MONOPSONISTIC EXPLOITATION IN CONTRACT FARMING: ARTICULATING A STRATEGY FOR GROWER COOPERATION

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Abstract: Contract farming has been considered a new hope to instil dynamism in third world agriculture. However, there remains serious concern whether small peasants will be able to benefit from this system since buyers may often be a single large or at most, few large corporations, a typical case of monopsony. In this paper we question the basis of the fears that are often raised in the literature. A clear analytical approach to understanding the (economic) meaning of monopsony helps us articulate a strategy for grower cooperation that could effectively deal with monopsony power in contract farming systems. Copyright © 2007 John Wiley & Sons, Ltd.

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1 INTRODUCTION

In the global restructuring of agro-food systems, contract farming is seen as an essential link between corporate business and farmers. The advantages of contract farming have been widely discussed in the literature (Eaton and Shepherd, 2001; Rehber, 2000; Singh, 2002). However, there still remains concern as to whether a fair share of benefits will actually accrue to producers, in particular the small peasant in developing countries. The concern primarily emanates from the perceived monopsony power of corporate buyers, possibly large multinational enterprises, over smallholder peasant producers.

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A monopsonist is a single *buyer*, just as a monopolist is a single *seller*. Monopsony power arises because a monopsonist can affect price by varying the quantity purchased of the good. Such monopsonistic power can also arise when there is more than one buyer. This situation is called oligopsony. Typically there may be a few large buyers in an oligopsonistic market, where each has some degree of monposonistic power.

Unfortunately, most research, especially the policy oriented and comparative case studies approach[1] has, without adequate theoretical conceptualisation, reduced monopsony power and exploitation to a simple bargaining power problem. This has resulted in sweeping generalisations and alarmist outbursts with few meaningful suggestions on how to alleviate the problem, the most common being to provide alternative opportunities to peasants and/or form 'farmers' cooperatives' to strengthen their bargaining power in negotiating terms of contract. Such recommendations, as we will see, are inadequate to overcome the specific issue of monopsonistic exploitation of sellers.

It must be mentioned here that an empirical approach to monopsonistic and oligopsonistic power or exploitation can be found in the agricultural economics[2] literature; the focus here being on estimation of this power in (especially U.S.) agricultural markets like tobacco and beef (Schroeter, 1988; Raper and Love, 1999). Data limitations have hampered these US-market based studies and conclusions are far from definitive (Rogers and Sexton, 1994, Ward[3]). Such data related problems are likely to be greater in developing countries. This may account for the absence of empirical estimates of monopsony power in contract farming relationships in countries like India.

In this paper we remain within the policy oriented framework rather than attempting to empirically measure monopsonistic power in contract farming. However, with a clear definition and a more analytical study of monopsony, we are able to not only understand the nature of the problem but also suggest a constructive strategy to alleviate monopsonistic exploitation in contract farming.

Our analysis is based on our observations of a few contract farming experiences in India. We have described some of these experiences primarily to serve as a basis for analytical conceptualisation rather than as empirical data. The reader should also note that India is not a single crop economy like, for instance, Eastern Caribbean (Grossman, 1998) countries, which for historical and other reasons developed an almost complete dependence on the export of bananas. Obviously, in a country like India where large domestic markets exist for agricultural products, no single company can fully dominate the agricultural economy. We, therefore, require a more logical re-examination of monopsonistic exploitation than simply a bargaining problem between one buyer and many sellers. At the same time, even within India, it is difficult to generalise our analysis across regions and agricultural commodities; its relevance would have to be studied in specific contexts. However, this paper, by stressing the need to consider more rigorously the notion of monopsonistic exploitation in contract farming, will help policy-makers and practitioners, to approach this issue in a more beneficial and practical way and with a better and more coherent strategy to alleviate the problem.

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[1]One could also refer to this body of literature as the 'contract farming literature'. See also Baumann (2000) for a brief overview of the contract farming literature.

[2]Monopsony power in agricultural markets has been addressed in two distinct sets of literature, namely, the contract farming literature and the agricultural economics literature. The cross-references amongst these two sets of academic discourse are negligible, if any at all.

[3]No date mentioned on this paper.

2 MONOPSONY AS THE BASIS OF UNEQUAL BARGAINING POWER

In the contract farming literature, monopsony has been taken to be the basis for the relatively stronger *bargaining power* of buyers leading to the exploitation of sellers; a single (few) buyer(s) and many sellers characterise a monopsony (monposonistic) market. However, there being only a single buyer for contracted produce is a necessary but not sufficient condition for unequal bargaining power; the latter also requires that growers lack alternative opportunities so that they must depend on the monopsonist for their sustenance. Generally speaking, the literature seems to impute an exploitative relationship between buyer and seller because one party (the buyer) is able to settle terms of contract that are 'unfair' but accepted by the other party (the seller) because it has no other option. The unfairness is implied by the effects of unequal bargaining power: growers are exploited, manipulated and as some argue, even cheated, by the buyer through pricing of output or other non-price terms within or outside the contract. This intuitive articulation of monopsony and bargaining power pervades the literature, which we briefly review.

White (1997) understands contract farming as the institutionalisation of monopsony/ monopoly relations between farm and agribusiness and the ability of the latter to capture value added by the producer through price manipulation. Since two equal parties do not negotiate the contract, small farmers are 'potential prey for whatever social-political predators may be present in a particular national or local context' (p. 106).

In their study of contract farming in Africa, Porter and Phillips-Howard (1997) speak of the 'sufferings' of small farmers who produce on contract. Their analysis points an accusing finger at 'current asymmetries of power' (p. 227) whereby through a 'highly unequal power relationship . . . contract farmers are relegated to the status of hired hands' (p. 229). Companies resort to 'widespread manipulation of contracts' (p. 228) and farmers turn to self-exploitation through extended working hours and child labour.

Clapp (1988) in his strong critique of contract farming views the contract as a mystification of an unequal power relationship through which the company dominates the farmer. Contract farming is usually between a company, which is both a monopoly seller of its final product, and a monopsony buyer of inputs. This unequal power relationship leads to the exploitation, disguised proletarianisation, loss of autonomy and subordination of farmers.

Cautioning against the use of contract farming as a simple model for agricultural development, Glover (1987) argues that *market imperfections*[4] (most frequently monopsony), the overriding goal of profit maximisation and weak bargaining position of growers all contribute to serious problems for small contract farmers, including the possibility of manipulation and cheating by companies.

In an otherwise theoretically detailed study of vertical integration focusing on contract farming, Rehber (2000) too equates monopsony and bargaining power. He points out that, 'it is a fact that contracting is a negotiation between unequal, economically powerful agro-business and rather weaker farmers . . . if the integrator has gained monopsony position, he could abuse his position to violate contract provisions in his favour' (p. 13).

[4]To economists, a perfect market is where there are many firms and no single firm has any monopoly or monopsony power; in other words, each firm is a price-taker. Firms then cannot affect price by varying the quantity sold or purchased of the good. In such a situation, profit-maximising firms will choose a quantity that is automatically maximizes social welfare. When firms exercise monopoly or monopsony power, the market structure is 'imperfect' and the outcome, sub-optimal wherein social welfare is not maximized. This is an instance of 'market-failure' arising from an imperfect market structure wherein the market system is unable to allocate resources optimally.

Eaton and Shepherd's (2001) practical guide to contract farming also warns of sponsoring companies exploiting a monopoly position and therefore the need to protect farmers. They acknowledge that there exists potential for contract farming in promoting agricultural production and marketing, but believe that it is 'essentially an agreement between unequal parties: companies, government bodies or individual entrepreneurs on the one hand and economically weak farmers on the other' (p. 10).

To Baumann (2000), 'a market monopsony is an essential component of contract farming as it is the only way to ensure that companies can secure a return on their investment' (p. 24), making it a universal phenomenon in contract farming. At the same time, the crucial problem in contract farming for smallholders is the division of value added between themselves and the contractor; this takes place not on the basis of real value added but relative *strengths*; the latter remaining undefined, we infer that this strength arises from a monopsonistic market structure. The result of this unequal power is harsh on sellers: firms 'lock growers into production through exploiting gaps in the contract' (p. 15), 'contracts enforce monocropping' (p. 15), 'manipulations of contract relating to quality standard' (p. 16) and that weak bargaining position of growers make them vulnerable to 'manipulation by project authorities' (p. 25).

Like Baumann, Singh (2002) too considers monopsony 'as crucial for the viable functioning of the contracting firm, in terms of a reasonable return on investment...' (p. 187). In a study of contract farming in the Indian Punjab, he claims that contracting causes new static market asymmetries including monopsonistic exploitation of growers by processors. The reports from his fieldwork, however, seem contradictory: on the one hand 'a large number *of farmers*[5] (60 per cent) were happy' (p. 191) and on the other, 'contracts are biased against the farmer' (p. 181). Such contradictory findings remain unexplained.

Key and Runsten (1999) also make explicit reference to monopsony, which is defined as 'one or few processors resulting in market power for processors (monopsony)' (p. 391). To them 'the relative bargaining power of firms will be stronger when they are monopsonists in the processing market, when there are many disorganised producers and when the asset specificity is high for growers and low for firms' (p. 390). They further argue, 'firms with significant monopsonistic market power are in a stronger position to enforce contract terms...' (p. 390). Throughout their paper there is a concern for the unequal bargaining power of buyers and sellers arising from monopsonistic markets (one or few buyers) and 'may force them (*sellers*) to accept less favourable or 'exploitative' contract terms' (p. 381–382).

3 POLICY RECOMMENDATIONS TO CORRECT UNEQUAL BARGAINING POWER AND ALLEVIATE MONOPSONISTIC EXPLOITATION OF SELLERS

The contract farming research sees monopsony as the basis for unequal relative strengths in bargaining power of buyer and sellers; this has led to recommendations that can strengthen the position of growers at the negotiating table. As we have seen, it is the presence of a single buyer *plus* the lack of alternative opportunities that leads to exploitation: since the former cannot be easily altered, researchers have looked to the latter as a key factor to correct the low bargaining strength of farmers and alleviate their exploitation. We briefly

[5]Italics our own.

Table 1. Area under gherkin in different size of holding (*in acres*)

Total landholding[a]	No. of sample farmers	Total area of holding (1)	Area under gherkin (2)	Proportion of 2 to 1	Avg. area under gherkin per farmer
1 to 5	12	37	8.75	0.24	0.73
5 to 10	15	104	12.5	0.12	0.83
10 to 15	16	179	17.5	0.10	1.09
15 and above	8	157	11	0.07	1.38
Total	51	477	49.75	0.10	0.98

[a]Excluding upper limit.

look at some such arguments in the research and our observations from Indian contract farming experiences that question the generality of these claims.

Fearing that contract farming if advocated only where farmers have abundant alternatives may lead to exclusion of poor farmers, Glover (1987) nonetheless states that 'the availability of alternatives is one of the most important preconditions for a contract farming situation that benefits small farmers' (p. 446). Rehber (2000) also thinks that monopsony power is abused when 'alternative marketing opportunities are closed out and an overly integrated firm or sector may beat down the terms of contract' (p. 13). As we will see in greater depth later, in India, in many cases firms have been entering into contracts with farmers in crops that have a ready alternative outlet in spot markets like potato, tomato, chilli, cotton and seeds. Firms and farmers take this factor into account in the pricing structure of contracts that a prior cannot be considered 'unfair' or 'exploitative'.

Glover (1990) cautions that farmers must be encouraged to maintain other sources of income and firms must not restrict farmers from growing alternative crops. To Glover and Kusterer (1990), alternative production possibilities can ensure a greater share of benefits being passed on to small farmers. Contract farming should then only be advocated as a second or third crop.

Table 1 is based on a random survey conducted by the authors in the year 2001 of 51 gherkin growers from about 20 villages in Dharwad district of Karnataka State in India. This example is illustrative[6] as a counter-example to the general notion that companies seek conditions suited to exploitation of farmers. In this case, we found that firms themselves insist that growers cultivate a small area under these crops to intensively monitor quality of output. Moreover, they do not allow use of the same plot of land for consecutive planting of the same crop so as to minimise pest attacks and use of chemical pesticides. It is neither true that the company favours a particular section of farmers nor does it attempt to make farmers depend on a single crop to strengthen their bargaining position. Their priority then is clearly not one to make farmers dependent on them.

Key and Runsten (1999) make an argument similar to that of Glover (1987); to them, alternative production and income possibilities strengthen the bargaining power of the farmer. Firms, they opine, favour smallholders who have limited production opportunities so that their bargaining power is relatively greater. We must question whether such

[6]This example is meant to be in the nature of a counter-example, rather than to be generalized across regions and/or products. Gherkins, as we are aware, is a highly labour-intensive crop, requiring careful attention of growers during its growing cycle.

Table 2. Pricing structure for gherkin in Bangalore and Dharwad districts in Karnataka, India

Grade	Bangalore district (Rupees/kg)	Dharwad district (Rupees/kg)
A	10.00	9.50
B	5.00	5.00
C	1.00	1.00

Note:
Grade A: >160 fruits/kg.
Grade B: 60–160 fruits/kg.
Grade C: <60 fruits/kg.

generalisations are possible to all contract farming. There are several factors which may actually influence bargaining power. For instance, a 'big farmer' cultivating on an extensive scale with greater investment in specific assets may make him more dependent on buyers than a small peasant cultivating intensively with low levels of specific investments. Another consideration favouring the choice of big farmers is transactions costs. In standard economic analysis, economic exchange is usually assumed to be costless. However, there are costs incurred while making an exchange. These are called transactions costs and include: search costs, the cost of acquiring information, bargaining costs and cost of enforcing contracts. Such transactions costs can influence our decisions to exchange goods and services. The consideration of transaction costs in dealing with small peasants that may induce firms to favour big farmers, like, for instance, in the Indian Punjab (Singh, 2002). If bargaining power were of overriding importance, economic factors like asset specificity and transactions cost would clearly not be relevant. In Table 1, we have seen that firms show no significant preference for small or large farmers. Such counter-examples illustrate that it is not simply a matter of gaining superior bargaining power that determines the actions of buyers.

Clapp (1988) argues that agribusiness firms are often frustrated by opportunism of farmers when alternative markets for their production exist, as was the case for Nestle and Carnation in Mexico. Firms then prefer to locate their activity in remote areas where there are no spot markets in the near vicinity (Nestle in Chontalpa and barley farming in Cusco) so that 'whatever price the buyer offers, is enough to induce the peasant to sign the contract' (p. 19). Here Clapp fails to see that there exists a tradeoff for firms with regard to costs and price. Firms may be able to negotiate a lower price in a remote area but then there are costs relating to assuring quality, productivity, extension services farming practices, availability of infrastructure and so on. In India, it is in the more agriculturally developed areas in relatively advanced states like Punjab, Gujarat, Karnataka and Tamil Nadu that firms have entered into contract cultivation. Moreover, as can be seen in Table 2, there is no significant difference in pricing (of gherkins) in two districts, Bangalore and Dharwad in Karnataka State, even though Bangalore is internationally connected by air and Dharwad, 300 km away from Bangalore, has no airport, domestic or international.

Provision of alternative possibilities to growers by itself is not a contentious recommendation. However, one must question who is to provide such alternative possibilities especially in countries 'that have liberalised marketing through the closing down of marketing boards' (Eaton and Shepherd, 2000, p. iii). In other words, is not contract farming being advocated to instil dynamism in the agricultural sector in a more liberalised economic environment since 'alternatives' are scarce? Moreover, if a

monopsonist keeps grower profits at a level just above their *reservation utility*[7] (Key and Runsten, 1999) then providing alternative opportunities makes advocating contract farming a rather superfluous exercise.

Another policy recommendation that has often been made in the literature is for collective bargaining through 'farmers' cooperatives'. Growers' organisations enhance the bargaining power of contract sellers in negotiating the terms of contract, which in essence is a bargaining game with an indeterminate outcome. Such organisations act as a countervailing force to the monopsonist (Rehber, 2000).

Singh (2002) specifically calls for 'bargaining cooperatives or other producer organisations' to negotiate equitable contracts (p. 192). He also sees the need for intervention by the state, NGO and community organisations to 'protect the farmer' (p. 192). For White (1997), smallholder cooperatives could be a solution to the unequal capturing of value added by monopsonistic buyers since in a cooperative profits would ultimately go to its members. Making the same case for collective bargaining, Key and Runsten (1999) argue that a 'growers' union that can monopolise product supply could potentially extract profits from firms' (p. 390).

Once again we are not arguing against collective action by sellers *per se*; our concern is more on the recommended strategy of these organisations. Collective action here is based on the rational choice behaviour of a group where individuals form a group with some underlying rules or norms to maximise their benefits. A mere confrontationist approach to increase procurement prices may not only put-off potential corporate buyers but may also not solve the problem of monopsonistic exploitation. Instead, overcoming monopsonistic exploitation requires *both*, negotiating a higher price *and simultaneously* assuring buyers a supply of contracted output. Unless the latter is specifically incorporated in the negotiating strategy of grower organisations, it is unlikely that the problem on hand can be solved satisfactorily.

We summarise the line of argument in the contract farming literature relating to monopsony.

SINGLE BUYER (MONOPSONY) AND LACK OF OPPORTUNITIES TO GROWERS ⟶	UNEQUAL BARGAINING POWER ⟶	LOW PRICE, MANIPULATION AND CHEATING BY FIRMS ⟶	PROVIDE ALTERNATIVE OPPORTUNITIES TO GROWERS AND COLLECTIVE BARGAINING AS COUNTERVAILING FORCE TO OBTAIN HIGHER PRICES AND CONTROL MONOPSONY POWER

4 DEFINING MONOPSONY POWER AND EXPLOITATION

Perhaps the best and most appropriate starting point for our analysis is Joan Robinson's classic on the Economics of Imperfect Competition (1972):

> It is commonly said that exploitation . . . arises from the unequal bargaining strength of employers and employed . . . Bargaining strength, as we shall find, is important in

[7]'Reservation utility' can be understood as the expected utility from profits the farmer believes he can get by putting his land to an alternative use, less search costs.

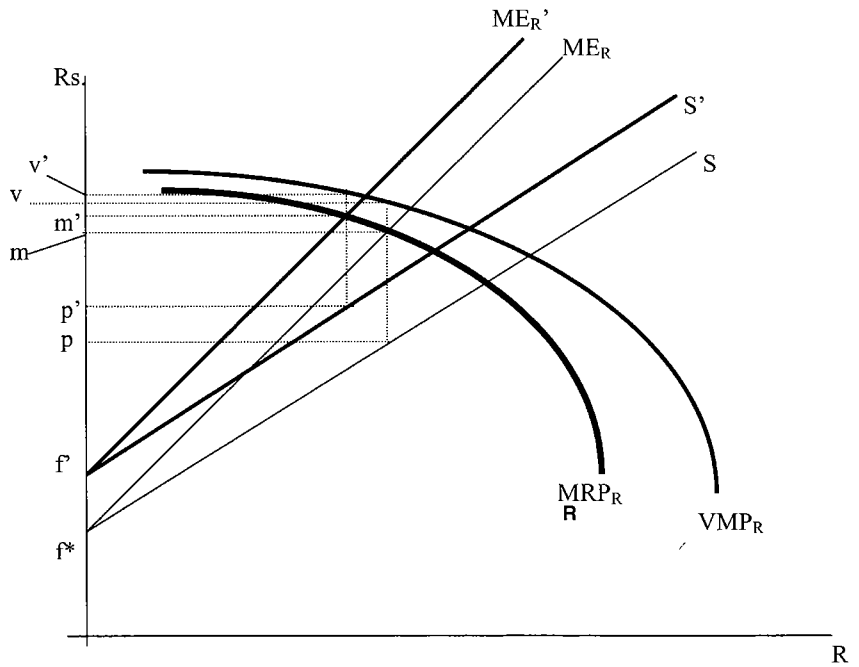

Figure 1. Alternative production possibilities do not eliminate monopsonistic and monopolistic exploitation, which changes from $E_S = (m - p)$ to $E_S' = (m' - p')$ and from $E_L = (v - m)$ to $E_L' = (v' - m')$ respectively

many ways, but the fundamental cause of exploitation will be the lack of perfect elasticity in the supply curve for labour or in the demand for commodities (p. 281).

In economic theory,[8] monopsonistic exploitation is defined as the difference between the price of a factor of production and its marginal revenue product (MRP) that arises from a less than perfectly elastic[9] supply curve for the factor of production. The price paid to growers depends on their supply curve. Being a monopsonist firm then means that this firm has to pay a higher price to the *marginal*[10] farmer to procure more of the contracted raw material, R (as in Figure 1). When it does so, i.e. it pays not only the marginal farmer a higher price, but has to pay all the farmers this price. Firms cannot differentiate between farmers and pay a uniform price to their suppliers. In the contract farming schemes studied by us, we did observe this situation where a uniform contract price (as in Table 2 above)

[8]We will not work through the economics of monopsonistic markets; it can be found in many standard texts (Ferguson, 1969; Robinson, 1972; Miller, 1978; Browning and Zupan, 1999; Carlton and Perloff, 1999). However, we will clarify some of the concepts used in our analysis for the non-economist.

[9]Under conditions of perfect competition, the demand/supply curves facing a firm are perfectly elastic, meaning that firms are 'price-takers', or in other words, they cannot influence price by varying quantity sold/bought in the market. The demand/supply curves are horizontal implying perfect elasticity. When the market structure is imperfect, i.e. under situations of monopoly or monopsony for instance, firms can influence price by varying quantity sold/bought. Consequently, the demand/supply curve will be downward/upward sloping implying 'less than perfect elasticity'.

[10]We mean 'marginal' in microeconomic terms, i.e. the last farmer with whom the firm negotiates. Note that marginal farmer does not mean a poor farmer.

across all farmers in a region.[11] It is this characteristic of monopsonistic markets that leads to a divergence between the supply curve (S) and the marginal expenditure curve (ME_R) and consequently, monopsonistic exploitation. The ME_R shows the additional cost to the firm of increasing its purchase of an input by one unit. The upward sloping supply curve faced by a monopsonist tells us that it must pay a higher price to buy additional quantities of an input. Moreover, this higher price must be paid not only for the last (additional) unit but all units that are purchased, i.e. from the first to the last unit. Therefore, the ME_R lies above the supply curve.

In Figure 1,[12] monopsonistic exploitation given S and ME_R is $E_S = (m - p)$ and monopolistic exploitation is $E_L = (v - m)$.[13] The buyer does not determine the supply curve for R. Rather, it takes this as a given and chooses a quantity at which it maximises profits, price for R being determined by the growers' supply curve. The argument that a monopsonist *sets price* because of stronger bargaining power is not theoretically justified.

5 BARGAINING POWER, PRICE AND MONOPSONISTIC EXPLOITATION IN CONTRACT FARMING

As we have seen, the literature has emphasised that where growers have alternative production possibilities their bargaining power will be strengthened. This strategy it is argued will bring higher prices to growers and eliminate monopsonistic exploitation.

If the effect of better alternatives is to raise the supply curve of the input,[14] that is any given quantity will be forthcoming only at a higher price, then we can show that this need not eliminate monopsonistic exploitation. In Figure 1, better alternatives to farmers shifts the origin of their supply curve for R from f^* to f', the supply curve to S' and corresponding marginal expense curve to ME_R'. This, however, does not eliminate monopsonistic exploitation, which remains at $E_s' = (m' - p')$.[15] When bargaining power is equated to monopsony in a simplistic way, there arises confusion between price received by growers and monopsonistic exploitation. A higher price received by growers or shifting the supply curve for R upwards does not eliminate monopsonistic exploitation.

6 PRODUCT ASYMMETRY, BARGAINING POWER AND MONOPSONISTIC EXPLOITATION

The brief analysis above illustrates the shortcoming in the literature both with respect to the notion of monopsonistic exploitation as well as in the policy recommendation (providing alternative opportunities to growers) to alleviate the problem. We have also discussed in

[11]If the monopsonist could differentiate between growers, each grower would be paid a different price. The monopsonist would derive maximum producer surplus and exploitation will be greater, see Miller (1978).

[12]For our analysis, we have assumed that the buyer is a monopolist in the 'output' market and a monopsonist in the 'input' (raw material) market. We have further assumed that the marginal product curve for R is downward sloping throughout. These assumptions are not restrictive and the analysis with respect to monopsonistic exploitation holds good even if these assumptions are relaxed to situations where the buyer sells output in a competitive market and/or marginal product curve for R is horizontal.

[13]For the present we ignore curves S' and ME_R' in Figure 1.

[14]See also Figure 2 below.

[15]This is true whether the agribusiness firm sells its output in a competitive market or it is a monopolist and whether MP_R is constant or decreasing throughout.

Section 2 how the literature views bargaining power in contract farming relationships in favour of buyers. In this section we question this simplistic view and study its implications for monopsonistic exploitation of growers.

In the Indian context, we often find that growers have access to active spot markets for a variety of agricultural products, and sometimes even for the crop under contract? Can we then assume that growers have less bargaining power than the buyer? If not, can monopsonistic exploitation still be present?

Consider, for example, crops like potato, tomato and chilli, where a number of agribusiness firms have entered into contracts with farmers in India. Here we find, what we term as, *product asymmetry*. The product R is not the same to the farmer and the firm. Often, the firm requires a specific variety of R whereas the farmer could sell R in a domestic or local market. For instance, in the case of chilli contract cultivation in Northern Karnataka the firm requires a specific variety of chilli for which special seeds must be used and output must contain a moisture level of 10 per cent. The firm may not be able to buy this variety of chilli in domestic markets for various reasons including a need for 'traceability' of produce related to food safety requirements and a need for distinct varieties of chilli in the right quality and at the right time (Eaton and Shepherd, 2001). However, the special variety of chilli grown under contract is saleable by the grower in the domestic spot market. 'Chilli' then does not mean the same thing to the grower and the firm. In such a situation there is no alternative to have a pricing structure that relates contract price to market price.

The role of product asymmetry in making a firm's position difficult is also discussed[16] in Runsten and Key (1996) for tomato cultivation Mexico. Unlike in California where tomatoes for processing markets could not be sold in fresh markets because the latter were machined-harvested, in Mexico no such market segmentation was possible. All tomatoes were handpicked and could therefore be sold in either market. Tomatoes for the processing industry could not be bought at a lower price than what prevailed in fresh markets. Similar problems have been reported in the case of contract farming in cucumber, red pepper and aubergines in Croatia (Eaton and Shepherd, 2001). Warning and Key (2002) also mention that in Senegal, the buyer of confectionary peanuts, NOVASEN, does not have significant monopsonistic power over farmers since the latter could always find a market for these peanuts in the local oil-peanut market. NOVASEN must buy confectionary peanuts from farmers, but for farmers these are just 'peanuts', which could be sold in the local market.

In Table 3 we summarise the effect of product asymmetry on pricing and on 'bargaining power' and 'monopsonistic exploitation' of growers. In the case where product asymmetry exists in favour of the seller, any contract with farmers will be meaningless unless firms relate contracted price to the market price *plus* some additional incentive to the farmer to undertake cultivation of the specific chilli variety. The latter could be reflected through offer of a minimum price to reduce risk, credit facilities, seed, pesticides and fertiliser provision on favourable terms, extension services, cash payment on delivery, etc. In our example of Karnataka chilli contract farming, the firm offers a floor price of Rs 25 per kilogram of output but market price[17] if this is greater than floor price. Chilli contract farming has also been successful in the state of Punjab (Singh, 2002) due to product asymmetry. A similar pricing structure is also found in cotton contract farming in Tamil Nadu state (Gurumurthy, 2002). In Senegal, Warning and Key (2002) inform that the

[16]Though not referred to as 'product asymmetry'.

[17]Market price was Rs 34 and, therefore, growers were paid this price. However, there are added benefits from contract farming like minimum price, credit, extension services, etc.

Table 3. A summary of product asymmetry, pricing, bargaining power and monopsonistic exploitation in contract farming

Nature of product asymmetry	Pricing	Bargaining power	Monopsonistic exploitation	Cases
Farmer can sell in spot market and/or to firm. Firm can buy from farmer only	Minimum price = Market price *plus* some incentive to enter contract	Farmer is at advantage	Exists	Chilli, cotton
Farmer can sell in spot market and/or firm. Firm can buy from spot market and/or farmer	Contract farming unlikely to succeed. Opportunistic behaviour likely by either party	Depends on contract price and spot market price	—	Tea, coffee, potato, tomato
Farmer can sell only to firm. Firm can buy only from farmer. Firm sells processed output in domestic market	Fixed price contract	Minimum price acceptable to farmers will depend on price of best alternative. Asset specificity of buyers will influence their dependence on farmers	Exists	Barley, organic soya
Farmer can sell only to firm. Domestic firm can buy only from farmer. Domestic firm sells to international buyer. No domestic market for output International buyer has access to many global sources	Fixed price contract	Domestic firm likely to be 'squeezed' by international buyer. Asset specificity of domestic buyer likely to be high. High dependence on assured supply of input from farmers	Exists	Gherkin, marigold, seaweed, egg products, Oleoresins

price of contracted peanuts is 74 FCFA/kg whereas the market price is 70 FCFA/kg. If such incentives are not provided, contracts could fall through due to opportunistic behavior of farmers.[18]

Under product asymmetry then farmers must be paid at least the competitive market price for the product. In Figure 2 the domestic market gives a competitive price for R as f^*. Figure 2 also shows the market for the specific (contract) variety of chilli. Here we may have a single buyer (monopsony) but origin of S must be equal to f^*. From here on we can revert to our earlier analysis; in particular, monopsonistic exploitation can still take place even though the farmers under contract must get a better deal than the generic chilli farmers (functioning in a competitive market). Bargaining power is surely in favour of the farmer but monopsonistic exploitation still takes place.

Where no product asymmetry exists, opportunistic behaviour on the part of firms or farmers depending on contract and market price will render contract farming quite

[18]This is especially true in most contract farming schemes in India where written contracts are rare and enforcement in courts of law not practical.

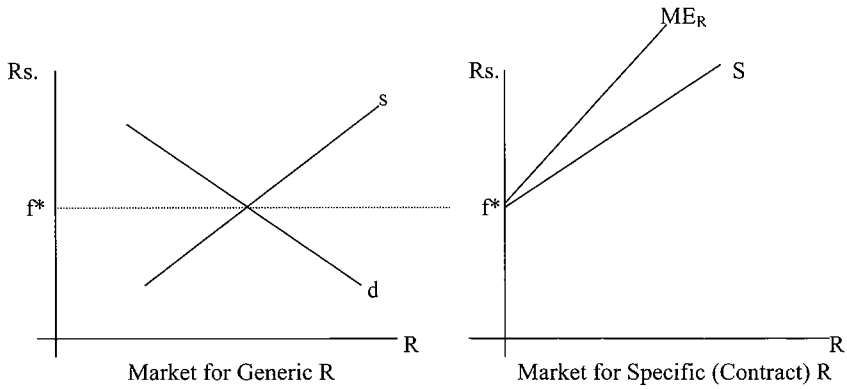

Figure 2. Market for generic R sets floor price for specific (contract) R

meaningless. This has often been the case with potato and tomato farming in India. Once again, Warning and Key (2002) give the example of melon cultivation in Senegal. Farmers were promised that their produce would be purchased at a pre-negotiated fixed price but when a glut in supply took place, prices in the spot markets fell, and the contracting firm never returned to purchase the melons.

Another situation described in Table 3 is where no active domestic spot markets exist for the contracted agriproduct, as in the case of barley in India. Here a fixed price contract (a predetermined price, not a floor price) is possible. Where domestic markets for the contracted product does not exist, the best alternative sets the minimum point f^* of S; however, the final price need not be 'just above' the minimum price but depends on position of VMP_R (or MRP_R) as well as S and ME_R. MRP is defined as the increase in total revenue due to the use of an additional unit of an input. It equals the marginal product of the input times the firm's marginal revenue. The Value of Marginal Product (VMP) is the marginal product of an input (i.e. the extra output resulting from an extra unit of the input) multiplied by the product's price.

As we can seen in Figure 1, merely shifting S and f^* upwards does not eliminate monopsonistic exploitation. Further, if f^* lies above the origin of the MRP_R (or VMP_R) curve, no contract farming would take place, so that the farmer is left with a net price of f^*. In such a situation too one cannot readily infer that bargaining power rests with the buyer; however, monopsonistic exploitation may exist.

Finally, in Table 3, we have the fourth possibility where the processing firm itself depends on a monopsonistic buyer, say, a global marketing company. This situation prevails in the case of gherkin, egg products and marigold. The domestic processing firm is 'squeezed' by its buyer and with large investment on plant and machinery, bargaining power does not seem in its favour. Even so monopsonistic exploitation of growers can still exist given the divergence of the supply curve and the ME_R.

7 ASSET SPECIFICITY AND BARGAINING POWER

Asset specificity or specialised factors of production (Miller, 1978) is also considered as an important factor influencing bargaining power and monopsonistic exploitation (Warning

and Key, 2002). With a greater degree of asset specificity the supply curve for R becomes steeper,[19] thereby increasing monopsonistic exploitation of growers.

However, one cannot simply assume that only growers invest in specific assets. As has been pointed firms too make investments in sophisticated processing plants requiring large capital outlays, and at the same time, often face globally competitive markets. For instance, in the case of gherkin cultivation in Karnataka there are approximately 16 processing plants in the State with investment in plant and machinery as well as sunk costs incurred in identifying and training growers in gherkin cultivation. Each unit has almost 5000 farmers in its purview. Transport, storage and other costs also prevent them from moving freely across regions. Once investments are made in a gherkin processing plant firms may in fact have fewer alternatives than growers.

Under such conditions one cannot easily assume that asset specificity shifts bargaining power in favour of firms and against growers. Moreover, it is important to distinguish between a 'reasonable' bargaining solution and a 'rational' one (Cooter and Ulen, 1997). In any voluntary agreement, each player must receive at least the 'threat value' (the benefit received if she does not enter into the agreement) or there is no advantage in cooperating – this is the rational solution. A reasonable solution, however, may be for each player to receive the threat value *plus* some significant share of the cooperative surplus. What takes place in contract farming is 'reasonable bargaining' to arrive at a mutually beneficial exchange and not mere exercise of bargaining power to reduce price to the threat value, f^*, i.e. the 'rational bargaining' solution. As pointed out by Carlton and Perloff (1999), exercise of power to reduce price to threat value may lead to a situation where there is no one left in the market to supply the product. Firms, especially agribusiness firms, are well aware of this problem of uncertain supplies; an important *raison d'etre* for firms entering into contracts in the first place.

At the same time, even though asset specificity for firms may be greater than for growers and the firm's bargaining power may be restricted, the firm will enter into contracts with growers only till $ME_R = MRP_R$. Whatever the equilibrium price, monopsonistic exploitation will continue to exist so long as the firm faces a less than perfectly elastic supply curve for R.

What then is the solution to the problem of monopsonistic exploitation in contract farming?

8 ELIMINATING MONOPSONISTIC EXPLOITATION IN CONTRACT FARMING

As we have seen the answer does not lie in addressing monopsonistic exploitation as primarily a 'bargaining power' problem; rather, it lies in removing imperfection in the supply of R curve, to make it perfectly elastic.

In Figure 3, where the firm is also a monopolist in the market for the processed output, initial equilibrium is at (p_0, R_0). With a supply curve p_1dS and marginal expense curve p_1deME_R, the new equilibrium outcome is (p_1, R_1). Monopsonistic exploitation is eliminated though monopolistic exploitation remains at dv.

[19]Monopsony power is reflected in the divergence between the supply curve and ME_R. The divergence increases when the supply curve is steeper. Monopsony power or the Buying Power Index $= 1/e_s$, where e_s is the elasticity of supply of R.

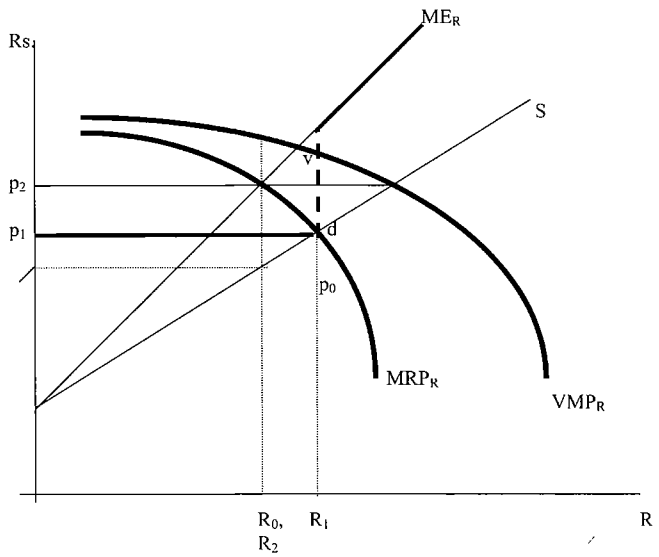

Figure 3. Collective bargaining eliminates monopsonistic, not monopolistic, exploitation

In labour markets, the alteration of the supply curve comes with the setting of a minimum wage, enforced by a trade union. As seen above, a similar recommendation to form farmers' cooperatives (to strengthen bargaining power) has been made in the contract farming literature. However, there are many specific problems that must be addressed when we speak of farmers' cooperatives or an 'association of farmers' (AoF):[20]

1. Formation of AoFs that include a set of heterogeneous and independent farmers.
2. The *nature* of negotiation between the buyer and AoF: implicitly the approach seems to be one where a union confronts the monopsonist with a 'take it or leave it' proposal. Such a confrontist approach may induce firms to shift location of their activities. Moreover, as we have seen, a mere increase in contracted price does not mean a lessening or elimination of monopsonistic exploitation.
3. Commitment to terms within the group: members in the AoF must adhere to the minimum price and not undercut their fellow members. A commitment to meet quantity and quality requirements of the contract is essential. This is unlikely to be legally enforceable on any individual farmer by the AoF—voluntary compliance is a preferred solution.

Given that an AoF is formed, we must address points 2 and 3 raised above; in fact, a clear answer to these points may aid formation of AoFs. Let us now elaborate on these points.

Point 2 entails negotiating a minimum price with the buyer. The AoF must assure firms of a minimum supply of OR_1 at a *negotiated* price, p_1 (Figure 3), to its members. The price p_1 is cannot be realised *a priori* but only through a process of trial and error and negotiation between buyer and the AoF. The price p_1 is also an equilibrium price; a price like p_2 (p_0) will mean excess supply (demand).

[20]We prefer the term AoF to cooperatives since the latter carries a specific connotation on the degree and nature of cooperation between farmers; for instance, voting rights, sharing of profits, etc. These are not relevant in the context of contract farming.

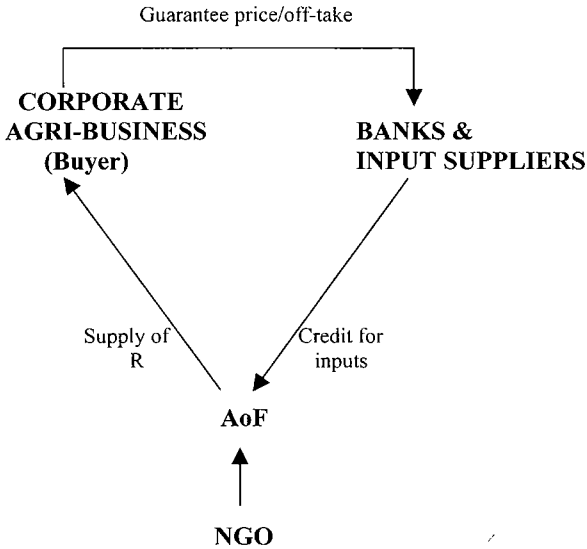

Figure 4. Proposed contract farming model integrating corporate business, banks, AoFs and NGOs

Regarding point 3, the negotiated price p_1 depends on the ability of the AoF to assure 'consistent, reliable supplies' (Little, 1999) to the buyer. Here the AoF could draw on the experience of self-help groups (SHGs). In India, SHGs have come to be widely accepted as an innovative institution in the microfinance arena, where the *group guarantee mechanism* by assuring repayment, has made formal finance[21] accessible to the poor (Karmakar, 1999). The AoF would perform a similar task and be responsible to monitor the performance of its members and exert adequate group pressure to honour contracts so that firms are guaranteed of their supply of R. Firms will be willing to pay a higher price for the input just as SHGs obtain credit at reasonable rates by guaranteeing repayment.

In addition to such activity, the AoF will also have to ensure that members do not supply R at a price less than p_1. However, unlike microfinance SHGs of poor landless women, one cannot assume that peer pressure by itself can prevent undercutting and/or assuring supply by individual growers. Therefore, linking the AoF-based contract farming model with credit and other input supplies may be essential to maintain group solidarity. The AoF would have to take up the dual responsibility of guaranteeing loan repayments as well as ensuring supply of produce to the firm at the negotiated price. The firm in-turn guarantees off-take and price of the farmers' output, thereby making it attractive for banks to lend to the AoF. Figure 4 below illustrates the proposed scheme to link stakeholders.

BASIX,[22] a microfinance bank in India, has visualised an integrated model of banks (or microfinance institutions), AoF and corporate agriculture processing and marketing firms. There are also some indications of involvement of AoFs in contract farming schemes, for example, in cotton contract farming in Coimbatore district in Tamil Nadu (Chandrasekhar, 2002; Gurumurthy, 2002).

[21]Formal institutions make credit available at reasonable rates compared to informal institutions like the village moneylender.

[22]No date mentioned on webpage.

Though Eaton and Shepherd (2001) categorically state that 'the decision to use the contract farming modality must be a commercial one . . . not a development model to be tried by aid donors, governments or non-governmental organisations (NGOs) . . .' (p. 3), we do believe that NGOs do have a role to play:

- In the process of forming AoFs and linking them to banks and agribusiness firms (input suppliers and agro-processors).
- Formulating a clear strategy for AoFs to negotiate terms of contract on the lines suggested above.

The recommended strategy can eliminate deadweight loss to society from monopsonistic exploitation by securing a higher price to growers and increasing quantity of sales.

9 CONCLUSION

The contract farming literature has reduced monopsony power to a simple bargaining strength problem without addressing the core issue of a less than perfectly elastic supply curve. This has led to suggesting provision of alternative opportunities to growers as it will ensure strengthening of their bargaining power and obtaining higher prices for their produce. Based on a theoretical analysis of monopsony, we have shown that provision of alternative production possibilities does not eliminate monopsonistic exploitation. Instead, to control or eliminate monopsonistic exploitation, there is a need for institutional intervention, an AoF, to *assure* firms of a supply of produce for which they will be willing to pay a higher minimum price. This AoF-based strategy does not confront buyers with a demand for higher prices, which could render contract farming a non-starter in many areas where growers could benefit from it. Rather, they secure higher prices for member-growers by coordinating production, assuring firms a supply of raw material and procuring inputs (including credit) at attractive rates. This strategy will not only control monopsonistic exploitation but also increase societal welfare.

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