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# Towards Designing Better Contracts: Assessing Contract Preferences of Small Farmers and Buyers

## Evidence from a choice experiment in cotton and tea schemes in Malawi: Synopsis

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## 1. BACKGROUND

Contract farming (CF) refers to a pre-planting arrangement between farmers and buyers for the supply of agricultural products under agreed terms and conditions. CF is widely practiced in many developing countries in the export and domestic crop markets (Maertens and Vande Velde, 2017).

In Malawi, CF is well established, particularly in the production of export crops such as tea, cotton, tobacco, green coffee and sugarcane. The Government of Malawi has developed a CF strategy to scale up the CF sector (MoAIWD, 2016).

The impacts of CF are of interest to policy makers as it has wide-ranging welfare implications for both contracted farmers and buyers. For resource constrained farmers, contracts facilitate access to farm inputs (technology, fertilizers, seeds, credit) thus increasing productivity (Ragasa et al. 2018; Ruml et al. 2020). Coupled with price and market guarantees, CF stabilizes incomes of farmers and reduces poverty (Meemken and Bellemare 2020). The on- and off-farm employment opportunities generated through CF also contribute to rural transformation (Meemken and Bellemare 2020). For buyers (or companies), CF reduces market uncertainties, stabilizes prices and supports building of relationships with producers (Ochieng et al. 2017).

Many studies have examined farmers' preferences for contracts, but the preferences of buyers remain largely unexplored. Also, the similarities and differences in contractual preferences of farmers and buyers are hardly known. Yet this is important in designing contracts that are acceptable to both parties to minimize contract default.

This policy note summarizes Working Paper 34 (Ochieng 2020), which examines preferences for contracts among cotton and tea farmers and companies in southern Malawi. The study analyzes the similarities and differences in preferences of farmers and buyers and provides valuable insights that can guide the design of better CF arrangements.

## 2. METHODOLOGY

The study used a choice experiment to analyze contract preferences of farmers and buyers of cotton and tea in southern Malawi. The author also examined the similarities and differences in preferences and critical contract features. The fieldwork was conducted between June and July 2019 in Chikwawa and Mulanje districts, which are respectively the main cotton and tea producing areas in Malawi. A multistage sampling procedure was employed to sample the study areas and farmers after purposively selecting companies. In Chikwawa, probability proportionate to size sampling was used to sample 251 contracted and 254 non-contracted cotton farmers from 5 extension planning areas (Dolo, Mikalango, Mitole, Mbewe, and Livunzu). In Mulanje, 257 contracted and 255 non-contracted tea farmers were sampled from 5 of the 21 blocks (Nansula, Chanunkha, Namame, Zambakoma, and Kangaza). Six cotton and five tea company managers were interviewed. Pre-survey visits to the study areas included focus group discussions with farmers and key informant interviews with farmers associations and company contract managers. From these, five important contract attributes (Table 1) were identified.

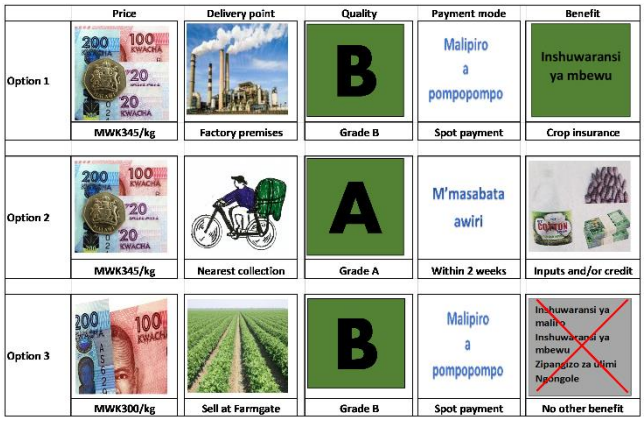
Table 1: Contract attributes and corresponding levels

| Attributes | | Cotton cards | Tea cards |
|---|---|---|---|
| Price/kg | 1 | MWK300/kg | 120/kg |
| | 2 | 300 + 15 | 120 + 5 |
| | 3 | 300 + 30 | 120 + 10 |
| | 4 | 300 + 45 | 120 + 15 |
| | 5 | 300 + 60 | 120 + 20 |
| | 6 | 300 + 75 | 120 + 25 |
| Delivery point | 1 | Farm gate | Farm gate |
| | 2 | Collection point | Collection point |
| | 3 | Buyers' premises | Buyers' premises |
| Quality | 1 | Grade B | Grade B |
| | 2 | Grade A | Grade A |
| Payment mode | 1 | Spot payment | Spot payment |
| | 2 | Within 2 weeks | Within 2 weeks |
| | 3 | After 2 weeks | After 2 weeks |
| Benefits | 1 | No benefit | No benefit |
| | 2 | Funeral insurance (farmer + spouse) | Funeral insurance |
| | 3 | Funeral insurance (4 people) | Funeral insurance |
| | 4 | Crop insurance | Crop insurance |
| | 5 | Farm inputs | Farm inputs |

**Source:** Authors' construction.
**Note:** MWK = Malawi Kwacha; Grade A = Superior grade; Grade B = Lower grade.

The author then randomized the attribute levels and designed 30 choice cards (Figure 1) allocated to 5 sets so that each farmer or contract manager was assigned to one set of six cards. Each card had two contract options and one non-contract option. Only one option could be selected from each card.

Figure 1. Sample of a choice card used in the experiment with the cotton farmers




**Source:** Authors' construction.

A mixed logit model was used to analyze the preferences and estimate farmers' willingness to accept contract attributes. Preferences of contract managers were analyzed descriptively due to the small sample size of 11 managers.

## 3. RESULTS

The choice experiment produced a range of findings on small farmers' and companies' contract preferences.

### a. Findings on farmers' preferences

Table 2 presents the empirical results of farmers' preferences for contracts. The coefficient of the non-contract option is negative and significant, meaning that farmers prefer contracts to the non-contract option. Furthermore, all but two of the coefficients are statistically significant at the 5 percent level, implying that the attributes are important to farmers. The other coefficients are interpreted relative to the non-contract option, which was constant in all the choice cards.

Farmers generally prefer not to deliver their crops at the farm gate. This is not surprising given that farmers and farmer association officials mentioned that farm gate collections by company appointed collectors were often delayed. This led to side-selling to other buyers and quality losses, particularly for tea farmers.

Both cotton and tea farmers preferred to contract for higher quality (grade A) crops because they fetch higher prices. However, as there are no standardized grading systems, quality is mainly determined by buyers. Many of the farmers interviewed distrusted the weighing and grading systems of the company field agents.

On payments, farmers disliked contracts with delayed payments. This can be explained by liquidity constraints of farmers, who often need cash for immediate needs, such as purchasing farm inputs, settling debts, or paying school fees. The study established that companies usually delayed payments under contractual arrangements but offered cash payments in few circumstances through third party intermediaries.

The positive coefficients on various insurance and farm input attributes suggest that farmers preferred contracts that offered support to cushion against farm-level risks. Farmers generally preferred contracts that offered funeral insurance cover for either the farmer and spouse or up to four family members. Group funeral insurance had been piloted among contracted cotton farmers in the study area but not for tea farmers.

Cotton farmers in Chikwawa district also preferred weather index crop insurance as a contract attribute. Chikwawa district is semi-arid and experiences frequent prolonged dry spells making this insurance highly relevant.

Table 2: Farmers' preferences for contracts

| | Cotton farmers | | Tea farmers | |
|---|---|---|---|---|
| Variables | Mean | SE | Mean | SE |
| *Parameters* | | | | |
| No contract | -3.049*** | (0.20) | -2.03*** | (0.53) |
| Price | 1.37*** | (0.39) | 0.20*** | (0.03) |
| Buyer's premises[a] | 68.98*** | (59.98) | 50.88** | (47.02) |
| Buyer's collection point[a] | 130.6*** | (47.30) | 54.19*** | (46.21) |
| Grade A quality[b] | 107.5*** | (14.63) | 49.15** | (37.89) |
| Payment within 2 weeks[c] | -22.92** | (14.09) | -7.06*** | (1.20) |
| Payment after 2 weeks[c] | -99.15*** | (42.31) | -49.91*** | (10.37) |
| Farmer + spouse insurance[d] | 61.47*** | (57.25) | 10.66** | (7.18) |
| Family funeral insurance[d] | -16.82* | (15.66) | 9.84** | (8.56) |
| Crop insurance[d] | 29.25** | (22.16) | 47.62 | (50.46) |
| Farm inputs[d] | 109.6*** | (48.41) | 58.29*** | (41.89) |
| Number of farmers | 505 | | 512 | |
| Number of observations | 9,090 | 9,090 | 9,216 | 9,216 |
| Pseudo R2 | 0.24 | | 0.28 | |
| Wald $\chi^2$ | 206.22*** | | 215.30*** | |

**Source:** IFPRI farmer choice experiments (2019).
**Note:** SE = Standard errors in (parentheses); [a] reference is farm gate; [b] reference is grade B; [c] reference is spot payment; [d] reference is no benefit or support. *, **, and *** means are significant at the 10%, 5%, and 1% levels, respectively.

The coefficient of the farm inputs attribute is positive and significant and with higher magnitude than for other attributes. This implies that cotton and tea farmers prefer contracts that provide farm inputs. This underscores the importance of farm inputs support to liquidity constrained farm households who often lack cash to purchase enough inputs at the right time. Currently, contracting companies provide contracted farmers with seeds, fertilizers and crop chemicals on credit (with repayments deducted from their subsequent sales).

Farmers' willingness to accept contracts by varying contract attributes was calculated based on mixed logit estimation (Table 3). The values describe the average price premiums (in MWK/kg) a farmer requires to accept a contract attribute. The prevailing market price was MWK300/kg for cotton and MWK120/kg for tea.

Table 3: Farmers' willingness to accept attribute levels

| | Cotton farmers | | Tea farmers | |
|---|---|---|---|---|
| Variable | Mean | Std. Dev. | Mean | Std. Dev. |
| Buyer's collection point | 50.55 | 33.30 | 25.59 | 22.45 |
| Buyer's premises | 95.71 | 28.97 | 27.26 | 19.88 |
| Grade A quality | 78.76 | 59.72 | 24.72 | 4.20 |
| Payment within 2 weeks | 16.79 | 8.56 | 25.11 | 5.20 |
| Payment after 2 weeks | 72.66 | 57.62 | 35.51 | 5.51 |
| Farmer + spouse insurance | 45.05 | 9.90 | 53.60 | 4.58 |
| Family funeral insurance | -12.32 | 1.36 | 49.50 | 6.11 |
| Crop insurance | 21.43 | 6.99 | 23.95 | 4.77 |
| Farm inputs | 80.36 | 17.37 | 29.32 | 12.86 |
| Number of observations | 505 | | 512 | |

**Source:** IFPRI Farmer choice experiments (2019).

Cotton and tea farmers require a premium of about MWK51/kg and MWK26/kg respectively to accept contracts with delivery at buyer's collection point. The required premiums increase when farmers must deliver to buyer's premises, which are often distant from the farm gate. Group marketing is therefore common among farmers to reduce the transportation costs. Regarding quality, cotton and tea farmers require premiums of MWK79/kg and MWK25/kg to contract for grade A products. This is high but understandable because grades are not standardized across buyers and farmers often have no influence in the grading process. For payments, cotton and tea farmers require a premium of 6 percent (17/300) and 20 percent (25/120), respectively to accept contracts with delayed payments of up to two weeks. These premiums increase when payment is delayed by more than two weeks.

For additional services provided under contract arrangements, cotton and tea farmers require a premium of 15 percent and 45 percent, respectively to accept contracts with group funeral insurance for the farmer and spouse. This is plausible given that farmers incur costs, albeit lower than if they were to insure themselves individually. Cotton farmers require a premium of 7 percent and tea farmers 19 percent to accept contracts that provide crop insurance. For farm inputs, cotton farmers require a premium of about 27 percent while tea farmers require a premium of 24 percent to accept input providing contracts.

### b. Findings on companies' preferences

Both cotton and tea companies preferred contracts, which allow them to improve quality and balance risks between farmers and themselves. In a competitive marketing environment for cotton and tea, companies were open to offer contracts, which provide insurance of inputs farmers. They were also willing to offer competitive prices to ward off competition and prevent side-selling by contracted farmers.

The most prioritized support by companies was farm inputs provision on credit to boost farmers' production and yields. Interestingly, while companies preferred to buy top grade products, they were flexible in their quality requirements given their experience with smallholders. Companies stated that smallholders had challenges in supplying grade A products because of poor post-harvest handling practices and limited funds to purchase inputs. Hence, companies were willing to purchase lower grades conditional on minimal or no insurance or input provision to farmers under contracts. This was mainly driven by the widespread lack of standardized grading mechanism among competitors and side-selling by farmers to vendors and competitors.

Companies also preferred delayed payments to farmers, which reduced their financing costs and provided time to inspect the quality of supplies at the factory. Some farmers include foreign materials in the consignments to add weight or mix quality within the consignments. Thus, delaying payments helps companies guard against such losses.

### c. Similarities and differences in preferences

The findings of the study show several similarities in contract preferences of small farmers and companies. Both farmers and companies prefer contract arrangements to open marketing.

In terms of pricing, farmers preferred higher prices and most companies were also willing to offer higher prices to ward off competition.

Farm gate collection especially for tea improves quality, since companies have better transportation and handling capacities than farmers.

Both farmers and companies also preferred to sell and buy quality products that fetched higher prices. For this reason, companies were open to providing farm inputs on credit to assist farmers in timely input acquisition to boost the volume and quality of their production.

Farmers also liked contracts with funeral or insurance cover and companies were flexible to incorporate such benefits into their contracts.

An important point of divergence between farmers and companies was on delayed payments. Farmers generally preferred spot payments whereas companies clearly preferred delayed payments

On delivery point, most farmers preferred to deliver either to buyers' collection points or buyers' premises (factory) whereas companies preferred to buy at the farm gate to mitigate side-selling by farmers and weak supervision by field officers.

## 4. CONCLUSIONS AND POLICY IMPLICATIONS

The key conclusions and policy implications from this study are:

1. Farmers generally prefer contracts to no contracts and favor contracts that offer higher prices with immediate payment.

2. Farmers prefer contracts, which cushion against farm-level risks by providing access to inputs or insurance. Farm inputs provision is especially important to farmers given the market imperfections that impede timely access to farm inputs.

3. Companies are open to contracting small farmers, subject to certain provisos to cushion them against contract default and losses. Companies wish for a shared information platform to guide their selection of farmers into the schemes, and for farmers to rate and recommend companies. Stronger contract (legal) enforcement mechanisms and information sharing platforms are important to promote contract farming.

4. Both farmers and companies prefer to sell and buy quality products. However, companies were pessimistic about farmers' ability to produce top products while farmers were distrustful of company grading systems. Standardized grading systems that will build trust between farmers and companies need to be developed.

5. Companies prefer delayed payments under contracts while farmers prefer spot payments. To retain farmers in the contract schemes and minimize side-selling, advance cash payments to farmers need to be introduced. Contract enforcement mechanisms also have to be strengthened to cushion companies against losses from side-selling.

6. Designing industry-wide contract templates requires incorporating some of the critical attributes identified by this study, and then customizing them to individual schemes.

## 5. RESOURCES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