaves them in a disadvantaged position in their business relations with buyers and financial institutions. In addition, it leaves them vulnerable to market fluctuations and competition with other suppliers. All in all, women are generally included as independent small-scale oil palm processors because of the specific gendered incentives of the work. While the inclusion of women into processing offers them substantial benefits, it also puts them in precarious positions in particular when dealing with other actors in the chain.

Chapter Six addressed the second and the third sub questions of this research, which refer to household’s perceived state of food security, and how this is affected by the processing activities. While the experience of food security varies from household to household, a substantial proportion of the respondents reported feeling occasionally anxious about having enough and different kinds of foods in their house. These anxieties are directly linked to a decreased financial and/or physical access to food during critical months in which the off-season of oil palm coincides with late and
diminished harvests. Regarding perceptions of the impact of oil palm production on the access, availability and dietary diversity of food, the chapter concluded that the increased integration of women did significantly alter the ways in which the respondents access food. Over time, less food is accessed from their own lands and home gardens, while more food is bought using cash income from the district’s food market. This shift is directly connected to the changing food availability in the communities due to (a) declining food crop yields because of climatic changes and soil infertility, (b) conversion of land to oil palm cultivation that is seen as more resilient/lucrative, and (c) less time spent on food crop farming because of increased engagement in processing/palm oil cultivation. As a result, food security dynamics are considerably changing from reliance on own land for food towards a reliance on cash income and the market for food. However, it is important to note that food crop farming is still regarded as the second most important source of food, also in the future. Furthermore, especially institutional actors stress the importance of self-provisioning of at least some food crops as an insurance against the increasing and volatile prices in the food market.

Figure 7.1 presents a visualization of the research findings. It demonstrates how the inclusion of women into small-scale oil palm processing impacts household food security in multiple ways. Increased involvement in a larger cash-based value chain provides these women with increased cash income that they save and or use for a variety of living expenses, including their households’ food provision. While this increased cash income increases their financial access to food, it also decreases their physical access to food as they allocate more time and energy into processing than food crop farming. Furthermore, the declined food crop yields from their own farms has decreased the overall food availability in the communities. Lastly, when women enter the oil palm value chain they generally do so under disadvantageous circumstances that make them more prone to run at a loss. In addition to market fluctuations and the seasonality of the oil palm fruits, this causes their cash income from processing to become quite volatile. That being the case, processors’ financial access to food tends to fluctuate according to the season, the goodwill of their buyers, their own health, the purchasing price of the FFBs and the overall demand for palm oil, to name a few. Overall, this shift towards oil-palm processing implies a move away from subsistence farming towards the market with consequences for food access, availability and diversity. While this shift is cushioned by the fact that processors’ spouses are still overwhelmingly farming food crops for both sale and home use, this research concludes that women’s integration into processing makes their households more prone to experiencing periodic food insecurity during the year.
7.2 Theoretical reflection and implications

7.2.1 Inclusive Value chain Collaboration

In the theoretical chapter of this thesis, I stated that inclusion in value chains does not uniformly leads to positive development outcomes. Instead, adverse inclusion involves that it is possible to be included on subordinate terms that can be disempowering for weaker groups. In other words, integrating the poor in international markets and value chain is not necessarily a good tool for poverty alleviation. Therefore, this thesis has studied the process of inclusion of women into the palm oil value chain as processors rather than merely assessing whether they are ‘included’ or ‘excluded’ from the chain. In order to do this, this study had based itself on the notion of inclusive value chain collaboration. Inclusive VCC acknowledges the potential of value chains for increasing cash income while taking account of potential trade-offs in other areas that extend beyond the limits of the palm oil industry, e.g. its impacts on gender relations, issues of accessibility for different social and economic groups, terms of engagement, environmental sustainability, health and lastly, food security. When using this framework of inclusive VCC to study and assess the process of inclusion of women in palm oil production, this thesis has reworked its operationalization to fit the research objectives.

Firstly, the inclusive VCC operationalization was originally put in place with primarily smallholder farmers in mind and their collaboration with the companies with which they had contracts. This research has demonstrated that the framework can also be applied to study other actors in the chain, in this case small-scale oil palm processors, and to study different kinds of collaborations. Since the processors in this study worked independently and have no contracts or fixed collaborations with any company, this study has used the inclusive VCC framework to explore other types of collaborations with a variety of actors in and outside the palm oil chain. More specifically, this study has looked into collaborations of processors with buyers and suppliers, Kramer owners or caretakers and colleagues and lastly, their collaboration with institutions. These institutions range from government institutions and financial institutions to NGOs and informal institutions such as the community chief. Secondly, for the purpose of this research, I have added the ‘health’ dimension to the operationalization to represent the access to information on the risks associated with inclusion. This dimension focuses on whether the processors have access to information on the health risks associated to processing, health insurance schemes and whether they use protective gear. It is necessary to include this dimension as a risk of inclusion since occupational health and safety standards are largely excluded from coverage under national occupational safety and health regulations and are as a result only minimally enforced which makes small-scale processing a dangerous occupation (De Schutter 2009: 10).

7.2.2 Food Security

In addition to the adaptations to the operationalization of inclusive value chain collaboration, this thesis has also revisited the classic operationalization of food security. The classic operationalization is characterized by three dimensions of food access, availability and dietary diversity in which solely food availability is given a dimension of time (e.g. FAO & the Asian

35 See Appendix A
36 For example: the Ministry of Food and Agriculture, the Oil Palm Research Institute, Environmental Protection Agency, Food and Drug Board and the District Assembly.
37 Rural Development Bank, Credit Union, other rural banks.
Development Bank 2013). In other words, food security is generally measured as a current/static state in which only food availability is (partly) analysed as changing throughout the year.

In the case of this research, I aimed to get an understanding of the effects of the integration of women into the palm oil value chain on their household food security. In order to measure this relationship, it was necessary to introduce a time dimension to all aspects of food security. As such, I have explored the changing dynamics of food access, food availability and dietary diversity to assess the impacts of processing on household food security. Furthermore, I have included future prospects to gain additional knowledge on how processing activities would continue to impact household food security according to the primary respondents. In practice this meant that for example in the focus groups, each proportional piling was done not only according to different categories (e.g. farm or market as source of food), but also according to critical points in time: before processing, currently and in five years’ time (future).

7.3 Suggestions for further research

While this research has provided in-depth answers to the research questions of this study as summarized in Section 7.1 and food for theoretical reflection as outlined in Section 7.2, it has also opened up a number of additional queries. On that account, this section presents my suggestions for further research that have surfaced throughout the different phases of this research. More specifically, these suggestions are inspired by questions I collected during the analysis and write up and by constraints that I experienced in the field (as described in Section 3.7.2) that another researcher with a different background and skillset may not have.

The first set of questions constitutes the follow-up research questions that came up when formulating the conclusions of the empirical chapters. Firstly, considering that both men and women perceive processing as an increasingly important source of income, how would this affect the accessibility of small-scale processing for the women in the communities? Secondly, Chapter 6 argued that oil-palm processing households tend to become more dependent fluctuating cash income and volatile food markets to access food instead of their own land with negative implications for their food security. Therefore, what coping mechanisms could be useful to tackle decreased food security and what role could food sovereignty play in these strategies?

The second set of questions arose during my time in the field. I have labelled these questions as ‘secondary topics’ that went beyond the scope of this research, but could be fleshed out more to inspire a thesis of their own. These topics include, but are not limited to: (1) the intersections between gender, access to land and processing activities, (2) the impacts of women’s integration in oil-palm processing on intra household dynamics through a gender perspective in terms of control, access and possession of resources and changing values and practices. Furthermore, (3) an ethnography of the ‘Kramer arena’ that would lay out the social stratification in the Kramers focussing on the linkages between labourers, processors, caretakers and Kramer owners, including the positioning of landless youth in the Kramers. Next, (4) an inquiry into the role of education as a major expense for Ghana’s (rural) population, (5) climate-change impacts and the politics of shifting from food crop farming to oil palm farming and (6) the health implications of working in a Kramer and what role insurances (could) play. Lastly, (7) a comparative study on the environmental impacts of small-scale oil-palm processing in a Kramer vs. medium and large scale processing, and (8) a thesis on the short and long-term implications of landscape conversion into oil palm plantations for food security in the region. Third and finally, since this research is purely qualitative
and bound to a particular context, it would be interesting to see if it is possible to upscale the outcomes of this research through quantitative research.

7.4 Recommendations for policy and practice

This research has pointed out that the contact with institutions needs to be improved in four key areas within and beyond the oil palm value chain that in turn could have positive impacts on the livelihoods of independent small-scale oil palm farmers and their households. Firstly, the need for improved monitoring for small-scale oil-palm processing should be prioritized. Particularly the limited health and safety standards in place for the small-scale processing are a key issue in the sector. While medium- and large-scale mills do need to adhere to various standards and regulations, including health, environment and safety, the only regulations that are actively reinforced for small-scale mills are inspection for the Sudan VI chemical and to some extent hygiene at the Kramer site. The other regulation that is in place, the prohibition of the use of car tires for fuel, is not enforced. Government institutions such as the Environmental Protection Agency, the Ministry of Food and Agriculture, Food and Drug Board and the Ghana Health Service could take up this role.

A second key area for improvement is increased information and knowledge sharing between institutions and processors as well as the facilitation of inter-Kramer and inter-community learning in local associations. This area relates to the former point on monitoring in the sense that there is a need for processors to be aware of the health and safety risks that accompany particular practices, for example, the use of car tires as fuel, exposure to the heat and fumes from fire and the lack of protective equipment. Consequently, there needs to occur an inquiry as to how to limit health and safety risk while keeping the sector accessible to women. Moreover, increased information sharing implies that processors gain good access to information on formal or informal ways to access credit and insurances. Subsequently, government, private or non-profit institutions could play a critical role in facilitating the organization of local associations that could function as informal social security networks, saving groups and learning platforms. In addition, these associations could have the potential to challenge the low negotiation power that processors have in relation to their buyers.

Third, this study has illustrated that although food crop farming remains an important source of food, its role is declining as processors and their spouses foresee that they will prioritize processing at expense of their food crop farming. However, the research findings reveal that it is necessary for processors to have at least a home garden in which they cultivate foods throughout the year for household consumption to cope with the fluctuating incomes and insecurities that accompanies independent small-scale oil-palm processing. As a result, promoting the importance of home gardens and a certain degree of self-sufficiency when it comes to food provision is critical. Also, in light of the various accounts of climate change impacts that result in declining yields, it is necessary to facilitate information sharing on how to make these home gardens more resilient.

Finally, the high cost of education was mentioned in all the interviews with processors and in most of interviews with their spouses. The education of their children was regarded as a high priority in addition to being one of their biggest household expenses that has only been increasing over the years. Reducing the cost of education would therefore considerably relieve the strain school fees have on the household budget, reduce the dependence on cash income and support the processors to achieve their future aspirations.

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38 These costs include tuition fees, stationery and uniforms.
References


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Appendices

A. Operationalization

The operationalization below served as a backbone for all data gathering that took place. It represents the link between the theoretical framework and the actual conversations with the participants of this research. The indicators in the table below were a key inspiration for developing the research instruments (especially the preliminary interview guides) and helped to structure and conceptualize the data collected. While this operationalization was created before going to the field, it has not remained static. To the contrary, the indicators have been reviewed and re-evaluated during the fieldwork so that they became more aligned with the reality that the respondents face.

Table 3.1: Operationalization table

<table>
<thead>
<tr>
<th>Concept</th>
<th>Dimension</th>
<th>Variables</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food security</td>
<td>Access</td>
<td>Economic access</td>
<td>Relative importance of food expenditures for the household (HH) budget</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Whose income is used to buy foodstuffs?</td>
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<td></td>
<td>Quantity of food crops cultivated for HH use</td>
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<td>Who contributes to the food production?</td>
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<td></td>
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<td></td>
<td>How much of the HH food provision is based on gifts (friends, family, NGO, church)?</td>
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<tr>
<td></td>
<td>Physical access</td>
<td></td>
<td>How is the access to food markets?</td>
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<td></td>
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<td>How is the access to land?</td>
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<td></td>
<td>How is the access to labour/inputs?</td>
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<tr>
<td></td>
<td>Changes over time</td>
<td></td>
<td>Past, present and future perspectives on food access</td>
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<tr>
<td>Availability</td>
<td>Quantity</td>
<td></td>
<td>Anxiety about HH budget/production available for food.</td>
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<td></td>
<td></td>
<td>Perceptions about inadequate quantity/quality of food</td>
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<td></td>
<td>Food deficiencies according to gender or age</td>
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<td></td>
<td>Coping actions to augment food budget or supply</td>
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<tr>
<td>Stability over time</td>
<td></td>
<td></td>
<td>Decline/increase in HH food production?</td>
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<td></td>
<td></td>
<td></td>
<td>Months when the HH struggles more to obtain enough food</td>
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<td></td>
<td></td>
<td></td>
<td>Over the years, is it easier/more difficult to get enough food for the HH?</td>
</tr>
<tr>
<td>Utilization</td>
<td>Dietary diversity</td>
<td></td>
<td>Today’s and yesterdays intake from the following food groups: staples; cereals; roots and tubers; vegetables, fruits; poultry; meat; fish; eggs; legumes, nuts, seeds; dairy products; oils and fat; sugars; beverages</td>
</tr>
<tr>
<td>Safety</td>
<td></td>
<td></td>
<td>Have you/anyone in your HH ever been ill because of the food that you ate?</td>
</tr>
<tr>
<td>Culturally</td>
<td></td>
<td></td>
<td>Were you or any HH member not able to eat the kinds of foods you preferred because of a lack of resources?</td>
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<tr>
<td>appropriate</td>
<td></td>
<td></td>
<td>Did you or any HH member eat just a few kinds of food day after day because of a lack of resources?</td>
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<td>Did you or any HH member eat food that you did not want to eat because a lack of resources to obtain other types of food?</td>
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<tr>
<td>Changes over time</td>
<td>Past, present and future perspectives on utilization</td>
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<tr>
<td>Inclusive</td>
<td>Alignment with processors’ reality</td>
<td>Alignment with aspirations</td>
<td>What do processors want to achieve? How do they think that VCC can offer that to them?</td>
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<tr>
<td>Value Chain</td>
<td>Alignment with aspirations</td>
<td>Alignment with aspirations</td>
<td>What do processors want to achieve? How do they think that VCC can offer that to them?</td>
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<tr>
<td>Collaboration</td>
<td>Alignment with heterogeneity</td>
<td>Alignment with heterogeneity</td>
<td>Does the collaboration allow for differences among processors?</td>
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<td>Alignment with capabilities</td>
<td>Alignment with capabilities</td>
<td>Do processors need special knowledge before they can enter into a VCC?</td>
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<tr>
<td>Terms of engagement</td>
<td>Common goals</td>
<td>Common goals</td>
<td>Processors’ aspirations taken into account?</td>
</tr>
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<td></td>
<td>Kind of contract</td>
<td>Kind of contract</td>
<td>Tight or loose? Space for secondary products/activities?</td>
</tr>
<tr>
<td></td>
<td>Criteria for inclusion</td>
<td>Criteria for inclusion</td>
<td>What criteria do processors need to meet to be included in VCC (e.g. gender, age, minimum yield/yr, …)</td>
</tr>
<tr>
<td>Incentives</td>
<td>Which incentive structures are in place for the processors?</td>
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<tr>
<td>Having a voice</td>
<td>Do processors feel that they have a say in the decisions that affect them?</td>
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<tr>
<td>Grievance system</td>
<td>What can processors do when they do not agree with a decision or when they feel cheated?</td>
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<tr>
<th>Equitable access</th>
<th>To markets</th>
<th>Do processors have equitable and stable access to high value markets? Difference between M/F?</th>
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<tbody>
<tr>
<td></td>
<td>To credit</td>
<td>Do processors have equitable access to credit schemes? Difference between M/F?</td>
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<tr>
<td></td>
<td>To information</td>
<td>Do processors have equitable access to information about prices, standards, and other things that may affect their livelihoods? Difference between M/F?</td>
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<tr>
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<td>To inputs</td>
<td>Do processors have equitable access to inputs provided by the company/buyers/government (FFBs, pots, fuel,…)? Difference between M/F?</td>
</tr>
<tr>
<td></td>
<td>To capacity building</td>
<td>Do processors have equitable access to training and technical support? Difference between M/F?</td>
</tr>
<tr>
<td></td>
<td>To risk sharing</td>
<td>Do processors have equitable access to insurances or other forms of risk sharing? Difference between M/F?</td>
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<tr>
<th>Inclusive innovation</th>
<th>Technical support or extension</th>
<th>Do processors have equitable access to technological knowledge and innovation?</th>
</tr>
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<tbody>
<tr>
<td>Co-production of knowledge</td>
<td>Is processors’ knowledge on best practices acknowledged and used?</td>
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<tr>
<td>Continuous learning</td>
<td>Is there a recurring evaluation of practices in palm oil processing? How often does that occur? Are processors involved in these evaluations?</td>
<td></td>
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<thead>
<tr>
<th>Environmental sustainability</th>
<th>Impact on landscape</th>
<th>What impacts does processing have on the local landscape?*</th>
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<tbody>
<tr>
<td></td>
<td>Pollution</td>
<td>Do processors learn how to reduce the environmental impacts of oil-palm processing?</td>
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<tr>
<th>Health</th>
<th>Access to information on health risks</th>
<th>Do processors have access to information on health risks of oil-palm processing?</th>
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<tbody>
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<td></td>
<td>Access to health insurance</td>
<td>Do processors have access to health insurance schemes?</td>
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<td></td>
<td>Access to protective gear</td>
<td>Do processors have access to protective gear (e.g. rubber boots, mouth caps, rubber gloves)?</td>
</tr>
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</table>

* Beyond the scope of this research.
B. Interview and focus group guides

FOCUS GROUP DISCUSSION FORMAT 25 & 26/09/2016

PART 1: INTRODUCTION (approx. 15 mins)

a. Brief explanation of this research project: to study the effects of small-scale oil palm processing on food security
b. Aims of this focus group discussion: to validate and deepen our understandings of the interviews
   c. Assure confidentiality of recordings
   d. Introduction game: throwing a ball around until everyone has introduced his/her name, community + Cramer and the number of years active as an oil palm processor

PART 2: INCLUSION IN THE VALUE CHAIN (approx. 45 mins)

e. Requirements to be a small-scale oil palm processor
   Mentioned in interviews: physical/mental strength, a start capital and emergency money when you run at a loss.
   ➢ How much should this capital be? Has the amount changed over the years?
   ➢ Is this correct? Additional requirements, knowledge or skills?
   ➢ If someone wants to be a processor, but he or she does not have the capital, what can he/she do?

f. Buyers and clients
   Mentioned in the interviews: they are easy to find, but often only buy on credit and sometimes do not pay back
   ➢ How often do they buy on credit? (almost always, half of the time, almost never,…)
   ➢ Has this changed over time? (Did they used to buy more/less on credit?)
   ➢ When they buy on credit, how long (approx.) does it take them to pay?
   ➢ How many times did it happen that they never paid you or your colleague back?
   ➢ What can someone do when they do not pay him/her back?

g. Organization/association of processors: what does an ideal association look like?
   Mentioned in the interviews: there is none, but you are all interested in joining one
   ➢ Who should be in it? (Different Cramers? Different communities? Also owners/managers/labours?)
   ➢ What are the main responsibilities? (e.g. Susu credit? Applying as organization for credit? Provide social security including health insurance? Increased leverage over buyers? ……)
   ➢ How should this organization be financed?
   ➢ How often should you meet? Where?
   ➢ Who should be the president?

h. Cramer
   ➢ Why did you choose your Cramer?
   ➢ What makes a Cramer good?
   ➢ What makes a Cramer owner good?

i. Profits for processors + changes over time
   ➢ Which months do you get most profits from your palm oil? How much is this approximately?
   ➢ Which months do you get the least profits from your palm oil? How much is this approximately?
   ➢ Did you get more or less profit this year compared to last year? Why?
PART 3: FOOD SECURITY  (approx. 1 hour)

j. **Demographic profile (migration patterns)**
   - Are most of you born here?
   - Are there a lot of people moving to this place? (If yes: why?)
   - Are there a lot of people moving out (e.g., youth)? (If yes: why? Who?)
   - What makes you all stay?
   - Have there been a lot of changes regarding the movement of people in the past years? (If yes: why?)

k. **Activity 1: proportional pieing for source of income**
   Where does the money in your household come from?
   - Make categories on card board: e.g., crop sales, processing, trade, labor, family gifts, etc.
   - Divide beans into these categories: if the majority of your money comes from processing, put the majority of beans in this category and so on. [MAKE PICTURE]
   Most of you told us that now you grow less food corps than 5 years ago because of the increased need and costs of inputs, irregular rainfall, land infertility and/or increased palm oil farming. Is this true?
   - How did these piles of beans look like 5 years ago? [MAKE PICTURE]

l. **Activity 2: seasonal calendar and year ranking**
   - What are the 5 most important food crops that you grow? [Fill in seasonal calendar on card board]
   - How was the harvest this year? (Good/Bad/Average) compared to last year? (compare until 5 years ago) Why?

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Getting her money's worth?

m. **Activity 3: Proportional Piling for Obtaining Food**
   - Determine categories: Market/Store and Farm/Home garden, ask if there should be another category
   - Write categories on cardboard and divide beans according to importance [MAKE PICTURE]
   - How did these piles of beans look BEFORE you started processing oil palm? [MAKE PICTURE]
   - Why did it (not) change?

n. **Activity 4: Proportional Piling for Sources of Expenditure**
   - Determine categories: Food, School fees, Household items (soap, clothing, ...), Inputs (FFBs, fertilizer, seeds, tools, rent, ...), Fuel or Transport, Utility bill, Taxes, Labor costs, Medicine/Healthcare, Gifts
   - Write categories on cardboard and divide beans according to importance [MAKE PICTURE]
   - How did these piles of beans look BEFORE you started processing oil palm? [MAKE PICTURE]
   - Why did it (not) change?

o. **Activity 5: Proportional Piling for Food Consumption**
   - Write categories
     - (.................................................................)
     - .................................................................
     - .................................................................
     - on cardboard and divide beans according to quantity they consume [MAKE PICTURE]
   - How did these piles of beans look BEFORE you started processing oil palm? [MAKE PICTURE]
   - Why did it (not) change?

p. **Market Prices**
   - Do the prices of foods (including vegetables, grains) remain constant over the year?
   - Did they increase from 5 years ago? If yes: How much?
   - Do you believe they will increase or decrease in the future? Why yes/no?

PART 4: CONCLUSION

Any questions? Additional remarks?
Thank respondents for their time and energy

**LOGISTICS**

<table>
<thead>
<tr>
<th>Necessary materials:</th>
<th>Preparation</th>
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<tbody>
<tr>
<td>✓ Cardboards (2 x 5 + 2 extra = 12)</td>
<td>✓ Invite all respondents</td>
</tr>
<tr>
<td>✓ Markers in different colors (4)</td>
<td>✓ Reserve quiet space with chairs</td>
</tr>
<tr>
<td>✓ Drinks and snacks for 2 x 10 people</td>
<td>✓ Prepare cardboards for activities 2 + 4 + 5</td>
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<tr>
<td>✓ Soap? Other tokens?</td>
<td>✓ .................................................................</td>
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<tr>
<td>✓ Recording device (and memory card)</td>
<td>✓ .................................................................</td>
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<tr>
<td>✓ Beans (120)</td>
<td>✓ .................................................................</td>
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<td>✓ .................................................................</td>
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Above I have included the detailed focus group discussion guide with all the questions and activities below. The first introductory part entailed (a) a brief explanation of the research project, (b) an outline of the aims of the focus group, (c) assurance of confidentiality, and (d) a get-to-know-each other part in which everyone introduced him or herself to the others. The second part consisted of a discussion on the inclusion of processors in the value chain. It focused on the issues and concerns that came up during the interviews, the questions I still had after the interviews and to validate my preliminary conclusions from the interviews. After the break, in which we provided the participants with a drink and a snack, the third part consisted of various activities to gain deeper insights into the food security dynamics within the household. These activities involved (a) a demographic profile to get insights into the migration patterns and the reasons behind the movements in and out the communities over the years. Next, we did (b) a proportional piling for sources of income (see Figure 3.7), (c) a seasonal calendar and year ranking (see Figure 3.8) to gain more insight into the farming patterns and the household food stock within a given year. Next we did another proportional piling for (d) obtaining food (see Figure 3.9), (e) sources of expenditure (see Figure 3.10) and (f) food consumption (see Figure 3.11). We defined the categories for the proportional piling during the focus group except for the last one, for which we used the predefined food categories from the interview guide. Next, I asked the respondents about the market price dynamics over the past years and how they envisioned them for the future. The fourth and final part concluded with a short summary of what we discussed, a moment at which the participants could ask me questions or give comments after which we concluded with a big medaasi (thanks) for the time and energy the participants had put in the discussion.

The next pages show the final interview guides that I employed during the interviews with the research participants: firstly the interview guide for the independent small-scale oil palm processors, secondly the interview guide for the spouses of the processors and thirdly the interview guide for the institutional actors. The guides also include the introductory passage of the interview as described in Section 3.6.1 (Informed consent).
**INFORMATION GUIDE 1 FOR (FEMALE) PALM OIL PROCESSORS**

**INTRODUCTION**

Good day! Our names are Akua and Andrea, we are students at the UENR (Akua) and the University of Amsterdam (Andrea). We are conducting a study on oil-palm processors and the food security in their household as a part of the larger WOTRO project. Therefore, I would like to ask you some questions about your work as an oil-palm processor and how you access foodstuffs and the kinds of food that you eat. Your participation is voluntary; you may choose not to answer any questions or decide to stop the discussion at any time. We also would like to assure you that your responses will be given maximum confidentiality. Are you willing to participate in this study?

YES / NO / STOP INTERVIEW

We would also like to record this interview to make sure that we capture everything, is that OK with you? Again, your confidentiality will be guaranteed.

YES / NO

### GENERAL

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<th>Details</th>
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<tr>
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<tr>
<td>Marital status (circle)</td>
<td>Single  Married  Widowed  Separated  Other (please specify):</td>
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<td>If married: name husband/wife</td>
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<tr>
<td>Who is the head of your household?</td>
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<td>No. of children</td>
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<td>Is there anyone else living in your household? (If yes, specify who + age)</td>
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<tr>
<td>Education (tick)</td>
<td>No education  Primary  Middle/JHS  SHS  Tertiary  Other courses? Specify:</td>
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<td>Primary occupation</td>
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<td>Secondary occupation</td>
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<tr>
<td>How long have you been a processor?</td>
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INCLUSION IN THE OIL PALM VALUE CHAIN
Note to the interviewer: probe 'why' and 'how' whenever relevant – words in italics are notes to the interviewer

1a. Do you work under some kind of contract?
   - YES: please specify: ______________________________________________________
   - NO
   - OTHER: please specify: __________________________________________________

1b. IF YES: What does this contract entail?
   Probe IF RELEVANT with: (1) can you sell to other buyers besides the company?,
   (2) does the company require a minimum yield of palm oil?, (3) does the company offer you some kind of insurance?
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

1c. Why did you choose to work/not work under a contract? (circle)
   Probe with benefits and disadvantages of working or not working under a contract and ask why this is the case
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

2. Are you a member of a professional organization or association? (tick and fill in)
   - YES. Please specify (name, main activities, how often do you come together):
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   - NO
   - NO, but interested. Why?
   ____________________________________________________________
   ____________________________________________________________

3a. Who provides you with inputs?
   ____________________________________________________________

3b. How do you finance these inputs?
   - Savings
   - Credit
   - Government subsidy
   - Other (please specify: ____________________________ )
4a. Who provides you with finance?

4b. Do you get this finance on credit? (circle)
   YES / NO / OTHER (please specify ____________________________)

5. How long does it take you to get to the place where you process oil palm?

6a. Is it easier or more difficult for women to access credit/loans than for the men? (circle)
   EASIER / MORE DIFFICULT / THE SAME / DON'T KNOW

6b. Why is it _______________ for women to access credit and loans than for the men?

7a. Who owns the machines and pots that you work with?

7b. Do you pay them for this? (If YES: how much?)

7c. Does the owner have a further (management) role in the Cramer? (If yes – please elaborate on this role)

8. What is the tenure type of the land you process on:
   □ Title deed (owned): whose name is on the title deed? ____________________________
   □ Rented (no payment): from who do you rent? ____________________________
   □ Rented (cash payment)
   □ Rented (land sharing)
   □ Rented (crop sharing – abunala/abusu)
   □ Other, please specify: ____________________________________________
9. Do you feel that you a voice or impact on the decisions/rules within the Cramer?
   Probe first with what kind of rules there are, probe then with why yes or no and let them give an example

10. When you have a problem with your company or buyer or colleagues, how do you resolve it?
    If relevant, probe further with: ‘why do you do this?’

11a. When you want to sell your palm oil, is it easy to find a buyer? (why? Give reasons)

11b. Do men or women typically have better access to the market (buyers/clients)? (circle)
     MEN / WOMEN / THE SAME / DON'T KNOW

11c. Why do they generally have better access to the market? (refer to answers above – give reasons)

12a. Do you attend trainings and/or receive technical support? (tick)

   □ NO
   □ YES (specify what, how often and from who ________________________________)
   □ OTHER (specify: ________________________________)

12b. IF NO: why not? (give reasons + continue to question 12)
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>12c. IF YES: Who mostly attends these trainings or gets this support?</td>
<td>MEN / WOMEN / BOTH ATTEND EQUALLY / DON'T KNOW</td>
</tr>
<tr>
<td>12d. Why do they mostly attend these trainings or get this support?</td>
<td>(give reasons)</td>
</tr>
<tr>
<td>13a. For who do you think it is easier to access land?</td>
<td>MEN / WOMEN / THE SAME / DON'T KNOW</td>
</tr>
<tr>
<td>13b. Why can they easier access land? (refer to the previous question +</td>
<td>(give reasons)</td>
</tr>
<tr>
<td>14a. Do you feel that you have good access to information on best</td>
<td>processing practices (e.g. best methods to operate the machine, best</td>
</tr>
<tr>
<td>processing practices (e.g. best methods to operate the machine,</td>
<td>methods for boiling the oil, best methods to ensure hygiene and safety,...)</td>
</tr>
<tr>
<td>best methods to operate the machine, best methods for boiling</td>
<td>that allow you to innovate and perform better? (circle)</td>
</tr>
<tr>
<td>the oil, best methods to ensure hygiene and safety,...) that</td>
<td>YES (proceed to 14b) / NO (proceed to question 14e)</td>
</tr>
<tr>
<td>allow you to innovate and perform better? (circle)</td>
<td>14b. IF YES: What practices have you adopted?</td>
</tr>
<tr>
<td>14c. IF YES: Did these practices allow you to perform better? (how)</td>
<td></td>
</tr>
<tr>
<td>14d. IF YES: How did you access this information? (from who?) (proceed</td>
<td></td>
</tr>
</tbody>
</table>
14. IF NO: Why don’t you feel that you have good access to information on best processing? (give reasons)

---

15. When you or your colleagues come up with an innovation – a new and better way of doing things (such as throwing the fruits to separate the husk or to use an old pressing machine to press the palm fibre to easy store it and reuse it), is this acknowledged by others? (For example: colleagues, company, other Cramer)

---

16. Do you come together with other processors from other communities or the company you work for to exchange ideas and to evaluate your practices for oil palm processing? (IF NO: give reasons why not, IF YES: who comes together, how often and what do you discuss?)

---

17a. Can anyone be a processor?

YES / NO / DON'T KNOW

17b. If NO: why not? (give reasons)

---

17c. If YES: What do you need to know when you want to be a processor?
18. Why did you choose to become a palm oil processor?  
(give reasons: e.g. was this because (1) you felt that there were no other options for you – explain or (2) did you choose this profession because of specific incentives – specify and explain)

---

19a. What do you want to achieve in 5 years time? *(personal + professional)*

---

19b. What is needed to achieve that?

---

19c. Is there anything that prevents you from achieving that? *(How?)*

---

19d. How can these obstacles be taken away?

---
19e. Who should take these obstacles away? (why this person / institution?)


PART 2: FOOD SECURITY
Note to interviewer: household = everyone who eats daily from the same pot

20a. How much of your disposable household income do you on average spend on food? (tick)
(note: disposable Hh income = the income that is left after fixed costs – e.g. buying inputs, paying rent, etc.)

☐ Most of it
☐ About half
☐ Less than half

20b. What are your top 5 expenses in a month and whose income is mostly used for this?

1. ____________________________, mostly paid by: ________________________________
2. ____________________________, mostly paid by: ________________________________
3. ____________________________, mostly paid by: ________________________________
4. ____________________________, mostly paid by: ________________________________
5. ____________________________, mostly paid by: ________________________________

20c. IF NOT SPECIFIED ABOVE: Whose income is mostly used to buy food? (tick)

☐ The respondent’s
☐ Husband/wife of the respondent
☐ Other (please specify): ______________________________________________________

21a. In addition to oil-palm processing, does your household also cultivate food crops (in fields and homesteads)?

☐ YES (proceed below)
☐ NO (go to question 21b)

21b. IF YES: What is the tenure type on the land you farm on (tick)

☐ Title deed (owned): whose name is on the title deed? ____________________________
☐ Rented (no payment): from who do you rent? ________________________________
☐ Rented (cash payment) ____________________________
☐ Rented (land sharing) ____________________________
☐ Rented (crop sharing – akumulabuso) ____________________________
☐ Other, please specify: ____________________________________________________
21c. IF YES: Which food crops do you consume and/or sell and/or buy them? (fill in & circle)

Crop: ____________________ household consumption / selling on the market / also bought this on the market this year
Crop: ____________________ household consumption / selling on the market / also bought this on the market this year
Crop: ____________________ household consumption / selling on the market / also bought this on the market this year
Crop: ____________________ household consumption / selling on the market / also bought this on the market this year
Crop: ____________________ household consumption / selling on the market / also bought this on the market this year

21d. IF YES: In your household, who is the main responsible for:

<table>
<thead>
<tr>
<th>Land preparation:</th>
<th>Harvesting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planting:</td>
<td>Transport:</td>
</tr>
<tr>
<td>Weeding:</td>
<td>Trade of food surplus:</td>
</tr>
<tr>
<td>Pruning:</td>
<td>Food processing:</td>
</tr>
</tbody>
</table>

21e. IF YES: Now, I cultivate (circle) MORE / LESS / THE SAME AMOUNT OF food crops compared to 5 years ago.

21f. IF YES: Why do you cultivate (circle) MORE / LESS / THE SAME AMOUNT now? (proceed to question 22a)

21g. IF NO: Did your household used to cultivate food crops?

☐ NO: why don't you cultivate food crops?

☐ YES: why did you stop cultivating food crops?

22a. Do you sometimes you receive food as a gift from family, friends, NGOs, church, other (please specify)?
22b IF YES: Are there particular months in which you rely more on these food gifts? *please specify + reason*


23a. Where is the nearest food market?


23b. How often do you buy food there?


23c. What foods do you mostly buy there?


24. Please reply whether this happened:
certainly not, seldom (once or twice in the last month), occasionally (3 to 10 times in the last month), or regularly (more than 10 times in the last month)

24a. Did you worry that your household would not have enough food? *(circle)*

<table>
<thead>
<tr>
<th>CERTAINLY NOT / SELDOM / OCCASSIONALLY / REGULARLY</th>
</tr>
</thead>
</table>

*IF RELEVANT: can you tell me a little bit more about the times that you worried that your household did not have enough food?* *Probe: when, why, how did you deal with this?*

24b. Were you or any member of your household not able to eat the kinds of food you preferred because of lack of money or its absence? *(circle)*

<table>
<thead>
<tr>
<th>CERTAINLY NOT / SELDOM / OCCASSIONALLY / REGULARLY</th>
</tr>
</thead>
</table>

*IF RELEVANT: can you tell me a little bit more about the times that you or any member of your household were not able to eat the kinds of food you preferred because of lack of money or its absence?* *Probe: when, why, how did you deal with this?*
24c. Did you or any member of your household eat a smaller meal in a day because there was not enough food?

CERTAINLY NOT / SELLDM / OCCASSIONALLY / REGULARLY

IF RELEVANT: can you tell me a little bit more about the times that you or any member of your household ate a smaller meal in a day because there was not enough food? Probe: when, why, how did you deal with this?

24d. Was there ever a day when there was no food in your household because there was no money or could not be obtained from your farm? (circle)

CERTAINLY NOT / SELLDM / OCCASSIONALLY / REGULARLY

IF RELEVANT: can you tell me a little bit more about the times that there was no food in your household because there was no money or could not be obtained from your farm? Probe: when, why, how did you deal with this?

25. Are there months in a year that you struggle more to obtain food? (IF YES: specify when and main reason)

26. Today and yesterday, did you or any member of your household eat the following food groups?

<table>
<thead>
<tr>
<th>Food group</th>
<th>Ate it yesterday/today</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>A</td>
<td>Staples: (e.g. maize, rice, wheat, fufu)</td>
</tr>
<tr>
<td>B</td>
<td>Other cereals: (e.g. bread, breakfast cereals, oats, maize porridge, sorghum porridge, millet)</td>
</tr>
<tr>
<td>C</td>
<td>Roots and tubers: (e.g. cassava, yam, cocoyam, plantains, potatoes)</td>
</tr>
<tr>
<td>D</td>
<td>Vegetables (e.g. tomatoes, onions, garden eggs, okro, pepper)</td>
</tr>
<tr>
<td>E</td>
<td>Fruits (e.g. avocado, citrus, pawpaw, Bananas, Mangoes, Pineapple)</td>
</tr>
<tr>
<td>F</td>
<td>Poultry (e.g. chicken, turkey, guinea fowl)</td>
</tr>
<tr>
<td>G</td>
<td>Meat (e.g. beef, mutton, lamb, wild game, pork)</td>
</tr>
<tr>
<td>I</td>
<td>Fish (e.g. Fresh, canned, frozen fish)</td>
</tr>
<tr>
<td>J</td>
<td>Eggs</td>
</tr>
<tr>
<td>----</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>K</td>
<td>Legumes, nuts &amp; Seeds, (e.g. baked beans, dried peas, cowpeas, peanuts, nuts, sunflower seeds, pumpkin seeds, dried beans)</td>
</tr>
<tr>
<td>L</td>
<td>Dairy products (e.g. yoghurt, condensed milk, powdered milk, cheese, ice cream)</td>
</tr>
<tr>
<td>M</td>
<td>Oils and fat (any food made with oil, margarine, or butter)</td>
</tr>
<tr>
<td>N</td>
<td>Sugars (e.g. sugar, syrup, sweets, honey, chocolate or ice cream)</td>
</tr>
<tr>
<td>O</td>
<td>Beverages (e.g. tea, mio, coffee, fruit juice, beer, homemade beer (Apeteshie, palm wine), local drinks (sobolo, pito, etc))</td>
</tr>
</tbody>
</table>

27. Have you ever been ill because of the food you ate? (IF YES - how often?)

28. Does your household grow less food since you started to engage in oil-palm processing? (why yes, why not?)

29. Does your household buy more food from the market since you started to engaging in oil-palm processing? (Why yes, Why not? – give reasons)

30. In a week, Do you eat more different kinds of foods since you started to engage in oil palm processing? (Why yes, Why not? – give reasons)

30a. IF YES: What kinds of food do you eat more of now since you engaged in oil palm processing?
### 30b. IF YES: are there foods that you eat less of since you engaged in oil palm processing?


### 31. Do you eat more food since you started to engage in oil palm processing? (why yes, why not?)


---

THANK YOU FOR PARTICIPATING!! *(give small token of appreciation)*
INTRODUCTION

Good day! Our names are Akua and Andrea, we are students at the UENR (Akua) and the University of Amsterdam (Andrea). We are conducting a study on oil-palm processors and the food security in their household as a part of the larger WCTRO project. Apart from interviewing oil-palm processors, we are also interested in the experiences of other members of their household. Therefore, I am here to ask you questions about your household situation, in particular about the types of food that you eat, how you access them and the availability of this food. Your participation is voluntary: you may choose not to answer any questions or decide to stop the discussion at any time. We also would like to assure you that your responses will be given maximum confidentiality. Are you willing to participate in this study?

YES / NO: STOP INTERVIEW

We would also like to record this interview to make sure that we capture everything, is that OK with you? Again, your confidentiality will be guaranteed.

YES / NO

| GENERAL |
|-----------------|-----------------|-----------------|
| Name            | Gender          |
| Community       | Main language   |
| Other languages | Telephone number|
| Age group (circle) | Marital status (circle) |
| 18-24          | 25-34           | 35-49           | 50-65 | 65+ |
| Single          | Married         | Widowed         | Separated | Other (please specify): |
| Name of the processor in the household: | Relation to the processor: |
| No. of children | Is there anyone else living in your household? (If yes, specify who + age) |
| Education (tick) | Primary         |
| No education | Middle/JHS   |
| Primary        | Tertiary       |
| Secondary      | Other courses: specify: | occupation |

PART 2: FOOD SECURITY

Note to interviewer: household = everyone who eats daily from the same pot

1a. How much of your disposable household income do you on average spend on food? (tick)

(Notes: disposable HH income = the income that is left after fixed costs – e.g. buying inputs, paying rent, etc.)

☐ Most of it
☐ About half
☐ Less than half
1b. What are your top 5 expenses in a month and whose income is mostly used for this?

1. __________________________________________, mostly paid by: __________________________________________
2. __________________________________________, mostly paid by: __________________________________________
3. __________________________________________, mostly paid by: __________________________________________
4. __________________________________________, mostly paid by: __________________________________________
5. __________________________________________, mostly paid by: __________________________________________

1c. IF NOT SPECIFIED ABOVE: Whose income is mostly used to buy food? (tick)

☐ The respondent's
☐ Husband/wife of the respondent
☐ Other (please specify): __________________________________________

2a. In addition to oil-palm processing, does your household also cultivate food crops (in fields and homesteads)?

☐ YES (proceed below)
☐ NO (go to question 2b)

2b. IF YES: What is the tenure type on the land your household farms on? (tick)

☐ Title deed (owned); whose name is on the title deed? __________________________________________
☐ Rented (no payment): from who do you rent? __________________________________________
☐ Rented (cash payment)
☐ Rented (land sharing)
☐ Rented (crop sharing – abusu/abusu)
☐ Other, please specify: __________________________________________

2c. IF YES: Which food crops do you consume them and/or sell them and/or also buy them? (fill in & circle)

Crop: __________________________ household consumption / selling on the market / also bought this on the market this year
Crop: __________________________ household consumption / selling on the market / also bought this on the market this year
Crop: __________________________ household consumption / selling on the market / also bought this on the market this year
Crop: __________________________ household consumption / selling on the market / also bought this on the market this year
Crop: __________________________ household consumption / selling on the market / also bought this on the market this year

2d. IF YES: In your household, who is the main responsible for:

<table>
<thead>
<tr>
<th>Land preparation:</th>
<th>Harvesting:</th>
</tr>
</thead>
<tbody>
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<td>Planting:</td>
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<td>Weeding:</td>
<td>Trade of food surplus:</td>
</tr>
<tr>
<td>Pruning:</td>
<td>Food processing:</td>
</tr>
</tbody>
</table>
2e. IF YES: Now, I cultivate (circle) MORE / LESS / THE SAME AMOUNT OF food crops compared to 5 years ago.

2f. IF YES: Why do you cultivate (circle) MORE / LESS / THE SAME AMOUNT now? (proceed to question 3a)

2g. IF NO: Did your household used to cultivate food crops?
   - NO: why don’t you cultivate food crops?
   - YES: why did you stop cultivating food crops?

3a. Do you sometimes you receive food as a gift from family, friends, NGOs, church, other (please specify)?

3b. IF YES: Are there particular months in which you rely more on these food gifts? (please specify + reason)

4a. Where is the nearest food market?

4b. How often do you buy food there?

4c. What foods do you mostly by there?

5. Please reply whether this happened:
certainly not; seldom (once or twice in the last month); occasionally (3 to 10 times in the last month); or regularly (more than 10 times in the last month)

5a. Did you worry that your household would not have enough food? (circle)
   - CERTAINLY NOT / SOMETIMES / OCCASIONALLY / REGULARLY
**5b. Were you or any member of your household not able to eat the kinds of food you preferred because of lack of money or its absence? (circle)**

Certainly not / Seldom / Occasionally / Regularly

**IF RELEVANT:** can you tell me a little bit more about the times that you or any member of your household were not able to eat the kinds of food you preferred because of lack of money or its absence? Probe: when, why, how did you deal with this?

---

**5c. Did you or any member of your household eat a smaller meal in a day because there was not enough food?**

Certainly not / Seldom / Occasionally / Regularly

**IF RELEVANT:** can you tell me a little bit more about the times that you or any member of your household ate a smaller meal in a day because there was not enough food? Probe: when, why, how did you deal with this?

---

**5d. Was there ever a day when there was no food in your household because there was no money or could not be obtained from your farm? (circle)**

Certainly not / Seldom / Occasionally / Regularly

**IF RELEVANT:** can you tell me a little bit more about the times that there was no food in your household because there was no money or could not be obtained from your farm? Probe: when, why, how did you deal with this?
6. Are there months in a year that you struggle more to obtain food? (IF YES: specify when and main reason)

7. Today and yesterday, did you or any member of your household eat the following food groups? (Read out each food group below)

<table>
<thead>
<tr>
<th>Food group</th>
<th>Ate it yesterday/today [tick box]</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Staples: (e.g. maize, rice, wheat, fufu)</td>
<td>Yes</td>
</tr>
<tr>
<td>B Other cereals: (e.g. bread, breakfast cereals, oats, maize porridge, sorghum porridge, millet)</td>
<td>Yes</td>
</tr>
<tr>
<td>C Roots and tubers: (e.g. cassava, yam, cocoyam, plantains, potatoes)</td>
<td>Yes</td>
</tr>
<tr>
<td>D Vegetables (e.g. tomatoes, onions, garden eggs, okro, pepper)</td>
<td>Yes</td>
</tr>
<tr>
<td>E Fruits (e.g. avocado, citrus, pawpaw, Bananas, Mangoes, Pineapple)</td>
<td>Yes</td>
</tr>
<tr>
<td>F Poultry (e.g. chicken, turkey, guinea fowl)</td>
<td>Yes</td>
</tr>
<tr>
<td>G Meat (e.g. beef, mutton, lamb, wild game, pork)</td>
<td>Yes</td>
</tr>
<tr>
<td>I Fish (e.g. Fresh, canned, frozen fish)</td>
<td>Yes</td>
</tr>
<tr>
<td>J Eggs</td>
<td>Yes</td>
</tr>
<tr>
<td>K Legumes, nuts &amp; Seeds, (e.g. baked beans, dried peas, cowpeas, peanuts, nuts, sunflower seeds, pumpkin seeds, dried beans)</td>
<td>Yes</td>
</tr>
<tr>
<td>L Dairy products (e.g. yoghurt, condensed milk, powdered milk, cheese, ice cream)</td>
<td>Yes</td>
</tr>
<tr>
<td>M Oils and fat (any food made with oil, margarine, or butter)</td>
<td>Yes</td>
</tr>
<tr>
<td>N Sugars (e.g. Sugar, syrup, sweets, honey, chocolate or ice cream)</td>
<td>Yes</td>
</tr>
<tr>
<td>O Beverages: (e.g. tea, milo, coffee, fruit juice, beer, homemade beer (Apeteshe, palm wine), local drinks (sobolo, pito, etc)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

8. Have you ever been ill because of the food you ate? (IF YES – how often?)

9. Does your household cultivate less food since you started to engage in oil-palm processing? (give reasons why yes why not)
<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Does your household buy more food from the market since your husband/wife started to engage in oil-palm processing? (Why yes, Why not? – give reasons)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>11a. In a week, Do you eat more different kinds of foods since your husband/wife started to engage in oil palm processing? (Why yes, Why not? – give reasons)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>11b. IF YES: What kinds of food do you eat more of now since your husband/wife engaged in oil palm processing?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>11c. IF YES: Are there foods that you eat less of since your husband/wife engaged in oil palm processing?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Do you eat more food since your husband/wife started to engage in oil palm processing? (Why yes, Why not?)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THANK YOU FOR PARTICIPATING! (give small token of appreciation)
INTERVIEW GUIDE 3 FOR SECONDARY RESPONDENTS ACTIVE IN RELEVANT ORGANIZATIONS  

INTRODUCTION

Good day! My name is Andrea and I am a student at the University of Amsterdam. I am conducting my fieldwork as part of my Master thesis within the larger WOTRO project. I am interested in collecting data about the relationship between oil palm processors, which the majority is female, and their household food security. In this interview, I would like to ask you questions about your views on how women are included in the palm oil value chain, particularly the processing of oil palm and how you think that this influences how they and their household members contribute to their household’s food security.

Your participation is voluntary; you may choose not to answer any questions or decide to stop the discussion at any time. We also would like to assure you that your responses will be given maximum confidentiality. Are you willing to participate in this study?

YES / NO / STOP INTERVIEW

We would also like to record this interview to make sure that we capture everything, is that OK with you? Again, your confidentiality will be guaranteed. YES / NO

<table>
<thead>
<tr>
<th>GENERAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Organization</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Title/function within organization</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Years active in this function</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Previous profession</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Gender</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Telephone number</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Education (tertiary)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Secondary occupation</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Note: these are open questions that require extensive probing. The order of the questions can be changed if necessary.

1. What does being a [function] entail? (job description / main responsibilities / connection to palm oil processing sector)
2. What is the mission of [institution]? (main tasks and responsibilities)
3. More specifically, how is [institution] involved with (small-scale) oil palm processing? (type of contact or connection)
4. How much of palm oil in the Kwaebibirem District is processed by independent small-scale processors? Is this similar to the rest of Ghana? Has this changed over time? (How? Why)
<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. What advantages do independent small-scale processors have as opposed to medium or large-scale</td>
</tr>
<tr>
<td>processors? What disadvantages do they face? Are these advantages/disadvantages different for men/</td>
</tr>
<tr>
<td>women?</td>
</tr>
<tr>
<td>6. Why are mostly women involved in small-scale oil palm processing?</td>
</tr>
<tr>
<td>7. What kind of incentive structures are in place for small-scale oil palm processors?</td>
</tr>
<tr>
<td>8. According to you, what kind of knowledge is essential for small-scale oil palm processors?</td>
</tr>
<tr>
<td>How does [institution] contribute to this knowledge? (e.g., documentation, trainings, info seminars)</td>
</tr>
<tr>
<td>9. Do you believe that independent small-scale oil palm processors have good access to trainings</td>
</tr>
<tr>
<td>/ technical support / information on best practices (for increased quality or efficiency)? (Why</td>
</tr>
<tr>
<td>not? What/who/how do they access?)</td>
</tr>
<tr>
<td>10. Do small-scale oil palm processors have good access to loans and credit schemes for their</td>
</tr>
<tr>
<td>business? (Why not? Who/what/how do they access?)</td>
</tr>
<tr>
<td>11. According to you, do small-scale oil palm processors have a good and stable access to the</td>
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<td>market? (Probe with seasonality and buyers who buy on credit + is there a difference between men</td>
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<tr>
<td>and women?)</td>
</tr>
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<td>12. Are there regulations in place for small-scale oil palm processors? (Why not? What kind, Who</td>
</tr>
<tr>
<td>makes them?)</td>
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<tr>
<td>13. Is there a recurring evaluation of processing practices? (Why not? Who is involved? How often?)</td>
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</table>

Getting her money's worth?
14. What could small-scale oil palm processors do when they feel cheated by a buyer? (Court? How? Expenses?)

15. If small-scale oil palm processors come up with an innovation to increase the quality/efficiency of their production, does [institution] acknowledge this? And does [institution] spread this information to other Cranes? (Why not? / Example)

16. What kind of insurances are available to small-scale oil palm processors? (e.g. in case of a disaster in the Cranes)

17. Many respondents stated that they grow less food crops because of climate-change related issues. Do you recognize this? Could this be a reason for them to start with oil palm processing? (Why)

18. Do you believe that the involvement in oil palm processing has changed the way that these households access foodstuffs? (E.g. farming vs. market – How?)

19. Do you believe that the involvement in oil palm processing has changed the diets of these households? (How/Why?)

20. Do you believe that the involvement in oil palm processing has changed the amounts of foods that these households consume? (How? Why?)

THANK YOU FOR YOUR PARTICIPATION!
### C. Demographic profiles of research participants

**Interview participants**

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<tr>
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### Focus group participants

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