

Smallholder Farmers' Dissatisfaction with Contract Schemes in Spite of Economic Benefits: Issues of Mistrust and Lack of Transparency

Ruml, Anette; Qaim, Matin

Veröffentlichungsversion / Published Version

Zeitschriftenartikel / journal article

Zur Verfügung gestellt in Kooperation mit / provided in cooperation with:

GIGA German Institute of Global and Area Studies

Empfohlene Zitierung / Suggested Citation:

Ruml, A., & Qaim, M. (2021). Smallholder Farmers' Dissatisfaction with Contract Schemes in Spite of Economic Benefits: Issues of Mistrust and Lack of Transparency. *Journal of Development Studies*, 57(7), 1106-1119. <https://doi.org/10.1080/00220388.2020.1850699>

Nutzungsbedingungen:

Dieser Text wird unter einer CC BY Lizenz (Namensnennung) zur Verfügung gestellt. Nähere Auskünfte zu den CC-Lizenzen finden Sie hier:

<https://creativecommons.org/licenses/by/4.0/deed.de>

Terms of use:

This document is made available under a CC BY Licence (Attribution). For more information see:

<https://creativecommons.org/licenses/by/4.0>



Smallholder Farmers' Dissatisfaction with Contract Schemes in Spite of Economic Benefits: Issues of Mistrust and Lack of Transparency

ANETTE RUML^{****} & MATIN QAIM^{*}

^{*}Department of Agricultural Economics and Rural Development, University of Goettingen, Goettingen, Germany, ^{**}Institute for Asian Studies, German Institute for Global and Area Studies, Hamburg, Germany

(Original version submitted March 2020; final version accepted November 2020)

ABSTRACT *Contract farming is typically seen as a useful mechanism to help smallholders in overcoming market access constraints. However, in spite of economic benefits, high smallholder dropout rates from contract schemes are commonplace. We use quantitative and qualitative data from Ghana to show that smallholder farmers benefit from a resource-providing contract in terms of higher yields and incomes, but that most of them still regret their decision to participate in the contract scheme and would prefer to exit if they could. The analysis underlines that research focusing on narrowly defined economic indicators alone cannot explain farmers' satisfaction with contracts and their dropout behaviour. The main problem in the contract scheme is insufficient information provided by the company. Farmers do not understand all the contract details, which leads to substantial mistrust. Farmers believe that the company behaves opportunistically, for instance during the output weighing procedure, and these beliefs are significantly correlated with the farmers' wish to exit. We conclude that issues of mistrust and lack of transparency can contribute to breakdowns of smallholder contract schemes and that such issues should receive more attention in future research on contract farming.*

1. Introduction

Contract farming describes an arrangement between a buying company and a selling farmer in which the terms of the sale are specified in advance (Grosh, 1994). It is an institutional response to the high risks and uncertainties in spot markets, which are often characterised by significant market failures. Contract farming can reduce these risks and uncertainties, and thus incentivise increased smallholder investments, leading to higher productivity and income (Eaton & Shepherd, 2001; Key & Runsten, 1999; Simmons, Winters, & Patrick, 2005). Therefore, contract farming is often seen as a useful tool for poverty alleviation and rural development (Bellemare & Lim, 2018; Otsuka, Nakano, & Takahashi, 2016; Wang, Wang, & Delgado, 2014). It is also seen as an efficient mechanism to link smallholder farmers to high-value supply chains (Nguyen, Dzator, & Nadolny, 2015).

The question whether contract farming is really beneficial for smallholder farmers has long been a subject of debate. One strand of literature raises concerns that contract farming leads to the exploitation of unpaid family labour (Clapp, 1994; Little & Watts, 1994), and to overuse of the farmers' natural resources (Bijman, 2008). It is argued that contracts create unequal power relations, due to the monopsonistic nature of the company (Clapp, 1994; Little & Watts, 1994; Oya, 2012). It is also argued that contracts lead to a loss of farmers' autonomy, unequal gender relations (Adams,

Correspondence Address: Anette Ruml, German Institute for Global and Area Studies, Hamburg, 20354 Germany.
Email anette.ruml@giga-hamburg.de

© 2020 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Gerber, & Amacker, 2019; Bijman, 2008; Carney, 1998; Carney & Watts, 1991; Schneider & Kay, 2010; von Bülow & Sorensen, 1993), and undesirable changes in social behaviour (Adams, Gerber, Amacker, & Haller, 2019).

A second strand of literature, mostly using quantitative research methods, provides evidence on positive effects of contract farming on production and household welfare. From an economics perspective, farmers with a contract typically benefit through higher yields (Brambilla & Porto, 2011; Champika & Abeywickrama, 2014; Hernández, Reardon, & Berdegue, 2007), higher revenues (Bolwig, Gibbon, & Jones, 2009; Cai, Ung, Setboonsarng, & Leung, 2008; Jones & Gibbon, 2011; Kalamkar, 2012; Tripathi, Kumar, Roy, & Joshi, 2018; Tripathi, Singh, & Singh, 2005), higher profits (Islam, Roy, Kumar, Tripathi, & Joshi, 2019; Kumar & Kumar, 2008; Kumar, Roy, Joshi, Tripathi, & Adhikari, 2019; Mishra, Kumar, Joshi, & D'Souza, 2016; Narayanan, 2014), and higher incomes (Andersson, Chege, Rao, & Qaim, 2015; Ashraf, Giné, & Karlan, 2009; Bellemare, 2012; Cahyadi & Waibel, 2016; Ito, Bao, & Su, 2012; Khan, Nakano, & Kurosaki, 2019; Maertens & Swinnen, 2009; Maertens & Vande Velde, 2017; Miyata, Minot, & Hu, 2009; Rao & Qaim, 2011). A recent review of the existing empirical results showed that positive productivity effects were found in 92%, and positive income effects in 75 % of the cases (Wang et al., 2014). However, there may be a certain publication bias in the literature on contract farming, with positive results having a higher likelihood of being published than negative results (Ton, Vellema, Desiere, Weituschat, & D'Haese, 2018). A recent study with representative data from six developing countries showed that contract farming had significantly positive income effects in only three of the six countries (Meemken & Bellemare, 2020).

In spite of positive income effects of contract farming in many situations, high smallholder dropout rates from contract schemes are often observed (Andersson et al., 2015; Euler, Schwarze, Siregar, & Qaim, 2016; Gatto, Wollni, Asnawi, & Qaim, 2017; Minot & Ngigi, 2004; Minot & Sawyer, 2014; Narayanan, 2013, 2014; Ton et al., 2018). One reason for dropouts is that smallholders violate the contract conditions or are unable to consistently meet the quality requirements. However, there are also cases where farmers simply seem to be dissatisfied (Andersson et al., 2015; Gatto et al., 2017; Ochieng, Veettil, & Qaim, 2017). Thus, the debate around the development potential of contract farming is ongoing and requires additional research on potentials and constraints beyond narrowly defined economic indicators. In particular, farmers' satisfaction with contract farming is not yet sufficiently understood, but is important to reduce dropouts and facilitate lasting partnership between smallholder farmers and agribusiness companies.

The aim of this study is to investigate possible reasons for smallholder farmers' dissatisfaction with and dropout from contract farming in spite of economic gains. We use an empirical example of a resource-providing contract between a large processing company and smallholder oil palm producers in Ghana to underline the importance of information, trust, and transparency for the long-term success of contract farming schemes. The selected contract scheme can be considered a success from an economics perspective. Previous work showed that oil palm farmers with a contract benefit substantially in terms of higher production investments, crop yields (Ruml & Qaim, 2020), and household incomes (Ruml, Ragasa, & Qaim, 2020). Despite these economic gains, we show that most farmers regret their decision to participate in the contract scheme and would like to exit the scheme as soon as legally possible. In other words, clear economic improvements notwithstanding, farmers are deeply dissatisfied with the contract.

This example provides an interesting opportunity to investigate problems with contract farming that have not yet received sufficient attention in the literature. Based on insights derived from focus group discussions with farmers and a structured survey, we examine the relationship between the contracting company and the farmers in order to highlight the importance of information, contract understanding, transparency, and trust. We find that these aspects are crucial for farmers' satisfaction and might explain their dropout behaviour.

In particular, we provide statistics on the self-reported information farmers had about the contract when signing it and their level of contract understanding. The results challenge the common

assumption that farmers rationally self-select into contract schemes and are enabled to make informed decisions about their production investments through proper information provided by the company (Barrett et al., 2012; Bellemare, 2012). We also analyse problems that arise if farmers – due to limited contract understanding – perceive the company’s actions as opportunistic. While the specific results relate to the case of the oil palm contract in Ghana, comparison with other examples from the literature suggests that similar problems of mistrust and lack of transparency also occur in many other contract schemes in various developing countries (Eaton & Shepherd, 2001; Glover, 1987; Huacuja, 2006; Ochieng et al., 2017; Saenger, Torero, & Qaim, 2014; Schipmann & Qaim, 2011; Singh, 2002). Our results may encourage follow-up research to investigate the benefits and challenges of contracted smallholders beyond narrowly defined economic indicators.

2. Background

2.1. The Ghanaian Oil Palm Sector

Oil palm is native in Ghana and palm oil is a crucial part of the local diet. Traditionally, farmers manually process the harvested fruit bunches into palm oil, to consume it or to sell it to other households on the local market (Byerlee, Falcon, & Naylor, 2017). In recent decades, oil palm has gained in importance for the food and cosmetics industry, and the local demand substantially increased (Huddleston & Tonts, 2007). As a response, the Ghanaian government incentivised a diversion away from citrus fruits and cocoa towards oil palm, which is by now one of the most important cash crops produced in the country (Rhebergen et al., 2016). Several national and international companies have established large processing mills with own plantations and contractual agreements with smallholders to meet the high demand and to run at full processing capacity (Ruml & Qaim, 2020).

2.2. The Contract Farming Scheme

One of the contract farming schemes in the Central Region of Ghana is the Twifo Oil Palm Plantation (TOPP), owned by Unilever. In addition to the 10,000 acres of company plantation land, Unilever sources oil palm from approximately 1000 oil palm farming households through contractual agreements. The contracts are offered in selected villages, with the village chief as intermediary between the farmers and the company. Unilever states that they accept all farmers that have land available for cultivation and are willing to accept the contract terms. The company is the only large buyer of oil palm fruit bunches in this region. Although farmers are able to sell small quantities on the local market, they are unable to sell larger quantities outside of the company contract. Thus, side-selling is a rare phenomenon and Unilever enjoys a monopsonistic position as the only company that sources oil palm fruit bunches in large quantities.

The contracting unit is the individual oil palm plot. The company sources all output produced on the contracted plots at an annually fixed price without any quality restrictions. They pick up the harvested oil palm fruit bunches at the farm gate with trucks in intervals of 2–3 weeks. The contracted oil palm plots are established by Unilever on credit. The company assists farmers with the planting materials, other inputs, machineries, and labour during the planting phase. The size of the credit depends on the inputs and services actually used by an individual farmer. The credits plus an annual interest rate of 11.5 % are paid back by farmers through the output supply: 25 % of each harvest is taken by the company without payment, independent of the size of the initial credit. However, the size of the initial credit determines the repayment duration, which is generally between 20–25 years. Farmers are legally bound to the contract until the initial credit is repaid in full, which reinforces Unilever’s market power in the contract region. Throughout the production period, farmers can additionally demand inputs, such as agrochemicals, tools, machinery, and labour, from the company also on credit. These extra credits are not included in the 25 % repayment rate and are

additionally deducted from the harvest. After the plot is established, farmers make their own decisions regarding input use and intensities. The company only supplies those inputs on credit that the farmer demands.

The contract offers two types of benefits for participating farmers: First, farmers have a secure sales market, meaning that they can sell their output at a specified time, in large quantities, independent of quality, and at a stable price. Second, farmers receive in-kind credits and assistance for the plot establishment and maintenance. This is particularly important because oil palm is a capital-intensive crop and farmers are financially constrained.

Previous analyses of data from this scheme found that the Unilever contract increases farmers' adoption of chemical fertilisers and herbicides and leads to a doubling of oil palm yields (Ruml & Qaim, 2020). Contracted farms expanded their commercial production and specialised more on the oil palm crop. Furthermore, it was shown that the contract significantly reduces agricultural labour use per acre of oil palm, due to the adoption of labour-saving technologies and because post-harvest handling and processing of the fruit bunches no longer take place at the individual farm (Ruml & Qaim, 2019). These labour savings led to some reallocation of household labour to off-farm economic activities. Finally, the data showed that the contract leads to a strong increase in farmers' oil palm profits (168%) and total household incomes (85%) (Ruml et al., 2020). Hence, the contract scheme is associated with clear economic gains for participating farmers.

3. Materials and Methods

3.1. Sampling Strategy and Data

We chose oil palm in Ghana as an interesting example because of the increasing importance of contract farming in this sector and the strong monopsony power of the contracting companies. Unilever's TOPP plantation and contract scheme in the Central Region (see previous section) was selected because of the long-term resource-providing contract with interesting features. We randomly sampled 13 villages from a complete list of contract villages provided by Unilever. Within these 13 villages, we compiled full lists of all contracted households with at least one plot registered with Unilever. From these lists, we randomly sampled and interviewed 75 % of the households. Overall, our sample includes 164 contracted households, with 169 independent oil palm farmers that answered the survey questions (in a few households more than one farmer had a contract).¹

We collected quantitative data on the production and sales of all crops cultivated by the households and on all other income sources to calculate household income. Prior to the structured survey to collect quantitative data, we held focus group discussions in four villages with resource-providing contracts, which were not sampled for the quantitative survey. Two types of focus group discussions were held in each of the four villages: First, we had a guided discussion with the village chief, the elder council, and the lead farmers to discuss the constraints farmers faced before and after the contract farming scheme started, how the company offered contracts within the village, and their selection criteria and cooperation with the informal village government. Second, we held focus group discussions with 10–20 farmers in each of the four villages. We did not restrict participation for any farmer in the village and ensured attendance by both male and female contract farmers. In these group sessions with farmers we discussed oil palm production methods, marketing options, constraints, satisfaction, and challenges with the contract and the contracting company.

Both types of focus group discussions included a set of lead questions, which were equal across villages, and a subsequent open discussion. Sessions were held in the local language and a local coordinator was present for English translations. Based on the information derived from these focus group discussions, the questionnaire for the quantitative survey was extended to include specific questions on farmers' satisfaction and complaints. Thus, building on information collected through the focus group discussions, we expanded the survey questionnaire to also capture data beyond purely economic indicators.

Table 1 presents farm, farmer, and household characteristics of the households in our sample for the quantitative survey. The average farm size is around 20 acres, even though 30 % of the households actually have less than 10 acres of land. The average area under contract is 8 acres. Most contracted farmers are male. On average, farmers are 56 years old, have 7 years of formal education, and 16 years of experience in oil palm cultivation. Most households have been under contract for 8–10 years. Prior to the contracts, only 45 % of the households cultivated oil palm commercially (beyond just small quantities for home consumption). In addition to oil palm, households grow other cash crops such as cocoa and rubber and food crops such as cassava and maize.

3.2. Methodology

Our study aim is to investigate farmers' satisfaction with the contract farming scheme and possible reasons for dissatisfaction in spite of economic benefits. During the structured interviews, we asked all sample farmers two questions related to their satisfaction. First, we asked whether they would sign the contract again, if they had the chance to go back in time. The purpose of this question was to see whether farmers regret having signed the contract in the first place. If this question was answered with 'no' (they would not sign the contract again), we asked them for specific reasons. Second, we asked farmers if they would sign the contract again in the future, after the current contract terminates, if the contract terms remained unchanged. We then test whether the responses to these questions are correlated with per capita household income using Pearson's correlation coefficients. This correlation analysis helps to understand whether farmers' (dis)satisfaction can (in part) be explained by income as an objective economic measure. A significant correlation would indicate that farmers who are better or worse off are more likely to drop out, depending on the sign of the correlation coefficient.

In addition, we investigate information flows between the company and farmers and farmers' contract understanding, in order to test the common hypothesis that farmers rationally self-select into contract farming and are enabled to make informed decisions regarding their production investments. We examine the knowledge that farmers had about the contract prior to signing it and at the time of the survey. We also asked about farmers' ability to read and understand the contract and used two test

Table 1. Sample farm, farmer, and household characteristics

	Mean	Std. Dev.
<i>Farmer (n = 169) and household (n = 164) characteristics</i>		
Gender (female = 1)	0.31	(0.46)
Age (in years)	55.94	(12.18)
Education (in years)	6.80	(4.66)
Experience (in years)	15.63	(9.54)
Number of household members	5.20	(2.60)
Number of adult household members (18 years and older)	2.85	(1.30)
Number of youth household members (14–17 years)	0.49	(0.71)
Number of children in the household (<14 years)	1.86	(1.72)
Commercial oil palm production prior to contract farming (yes = 1)	0.45	(0.50)
Independent oil palm production (yes = 1)	0.21	(0.41)
Years under contract	9.34	(1.02)
<i>Farm characteristics (n = 164)</i>		
Total land availability (in acres)	19.94	(18.70)
Small-scale farmers (<10 acres)	0.30	(0.46)
Medium-scale farmers (10–19 acres)	0.37	(0.48)
Large-scale farmers (>20 acres)	0.33	(0.47)
Land purchase since contract participation (in acres)	4.34	(7.40)
Absolut area under oil palm cultivation (in acres)	9.36	(9.83)
Relative area under oil palm cultivation	0.51	(0.24)
Area under contract (in acres)	7.67	(6.93)
Number of other cash crops produced	2.40	(0.81)

questions about particular contract clauses. Further, we were interested to see whether farmers are aware of the size of their initial credit obtained through the contract.

Finally, we investigate the role of transparency and trust by looking at the example of oil palm fruit bunch weights, where farmers often feel deceived by the company. In the survey, we asked farmers whether they experienced a (perceived) weighing loss within the last 12 months prior to the survey, and for their estimated loss in tons of output. Answers to these questions are correlated with the satisfaction variables, in order to see whether issues of transparency and trust influence farmers' satisfaction and potential dropout behaviour.

4. Results

4.1. Farmers' Satisfaction

Table 2 presents mean values of farmers' answers to the satisfaction questions. Only 43 % of the farmers do not regret having signed the contract and would sign it again under the same conditions. Hence, more than half would not sign the contract again. Several reasons are stated for the dissatisfaction. The most often mentioned reason relates to unfair contract terms, which indicates that farmers were unaware of the true contract features prior to signing the contract. In particular, many farmers consider the output prices too low and the interest rates and input prices too high. These answers indicate that farmers did not make informed and rational choices when they signed the contract.

Moreover, many farmers criticise the lack of transparency and honesty of the company. Throughout the surveyed villages, farmers often reported that company representatives enter the farmland without informing the farmer. The output and input prices and related calculations and deductions are perceived as not transparent. In some cases, it was reported that the company harvested a plot without prior knowledge of the farmer. Moreover, some farmers feel deceived because the initial information they received from the company was incomplete and the initial promises made were not met. Considering the widespread criticism, it is not surprising that only 38 % of the farmers plan to sign an additional round of the same contract in the future (Table 2). Whether farmers will really not sign in the future and drop out of the scheme cannot be observed at this point. The scheme is in its first round of contracting, and the current contracts will still continue for another 10–15 years.

Table 3 shows Pearson's correlation coefficients of the two satisfaction variables and per capita household income. We find no statistically significant correlation between satisfaction and income. Moreover, both correlation coefficients are very small in magnitude (close to zero), which supports the suspicion that farmers' satisfaction with the contract cannot be explained by economic indicators alone.

Table 2. Contract satisfaction (n = 169)

	Yes	No	Share (std. dev.)
If you had the chance to go back in time, would you sign the contract again?	73	96	0.43 (0.50)
Why would you not sign the contract again?			
Unfair contract terms		90	
Too low output prices		51	
Interest rates are too high		28	
Too high input prices		18	
Lack of transparency and honesty		11	
Initial set-up is too expensive		2	
After this contract ends, would you sign up for another one, assuming the contract terms are unchanged?	65	104	0.38 (0.49)

Table 3. Pearson's correlations between contract satisfaction and household income

	Per capita household income
If you had the chance to go back in time, would you sign the contract again?	0.0794
After this contract ends, would you sign up for another one, if the contract terms remained unchanged?	0.0686

Note: None of the correlation coefficients is statistically significant, suggesting that farmers' satisfaction with the contract is not significantly associated with income as a purely economic outcome.

4.2. Incomplete Information and Contract Understanding

Based on the concrete complaints raised by sample farmers, we investigate the information and understanding that they had about the contract at the time of the survey and when signing the contract in the past. The results are presented in Table 4. The contract document that the farmers signed was written in English, included several lengthy clauses, and a cost and repayment schedule. The results in Table 4 show that only 28 % of the sample farmers can read and speak English, meaning that 72 % of them were unable to read the contract before signing it. The problem of insufficient or inaccessible information is also supported by the fact that only 32 % of the farmers reported that they actually understood the contract prior to signing it. Farmers who cannot read English themselves and still stated that they understood the contract mentioned that they had asked friends or other family members for translation.

We further asked two test questions to check the farmers' knowledge about particular contract clauses. First, the contract specifies that after a certain delay in output supply (more than six weeks) the company has the right to take over the oil palm plot. This take-over means that the company decides on all input applications and provides all the labour required to cultivate the plot. The farmer loses decision-making power, is no longer allowed to work on the plot, and receives no payment until the debt is repaid in full. Eighty-six percent of the farmers were aware of these consequences at the time of the survey (Table 4). However, further discussions with the farmers suggest that this was not widely understood when signing the contract. Instead, farmers learned about this contract clause through experience. Several farmers actually faced such 'expropriation', and this information spread widely also among surrounding households and villages.

Second, the contract specifies that if the farmer deceases during the time of the contract duration, the contract would either be continued by the heir, or the plot would be taken over by the company until the debt is repaid in full. Except for one farmer, all farmers in the sample were aware of this contract clause. Yet, further discussions with the farmers revealed that many are unaware that the family of the deceased has to provide a death certificate, which is untypical and difficult to get in the local setting. We learned about one case where the death of the farmer was not confirmed through a certificate and the company consequently took over production on the plot, denying the widow access to the plot and payments from the harvest.

Table 4. Information and contract understanding (n = 168)

	Yes	No	Share (std. dev.)
Self-reported understanding of English	48	121	0.28 (0.45)
Self-reported understanding of contract	54	115	0.32 (0.47)
Test question understanding of contract breach (take-over of plot by company in case of delayed output supply)	146	23	0.86 (0.34)
Test question understanding of contract duration (responsibility of heir in case of farmer death)	168	1	0.99 (0.08)
Knowledge of the initial credit size	37	132	0.22 (0.41)

The last row in Table 4 shows that only 22 % of the contracted farmers are aware of the amount of the initial credit they are currently paying off. As described, the company provides assistance in the form of labour, planting material, agrochemical inputs, and machinery to establish the oil palm plantation on the contracted plot. The resulting credit is then paid back over many years following the plantation establishment through 25 % of each harvest. This credit is not a fixed amount that is equal across all contracted farmers, as it depends on the types of assistance and inputs required by an individual farmer. Seventy-eight percent of the farmers in our sample were unaware of the credit amount and thus could not make rational and informed decisions on how much and what type of assistance and inputs to use. Further, these farmers could not weigh the value of the assistance and inputs received on credit against the actual value of the later repayment in terms of oil palm fruit bunches. For the 22 % of the farmers who reported their initial amount of credit, we cannot check whether the amount was estimated correctly, as Unilever did not provide information to cross-check.

4.3. Transparency

Lastly, we examine perceived opportunistic behaviour from the company by investigating incidences of weighing losses. The results in Table 5 show that 34 % of the farmers in the sample (59 farmers) experienced at least one such perceived weight and weighing loss (Table 5). Out of the 59 farmers, 29 were able to estimate the quantity of the loss in tons of output. The average stated loss within the 12 months prior to the survey is approximately 5 tons, which is equivalent to 77 % of the average annual yield per acre.

Table 6 shows that this experience of at least one perceived weighing loss during the last 12 months is negatively correlated with the stated willingness to sign a new contract in the future. The correlation coefficient of -0.16 is statistically significant at the 5 % level. Hence, lack of information and transparency, distrust, and dissatisfaction seem to be associated and possibly mutually reinforcing.

5. Discussion

The results presented in the previous section on farmers' perceptions of contract farming in the Ghanaian oil palm sector have several important implications. They indicate that economic benefits

Table 5. Descriptive statistics of perceived weighing losses

	Number of farmers	Share	Std. Dev.
Experienced at least one weighing loss	58	0.34	(0.48)
Ability to estimate this loss	29	0.49	(0.50)
Average estimated loss (in tons of output)	29	4.87	(5.57)

Note: The share of farmers able to estimate their weighing loss (0.49) is in relation to all farmers who have experienced a weighing loss.

Table 6. Pearson's correlations between contract satisfaction and weighing losses

	Experience of at least one weighing loss
If you had the chance to go back in time, would you sign the contract again?	-0.0265
After this contract ends, would you sign up for another one if the contract terms remained unchanged?	-0.1616^*

Note: * marks significance at the 5 % level. The negative and significant coefficient suggests that farmers' dissatisfaction with the contract (wish to exit) is associated with the feeling of distrust vis-à-vis the company.

alone cannot explain farmers' satisfaction with the contract scheme and their dropout behaviour. More than half of the farmers regret having signed the contract in the past and would not sign the contract again in the future. Hence, the majority of the farmers are dissatisfied with the contract in spite of sizeable economic benefits.

High dropout rates despite economic benefits are often observed in the existing literature (Andersson et al., 2015; Euler et al., 2016; Gatto et al., 2017; Minot & Ngigi, 2004; Minot & Sawyer, 2014; Narayanan, 2013, 2014; Ton et al., 2018). A low willingness to sign another contract in the future could also indicate that farmers would no longer require contractual support. This was reported, for instance, in connection with contract schemes in Thailand, India, and Indonesia (Euler et al., 2016; Narayanan, 2013). In those cases, farmers became wealthier through many years of contract farming and could afterwards expand their plantations also without additional contractual support. In some cases, they also started investing into other businesses outside of agriculture (Narayanan, 2013).

These examples from other countries suggest that not signing a contract again is not necessarily an indicator of dissatisfaction. However, in our case the level of dissatisfaction is quite obvious through the combination of answers to the two questions we asked about the past and the future. Our data show that only 5 % of the farmers who stated that they would not sign a new contract in the future do not regret having signed the current contract in the past. Furthermore, we showed that neither regretting having signed the contract nor being unwilling to sign a new contract is significantly correlated with household income. Hence, we conclude that the dissatisfaction is not primarily driven by objectively measurable economic indicators.

Based on the criticism raised by farmers we analysed the information flows between the contracting company and farmers as well as farmers' understanding of the contractual details. It is widely assumed that participation of farmers in contract schemes is the result of an expected utility analysis that compares the situation with and without a contract (Simmons et al., 2005). Under this assumption, farmers self-select into contract farming if their expected utility with a contract is higher than without (Barrett et al., 2012; Bellemare, 2012). However, our results show that the majority of the oil palm farmers in Ghana has neither read nor fully understood the contract prior to signing it. Our example from Ghana does not seem to be a unique case. In other contexts farmers were also sometimes found to lack information about contract details (Singh, 2002). Farmers are often unaware of input prices, contract conditions, the exact company they signed the contract with (Simmons et al., 2005), or the company's policies (Porter & Phillips-Howard, 1997). Written contracts can be problematic in particular, as they often lack transparency when using legal terms or language that is inaccessible to farmers with relatively low education levels (Cahyadi & Waibel, 2016).

Our results also show that 78 % of the farmers in Ghana are unaware of the initial credit amount that they are currently repaying, and could thus not make rational decisions about the inputs and assistance demanded at the time of plot establishment. This combination of easy access to credit and lack of information and transparency has also been reported elsewhere and increases the risk of farmers' indebtedness (Bijman, 2008). Farmers do not know how much they owe and how long it will take them to repay this debt. Being frustrated by this lack of transparency, several farmers in our sample reported that they had applied for a credit at a formal bank, in order to pay back Unilever at once and then exit the contract. However, the contract actually does not allow such one-time repayment, so that many farmers feel locked into the scheme with insufficient information on the contract conditions. Such situations can easily occur when contracts seem attractive in the beginning and farmers sign long-term agreements involving large debts without having full information (Glover, 1987).

Lack of transparency increases the risk of default with the consequence that farmers may have to sacrifice the autonomy over their land and also lose the opportunity to sell any output to the company (Key & Runsten, 1999). This is particularly problematic if farmers are highly specialised on the contracted crop and the firm has a monopsony in the region, as is true in our case of oil palm in Ghana. But also elsewhere, monopsony power of the contracting company has been stated as a concern (Clapp, 1994; Little & Watts, 1994; Oya, 2012). Monopsony power makes farmers more

dependent and vulnerable to the contractor (Cai et al., 2008; Eaton & Shepherd, 2001) and generates asymmetric power relations (Adams et al., 2019; Key & Runsten, 1999). For instance, a monopsonist can ration procurement, lower prices, or increase quality requirements in times of supply abundance (Bijman, 2008; Glover, 1987; Huacuja, 2006).

Monopsony power is particularly problematic if farmers perceive the actions of the company as opportunistic, because farmers are powerless towards such (perceived) behaviour. The existing literature includes reports about the perceived manipulation of quality standards and reductions in the price received or the quantity weighed (Eaton & Shepherd, 2001; Glover, 1987; Huacuja, 2006; Ochieng et al., 2017; Singh, 2002). Frequently-reported examples of the perceived execution of the company's monopsony power are reported weighing losses as a result of long waiting hours at either the farm or the company gate. Farmers often have to wait until the harvest is picked up or received by the company, leading to weight losses due to water evaporation and potential spoilage. This way, farmers are paid for less than what was actually delivered (Glover, 1987). For our case of oil palm farmers in Ghana, we find that 34 % of the farmers experienced a perceived weighing loss. And this experience is significantly correlated with the farmers' wish to exit the contract. Some farmers also claimed that the quantities the company paid for were less than what they had actually delivered, which has also been reported elsewhere (Huacuja, 2006; Ochieng et al., 2017).

Perceived weighing losses are not necessarily a proof of truly opportunistic behaviour, as differences between farmers' estimated weights and actual weights can always occur. But distrust and lack of transparency can easily lead to perceived unfairness, which is then hard to prove or disprove (Glover, 1987; Rist, Feintrenie, & Levang, 2010). Some contract schemes do not allow farmers to be present at the time of the weighing or grading (Huacuja, 2006), which further decreases transparency and raises the farmers' suspicion and mistrust (Eaton & Shepherd, 2001; Saenger et al., 2014; Schipmann & Qaim, 2011). In the sweet potato supply chain in the Philippines, the price setting of contractors is largely intransparent and perceived as unfair by farmers; yet, examinations of the price margins revealed that the companies are actually not acting opportunistically (Batt & Cadilhon, 2007). Similarly, weighing losses can be a result of imperfect harvest logistics, which cause dissatisfaction among farmers (Isager, Fold, & Nsindagi, 2018).

Perceived opportunism due to lack of transparency can also increase the farmer's perceived risk, if he/she feels vulnerable and unprotected towards the company potentially breaching the contract (Dedehouanou, Swinnen, & Maertens, 2013; Glover, 1987). Further, the experience of weighing losses can lead to lower expectations of revenues. Rational farmers will take this into account when making decisions about their production investments, and potentially also lower their effort and input use. Hence, if not implemented properly contract farming can lead to additional risk for farmers, rather than reducing risk as actually intended.

The importance of transparency in contract farming was also illustrated by Saenger et al. (2014) in the Vietnamese dairy sector. The authors introduced an independent milk quality control for contract farmers through a randomised controlled trial. They found no opportunistic behaviour of the company regarding the reported quality of the milk. Nevertheless, the option of getting the milk quality verified by an independent laboratory led to a significant increase in the farmers' production investments and productivity. Hence, the perceived opportunistic behaviour of the contracting company introduces an additional risk that can influence the farmers' production decisions and lower the potential benefits of contracts.

The importance of transparency and trust for farmers' satisfaction is further supported by studies that investigated farmers' preferences for contract farming with choice experimental approaches. In addition to overcoming output and input market uncertainty, farmers often prefer contracts with low possibility for potentially unpredictable harvest rejections (Abebe, Bijman, Kemp, Omta, & Tsegaye, 2013; Ochieng et al., 2017). This underlines the importance of transparent quality grading and trust for contract participation (Fischer & Wollni, 2018; Schipmann & Qaim, 2011). Moreover, it was found that the trustworthiness, reliability, and dependability of and social relationship with the buyer

can be stronger determinants for farmers' participation in contract schemes than the output price offered (Gelaw, Speelman, & Van Huylenbroeck, 2016). Hence, trust and transparency should receive more attention in the literature on contract farming, particularly in explaining farmers' satisfaction and dropout behaviour.

6. Conclusion

Much of the existing literature on contract farming in developing countries focusses on the question whether contracting is economically beneficial for smallholders. Empirical studies confirm that smallholders often benefit from contracts through higher yields and incomes. Nevertheless, high dropout rates from contract schemes are observed, reasons of which have not been analysed sufficiently.

The empirical example from the oil palm sector in Ghana presented here underlines the importance of investigation beyond purely economic indicators. Our data revealed that farmers were not sufficiently informed about the contracts they signed and are mostly unaware of the amount of debt they have with the company. This lack of transparency increases farmers' uncertainty and causes mistrust. Many farmers believe that the company behaves opportunistically, and this belief is significantly correlated with the farmers' wish to exit the scheme. We should stress that we have no indication of true opportunistic behaviour by the company. Moreover, it is important to highlight that the farmers have actually benefited substantially from the contract scheme in terms of higher profits and incomes. These gains are not always so obvious for farmers. Most of them are much better off today than they were several years ago before the contract scheme had started, but farmers certainly cannot know how their situation would have developed had they not signed the contract. In this case, farmers' satisfaction with the contracts seems to be influenced more by perceptions than by actual benefits. In other words, farmers' perceptions matter and need to be accounted for by the contracting company when the wish is to develop mutually beneficial and lasting business relationships.

While similar issues were also reported for other contract schemes in various countries, issues of mistrust and lack of transparency have received relatively little attention in the quantitative literature to explain smallholder dissatisfaction, dropouts, and possibly the complete breakdown of smallholder contract schemes. One policy implication is that contracts need to be clearly specified in a language that is accessible to farmers. One research implication is that studies evaluating the success of contract farming from a broader perspective need to go beyond narrowly defined economic indicators.

Note

1. In previous studies about the economic impacts of contracts we additionally sampled 193 households producing oil palm under simple marketing contracts (without credit and input provision), which farmers can exit whenever they want, and 106 oil palm producers without any contract (Ruml & Qaim, 2020; Ruml et al., 2020). Here, we are particularly interested in farmers' satisfaction with the long-term resource-providing contract.

Acknowledgements

The authors thank the Ministry of Food and Agriculture in Obuasi, Ghana, for the support during the field work. The authors also thank the survey enumerators and respondents for their willingness to cooperate. Comments received from two anonymous reviewers of this journal are gratefully acknowledged.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author, [AR], upon reasonable request.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This research was financially supported by the German Research Foundation (DFG), grant number RTG 1666 (GlobalFood).

References

- Abebe, G. K., Bijman, J., Kemp, R., Omta, O., & Tsegaye, A. (2013). Contract farming configuration: Smallholders' preferences for contract design attributes. *Food Policy, 40*, 14–24.
- Adams, T., Gerber, J. D., & Amacker, M. (2019). Constraints and opportunities in gender relations: Sugarcane outgrower schemes in Malawi. *World Development, 122*, 282–294.
- Adams, T., Gerber, J. D., Amacker, M., & Haller, T. (2019). Who gains from contract farming? Dependencies, power relations, and institutional change. *The Journal of Peasant Studies, 46*, 1435–1457.
- Andersson, C. I., Chege, C. G., Rao, E. J., & Qaim, M. (2015). Following up on smallholder farmers and supermarkets in Kenya. *American Journal of Agricultural Economics, 97*, 1247–1266.
- Ashraf, N., Giné, X., & Karlan, D. (2009). Finding missing markets (and a disturbing epilogue): Evidence from an export crop adoption and marketing intervention in Kenya. *American Journal of Agricultural Economics, 91*, 973–990.
- Barrett, C. B., Bachke, M. E., Bellemare, M. F., Michelson, H. C., Narayanan, S., & Walker, T. F. (2012). Smallholder participation in contract farming: Comparative evidence from five countries. *World Development, 40*, 715–730.
- Batt, P., & Cadilhon, J. (2007). Fresh produce supply chain management: Overview of the proceedings and policy recommendations. In Proceedings of the international symposium on fresh produce supply chain management (pp. 8–22). Bangkok: Agricultural and Food Marketing Association for Asia and the Pacific-AFMA, Curtin University of Technology, Department of Agriculture, FAO.
- Bellemare, M. F. (2012). As you sow, so shall you reap: The welfare impacts of contract farming. *World Development, 40*, 1418–1434.
- Bellemare, M. F., & Lim, S. (2018). In all shapes and colors: Varieties of contract farming. *Applied Economic Perspectives and Policy, 40*, 379–401.
- Bijman, J. (2008). *Contract farming in developing countries: An overview*. Wageningen: Wageningen University, Department of Business Administration.
- Bolwig, S., Gibbon, P., & Jones, S. (2009). The economics of smallholder organic contract farming in tropical Africa. *World Development, 37*, 1094–1104.
- Brambilla, I., & Porto, G. G. (2011). Market structure, outgrower contracts, and farm output. *Evidence from Cotton Reforms in Zambia. Oxford Economic Papers, 63*, 740–766.
- Byerlee, D., Falcon, W. P., & Naylor, R. (2017). *The tropical oil crop revolution: Food, feed, fuel, and forests*. New York: Oxford University Press.
- Cahyadi, E. R., & Waibel, H. (2016). Contract farming and vulnerability to poverty among oil palm smallholders in Indonesia. *Journal of Development Studies, 52*, 681–695.
- Cai, J., Ung, L., Setboonsang, S., & Leung, P. (2008). Rice contract farming in Cambodia: Empowering farmers to move beyond the contract toward independence (No. 109). *ADB Institute Discussion Papers*.
- Carney, J. A. (1998). Women's land rights in Gambian irrigated rice schemes: Constraints and opportunities. *Agriculture and Human Values, 15*, 325–336.
- Carney, J. A., & Watts, M. (1991). Disciplining women? Rice, mechanization, and the evolution of Mandinka gender relations in Senegambia. *Signs: Journal of Women in Culture and Society, 16*, 651–681.
- Champika, P. J., & Abeywickrama, L. M. (2014). An evaluation of maize contract farming system in Sri Lanka: Adoption, problems and future prospects. *Tropical Agricultural Research, 26*, 62–73.
- Clapp, R. A. (1994). The moral economy of the contract. In P. D. Little & M. Watts (Eds.), *Living under contract: Contract farming and Agrarian transformation in sub-Saharan Africa* (pp. 78–96). London: Univ of Wisconsin Press.
- Dedehouanou, S. F., Swinnen, J., & Maertens, M. (2013). Does contracting make farmers happy? Evidence from Senegal. *Review of Income and Wealth, 59*, 138–160.
- Eaton, C., & Shepherd, A. (2001). *Contract farming: Partnerships for growth (No. 145)*. Rome: Food and Agriculture Organization.
- Euler, M., Schwarze, S., Siregar, H., & Qaim, M. (2016). Oil palm expansion among smallholder farmers in Sumatra, Indonesia. *Journal of Agricultural Economics, 67*, 658–676.
- Fischer, S., & Wollni, M. (2018). The role of farmers' trust, risk and time preferences for contract choices: Experimental evidence from the Ghanaian pineapple sector. *Food Policy, 81*, 67–81.

- Gatto, M., Wollni, M., Asnawi, R., & Qaim, M. (2017). Oil palm boom, contract farming, and rural economic development: Village-level evidence from Indonesia. *World Development*, 95, 127–140.
- Gelaw, F., Speelman, S., & Van Huylbroeck, G. (2016). Farmers' marketing preferences in local coffee markets: Evidence from a choice experiment in Ethiopia. *Food Policy*, 61, 92–102.
- Glover, D. J. (1987). Increasing the benefits to smallholders from contract farming: Problems for farmers' organizations and policy makers. *World Development*, 15, 441–448.
- Grosh, B. (1994). Contract farming in Africa: An application of the new institutional economics. *Journal of African Economies*, 3, 231–261.
- Hernández, R., Reardon, T., & Berdegué, J. (2007). Supermarkets, wholesalers, and tomato growers in Guatemala. *Agricultural Economics*, 36, 281–290.
- Huacuja, F. E. (2006). Contract farming and small scale producers: Non-traditional vegetable exports from Mexico. *Iberoamericana–Nordic Journal of Latin American and Caribbean Studies*, 36, 83–102.
- Huddleston, P., & Tonts, M. (2007). Agricultural development, contract farming and Ghana's oil palm industry. *Geography*, 92, 266–278.
- Isager, L., Fold, N., & Nsindagi, T. (2018). The post-privatization role of out-growers' associations in rural capital accumulation: Contract farming of sugar cane in Kilombero, Tanzania. *Journal of Agrarian Change*, 18, 196–213.
- Islam, A. H. M., Roy, D., Kumar, A., Tripathi, G., & Joshi, P. K. (2019). Dairy contract farming in Bangladesh: Implications for welfare and food safety (Vol. 1833). IFPRI Discussion Paper No. 01833.
- Ito, J., Bao, Z., & Su, Q. (2012). Distributional effects of agricultural cooperatives in China: Exclusion of smallholders and potential gains on participation. *Food Policy*, 37, 700–709.
- Jones, S., & Gibbon, P. (2011). Developing agricultural markets in sub-Saharan Africa: Organic cocoa in rural Uganda. *Journal of Development Studies*, 47, 1595–1618.
- Kalamkar, S. S. (2012). Inputs and services delivery system under contract farming: A case of broiler farming. *Agricultural Economics Research Review*, 25, 515–521.
- Key, N., & Runsten, D. (1999). Contract farming, smallholders, and rural development in Latin America: The organization of agroprocessing firms and the scale of outgrower production. *World Development*, 27, 381–401.
- Khan, M. F., Nakano, Y., & Kurosaki, T. (2019). Impact of contract farming on land productivity and income of maize and potato growers in Pakistan. *Food Policy*, 85, 28–39.
- Kumar, A., Roy, D., Joshi, P. K., Tripathi, G., & Adhikari, R. (2019). Impact of contract farming of paddy seed on smallholder farm profits: Evidence from Nepal. *Agricultural Economics Research Review*, 32, 25–39.
- Kumar, J., & Kumar, K. (2008). Contract farming: Problems, prospects and its effect on income and employment. *Agricultural Economics Research Review*, 21, 243–250.
- Little, P. D., & Watts, M. (Eds.). (1994). *Living under contract: Contract farming and agrarian transformation in sub-Saharan Africa*. Madison, Wisconsin: University of Wisconsin Press.
- Maertens, M., & Swinnen, J. F. (2009). Trade, standards, and poverty: Evidence from Senegal. *World Development*, 37, 161–178.
- Maertens, M., & Vande Velde, K. (2017). Contract-farming in staple food chains: The case of rice in Benin. *World Development*, 95, 73–87.
- Meemken, E.-M., & Bellemare, M. F. (2020). Smallholder farmers and contract farming in developing countries. *Proceedings of the National Academy of Sciences USA*, 117, 259–264.
- Minot, N., & Ngigi, M. (2004). Are horticultural exports a replicable success story? Evidence from Kenya and Côte d'Ivoire. EPTD Discussion Paper No. 120. IFPRI.
- Minot, N., & Sawyer, B. (2014). *Contract farming in developing countries: Theory and experience. Report prepared for the Investment Climate Unit, International Finance Corporation*. Washington, DC: IFPRI.
- Mishra, A. K., Kumar, A., Joshi, P. K., & D'Souza, A. (2016). Impact of contracts in high yielding varieties seed production on profits and yield: The case of Nepal. *Food Policy*, 62, 110–121.
- Miyata, S., Minot, N., & Hu, D. (2009). Impact of contract farming on income: Linking small farmers, packers, and supermarkets in China. *World Development*, 37, 1781–1790.
- Narayanan, S. (2013). Smallholder attrition in contract farming schemes in India: Extent, causes, and concerns. *Food Chain*, 3, 155–170.
- Narayanan, S. (2014). Profits from participation in high value agriculture: Evidence of heterogeneous benefits in contract farming schemes in Southern India. *Food Policy*, 44, 142–157.
- Nguyen, A. T., Dzator, J., & Nadolny, A. (2015). Does contract farming improve productivity and income of farmers?: A review of theory and evidence. *Journal of Developing Areas*, 49, 531–538.
- Ochieng, D. O., Veetil, P. C., & Qaim, M. (2017). Farmers' preferences for supermarket contracts in Kenya. *Food Policy*, 68, 100–111.
- Otsuka, K., Nakano, Y., & Takahashi, K. (2016). Contract farming in developed and developing countries. *Annual Review of Resource Economics*, 8, 353–376.
- Oya, C. (2012). Contract farming in sub-Saharan Africa: A survey of approaches, debates and issues. *Journal of Agrarian Change*, 12, 1–33.
- Porter, G., & Phillips-Howard, K. (1997). Comparing contracts: An evaluation of contract farming schemes in Africa. *World Development*, 25, 227–238.

- Rao, E. J., & Qaim, M. (2011). Supermarkets, farm household income, and poverty: Insights from Kenya. *World Development*, 39, 784–796.
- Rhebergen, T., Fairhurst, T., Zingore, S., Fisher, M., Oberthür, T., & Whitbread, A. (2016). Climate, soil and land-use based land suitability evaluation for oil palm production in Ghana. *European Journal of Agronomy*, 81, 1–14.
- Rist, L., Feintrenie, L., & Levang, P. (2010). The livelihood impacts of oil palm: Smallholders in Indonesia. *Biodiversity and Conservation*, 19, 1009–1024.
- Ruml, A., & Qaim, M. (2019). New evidence regarding the effects of contract farming on agricultural labor use. GlobalFood Discussion Paper 135. University of Goettingen.
- Ruml, A., & Qaim, M. (2020). Effects of marketing contracts and resource-providing contracts in the African small farm sector: Insights from oil palm production in Ghana. *World Development*, 136, 105110.
- Ruml, A., Ragasa, C., & Qaim, M. (2020). Heterogeneous effects of marketing contracts and resource-providing contracts on household income. GlobalFood Discussion Paper 138. University of Goettingen.
- Saenger, C., Torero, M., & Qaim, M. (2014). Impact of third-party contract enforcement in agricultural markets—A field experiment in Vietnam. *American Journal of Agricultural Economics*, 96, 1220–1238.
- Schipmann, C., & Qaim, M. (2011). Supply chain differentiation, contract agriculture, and farmers' marketing preferences: The case of sweet pepper in Thailand. *Food Policy*, 36, 666–676.
- Schneider, K., & Kay, M. K. G. M. (2010). Gender & contract farming in Sub-Saharan Africa. Literature Review. Evans School of Public Affairs, University of Washington.
- Simmons, P., Winters, P., & Patrick, I. (2005). An analysis of contract farming in East Java, Bali, and Lombok, Indonesia. *Agricultural Economics*, 33, 513–525.
- Singh, S. (2002). Contracting out solutions: Political economy of contract farming in the Indian Punjab. *World Development*, 30, 1621–1638.
- Ton, G., Vellema, W., Desiere, S., Weituschat, S., & D'Haese, M. (2018). Contract farming for improving smallholder incomes: What can we learn from effectiveness studies? *World Development*, 104, 46–64.
- Tripathi, G., Kumar, A., Roy, D., & Joshi, P. (2018). Profits from participation in contract farming: Evidence from cultivators of onion, okra and pomegranate in Maharashtra, India. Paper presented at the International Conference of Agricultural Economists, Vancouver.
- Tripathi, R. S., Singh, R., & Singh, S. (2005). Contract farming in potato production: An alternative for managing risk and uncertainty. *Agricultural Economics Research Review*, 18, 47–60.
- von Bülow, D., & Sorensen, A. (1993). Gender and contract farming: Tea outgrower schemes in Kenya. *Review of African Political Economy*, 20(56), 38–52.
- Wang, H. H., Wang, Y., & Delgado, M. S. (2014). The transition to modern agriculture: Contract farming in developing economies. *American Journal of Agricultural Economics*, 96, 1257–1271.