Corporate and Cooperative Solutions for the Agrarian Crisis in Developing Countries

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Abstract

This article discusses credit and marketing arrangements for small farmers in developing countries. The authors draw on the mixed experience with agricultural cooperatives in developing countries to present the design of a credit and marketing cooperative. The authors argue that in conjunction with other state policies, this arrangement works better for small farmers than other alternatives, in particular corporate ones.

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1. Introduction

One of the defining aspects of the current phase of globalization is the increased threat to the livelihoods of small farmers in developing countries. There are instances of this across the developing world: from 1998 until the present, thousands of small farmers have committed suicide in India (*Economic and Political Weekly* 2006); in Central America, in the wake of a fall in coffee prices in the late 1990s, the livelihoods of many small farmers have come under significant threat,[1] and the number of chronically undernourished people in sub-Saharan Africa, of whom small farmers form a major chunk, rose from 168 million

1. See World Bank (2005)—for example, in Nicaragua, the real per capita incomes fell by 38 percent in 1998–2001.

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to 194 million between 1990–1992 and 1997–1999 (Food and Agricultural Organization 2002: 1.3). Specific reasons for this crisis vary from one context to the other, but adverse trends in global markets and poorly organized credit and marketing institutions have been cited to be the main causes (Rao and Storm 2003; Rao and Vakulabharanam 2006). In this article, we take the trade policy as given and evaluate various credit and marketing alternatives to suggest one potential solution.

We focus on credit and marketing arrangements because farmers seem to have experienced serious difficulties in obtaining adequate and affordable credit, on one hand, and in effectively marketing their produce even at the prevailing market prices, on the other. Small farmers have become increasingly dependent on informal local moneylenders even as governments in developing economies influenced by neoliberal policies have cut down on institutional credit supplied through public banks in the name of improving efficiency of repayment and market discipline. Informal moneylenders charge high interest rates (e.g., in India, 24 to 60 percent per annum depending on the region). There are two main reasons why farmers have been unable to effectively market their produce. First, farmers are forced to sell their produce to market intermediaries (to whom they are also indebted), who charge a commission and do not pay the full market price.[2] Second, individual farmers have low bargaining power relative to moneylender-merchants.

Although smallholder agriculture has defied the expectations of many[3] and survived into the present century, it seems unlikely that it will endure the present crisis without appropriate policy support. Given the problems of smallholder agriculture, a question that has often been raised is whether it makes sense to retain agriculture in the smallholder form. We believe that smallholder agriculture itself is extremely valuable for the reasons stated below, although institutional changes need to be introduced. These reasons are (a) efficiency—small farms are more efficient than larger farms; (b) biogenetic diversity—evidence suggests that small farmers contribute significantly to biogenetic diversity; and (c) employment—smallholder agriculture is the source of employment for a large number of poor people in the absence of opportunities in other sectors (for references, see Motiram and Vakulabharanam 2006).

In light of the above, in the remaining part of the article, we discuss alternatives that are being proposed and compare these with a carefully designed credit-marketing cooperative. This cooperative is inspired by the work of Chayanov (1992), an early twentieth-century Russian agronomist. Section 2 discusses the proposed alternatives. Section 3 presents the cooperative. Section 4 compares it with the alternatives and concludes.

2. Some Proposed Credit and Marketing Arrangements for Small Farmers

2.1 Contract Farming

One arrangement that is prevalent in many developing countries (e.g., Kenya, Mexico, and Thailand) and that is being proposed in new contexts (for references, see Motiram and

2. In our fieldwork in South India, we found that the commission is 2 percent of the market value of a crop.

3. For example, Moore (1967) wrote that peasantry is "a class over whom the wave of progress is about to roll" (505).

Vakulabharanam 2006) is "contract farming." Usually, a contractor (an agribusiness[4] or a state-agribusiness partnership) provides inputs to farmers on credit, and in return, farmers agree to sell their crop at a fixed price that is agreed on. The contractor also specifies the amount of land that the contracted crop has to be planted in.[5] Contract farming is a supply chain management technique that ensures that firms receive raw materials in a reliable and timely fashion. It can also confer other advantages to them—for example, it provides access to farmers' family labor, which is not otherwise available to the firm; it reduces the need to acquire land and thereby incur expropriation risk; and it reduces the need to hire and monitor labor on firm-owned land (Grossman 1998: 1–6).

Contract farming can also confer advantages to farmers. Farmers are assured access to credit and a market for their crop, thereby avoiding intermediaries. In most cases, they can also get stable prices, which benefits them because they are risk averse (because they have limited opportunities to diversify risk). However, there are several disadvantages. Farmers lose control over crucial aspects of the production process (e.g., choice of inputs, land allotted to the contracted crop). Moreover, rigorous and subjective quality standards are imposed. These can be used by firms to renege on the contract (by rejecting output) when there is oversupply or if the crop can be obtained cheaply through other means (Grossman 1998: 7). Other incentive problems have also been found: farmers can use inputs meant for the contracted crop on other crops, and they can sell the crop to other buyers (Grossman 1998: 7). In Africa, it has been found that contract farming can adversely affect food security and intrafamily relationships (Little and Watts 1994).[6]

2.2 Microcredit

Another alternative that is being proposed is group-based microcredit. Although there is considerable variation in microcredit schemes, one (and the most well-known) prototype is due to the Grameen Bank of Bangladesh. In this scheme,

> the loan contract involves groups of customers, not individuals acting on their own. The groups form voluntarily, and while loans are made to individuals within groups, all members are expected to support others when difficulties arise. The groups consist of five borrowers each; loans go first to two members, then to another two, and then to the fifth member. As long as the loans are being repaid, the cycle of lending continues. But, according to the rules, if one member defaults and fellow group members do not pay off the debt, all in the group are denied subsequent loans. . . . Moreover, the five-member group is part of a "center" composed of eight groups. Repayments are made in public, that is, before the forty members of the center, in weekly installments. (Aghion and Morduch 2005: 12–3)

Microcredit has successfully provided credit to the poor, who cannot offer collateral and who are therefore cut off from formal lenders. Moreover, it appears to be viable: the repayment rates on these loans are very high, much higher than those on loans offered by state

4. Examples of agribusinesses that are involved in contract farming are Unilever, Pepsi Co, and Green Giant.

5. For empirical studies of contract farming, see the references in Grossman (1998).

6. Contracted crops are usually nonfood crops. In Africa, contract farming affected the balance of power within a household, as certain crops are grown only by men, whereas others are grown only by women.

banks (Aghion and Morduch 2005: 1). However, for our purposes, microcredit has serious limitations. First, given the above structure, which involves small payments at regular intervals, it is difficult to use credit for agricultural production or for long-gestation agricultural projects (Ramachandran and Swaminathan 2002). Second, it does not directly deal with marketing. More important, contrary to received wisdom, its benefits are still unclear. This is true even for poverty reduction and gender empowerment, two areas where it is supposed to have had a major impact (Ramachandran and Swaminathan 2002: 4). Moreover, because microcredit is usually implemented taking the existing economic relations as given, it is not surprising to find that the wealthy wield more power and benefit more (Ramachandran and Swaminathan 2002: 200–1).

3. Credit and Marketing Cooperatives

Compared to other alternatives, cooperatives have received little attention, especially in India, where the agrarian crisis has been quite acute. We believe that cooperatives in conjunction with appropriate policies can provide credit and marketing and also overcome the limitations of other alternatives. The discussion later builds on and extends the model that we developed in Motiram and Vakulabharanam (2006).

The cooperatives that we consider involve small farmers producing on their own plots of land but cooperating in procuring credit and in marketing their crops. In theory, such cooperatives have several advantages. First, farmers in cooperatives have higher bargaining power. Second, per capita transaction costs in obtaining loans are lower. Third, the cooperative has better access to information about its members as compared to "outsiders," such as a contractor or a moneylender.

Despite the previous advantages, experience with agricultural cooperatives has been mixed. Although they were highly successful in some contexts (e.g., Germany, Japan, South Korea, and Taiwan), they were moderately successful or failed in other contexts (e.g., Ireland, Cameroon, India, and Malawi). Literature suggests the following reasons for failures: rent seeking by larger landlords and influential people, who wielded more power within the cooperative (Thorner 1964); concern with providing low-interest credit, ignoring other ways of supporting farmers (Youngjohns 1983); inability to punish defaulters, given the preexisting cultural norms (Guinnane 1994); and problems inherent in smallholder agriculture in developing countries, which make lending to small farmers risky (e.g., dependence on rainfall, use of production credit for social or other purposes). There were also problems with design, management, and timing. In some countries (e.g., India; see Thorner 1964), cooperatives were introduced at a time when rural inequality was very high, whereas in other countries, they where introduced when there were strong competitors (e.g., Post Office Savings Banks in Ireland; see Guinnane 1994). Attempts were also made to transplant cooperatives from one context (where they were successful) to another, without paying attention to social and cultural specificities (Guinnane 1994; Youngjohns 1983).

We present later on a cooperative that takes into account both successes and failures of past attempts. To highlight one of the points made previously, one crucial reason why cooperatives failed in the past is that wealthier or more powerful groups wielded more power. There are two policies that can be adopted to address this issue. First, land reform

and/or other asset redistribution can significantly curtail the power of the wealthy. This can also make agriculture more productive, given the efficiency of small farms. Second, cooperatives can be formed including only small farmers. Either of these policies would result in cooperatives that are "homogenous" in terms of economic power.

Consider such a "homogenous" cooperative, with N identical, infinitely lived, risk-averse small farmers. To illustrate, we consider the case where there are two farmers ($N = 2$), although the results can be generalized. Each period, these farmers make requests for inputs from the cooperative. The cooperative pools these requests, borrows from a competitive source of credit (e.g., a bank), procures inputs, and gives each farmer the inputs that he or she requested. Farmers produce using these inputs, land, and labor and deliver the output to the cooperative. The cooperative sells the output on the market and gives each farmer his or her income (the value of the farmer's output after deducting the principal and interest on the loan). There can be three kinds of farmers: those who deliver their crops to the cooperative, those who do not deliver (i.e., defaulters), and those who cannot (e.g., because of crop loss). Defaulters sell their crop on the market and do not repay their loans. We assume that the bank can distinguish between these types of farmers.

If a farmer defaults, whereas the other does not, then the nondefaulter will pay an amount a, which is decided by the cooperative, in lieu of the loan of the defaulting farmer. This "joint liability" is a key aspect of the cooperative, which distinguishes it from non-cooperative arrangements. The defaulting farmer will face two kinds of punishments: (a) he or she will not get loans in the future; (b) because the nondefaulting farmer is liable for the loan of the defaulting farmer, he or she imposes social sanctions on the defaulting farmer (e.g., he or she does not cooperate with the defaulting farmer in other activities, he or she complains about the defaulting farmer to the village elders, resulting in loss of reputation) (for a discussion, see Besley and Coate 1995). The above formalizes the "sociological" or "repeated interaction" view of cooperatives, wherein society/social mechanisms constrain opportunistic behavior (Banerjee, Besley, and Guinnane 1993).

a is the cost that the nondefaulting farmer incurs as a result of default by the other farmer. As is realistic, we assume that the intensity of social sanctions that a nondefaulting farmer imposes is increasing in the cost that he or she incurs as a result of the behavior of the defaulting farmer. However, there are limits on these sanctions. In other words, if $C^s(a)$ denotes the cost of social sanctions for the defaulting farmer,

$$\frac{\partial C^s(a)}{\partial a} > 0 \text{ for } 0 \leq a < M, \frac{\partial C^s(a)}{\partial a} = 0 \text{ for a} \geq M, C^s(a) \in [0, M].$$

Here, M represents the maximum cost that sanctions can impose.

The objective of the cooperative is to maximize the lifetime expected benefit of each farmer under the cooperative by choosing the degree of joint liability (a). The choice of a affects the possibility of default through the social sanctions that are imposed on the defaulter. Note that a cannot be higher than the principal and interest on the loan taken by the defaulting farmer or the value of the output of the nondefaulting farmer. Increasing a beyond M does not serve any purpose, as it does not increase the cost of social sanctions. Hence, the cooperative's choice of a is:

$$a^* = \text{minimum } \{\text{principal and interest on the defaulter's loan, value of the nondefaulter's output, } M\} \quad (1)$$

The bank offers competitive interest rates and chooses the maximum that can be borrowed. This credit limit ensures that a farmer does not default—that is, it is a solution to:

> Expected Lifetime Benefit from not defaulting = Benefit from default for one period + Subjective Discount Factor of each farmer * Expected Lifetime Benefit from operating outside the cooperative – Cost of Social Sanctions (2)

If a farmer does not default, he or she gets a lifetime benefit from being under the cooperative. If he or she defaults, for one period, he or she gets the benefit of defaulting. However, he or she cannot borrow in the future (i.e., from next period, implying that he or she operates outside the cooperative) and also faces social sanctions (imposing costs $C^s(a^*)$). In equilibrium, farmers get competitive interest rates; the degree of joint liability and credit limit are given by equations (1) and (2), respectively, and no farmer defaults.

Note that because farmers get credit at competitive rates, this avoids problems associated with low-interest credit provision that we discussed previously. Also, because the cost of social sanctions can vary from one context to the other, the joint liability and credit limits can vary from one context to another. In other words, the structure of the cooperative depends on local/specific aspects of a context. This avoids a "one size fits all" approach that has characterized the design of cooperatives in the past.

In our proposed cooperative, we have not discussed the possibilities of savings or storage. Savings have been an integral part of successful cooperatives (e.g., South Korea). If farmers can save, then the cooperative can accumulate capital akin to a capitalist firm and lend to farmers for their needs. This can mitigate the impact of farmers using production credit for other purposes, a factor that has threatened the viability of cooperatives. If the cooperative accumulates savings and storage is possible, then it can store the crop to sell it when the prices are favorable. Farmers can meet their immediate needs by borrowing from the cooperative. Because farmers are risk averse, another policy that can benefit them is price/crop insurance, which provides stable prices and incomes.

4. Comparison and Conclusions

Comparing the welfare of a farmer under contract farming and the cooperative, we can see that unlike contract farming, under the cooperative, the farmer has complete control over production, including inputs and land allocated to various crops. Given this, the cooperative is likely to avoid the adverse impacts on food security and intrahousehold allocation that were found in the case of contract farming.

However, the contractor provides a certain price, whereas the cooperative does not (farmers get uncertain market prices). Fixed prices are preferable to farmers, as they are risk averse. But the credit offered under the cooperative can be higher than the same under contract farming, which cannot exploit joint liability. In other words, the equation analogous to (2) under contract farming lacks the cost of social sanctions, thereby leading to a lower credit limit. If the benefits of higher credit under the cooperative dominate those of a certain price under contract farming, then the former is better for small farmers. Providing crop insurance to farmers within the cooperative can not only help

exploit the benefits of joint liability but also reduce price and income risk, which would increase the attractiveness of the cooperative vis-à-vis contract farming.

Comparing group-based microcredit and the cooperative, we can see that both exploit joint liability, albeit in different ways.[7] However, apart from providing marketing, the cooperative and associated policies have the additional advantage of curtailing the exercise of asymmetric power by the wealthy. Moreover, given the absence of repayment at regular intervals, the cooperative can provide adequate credit for agricultural production and any long-term agricultural investment (e.g., technology adoption).

Overall, cooperatives deserve more consideration than they have received. As we have shown, properly designed cooperatives in conjunction with policies like land reform and crop insurance can do better than other alternatives that are being proposed.

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7. In microcredit, if one member does not repay the loan, the whole group does not get credit. In the cooperative, if a member defaults, the nondefaulting member pays an amount a in lieu of the defaulter. Only the defaulter does not receive credit in the future.

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