

Very Drafty: Comments Welcome

Small Farmer Participation in Contract Farming

Matthew Warning
University of Puget Sound

Nigel Key
Economic Research Service, US Department of Agriculture

Wendy Soo Hoo
University of Washington

1. Introduction

Neoliberal reforms have brought state disengagement in rural areas of developing countries. Contract farming has been proposed as one avenue for private firms to take over the roles previously served by the state in the provision of information, inputs and credit (World Bank, 2001, p. 32). While a vigorous debate has ensued over whether contract farming will benefit farmers or lead to their exploitation by trans-national corporations (e.g., Dirven, 1996, Glover, 1989, Glover and Kusterer, 1990; Grosh, 1994, Little and Watts, 1994; Porter and Phillips-Howard, 1997; Schetjman, 1996; Warning and Key, 2002), less attention has been given to whether contract farming will even reach the small farmers who are the targets of poverty reduction programs. The evidence thus far suggests the vast majority of contract farming schemes exclude small farmers (Singh, 2000).

In this paper, we explore the reasons behind the general exclusion of small farmers from contract farming and examine several cases in which firms small farmers have participated – successfully or unsuccessfully - in contract farming schemes. We try to identify the features of the successful schemes that led to positive “social performance” with an eye towards informing policy development.

2. The Causes of Exclusion

Contract farming is the vertical coordination between growers of an agricultural product and buyers or processors of that product. Contracts typically provide the grower with production inputs, credit, and extension services as well as a guaranteed sale price in return for market obligations on the methods of production, the quantity that must be delivered, and the quality of the product.

While small farmers may self-select out of contract farming schemes, more typically the contracting firms choose to work with larger farmers because of lower associated transactions costs. Firms face a variety of fixed, per-grower transactions costs including screening applicants, negotiating the contracts, providing information on required production methods and standards, delivering inputs, monitoring grower behavior, and enforcing contract terms. A firm thus minimizes these fixed transactions costs in the production of a given quantity of product by choosing fewer growers, each with greater production.

There may be advantages for the firm of working with smaller farmers, however, as poorly functioning markets for things such as credit, insurance and labor may disproportionately affect small farmers and make them more likely to accept contracts that larger farmers would find unfavorable. For example, smaller farmers generally will have a higher shadow value of credit and insurance because of the weak development of these markets and the small farmer's relatively poor asset position. They would thus find the insurance (the guaranteed price for the product is essentially a futures contract) and credit components of the contracts particularly appealing and would be willing to accept a lower product price as a result. Conversely, small farmers will often have a lower shadow value for some of the inputs they provide, particularly labor. Small farmers are more likely to rely on family labor, and the relatively low monitoring costs for family labor - and the low opportunity cost that may be associated with some forms of family labor as a result of legal or cultural proscriptions on labor market participation - may result in a lower shadow value of labor for small farmers. This gives the same result that small farmers would be more likely to accept contract terms that are more favorable to the firm.

We thus have the somewhat perverse result that poor market development should result in greater participation of small farmers. This does not mean, however, that better market development would be associated with lower welfare for small farmers. In fact, we would expect that the opposite would be true: as market development eases constraints, small farmers would have access to more favorable opportunities and would be less willing to pay a premium for what the contracts offer. The small farmer's relative marginality might be an

asset to the firm, but not to the farmer him/herself. (One could also imagine how the development of markets for information might benefit both the firm and the small farmer. As credit histories, harvest data and the like become more readily (cheaply) available, firms would find it less costly to work with small farmers.)

Firms can take advantage of the differential shadow values of small and large farmers through the use of differentiated contracts. For example, they might offer a credit-providing contract with a lower price for the final product as well as a contract with no credit that pays a higher price. The key question will be whether the additional costs of offering the differentiated contracts exceeds the additional benefits the firms gains.

3. Examples of Contract Farming Schemes that Incorporate Small Farmers

The four case studies that follow are examples of contract farming programs that incorporated small farmers in their operation. The successes and failures of these programs help illustrate the general principles described above.

3.1 Frozen Vegetables in Mexico (Runsten and Key, 1996; Key and Runsten, 1999)

In 1967, the U.S. firm, Birdseye, created a frozen vegetable industry in Mexico based on contract farming. In the 1980s, the industry was one of the most dynamic sectors of Mexican agriculture with an annual growth rate of 34 percent. A number of U.S. multinationals – Green Giant, Campbells and Stokely – as well as Mexican firms, are involved in the industry.

Contracting with Smaller Growers by Necessity

Initially, the U.S. firms chose to contract exclusively with larger growers because of the greater transactions costs associated with the small growers.

Not only did their [the smaller growers] numbers increase administrative costs, but they needed more services from the firm. For example: they needed more extension assistance; communication was costly as they often has no phones; they had to borrow or rent more specialized machinery (such as roto-tillers or high-pressure sprayers); they wanted to borrow operating capital in addition to receiving crop inputs; they made more numerous deliveries of smaller volume; they tried to get the firms to loan them money for tractors and other machinery; and they required more monitoring for pesticide violations. The director said they did not want to be an investment bank, did not want to be the *patron*. (Runsten and Key, p. 29)

Nevertheless, over time a number of firms found it in their interest to contract with smaller growers as well as large growers. In 1983, when Green Giant built a plant in the town of Irapuato, they contracted with both poorer *ejidatarios* (members of the traditional semi-communal villages or *ejidos*) and larger growers. They did this for two reasons. First, the firm encountered difficulties finding enough growers to produce the amount of vegetables they needed. Second, they feared that the larger growers, being few in number, might collectively bargain to bid up the prices paid to them for their product. However, in 1987, when the pool of available large growers increased because of a change in agricultural policy that reduced the profitability of grain cultivation, the firm reduced its dealings with the *ejidatarios* to reduce its transactions costs.

Campbells contracted with *ejidatarios* in the Valle de Santiago for the production of small, pickling cucumbers. They chose to work with *ejidatarios* because these growers had better

access to the large amounts of labor required for the crop, a result of the *ejidatarios'* control of family labor and their lower transactions costs for screening and monitoring non-household labor from their communities. During the boom years of the 1980s, Campbells extended this program to other crops as well. In all cases, it appears that this choice did not demonstrate a preference for the *ejidatarios*, but rather a lack of alternatives. When a bust followed the boom years, Campbells abandoned frozen vegetable production in Mexico altogether.

For similar reasons, Birdseye contracted with *ejidatarios* in Aguascalientes in the 1980s. Cost considerations - both transactions cost and the costs of constructing new plants - led the firm to eventually abandon these growers and contract with larger growers in the northern area of the state.

The examples of Green Giant in Irapuato, Campbells in the Valle de Santiago, and Birdseye in Aguascalientes suggest that firms were willing to contract with smaller growers only when other alternatives were not available: weak local development of the markets for the product and labor the firms needed left the firms with the choice of contracting with *ejidatarios* or contracting with no one. In the boom years of the 1980s this was justified: the high price received for the product was sufficient to cover the additional transactions costs associated with contracting with smaller growers. However, when market conditions were less favorable, this was no longer true and the firms reduced or abandoned their dealings with the *ejidatarios*.

Differentiated Contracts

In Guanajuato, Campbells tried another production strategy. It offered seven different contracts that allowed the growers to self-select. In the case of broccoli, the contracts ranged from one providing “complete services (including all operating capital, use of specialized machinery, seedlings, inputs, regular technical assistance, and some risk-sharing in the event of crop loss) that had a base price of 6.5 cents per pound of broccoli” to purchases on the spot market at the plant door for 13.5 cents a pound. (Runsten and Key, p. 32)

In contrast with Campbells, the other firms in the region only offered two contracts – one with some services and one without. With the narrow range of contracts, the firms were unable to recover the additional transactions costs associated with the smaller growers because they were paying them *too high* of a price for their product. Rather than adopt Campbells’s approach of more differentiated contracts, these firms put pressure on Campbells to bring its prices in line with theirs. In the end, Campbells was unable to pay no-service growers a high enough price or full-service growers a low enough price to offer the respective groups an adequate return and at the same time recover the differential costs of dealing with each group and they switched to a single contract that effectively excluded small growers.

Successful Contracting with Smallholders.

Frigozados La Huerta is a family-owned frozen vegetable firm located just north of the city of Aguascalientes. While La Huerta relies on its own vertically integrated production for much of the vegetables it processes, it also successfully contracts with 10 large producers and 70 *ejidatarios*, providing the latter with services including credit, seedlings, chemicals, fertilizer and extension. La Huerta's success in working with the *ejidatarios* appears to lie in a number of actions it has taken to reduce its direct and indirect costs and in local circumstances that make the *ejidatarios* particularly well suited to the task.

First, many of the smaller growers or their children work for the firm in other capacities. This reduces the asymmetric information between the firm and potential growers and thereby significantly reduces screening costs to the firm. In addition, the employment of family members by the firm results in implicitly interlinked labor-product transactions lowering contract enforcement costs: if a grower reneges on his or her contractual obligations, the firm might sanction the employee family member.

Second, the firm has reduced the costs of services requiring sites visits by limiting the number and location of *ejidatarios* and choosing only those whose farms lie along the main highway. This makes it possible for the firm's agronomist to visit all the farms once a week. In addition, the growers themselves are required to pick up the seedlings and fertilizer from the firm and so must absorb the associated fixed costs of these visits.

The *ejidatarios* find the La Huerta contracts appealing for a number of reasons. First, the *ejidatarios* have lower labor costs than other growers. The region is very heavily impacted by outmigration of young men to the United States. This results in a critical shortage of the individuals who generally make up the bulk of the labor pool. Not only are the *ejidatarios* able to access household labor for which markets are missing, but they also have lower transactions costs (e.g., screening, monitoring, and enforcement costs) for non-household *ejido* labor because of their social proximity to potential laborers.

Second, the *ejidatarios* have lower rental costs for land. It is nominally illegal to rent land in the area, and while *ejidatarios* will rent (via a sharecropping arrangement) to other *ejidatarios*, they view it as too risky to rent to anyone from outside the *ejido*. As a consequence, the firm and the other growers had to compete for the limited amount of non-*ejido* land in the area.

Finally, according to the La Huerta's own estimates, the smaller growers obtained significantly higher crop yields than the firm. La Huerta attributed this to the smaller size of the *ejidatarios'* plots and the resultant ability to catch disease and pest problems sooner, as well as the labor monitoring issues mentioned above.

3.2 Processing Tomatoes in Mexico (Runsten and Key, 1996)

The processing tomato industry developed in the 1960s in the Sinaloa and Sonora regions of Mexico in response to excess supply in the fresh tomato market. Large, Mexican and

U.S. multinational agro-processors - including Green Giant, Del Monte, Heinz, and Campbells Soup –contract with growers in the region to obtain the product they require for their plants.

While, like in the case of frozen vegetables, tomato-processing firms originally contracted with lower-transactions-costs large growers, many later switched to contracting with the poorer *ejidal* growers. As a lucrative market for fresh tomatoes developed, firms found it increasingly difficult to enforce contracts they had with larger growers: when prices were high, growers would renege on their contractual agreements and divert their product to the fresh market, leaving the firms with substantial unused processing capacity. The relatively weak and cumbersome legal system in the area left the firms with little recourse other than to deny growers future contracts.

At some point, the transactions costs of enforcement apparently became high enough to outweigh the various fixed transactions costs associated with smaller growers, and firms began to contract with the latter group. In this case, it was the high transactions costs faced by *ejidal* producers themselves that made them more attractive to the firms. First, the *ejidal* growers found it more costly to access the fresh tomato market and so were less likely to divert their product to these markets. Second, *ejidal* growers obtained credit through the scheme and had few alternative sources of credit; the denial of future contracts would represent a very real penalty to them. Thus, the firm was able to take advantage of the

ejidal growers' high shadow value of credit to reduce contract enforcement costs. In this way, contracting with the poorer growers became advantageous for the firms.

3.3 Confectionery Peanuts in Senegal (Warning and Key, 2002)

Peanuts have been a mainstay of Senegal's economy since the 19th century. The majority of the peanut production is processed into oil and exported to European markets. Since the 1960s Senegal has also produced more lucrative "confectionery" peanuts that are eaten whole rather than processed into oil. The private firm NOVASEN produces confectionery peanuts through contracts with 32,000, providing them credit, seeds, fertilizer, agro-chemicals and extension services. The growers' returns from the scheme are quite high and, in a normal year (normal in terms of rainfall and pest problems), 98 to 100 percent of growers are fully compliant with the contract and repay their entire loan.

An econometric analysis of survey data on participants and non-participants in the scheme revealed that wealth and farm size were not significant determinants of participation, i.e., smaller, poorer farmers were as likely to participate as larger, better-off farmers.

This is attributed primarily to NOVASEN's use of local intermediaries to screen potential growers, monitor production techniques, and enforce repayment. The intermediaries are members of the villages they serve and are typically growers themselves. Information flows freely in these rural communities and long association provides community members with intimate knowledge of their peers. Screening is therefore essentially costless for a village intermediary. In addition, the intermediary is able to mobilize social sanction to penalize

growers who attempt to renege on their contract - particularly since the village may be cut off from the scheme if default becomes significant – and so the cost of enforcing contracts are significantly reduced.

3.4 Fair Trade Coffee in Mexico

Coffee is the second largest exporter earner for developing countries and one of the top five globally traded commodities. Worldwide, 35 million people grow coffee and 20 million of these are small farmers. With the breakdown of the International Coffee Agreement in 1989, Vietnam’s dramatic entrance into coffee markets in the 1990s, and ongoing rapid expansion of Brazil’s production, the global coffee market has become characterized by chronic oversupply. The result is a 30-year low in coffee prices on international commodity exchanges and, in many cases, farm-gate prices that are below production costs.

One response to this crisis is the “fair trade” movement in coffee. The underlying premise of the fair trade movement is that many consumers care about the social, economic and environmental conditions in which the goods they consume are produced, and that they will be willing to pay more for products that satisfy certain social and environmental criteria. The fair trade “social labeling” approach is analogous to the eco-labeling associated with products such as dolphin-safe tuna and certified wood. In the case of coffee, fair trade certification requires that the producers be paid a floor price sufficient to

meet basic needs, that they are organized in democratic cooperatives with open books, and that cooperative members all be small farmers with landholdings typically under five hectares.

Rainforest Trading Company Internacional (RTC) is a coffee exporter in the Mexican state of Oaxaca that exports high-quality *arabica* coffee to specialty roasters in the U. S. RTC's coffee is produced on contract by the 235 farm families that make up the Organización Productores de Café La Trinidad coffee cooperative. Through its non-profit arm, FomCafé, RTC trains growers in accounting methods and organic certification requirements, and guarantees them a floor price of \$1.26 per pound for their product. (The current market price is approximately \$0.50 per pound.) In return, the growers agree to sell their production exclusively to RTC.

RTC faces a large number of potential transactions costs in working with the La Trinidad cooperative, particularly as compared to working with the large plantations in the area. First, while the three villages that make up La Trinidad are located deep in the Sierra Madre del Sur, RTC is five hours away in Oaxaca city. Second, the cooperative members are very widely dispersed: while two of the villages are close to one another, the third is 25 kilometers away on mountain footpaths or six hours away on a circuitous bus route. In addition, even within a given village it can take as much as two hours to walk between the coffee plots of coop members.

RTC mitigates the potential transactions costs of working with such a large number of geographically dispersed members by delegating many tasks and to the cooperative and its sub-groupings at the village and the sub-village “community committee” levels. For example, when training growers in required practices for organic certification and monitoring adherence to organic standards, RTC, through FomCafé, works with representatives selected by the communities - “inspectors campesinos” – at all-cooperative workshops in one of the coop villages. These individuals are then responsible for extending their knowledge to the individual coop members.

Communication is another area where the potential transactions costs are much higher when working with the cooperative. Most plantation owners have phones while only one member of the cooperative can be readily reached by phone. RTC thus communicates with the coop members by a combination of landlines, cell phones and a coordinated system of messengers. The result can be substantial delays in passing of messages as well as devotion of a great deal of time and effort to organize a meeting of any significant number of coop members.

It is clear that RTC incurs substantial transactions costs from working with such a large number of growers rather than contracting with a smaller number of large plantations. Nevertheless, RTC is profitable company considered a model in the fair trade coffee world, and the producers are realizing unprecedented benefits from the arrangement. This is largely because the participation of small farmers has been turned into an *attribute* of the

product, one that consumers are willing to pay for. If the coffee were only judged on *product* standards – variety, acidity, etc. – then working with small growers would almost certainly be a losing proposition. However, since the *process* standard – small-farmer produced – is now attached to the product, the firm can bear the transactions costs of working with so many small growers. Consumers are in effect paying RTC to work with small farmers.

4. Conclusions

The preceding examples suggest that contract farming is not likely to play a significant role in improving the welfare of small farmers in developing countries; contracting with smaller growers generally involves high transactions costs and, under most circumstances, agro-industrial firms will prefer to contract with larger growers. However, weak institutional development may result in greater small farmer participation. In the case of the processing tomato industry, poor development of legal institutions allowed large growers to renege on their contractual obligations. Uneven development of the fresh tomato market and a lack of available alternatives in the credit market made smaller growers more dependable contractual partners. In the frozen vegetable industry, weak labor market institutions – restrictions on female participation and the lack of mechanisms (such as formal references and work histories) to reduce the costs of screening and monitoring workers – led firms to contract with smaller growers, essentially to serve as labor-market intermediaries.

In other ways, however, better institutional development may make smaller growers more desirable partners for firms. Many of the transactions costs that keep firms from contracting with smaller growers result from weak institutions. For example, if markets for information were better developed, growers might directly access important production information rather than relying on the firm for the high fixed costs of extension services.

Some of the barriers to the participation of smaller growers in contract-farming schemes may be reduced through changes in the institutional structure of contract farming itself. The NOVASEN example in Senegal illustrates how the use of village intermediaries can mobilize local information and social intuitions to effectively reduce transactions costs. The La Huerta example shows how linking transactions and limiting the geographical spread of small growers can make them desirable partners. Similarly, rather than interacting with individual cooperative member, RTC reduces its transactions cost by primarily working with their representatives. This transfers some of the burden of working with such a large group of growers from the firm to the growers themselves. If groups of small growers develop ways to internalize many of the associated transactions costs, they will be more appealing partners in contract farming schemes. Finally, rather than focusing exclusively on reducing transactions costs, firms might develop mechanisms to recover these costs with differentiated contracts.

Perhaps the most promising approach is illustrated with fair-trade coffee: by making “small-farmer grown” a product characteristic with an associated price, firms can protect their

bottom line while improving the social performance of contract farming schemes. Indeed, for this reason the World Bank, the Inter-American Development Bank, and the US Agency for International Development have become advocates of fair trade coffee (and the World Bank even serves it in its headquarters in Washington, D. C.). The expansion of fair trade into a variety of other commodities – tea, chocolate, bananas, mangoes, etc. – might thus offer real opportunities for many small farmers worldwide.

References

- Dirven, M. 1996. "Agroindustry and small-scale agriculture: a comparative synthesis of different experiences." Report LC/R.1663. Economic Commission for Latin America and the Caribbean, Chile.
- Glover, D. and Kusterer, K. 1990. *Small Farmers, Big Business: Contract Farming and Rural Development*. St. Martin's Press, New York.
- Glover, David J. 1989. "Special Issue on Contract Farming and Smallholder Outgrower Schemes in Eastern and Southern Africa." *Eastern Africa Economic Review*.
- Grosh, Barbara. 1994. "Contract Farming in Africa: An Application of the New Institutional Economics." *Journal of African Economies*, 3(2): 231-61.
- Key, Nigel and David Runsten. 1999. "Contract farming, smallholders, and rural Development in Latin America: The Organization of Agroprocessing Firms and the Scale of Outgrower Production," *World Development* 27 (2) (1999) pp. 381-401.
- Little, P. and Watts, M., eds. 1994. *Living Under Contract: Contract Farming and Agrarian Transformation in Sub-Saharan Africa*. Madison: University of Wisconsin Press.
- Porter, Gina and Kevin Phillips-Howard. 1997. "Comparing Contracts: An Evaluation of Contract Farming Schemes in Africa." *World Development*, 25(2): 227-238.
- Runsten, D. and N. Key. 1996. "Contract Farming in Developing Countries: Theoretical Aspects and Analysis of Some Mexican Case Studies." Report LC/L. 989. Economic Commission for Latin America and the Caribbean.
- Schejtman, A. 1996. "Agroindustry and small-scale agriculture: conceptual guidelines for a policy to encourage linkage between them." Report LC/R.1660, Economic Commission for Latin America and the Caribbean, Santiago, Chile.
- Singh, Sukhpal. 2000. "Theory and Practice of Contract Farming: A Review." *Journal of Social and Economic Development* v3, n2: 228-46.
- Warning, M. & Key, N. 2002. The Social Performance and Distributional Consequences of Contract Farming: An Equilibrium Analysis of the *Arachide de Bouche* Program in Senegal. *World Development*, 30(2), 255 - 263.
- World Bank. 2001. *World Development Report 2002: Building Institutions for Markets*. Washington, D.C.: The World Bank.