

IMPACT OF CONTRACT FARMING ON ECONOMIC STATUS OF FARMERS IN KARNATAKA

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ABSTRACT

In India contract farming has considerable potential where small and marginal farmers can no longer be competitive without access to modern technologies and support of different agencies involved in farming. Hassan, Tumkur, Kolar and Koppal districts of Karnataka were selected for the study. The results indicated that there was maximum per cent of increase in economic status of farmers from Hassan (12.12 per cent), Tumkur (14.85 per cent), Kolar (29.13 per cent) and Koppal (18.34 per cent) districts after adopting contract farming in their fields, respectively. B:C ratio of the four districts viz., Hassan (3.05), Tumkur (2.37), Kolar (2.76) and Koppal (6.18) gave positive signs towards improvement of farmers' economic status. Further, results showed that majority of the farmers faced financial and situational constraints rather than technological and extension constraints.

Introduction

The vast agro-climatic diversity, production potential, farm labour availability and domestic and overseas market potential of India provides greater scope for private sector's participation. Interestingly, in the recent past, private agri-business firms and multi-national companies have also received offers from different State governments including Karnataka State for contract farming. National agricultural policies of India also favoured private sector participation through contract farming arrangements.

Gurdev Singh (2005) provides a more universal definition of contract farming. "Contract farming is a form of vertical

coordination between the producers (farmers) and the contractor (processor or marketing firm or a third party such as input manufacturer or service provider) where the latter directly influences the production decisions and exercises some control at the production point under the obligation of purchasing certain quantity of produce at specific price from the producer. The quantity and price relate to delivery of specific quality produce at designated location and for a period of time."

Contract farming is a system of production and supply of agricultural/horticultural produce under forward contracts between producers/suppliers and buyers. The essence of such an arrangement is the commitment of the producers/sellers to

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provide an agricultural commodity of certain type, at a time and a price, and in the quantity required by the known and committed buyer. Contract farming is generally defined as farming under an agreement between farmers and a sponsor (processing and/or marketing firm) for the production and supply of agricultural products under forward agreements, frequently at predetermined prices (Paty B.K., 2005). According to the contract, the farmer is required to grow the contractor's crop on his land, and to harvest and deliver to the contractor a quantum of produce, based upon anticipated yield and contracted acreage. Towards these ends, the contractor supplies the farmer with selected

inputs, including the required technical knowhow and advice, on the other hand, farmer supplies land and labour. However, the terms and nature of the contract differ according to variations in the nature of crops to be grown, agencies, farmers and technologies and the context in which they are practised.

Crops Covered Under Contract Farming

Professor Mathur (2004) found that in five sample States, crops covered under contract farming varied from fruits and vegetables, medicinal and aromatic plants to cereals. Different companies initiated contract farming in various States. Mathur's findings are summarised below :

Table 1 : Example of Contract Farming States and Crops

| Karnataka | Maharashtra | Madhya Pradesh | Punjab | Tamil Nadu |
|----------------|---------------------|---------------------|----------------|------------|
| Ashwagandha | Soyabean | Wheat, maize | Tomato, chilly | Cotton |
| Dhavana | Several fruits | Soyabean | Barley | Maize |
| Marigold | Vegetables, cereals | Several fruits | Basmati rice | Paddy |
| Capsica Chilly | Spices and pulses | Vegetables, cereals | Maize | |
| Coleus | | Spices and pulses | Groundnut | |
| Gherkins | | | Potato | |

Contract farming has been tried in various States and covered a variety of crops. Different agro-climate zones produce different specialised crops. For example, tea in North Bengal, and Nilgiri in South, coffee in South, apples in Kashmir and Himachal Pradesh, grapes in Nasik and around Hyderabad. Some notable instances are:

- * Seed multiplication in Marathwada and Andhra Pradesh.
- * Tea and coffee in Karnataka, Kerala and Tamil Nadu.

- * Rubber and pepper in Kerala.
- * Poplars in Uttar Pradesh, Haryana and Punjab.
- * Medicinal plants in Uttar Pradesh.
- * Castor, Isabgol, cumin and aniseed in North Gujarat.
- * Jute in West Bengal.
- * Tomato and chillies in Punjab, Andhra Pradesh and Karnataka.

* Mangoes in Andhra Pradesh, Tamil Nadu and Maharashtra.

Elements of Contract Farming: There are 17 elements of contract farming:

1. Purpose / Reason: which includes quantity of material needed by the company not available in open market and required quality not available in open market, need for bulk and cost-effective procurement, easy market access to farmers.
2. Time of Contract: it includes pre-harvest and post-harvest.
3. Minimum Size of Contractual Acreage: may vary from commodity to commodity. The unit of measurement may vary from area/acreage for crops to quantity say number of animals in case of dairy.
4. Registration Process : the registration process includes the registration fees and signing a simple document
5. Partners in the Consortium : the contract farming includes State government / board (in case of plantation crops such as spices board, tea board etc, financial Institutes-NABARD, Banks, input providers, service providers and insurance providers.
6. Insurance supplied : the insurance supplied in contract farming includes life insurance and crop insurance.
7. Inputs Provided : during the contract the company under the contract supplies fertilisers, seeds, and pesticides.
8. Services Provided in contract farming are extension services and monitoring quality.
9. Quantity Specifications : it includes main products and the byproducts.
10. Harvesting Time : the harvesting time will be decided by corporate and also by producer.
11. Price Fixation Criteria : the price fixation criteria followed in contract farming includes pre-fixed (including or excluding cost of handling, packaging, transport, taxes and octroi), market base and pre-fixed with market link component.
12. Procurement Strategy : the procurement strategy followed in contract farming includes (a) Delivery taken at farm gate (b) Delivery taken at factory/godown gate. (c) Delivery at designated Mandis.
13. Packaging : (a) Provided by the buyer at his cost (b) Provided by the producer at his cost Contract Farming.
14. Handling : (a) Cost borne by the producer. (b) Cost borne by the buyer
15. Transport : (a) Arranged and paid by the producer up to delivery point. (b) Arranged and paid by the buyer up to delivery point. (c) Arranged by producer but paid by the buyer at delivery point. (d) Transport subsidy paid by company / government / board.
16. Mode of Payment : Cash. (b) Cheque.
17. Time of Payment : (a) Part or full payment immediately. (b) Remaining part or full payment in a given time period (week, fortnight, month). (c) As per specified payment schedule. Karnataka has opened the doors for contract farming and entry of major players into trade in agricultural commodities.

The State Assembly of Karnataka amended the Karnataka Agricultural Produce

Marketing act to allow private players to enter the agricultural sector in a big way. The amended act reveals that contract farming will help farmers get pre-fixed rates for their produce. Presumably the agricultural trade in the State is dominated by the Agricultural Produce Marketing Committees (APMCs) and small and medium players. The amendment will help in the entry of big players like Metro Cash & Carry, Reliance etc. to the agriculture produce trade. PepsiCo India Holdings is looking at the State for large-scale contract farming in maize, chillies and tomatoes, for which it has commenced trials in Haveri district. Although these trials are on a small scale, the company is said to be looking at nearly 20,000 hectares of contract farming in maize to fall in place by next year in Haveri and neighbouring districts (Keshavamurthy, 2005).

Though farmers are gradually entering into this farming, studies are limited to assess the impact. Hence, the study was conceptualised with the following specific objectives viz. (1) To analyse the impact of contract farming on economic status of farmers and (2) to elicit the constraints faced by the farmers practising contract farming and suggestions for the success of contract farming.

Methodology

The present study was carried out in four districts of Karnataka which includes Hassan, Tumkur, Kolar and Koppal. Thirty farmers from each district were selected as sample to make it total of 120. Ex-post Facto Research Design was considered as appropriate for the study. The economic index of farmers before and after contract farming was computed by converting the individual raw scores of landholding, family income and assets possession, obtained into standard scores to avoid the difference of units of the variables. Benefit-cost ratio of farmers practising

contract farming before and after adopting the contract farming was also calculated.

The economic index of farmers before and after contract farming was computed by converting the individual raw scores of landholding, family income and assets possession (number and type of house, farm power, agricultural implements, and materials possession) obtained into standard scores. The raw scores were converted into standard scores by using formula :

$$\text{Standard scores} = \frac{x - X}{\sigma} \sqrt{10} + 50$$

Where x= individual raw score

X= mean of raw score

σ = Standard deviation of raw score

Thus, the average economic index (AEI) was worked out by using the formula:

$$\text{AEI} = \frac{\text{f (landholding + income + number and type of house + Farm power + agricultural implements + materials possession)}}{6}$$

Paired't' test was used for testing the significant differences of mean scores of the economic status of farmers before and after contract farming.

Results and Discussion

The results reveal the economic status of the farmers practising contract farming before and after adopting the contract farming.

Table 2 reveals that benefit-cost ratio is higher after contract farming. Accordingly, B:C ratio of Hassan, Tumkur, Kolar and Koppal districts was 13.15, 12.89, 9.24 and 7.00, respectively before contract farming was less

compared to after contract farming (16.20, 15.26, 12 and 13.18 respectively). It is clear that the total cost of cultivation increased after adopting contract farming in all the four districts but it was relatively high in Koppal district. The major reason for the result obtained was the type of crop under contract farming. In Koppal district crop under contract farming was the chilli seed production where the cost of production was also high because of high input requirements including the

shade net used and the returns from the seed production were also considerably high. Kolar and Tumkur had gherkin crop under contract farming and had less increase in the B:C ratio compared to the other two districts. The gherkin is a new crop to the farmers and also strict enforcement of time of harvesting of crop might have resulted in decreased B:C ratio. The result is in confirmation with the findings of Keshavamurthy (2005).

Table 2 : Cost and Returns Under Contract Farming in the Selected Districts

| Districts | | Gross returns | Total cost | % increase in cost | Net returns | B:C ratio | Difference in B:C ratio |
|---------------|-------------------------|---------------|------------|--------------------|-------------|-----------|-------------------------|
| Hassan (N=30) | Before contract farming | 80,733 | 6,139 | 47.10 | 73,133 | 13.15 | 3.05 |
| | After contract farming | 146,383 | 9,031 | | 154,990 | 16.20 | |
| Tumkur (N=30) | Before contract farming | 57,700 | 4,474 | 59.11 | 48,087 | 12.89 | 2.37 |
| | After contract farming | 108,667 | 7,119 | | 91,535 | 15.26 | |
| Kolar (N=30) | Before contract farming | 77800 | 8419.83 | 15.29 | 69380.17 | 9.24 | 2.76 |
| | After contract farming | 112066.7 | 9,706 | | 100444 | 12.00 | |
| Koppal (N=30) | Before contract farming | 110,733 | 15,340 | 31.55 | 103,770 | 7.00 | 6.18 |
| | After contract farming | 266,000 | 20,180 | | 245,783 | 13.18 | |
| Pooled (N=30) | Before contract farming | 81,741.5 | 8593.20 | 33.93 | 73592.50 | 10.57 | 3.59 |
| | After contract farming | 1,58,279.7 | 11509 | | 1,48,188 | 14.16 | |

Economic status of farmers practising contract farming was represented in Table 3, it is evident that standard mean scores of economic status before contract farming was highest in Hassan (262.68) followed by Koppal (253.65), Tumkur (252.79) and Kolar (232.19). It is also clear that standard mean scores of economic status after contract farming was highest in Koppal (300.16) followed by Kolar (299.85), Hassan (294.52) and Tumkur (290.32) districts. The percentage increase of the economic status is highest in Kolar (18.33) followed by Koppal (18.33), Tumkur (14.85 per cent) and Lowest in Hassan (12.12). It is very

interesting to know that there is maximum per cent of increase in economic status of farmers from Kolar district after adopting the contract farming in their fields. This may be due to the reason that farmers of Kolar district were involved in vegetable production since many years and they were facing the problem of market fluctuation. Further, the gherkin crop for which they have entered into an agreement is a new crop and it does not require much input and pesticides compared to the earlier crops. The reduced cost of cultivation coupled with increased income resulted in B:C ratio.

Table 3 : Economic Status of Farmers Practising Contract Farming in Selected Districts of Karnataka

(N=30)

| Districts | Standard mean scores | | Per cent increase due to contract farming | Paired t-value |
|-----------|-------------------------|------------------------|---|----------------|
| | Before contract farming | After contract farming | | |
| Hassan | 262.66 | 294.52 | 12.12 | 6.72*(4.73) |
| Tumkur | 252.79 | 290.32 | 14.85 | 8.97*(4.18) |
| Kolar | 232.19 | 299.85 | 29.13 | 14.39*(4.70) |
| Koppal | 253.65 | 300.16 | 18.34 | 9.92*(4.69) |
| Total | 250.25 | 296.25 | 18.38 | 17.90*(2.57) |

*- Significant at 5 per cent (Note: Figures in bracket refers to Std. Error Mean of Paired differences).

Koppal district also had similar changes but less, compared to Kolar district. The seed production was practised by Koppal farmers under open field cultivation since many years. But after the contract farming the farmers were made to adopt the shade nets for cultivation of chilli seed production. This has resulted in increased cost of cultivation with

slight increase in income. This might have resulted in higher B:C ratio. The findings were supported by the studies of Ramasundharam *et al.* (2005), Pramod (2006) and Roopa, (2006).

It was observed from the results that there were more financial and situational constraints than technological and extension constraints. Reason for the obtained result is

Table 4 : Problems Faced by Farmers in Practising Contract Farming

| Problems | Tumkur (N=30) | | Hassan (N=30) | | Kolar (N=30) | | Koppal (N=30) | | Combined (N=30) | |
|---|------------------|--------|------------------|-------|-----------------|-------|------------------|-------|--------------------|-------|
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| I. Technological Constraints | | | | | | | | | | |
| 1. The popularity of crop itself is low | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 2. Varieties used are susceptible to pests and diseases | 2 | 6.67 | 1 | 3.33 | 3 | 10.00 | 4 | 13.33 | 10 | 8.33 |
| 3. The yield levels of the crop are low | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 4. No constraints | 28 | 93.33 | 29 | 96.67 | 27 | 90.00 | 26 | 86.67 | 110 | 91.67 |
| II. Financial Constraints | | | | | | | | | | |
| 1. Non-availability of loans in required time | 29 | 96.67 | 27 | 90.00 | 26 | 86.67 | 25 | 83.33 | 107 | 89.17 |
| 2. Non-availability of loans in required amount | 30 | 100.00 | 28 | 93.33 | 28 | 93.33 | 27 | 90.00 | 113 | 94.17 |
| 3. Initial investment is high | 21 | 70.00 | 17 | 56.67 | 20 | 66.67 | 19 | 63.33 | 77 | 64.17 |

(Contd.)

Table 4 : (Contd.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|--|-----|-------|-----|-------|-----|-------|-----|-------|------|-------|
| 4. Payment after delivery is delayed | 11 | 36.67 | 8 | 26.67 | 14 | 46.67 | 10 | 33.33 | 43 | 35.83 |
| 5. High interest rate for loan | 22 | 73.33 | 17 | 56.67 | 20 | 66.67 | 19 | 63.33 | 78 | 65.00 |
| 6. High cost of inputs | 30 | 120 | 30 | 100 | 30 | 100 | 30 | 100 | 120 | 100 |
| 7. No constraints | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| III. Extension Constraints | | | | | | | | | | |
| 1. Poor technical assistance by the agency | 3 | 10.00 | 6 | 20.00 | 6 | 20.00 | 5 | 16.67 | 20 | 16.67 |
| 2. Non-availability of technical assistance in required time | 3 | 10.00 | 6 | 20.00 | 6 | 20.00 | 5 | 16.67 | 20 | 16.67 |
| 3. Lack of technical competency by extension workers | 1 | 3.33 | 2 | 6.67 | 4 | 13.33 | 4 | 13.33 | 11 | 9.17 |
| 4. No fixed schedules of visit by extension workers | 4 | 13.33 | 6 | 20.00 | 6 | 20.00 | 5 | 16.67 | 21 | 17.5 |
| 5. Lack of training on time and methods of harvesting | 2 | 6.67 | 5 | 16.67 | 3 | 10.00 | 2 | 6.67 | 12 | 10.00 |
| 6. Lack of knowledge on grading and packaging | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 7. No constraints | 27 | 90.00 | 24 | 80.00 | 23 | 76.67 | 25 | 83.33 | 80 | 66.67 |

(Contd.)

Table 4 : (Contd.)

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|--|-----|-------|-----|-------|-----|-------|-----|-------|------|-------|
| IV. Situational Constraints | | | | | | | | | | |
| 1. Non-availability of inputs in required quantity | 19 | 63.33 | 25 | 83.33 | 27 | 90.00 | 27 | 90.00 | 98 | 81.67 |
| 2. Non-availability of inputs in required time | 19 | 63.33 | 24 | 80.00 | 27 | 90.00 | 26 | 86.67 | 96 | 80.00 |
| 3. Lack of storage facilities | 0 | 0.00 | 2 | 6.67 | 2 | 6.67 | 3 | 10.00 | 7 | 5.83 |
| 4. Lack of transportation facilities | 1 | 3.33 | 2 | 6.67 | 2 | 6.67 | 3 | 10.00 | 8 | 6.67 |
| 5. Lack of information on marketing channels | 1 | 3.33 | 5 | 16.67 | 6 | 20.00 | 8 | 26.67 | 20 | 16.67 |
| 6. Non-availability of labours | 30 | 100 | 30 | 100 | 30 | 100 | 30 | 100 | 120 | 100 |
| 7. Non-availability of custom hiring services | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 8. Labour requirement for operations is very high | 30 | 100 | 30 | 100 | 30 | 100 | 30 | 100 | 120 | 100 |
| a) No constraints | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| b) No constraints | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |

Note : Multiple responses possible.

that the contract firms are efficiently providing the technical guidance and extension services time to time to all the farmers involved in contract farming to ensure maximum output with good quality. Further, it is mandatory on the part of the firms to provide the technical guidance as part of the agreement made in the contract or otherwise the company will also be at loss.

The contract firms will not compromise on the quality and recommended quantity of inputs to be used by the farmers, as a result the cost of such inputs will be more. Any compromise by the company in supplying the inputs will reduce the yield and quality of produce. This might have prompted the farmers to indicate that the cost of inputs supplied was more.

Farmers had a major problem of non-availability of labours in time and required number for timely operation. This may be due to the maintenance of quality of the produce which naturally demands more labours than usual. Further, the small family size restricts the availability of family labours and the migration of labours from rural areas to urban in search of employment might aggravate the problem of labour. Findings of Sukhpal Singh (2002) and Keshavamurthy (2005) were in confirmation with the results of the present study.

Suggestions given by the farmers practising contract farming presented in Table 5 reveal that majority of the farmers opted for settling of payments in time. They also suggested that cost of inputs should be reduced by the contract firms and increase the price for the produce. Further, half of the respondents suggested that there should be Government intervention for making strict laws to legalise the contracts. Few of the farmers suggested that more MNC's should be allowed to do such type of agri-business.

It was very interesting to know that farmers gave suggestions very critically to improve the contract farming in the country and to raise the economic status of the farmers. Cost of the inputs provided by the contract firms should be reduced as suggested by majority of the farmers. It was also suggested that the payments should be made in time since they were facing problems due to delayed payments. Government intervention for making strict laws to legalise the contracts was the important legal suggestion given by the farmers to improve the present status of the contract farming in the research areas.

It was very much interesting to know that farmers wanted more of the contract firms to be allowed to do contract farming since they had improved their economic conditions due to these contracts and wanted to gain more profits and avoid monopoly. The results were supported by the findings of Chawla (2002) and Keshavamurthy (2005).

Conclusion

Contract farming is found to be more ideal to enhance the income level of farmers. The results showed that there were no marketing and transportation risks on the part of the farmers. The B:C ratio worked out for both before and after adoption of contract farming indicated that contract farming is most profitable in improving the economic status of the farmers. Hence, extension workers need to educate interested farmers regarding contract farming for adoption. It was observed from the results that there were more financial and situational constraints than technological and extension constraints. This may be because the contract firms were efficiently providing the technical guidance and extension services from time to time to all the farmers involved in contract farming to ensure maximum output with good quality and it is

Table 5 : Suggestions of Farmers Practising Contract Farming

| S.No. | Suggestions | Hassan (N=30) | | Tumkur (N=30) | | Kolar (N=30) | | Koppal (N=30) | | Combined (N=120) | |
|-------|--|------------------|-------|------------------|-------|-----------------|-------|------------------|-------|---------------------|-------|
| | | No. | % | No. | % | No. | % | No. | % | No. | % |
| 1. | Cost of inputs should be reduced by the contract firms | 26 | 86.67 | 24 | 80.00 | 22 | 73.33 | 30 | 100 | 102 | 85.00 |
| 2. | Settling of payments should be in time | 22 | 73.33 | 30 | 100 | 26 | 86.67 | 30 | 100 | 108 | 90.00 |
| 3. | Increased price for the produce | 28 | 93.33 | 30 | 100 | 27 | 90.00 | 9 | 30.00 | 94 | 78.33 |
| 4. | Government intervention for making strict laws to legalise the contracts | 16 | 53.33 | 19 | 63.33 | 20 | 66.67 | 14 | 46.67 | 69 | 57.5 |
| 5. | More MNC's should be allowed to do agri-business | 25 | 83.33 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 25 | 20.83 |

Note : Multiple responses possible.

mandatory on the part of the firms to provide the technical guidance as part of the agreement made in the contract or otherwise the company will also be at loss. Further, it was very much interesting to know that farmers wanted more of the contract firms to be allowed to do contract farming since they had improved their economic conditions due to

these contracts and wanted to gain more profits and avoid monopoly. Hence it may be concluded that contract farming is a boom in agriculture. Also, Government interventions are necessary for making strict laws to legalise the contracts and there is scope for multinational companies to enlarge their area of coverage in any such similar locations.

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