

Contract Farming for Agricultural Development and Diversification in Punjab: Problems and Prospects

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The farm sector in Punjab is plagued with declining farm incomes, monoculture of wheat and paddy, decline of ground water table, ecological degradation, and over capitalization. But, agriculture is the primary engine of growth without which Punjab will neither be able to accelerate growth nor achieve fiscal sustainability. Therefore, diversification within agriculture is intended to stabilise incomes and employment in the farming sector. This diversification can either be in terms of variety of crops grown or technologies used for the same set of crops. Contract farming is being promoted to achieve this diversification by promoting high value crops, lowering costs of production with better extension and raising returns by assured market and higher prices for the produce. This paper examines the role of contract farming in helping agricultural diversification and development in Punjab. It examines briefly its nature, growth and status including the performance of different models of contract farming based on empirical studies. The paper concludes by drawing lessons for agribusiness policy for contract farming to play an effective role in agricultural development in the state.

Introduction

The entry of large businesses into agribusiness sector has led to a new arrangement in raw material production and procurement in India, known as contract farming. This is happening as good quality, timely, and cost effective raw material is a pre-requisite for any successful agribusiness firm, whether operating in the domestic or the international market. Given the Land Ceiling Act in India, agribusiness firms cannot own and cultivate land for their raw material requirements. Also, most of the times, it is not a viable option (Singh, 1998). Therefore, the only option for them to procure raw materials is to have contractual arrangements with the primary producers which are also suggested as an alternative to corporate farming or liberalisation of land ceiling laws (Vyas, 2001). Contract farming refers to the production and supply of agricultural produce under advance contracts, the essence of such contracts being a commitment to provide an agricultural commodity of a type, at a time and a price, and in the quantity required by a known buyer. It basically involves four things - pre-agreed price, quality, quantity or acreage (minimum/maximum) and time. The contracts could be of three types; (i) procurement contracts under which only sale and purchase conditions are specified; (ii) partial contracts wherein only some of the inputs are supplied by the contracting firm and produce is bought at pre-agreed prices; and (iii) total contracts under which the contracting firm supplies and manages all the inputs and the farmer becomes just a supplier of land and labor. The

relevance and importance of each type varies across products and over time, and these are not mutually exclusive (Key and Runsten, 1999).

A contract reduces price risk for a farmer and can be terminated at reasonably short notice. Also, contractual arrangements are attractive to farmers seeking capital and new technology and other inputs and production services as generally new crops with modern technology or existing crops with new seeds and other inputs are promoted under such arrangements. On the other hand, food processors can minimize their overhead costs per unit of production by operating their plants at or near fully capacity by obtaining assured, stable and quality raw material supplies from farms under contracts. For a processor, contracts are more flexible in the face of market uncertainty, make smaller demands on scarce capital resources and impose less of an additional burden on management. They also overcome land constraint for corporate firms, reduce production risk, and are politically more acceptable than corporate farming (Eaton and Shepherd, 2001). Contracting can give a positive image to the company as it may be perceived as progressive especially if it works with small farmers, and can help it get access to state or donor funds (Baumann, 2000).

At more macro economic level, contracting can help to remove market imperfections in produce, capital, land and labor markets, remove intermediaries and therefore make upstream value chain (agricultural marketing) more efficient, and can help in better co-ordination of local production activities as it often involves initial investment in processing, extension etc. (Grosh, 1994; Gill, 2004). From an institutional economics perspective, contract farming could be looked upon as a way of creating positive externalities, created better by private sector instead of the state, which can result in overall rural development. Contracting can lead to more employment opportunities for farm and non-farm labour as generally it deals with labour intensive high value crops requiring labour for harvesting, grading, and packaging at the farm level, and in processing, transportation, packaging and marketing at the post-farm stage, reducing the seasonality of employment and giving higher wages through competition in the labour market. There can also be larger developmental effects from the improvement in infrastructure and other amenities due to contracting and general expansion of demand due to higher incomes under contracting (Haque and Birthal, 1998).

Given the failure of government mechanisms for support to agriculture, there is wide support for contract farming under the Structural Adjustment Programme (SAP) and liberalisation. Given the enthusiastic promotion of this mechanism by the international development agencies like the World Bank, the United States Agency for International Development (USAID), the International Finance Corporation (IFC) and the Commonwealth Development Corporation (CDC) (Little and Watts, 1994), it is inevitable that new forms of contracts will be tried by the agribusiness firms. This is the only way to ensure good quality and timely availability of raw material for processing, especially when, in India, captive farming is not allowed at present under the Land Ceilings Act. Besides, captive farming means putting large resources in raw material production which may not be the best economic option for many agribusiness firms in India, especially small firms, or may not be a viable practice any more in competitive markets like in the case of tea plantations in South India (Hayami and Damodaran, 2004).

The main problems of the farm sector in Punjab include declining growth rate of farm production, declining capacity of the agricultural sector to absorb labour because the employment elasticity with respect to output in agriculture has come down to 0.2 per cent, monoculture of wheat and paddy which account for more than 76 per cent of gross cropped area of the state, decline of ground water table, ecological degradation and over capitalization of the farm sector. But, agriculture is the primary engine of growth without which Punjab will neither be able to accelerate growth nor achieve fiscal sustainability. Therefore, the economic condition of a vast majority of farmers, especially marginal and small, cannot be improved unless there are changes in the cropping pattern and in the technology of production. Diversification within agriculture is intended to stabilise incomes and employment in the farming sector. This diversification can either be in terms of variety of crops grown or technologies used for the same set of crops. Contract farming is being promoted to achieve this diversification by promoting high value crops, lowering costs of production with better extension and raising returns by assured market and higher prices for the produce.

This paper examines the role of contract farming in helping agricultural diversification and development in Punjab. It examines briefly its nature, growth and status including evaluating the performance of different models of contract farming in Punjab based on empirical studies so far. The paper concludes by drawing lessons for agribusiness policy for it to play an effective role in agricultural development in the state.

Corporate-led Contract Farming

Contract farming in Punjab which was in place by the early 1990s with the entry of Pepsi Foods - an MNC (Pepsico) subsidiary - into tomato and chillies, and a local firm - Nijjer Agro Foods Ltd. - into tomato, got further rooted with the selling off of its tomato facility by Pepsi to Hindustan Lever Limited (HLL) - a Unilever multinational subsidiary which processes one tenth of world tomato production and is the largest food processing and marketing company in India) in 1995, and Pepsi's entry into potato contracting by the late 1990s. The HLL plant in Punjab (set up by Pepsi) was the biggest tomato paste plant in Asia with a capacity to process 650 tonnes of tomatoes a day. HLL worked with about 400 contract growers during the late 1990s. Pepsi which had been working with hundreds of tomato and chilly farmers until 1997, later worked with only about a few dozen in chillies and potatoes each. Its potato contracts accounted for only about 10 per cent of its total procurement. Nijjer Agro Foods' tomato paste plant capacity is half that of HLL plant's and the company worked with about 400 contract tomato farmers in the late 1990s. Contract farming in Punjab by the corporate sector has so far been more of a case of buy back, input supply (figure 1) and also credit supply or linkage as depicted in figure 2.

There have been some studies of the contract farming system in Punjab recently. Besides describing the contract system and operations of the companies, most of them look at the economics of the contract farming system in specific crops, compared with that of the non-contract situation and/or competing traditional crops

of the region, e.g. in tomato (Bhalla and Singh, 1996; Haque, 1999; Rangi and Sidhu, 2000; Singh, 2000; Dileep et. al., 2002), potato (Satish, 2003; Singh, 2000), mustard (Singh 2000). It is found that contract production gave much higher (almost three times) gross returns compared with that from the traditional crops of wheat, paddy and potato in case of tomato (Bhalla and Singh, 1996; Rangi and Sidhu, 2000) due to higher yield and assured price under contracts. The studies of tomato contract production in Punjab and Haryana (Haque, 1999; Dileep et. al., 2002) also found the net returns from these crops under contracts being much higher than those under non-contract situations though production cost was also higher under contract system (Dileep et. al, 2002). Contract growers in Punjab and Haryana faced many problems like undue quality cut on produce and high rejections by firms, delayed deliveries at the factory, delayed payments, low price, and pest attack on the crop (Bhalla and Singh, 1996; Singh, 2000; Rangi and Sidhu, 2000; and Dileep et. al., 2002; Satish, 2003). But, more recently, HLL's tomato processing plant in Punjab (bought from Pepsi in 1995) has been shut down for the last one year. Also, most of the firms work mostly with large and medium farmers and contracts are biased against the farmers (Bhalla and Singh, 1996; Singh 2000; Satish, 2003). Breach of contracts by farmers as well as firms has been reported (Bhalla and Singh, 1996; Singh 2000). In Punjab, Pepsi and Nijjer were found to be under-performing in contracts in terms of not having written contracts and farmers not renewing contracts especially in case of the former. The situation in terms of performance of contracting was pathetic in case of some local units involved in aromatic oil, herb, and spice processing in Hoshiarpur and Patiala who neither provided any technical assistance to growers, nor procured crops at pre-agreed prices (Satish, 2003).

Fig. 1: Bi-partite Contract Farming Model

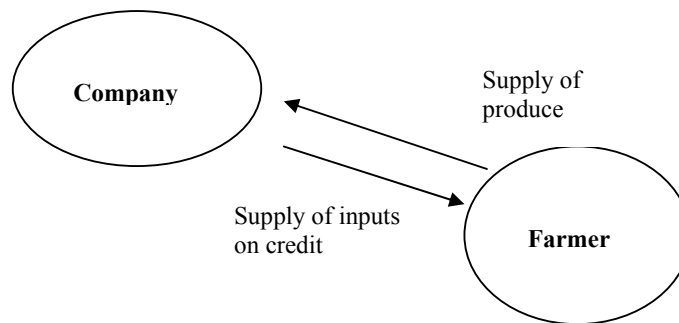
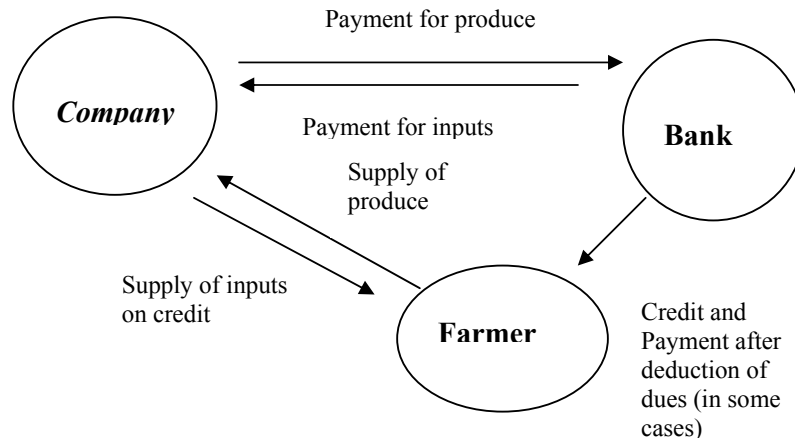


Fig. 2: Tri-partite Contract Farming Model

Though many studies recommend contract farming promotion for Punjab agriculture (Rangi and Sidhu, 2000a; Sidhu, 2002), it is likely to solve the state's farming crisis only partially. Also, as a short-term measure, although it is leading to higher incomes, given that it involves higher chemical input intensity and water use (Singh, 2000), these remain the root cause of the sustainability crisis in the state's farming sector. Of the four firms operating in the state, two are multinational subsidiaries and, are therefore, globally oriented in their operations. Both are expanding their operations in food sector as part of their global strategies, and therefore are likely to stay in this business but may not restrict themselves to Punjab alone as it is already evident in HLL's move into Haryana and Rajasthan for its procurement. Similarly, Pepsi has given up tomato and chillies contract farming by and large. But, it has moved into basmati paddy, groundnut and garlic contract farming since 1998 (Prabhu, 2004). On the other hand, the locally emerged and locally oriented firms (Nijjer and Markfed) are small in their operations and find it difficult to grow on their own. Nijjer has already become a subcontractor to Nestle so far as contract production of tomato and processing of tomato paste is concerned. It procures from farmers, processes the tomatoes into paste and supplies in bulk to Nestle. Thus, it is operating as an intermediary between the farmers and the MNC. By doing so, it not only avoids the risk of farm production by contracting but also the market risk by selling in bulk to Nestle. Thus, practically, it is operating as a subsidiary of a MNC and, therefore, all the benefits for the local economy are being reduced to that extent. Further, there are issues of monopsony of the processing/marketing firm and its disinterest in more backward areas where farmers need such interventions, besides the more crucial question of sharing of value added surplus in processing and marketing which are at the centre of whether contract farming can contribute to more broad based agricultural development (Gill, 2004).

Contracting is also promoting reverse tenancy in the state as companies prefer larger farmers for contracting (Singh, 2000). Though reverse tenancy seems to be a win-win situation for both the small farmers leasing out and the large farmers leasing in as they maximize their incomes, this practice may alienate the marginal and small farmers from land altogether without offering them alternative sources of employment (Haque, 2000).

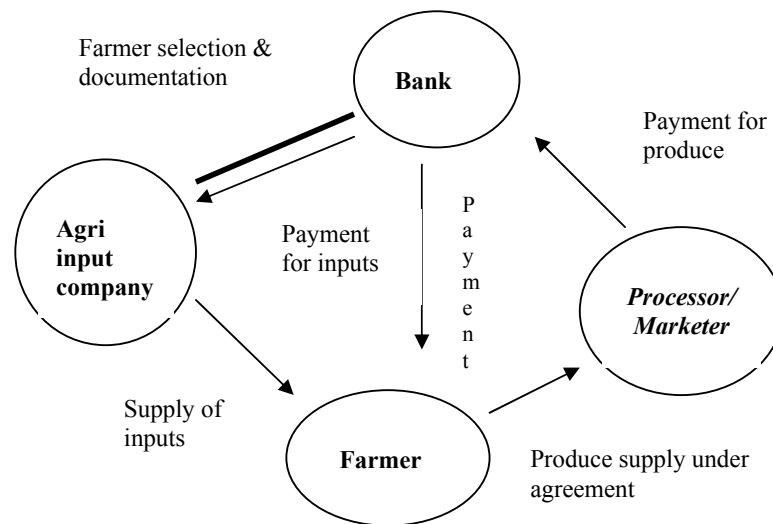
The Consortium Approach

Recently, several agribusiness companies have made forays into the farm service sector which is being perceived as private sector participation in agricultural development. They are facilitators of contract farming systems most of the time. One such model is that of Mahindra ShubhLabh Services Limited (MSSL) which has an agreement with the Government of Punjab to facilitate contract farming of maize and basmati paddy. It planned to increase farmer profitability by 35-60 per cent by better and cost effective input supply and better value realization from farm produce by finding better markets. For this, it tried to leverage its tractor brand, strong customer base, dealer network and first mover advantage. Its product portfolio includes seeds, pesticides, fertilizers, irrigation systems, equipment rentals, post harvest services, information provision, and finance. For this purpose, various partners i.e. retailers, agri input companies, logistics companies, farm equipment companies, food companies, and agri finance corporations and banks, besides agricultural universities and research centers are networked into the project. The company offers extension services to farmers for a fee but ensures a certain level of yield. If farmers get lower than the assured level of yield, then they need not pay the fee. This experiment of the company in Madurai in Tamilnadu where farmers had to pay Rs.500 per acre achieved assured yield in 75 per cent of the cases in the first year, which increased to 80 percent in the second year, despite drought conditions. This ensures that the yield risks are low, and therefore, insurance scheme can be implemented (Naik, 2002). The MSSL plays the role of an integrated farming solutions provider. Other crops planned under the company's operations in the state are mustard, castor, pulses and vegetables. In basmati paddy contract farming, Escorts Ltd, LT Overseas Ltd., United Rice Land Pvt. Ltd., and Pepsi have MoUs with the PAIC (Grewal, 2003). LT Overseas Ltd. in collaboration with Rallis India Ltd. and ICICI Bank, have launched a programme for contract farming 30,000 acres of basmati paddy in Punjab initially for three years with a possible extension for further two years, under the aegis of the PAIC (Table 1).

The facilitator companies provide all the inputs, technical support and finance to the registered growers for a specific crop and facilitate the sale of produce at reasonable price. The companies follow a consortium approach (Figure 3). They tie up with banks like ICICI and SBI and with buyers of produce like HLL, Picric and Cargill. For example, the Rallis' system is run through a network of 10 Rallis Kissan Kendras (RKKs) across the country. A farmer can take advantage of a loan of upto Rs.6,500 per acre for basmati cultivation in Panipat for a 6-month period at a rate of interest of 13 per cent per annum. In addition, every member farmer has accident insurance coverage of Rs.1 lakh. The RKK has trained farmers to harvest basmati when

moisture levels are at 16 per cent as harvesting at lower levels can lead to more broken basmati grains during milling. The farmers are paid prevailing market prices. The Rallis and the ICICI deduct the cost of inputs and the loan amount from the proceeds before paying the farmer on the spot (Karunakaran, 2002). The bank has been able to get 10 per cent loan guarantee from the buying company in case of default by the company. Encouraged by this project, the company has set up new projects in fruits at Bangalore and vegetables at Nasik. The ICICI collaborated with the company as they benefited from the rural penetration of Rallis, and the HLL gained as it could get good quality wheat for processing it into wheat flour (Subramaniam, 2002).

Fig.3: The Quad-partite Contract Farming Model



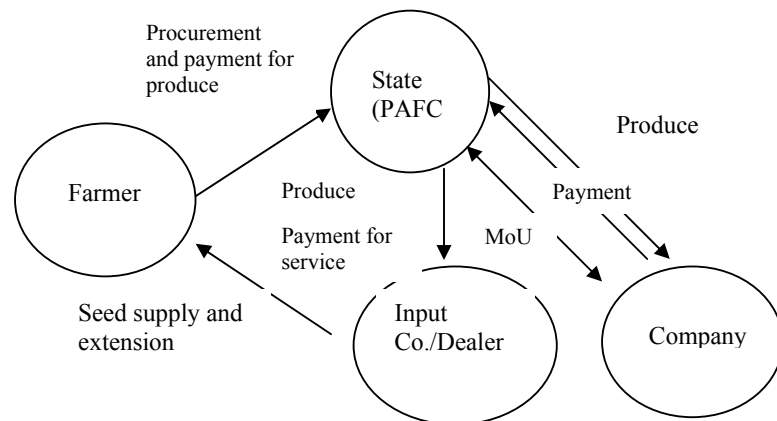
The ICICI Bank lays down pre-set criteria for farmer selection and informs input companies. The input companies/bank officials do the documentation. Input companies supply the inputs and send detailed accounts to the Bank, which debits farmer account, and credits the input company account. At the time of harvest, the processing/marketing company collects produce and pays the bank its dues and rest to the farmer. The bank credits the farmer's account and the account is closed. A MoU among the bank, the input company and the output company is signed for the above arrangement. An undertaking from the farmer to supply produce under this scheme to the output company is taken by the bank. The ICICI Bank prefers four sector projects as against tri-partite projects as it considers inputs service very crucial for cost reduction and quality enhancement leading to better value realization for the farmer. The bank provided a total of Rs.180 crore as loans for

various contract farming projects during last year (2002-2003). The bank-funded project has a ‘credit plus’ approach, which involves not only credit and input supply but also extension service and marketing support. The bank is now funding projects in basmati rice, chillies, potato and cotton, besides wheat. It aims at raising prices of agriculture produce and lowering cost to make farming viable for the growers (Sabarinath, 2003). The Rallis’ joint venture project with the government of Madhya Pradesh, in which ICICI is involved, started three years ago with 250 acres of wheat with 50 farmers. Now, there are 15,000 acres under wheat cultivation.

State-led Contract Farming

The contract farming programme launched by the Punjab government in October 2002 (for the *rabi* season) was aimed at taking away 10 lakh hectares from the wheat-paddy rotation over the next five years as part of the crop adjustment programme (read diversification) as recommended by the second (2002) Johl Committee (Table 2). In 2002, a total of 29,000 acres had been proposed by the PAFC under the program, implemented jointly by the Department of Agriculture, Punjab Agro Industries Corporation (PAIC through its subsidiary Punjab Agro Foodgrains Corporation (PAFC)) and private companies. The PAFC not only provided seeds purchased from reputed seed companies like Adventa India Limited and Pro-Agro Limited, and technical supervision and follow up on agronomic practices to the contract growers, but also promised to buy back the entire produce at pre-agreed prices through a tri-partite agreement involving PAFC, seed company through its dealer, and the farmer (Figure 4). The tri-partite agreement specifies the fixed price and bonus to be paid by the PAF to farmer for the produce (bonus only if the PAFC is able to sell the produce at a higher price), type and quantity of seed to be supplied by the seed company at a given price for given acreage, farmer’s responsibility of delivering the quality produce (produced by making use of recommended inputs bought from outlets prescribed by the PAFC) at a specified place, payment within two days after delivery and PAFC being the sole decider of weight of produce and the sole and only arbitrator in case of dishonouring of the contract by any of the parties. The contract is signed by the three parties in the presence of two witnesses for the farmer.

Fig.4: State-led Contract Farming System in Punjab (Tri-partite agreement among farmer, seed company/dealer and PAFC).

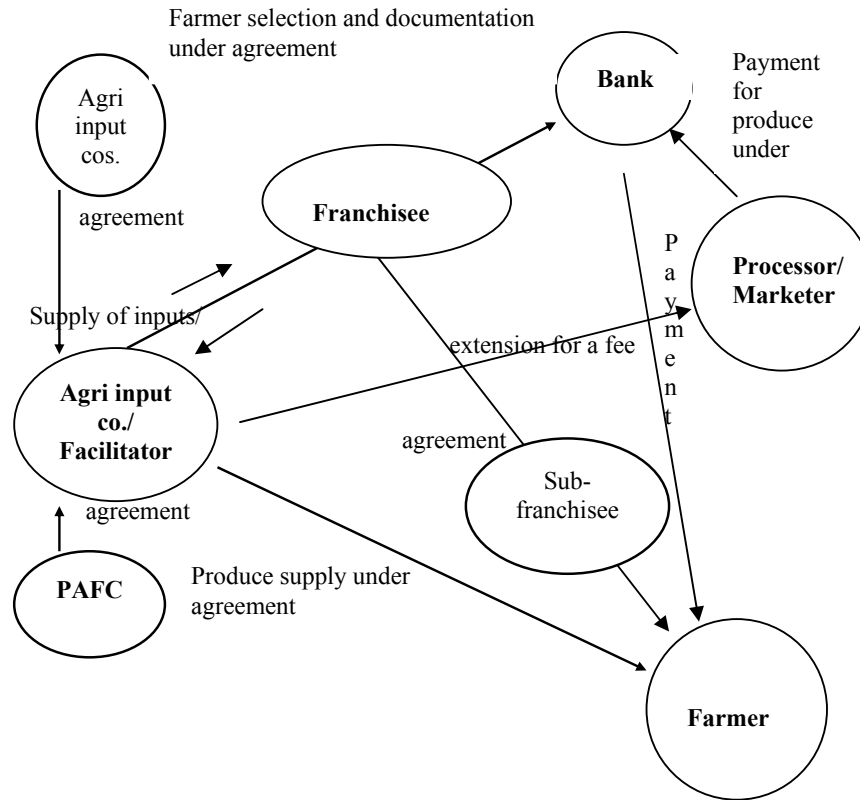


Towards the end of harvesting season for the contracted crops, the programme had run into rough weather. The contracted winter maize and hyola crops failed almost completely due to inclement weather and poor quality seeds (Grewal, 2003). In case of green peas, the contract growers were forced to dump their produce in open market, after being rejected by the PAIC on quality ground as per the contract specification, as there had been fungus infection due to inclement weather which was marked by heavy rains in winter season and then sudden rise in temperature. An area of 500 acres under contract production of green peas in Patiala and Fatehgarh Sahib districts had been affected. Some farmers found fault with the fungicide supplied by the contracted company in this regard. The dumping of contract-produced crop in the open market led to fall in local market prices and it was being sold at Rs. 3 per kg. now as against a promised price of Rs. 5 per kg. by the PAIC (Singh, 2003; Rangi and Sidhu, 2003). In general, across crops and regions, the contract farming programme could not achieve the stated area goal. Not only it fell short in terms of contracted area being less than that stated by the agency, but also the farmers did not plant the entire contracted area with the contract crops. The gap was much larger in the latter case and even as high as 50 per cent in winter maize in Ludhiana and 20 per cent in hyola in both Ludhiana and Patiala. There was a different private seed company for each crop and they only provided seed and no other extension service. Finally, none of the companies procured the produce and advised the farmers to sell in open market either because open market prices were higher than contract price or quality was not as desired. Except for the oilseed crops (hyola and sunflower), the net returns from contract crops were found to be lower than what farmers would have got from wheat crop. Most of the problems that farmers faced related to production and quality (like quality of seed and extension) and not marketing of produce (except peas) as open market could take care of contract produce. Due to this experience, a large majority (60 per cent) were not willing to enter into contract farming arrangement again (Dhaliwal et al, 2003).

The Franchisee Model

The facilitator model has been modified with the inclusion of a local arthiya/commission agent/ input dealer as a franchisee for the agri. facilitator (Fig. 5). It is more of inter-locking of factor markets coming back in another form. But, this model also does not seem to be working well as there are many problems in this model in Punjab though it has worked well in some other states.

Fig 5: The Six-Partite (networking/franchisee) CF Model



The agribusiness facilitators are ‘new players’ with knowledge and resources and strategy for sustained growth through partnership for sustainability. They will make money while helping others, including farmers, make money. Their strategies involve bundling of inputs and linking up of credit with input supply, which is the agribusiness of the twenty first century (Boehlje et al, 1995). But, what is wrong with it if it can provide what state and co-operatives have not been able to provide for so long i.e. timely and cost effective supply of quality inputs and finance and even tractors, and combine harvesters etc. on hire basis and assured market for produce? Unfortunately, what local panchayats and farmer groups are not able to do (e.g. custom hiring out of tractors) is being undertaken by agribusiness companies. They focus on more efficient use of modern inputs with a two-pronged strategy i.e. yield increase or cost reduction through inputs and value addition (market improvement). This is a must for enhancing competitiveness whether domestic or international where quality and cost effectiveness are the driving forces. In fact, this is similar to what was proposed in 2001 by HLL

Chairman M S Banga as a Farmer Service Centre (FSC) concept which can be a focal point for credit suppliers, crop insurers, agri input suppliers, food processors for buy back from farmers, and farm equipment leasing and specialized grain transport and storage agencies to help the farmers with specialized services (Banga, 2001).

Conclusions

The Punjab government has also now resigned to a role of a facilitator of contract farming in the state. The governments of Uttar Pradesh and Punjab have recently amended the APMC Act that did not permit farmer level (direct) procurement by companies. This legal reform process is being accelerated by the central government with the enactment of the Model Act for the state Agricultural Produce Marketing (Development and Regulation) Act, 2003 which deals with setting up of private markets, selling of produce by growers outside the APMCs (regulated markets), setting up of direct markets, specialized commodity specific markets, regulation and promotion of contract farming, provision for agencies and measures to promote quality, standards, alternative markets, and public-private partnerships to facilitate more and better linkage between firms and farmers (GoI, 2004).

A recent World Bank report also points to the deficiencies in the contract farming program launched by the state government of Punjab. It states that for the programme of contract farming to be successful, it should take into account the aspects of selection of crops for contracting, development of quick and effective contract enforcement and dispute resolution system, limiting fiscal risks to the state government, limiting the number of parties in a contractual arrangement, and developing farmer organizations' capability of contracting with sponsors, with a view to reducing transaction costs, increasing information flow, and improving farmers' negotiation position (World Bank, 2003).

Given that the nature of modern farming involves a tremendous amount of technological input and market orientation requiring capital resources, it is but inevitable to involve private corporate business interests in agricultural development through contract farming system. What is required is marketing extension in terms of better product planning at the farmer level, provision of market information, securing and accessing markets for farmers, provision of alternative markets and market orientation in terms of improved marketing practices at the farmer level (Patnaik, 2003). Further, it is not the contract per se which is harmful as a system but how it is practised in a given context. This involves questions about who is doing contract farming with whom, why, for what, and how. If there are enough mechanisms to monitor and use the contract for developmental purposes, it has the potential to lead to a betterment of all the parties involved, especially small and marginal farmers (Fig. 6).

Contract farming as a mechanism is desirable if the crop is perishable, non-bulky, perennial in nature, needs heavy processing, strict quality adherence (Goldsmith, 1985), credit market is in a state of failure, there is a need to encourage new crops or the open market has failed. But, still there are other options which should be tried out i.e. state, co-operatives and NGOs for credit and other inputs, and if contracting is a must, then, it should be regulated and monitored (Grosh,

1994). A case by case approach is necessary when allowing or encouraging contract farming as a lot depends on how and where it is practiced (Table 3). At present, most of the farmers who are contract growers were already growing the contract crops like basmati, wheat, and maize. Therefore, the objective of diversification is not being achieved in any way. Also, as the crucial question for development under contracting is the division of value added between the agribusiness firms and farmers, it is important to examine carefully the design, pricing and incentives and other aspects of the contracts.

Figure 6: Relative Benefits of Alternative Marketing Structures for Small Farmers

Structure	Sales position of Small Farmers (SF) vis-a-vis Large Farmers (LF)	Sales position of SF vis-a-vis buyer	Input Facilities/Technical assistance	Government support required
Private local firms (Nijjer in Punjab)	Can be against SFs due to bargaining power	Advantage of access to alternative outlets	May be available/based on local experience	Provision of market infrastructure, information, ensuring competition, price stabilization
MNCs/large firms (Pepsi, HLL)	Equitable prices through contract	Dependent but secure if supplies quality	Direct supply on credit/direct and intensive	Should negotiate prices and participation for SFs
Co-operatives/New Generation Co-operatives (NGCs) (Amul/Amalsad)	Equal if successful	Favourable if efficient co-op.	May arrange	Financial support may be required
State boards/bodies (PAFC/HPMC)	Equal prices if can reach official buying position	May be exploited	Rare/left to other govt. agencies	Insist on reaching small farmers
Development agency (NDDDB)	-- do --	Protected if meets quality	Direct supply on credit	Financial support required

Source: adapted from J.C. Abbott (1993).

There is a role for state agencies and NGOs to intervene in contract situations as intermediaries to protect the farmer and broader local community interests. The NGOs can also play a role in information provision, and in monitoring and regulating the working of contracts. Better co-operation and co-ordination between companies and co-operatives for agricultural development also needs to be encouraged. Further, both companies and state should promote group contracts with the intermediation of local NGOs and other organisations and institutions so that contractual relationships are more durable, enforceable, and fair. An insurance

component in farming interventions is a must to protect the farmer interest and it is noted that some companies are already doing it. But the most important thing is to ensure a market for the farmer's produce at a better price under these agribusiness projects. Government should also play an enabling role by legal provisions and institutional mechanisms, like helping farmer co-operatives and groups, to facilitate smooth functioning of contract system.

The HLL experience showed that it is important to demonstrate good results continuously to initiate change. Also, building linkages requires time, commitment, patience and perseverance. The demonstration of new crop in nurseries or on the fields can be very effective. It is important to establish quality standards right from the beginning at every stage of the operation. The inputs should be provided across a wide range of crops and enterprises and not just for the contracted crop. It is important to ensure that the farmer benefits on a scale that motivate him to do better as he is generally a small landholder. This can be achieved through a combination of technology, service and networking. Whereas technology involves providing the best inputs and harvest and post-harvest facilities, service insures that resources are made available in time and the post-harvest off take is efficient, and networking assures government support, infrastructure, banking facilities, and so on. In fact, earning the farmers' trust is very basic to success in building backward linkages. A number of small steps, such as prompt payments, being available on sight, sharing and updating best practices, can help build trust. In fact, the best step is to increase demand for the produce by the company which improves farmer profitability (Datta, 1996). It is also important to realise that companies like the HLL had the first mover advantage when they undertook contract farming. But, in more competitive markets for contracts, these steps may be even more crucial for the sustainability of contract farming.

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Table 1: Summary of Basmati Contract Farming Schemes in Punjab (July 2003)

	<i>Sponsors under PAFC scheme</i>				<i>Independent sponsor</i>	
	MSSL	Rallis India Ltd.	M/S Escorts	DCM-Shriram	Pepsico	HLL
Hectares signed up	8,000	12,000	16,000	4,000	3,200	4,280
Fee/hectare, payable by farmer to sponsor	Rs. 375, before planting	Rs. 200 down to Rs. 25, at the time of sale	Rs 200 down to Rs. 50, at the time of sale	---	None	None
Prospective buyer from farmer	Sunstar Overseas	L.T. Overseas	Satnam Overseas; Anima Foods; DD Int'l	KRBL	Sponsor	Sponsor
Contract with buyer and PAFC	To be signed	Signed	Signed	---	n/a	n/a
Minimum prices per qt:						
Contract price	Rs. 1,350	Rs. 1,100	Rs. 1,350	---	Rs. 1,200	Rs. 1,200
PAFC 'comfort price'	Rs. 1,100	Rs. 1,100	Rs. 1,100	Rs. 1,100	n/a	n/a
Price adjustment	---	Based on seasonal average price in Amritsar market	---	---	To be based on basmati market & returns on other crops	Av market price – Rs. 50 per qtl

--- = information not available

Source: World Bank (2003).

**Table 2: PAFC's Five-Year Plan for Contract Farming
(‘000 hectares)**

<i>Crop</i>	<i>Season</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>
Hyola (hybrid rapeseed)	Rabi	20	80	120	160	180
Barley	Rabi	2	6	10	16	28
Winter maize	Rabi	1	2	4	5	6
Durum wheat	Rabi	20	80	120	160	180
Sunflower	Spring	4	16	40	60	90
Spring maize	Spring	2	6	6	16	32
Basmati rice	Kharif	34	40	60	60	60
Kharif maize	Kharif	20	120	160	200	240
Guargum	Kharif	1	2	3	4	6
Castor	Perennial	1	4	8	16	20
Groundnut	Kharif	-	-	6	8	10
Organic basmati	Kharif	2	1	2	3	6
Vegetables	Kharif/Rabi	1	2	2	4	8
Cotton	Kharif	6	20	48	60	80
Moong/other	Kharif	5	20	10	28	54
Total		120	400	600	800	1,000

Source: World Bank (2003).

Table 3
Activities/Crops Suitable for Contract Farming and Examples in Punjab

Activity/crop	Examples/sponsors in Punjab	Scale	Observations
Perishable products for agro-processing	Milk	7.9 million tons by 2001/02; 43 milk plants	<ul style="list-style-type: none"> Highly successful, grew by 4% per annum during 1990s Net returns much greater than rice & wheat Some logistical diseconomies due to large procurement zones
	Tomatoes, chilies and potatoes for processing: Pepsi (started 1989), HLL (1995) and Nijjer Foods.	Never more than 1,200 hectares	<ul style="list-style-type: none"> Pepsi/HLL operations terminated due to underlying economics, but CF system proved fully viable it facilitated R&D and highly productive system it had major beneficial side-effects on non-CF production
Perennial crops, e.g. rubber, oil-palm, citrus	None		
Crops with very exacting delivery schedules and product standards	Basmati rice: <ul style="list-style-type: none"> HLL and Pepsico – since 1998 under PAIC programme – 4 new sponsors – in 2003 	In 2003: <ul style="list-style-type: none"> original sponsors: 7,500 hectares under PAIC programme, over 32,000 ha 	<ul style="list-style-type: none"> original sponsors doing R&D all sponsors arranging seed supply and TA, and organizing traceability systems some of the PAIC supported area may not be new to date international trade pays no premium for traceable basmati
	PAGREXCO air freighting fresh vegetables (okra, bitter gourds, green chillies, baby corn) to UK market	150 growers; 200 hectares; 1-1.5 tonnes per week	<ul style="list-style-type: none"> production located in Patiala; why not close to airport in Amritsar? small supplier compared to major players in Kenya and other countries plan to charter flights of 23-24 tons, with transhipment through Dubai
As above, + requiring close adherence to production protocols	Seed production, e.g. Punseed, flower seeds for export	Not known	Minimal problems of side-selling because the seed company pays premium prices
Production is critically dependent upon credit from the sponsor	None		Formal and informal credit is widely available in Punjab

