

Improving the supply chain efficiency of marigold through contract farming

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Received : 20.08.2013; Revised : 15.01.2014; Accepted : 15.02.2014

ABSTRACT

This study focuses on performance of marigold supply chains in contract and non-contract farming by analyzing primary data collected from randomly selected 50 contract and 50 non-contract farmers of Sathyamangalam block in Erode district through personal interview method. The results revealed that efficiency of supply chain (channel I and II) in non-contract farming were affected by exploitation of middlemen, lack of assured price, timely availability of inputs, lack of advanced technologies (farmers) and access to raw materials (processors) and higher retail price (consumers). The contract farming system improved the efficiency of supply chain by eliminating the above constraints and the farmers were getting higher net price in contract farming channel III. Assured price, higher yield and return were the important reason for participation in contract farming. Labour problems and lack of insurance cover were the major problems faced by the farmers in contract farming system.

KEY WORDS : Contract farming, Supply chain, Market channel, Price spread, Marketing efficiency

How to cite this paper : Karuppusamy, R., Sivakumar, S.D., Jawahar Lal, M. and Palanichamy, N. Venkatesa (2014). Improving the supply chain efficiency of marigold through contract farming. *Internat. J. Com. & Bus. Manage*, 7(1) : 1-5.

Contract farming is an agreement between a farmer and a firm, either a simple verbal commitment or one based on written documents where the farmer produces a fresh or partially processed product and the firm is committed to buying it under certain stipulated conditions (Grosh, 1994). The commercial crops like sugarcane, cotton, tea, coffee, flower crops etc., have always involved some

forms of contract farming.

After the implementation of economic reforms in 1991 the agro-marketing system undergone a dramatic change and it creates potential opportunities to the millions of small and marginal farmers to diversify their portfolio into commercial crops (Weinberger and Lumkin, 2005). Lack of market access, capital, improved technology, quality input and information has limited the farmers to exploit the potential opportunities created by the economic reforms (Holloway *et al.*, 2000).

In India contract farming has considerable potential where small marginal farmers can no longer be competitive without access to modern technologies and support. These small and marginal farmers constituting 86 per cent of the farmer population of the country, or generally capital starved and can't make major investment in land improvement and modern inputs (Government of India, 2006). Contract farming can fill up this gap by providing the farmers with quality inputs, technical guidance, management skills, credit as well as knowledge of new technologies (Miyata *et al.*, 2007).

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From the stand point of corporate bodies, farming reduces the supply risk, while the farmers enter into contractual arrangements with companies in order to minimize market and price risks. It contributes to value addition by facilitating the emergence of agro-processing industry which otherwise would not exist if supplies were not forthcoming in an organized manner. Furthermore, it enables export of the produce from small farmers who otherwise would not be able to access the demanding markets. It encourages higher quality production and better handling and sorting, thereby increasing the value of the produce emanating from the small farmers.

Problem focus:

Marigold was important flower crop in Tamil Nadu. Marigold flowers were marketed through local markets through different channels. But the farmers in these channels were affected by exploitation of middlemen, lack of assured market price lack of advanced production and post harvest technologies and timely availability of inputs etc. Apart from the producers, the processors in the supply chain were also constrained by availability of raw materials (marigold flowers) both in terms of quantity and quality for continuous operation of the firm. The consumers in the traditional channels were also affected by increased retail price of flowers. In this scenario contract farming system emerges as one of the potential mechanism to eliminate all those constraints in the traditional supply chain of marigold. Keeping these things in mind, the present study would focus on the intervention of contract farming in marigold cultivation and its supply chain management. This study would compare the supply chain of marigold in contract and noncontract farming system. The specific objectives of the study are:

- To identify and analyze the different marketing channels involved in contract and non-contract farming.
- To estimate the price spread and marketing efficiency of different marketing channels involved in contract and non-contract farming.
- To study the benefits of contract farming in marigold cultivation.

Pandit (2009) studied the performance of potato contract farming in West Bengal among 139 non-contract and 144 contract growers. The results revealed that the farm gate price of contract variety is higher than non-contract variety. The cost

of cultivation was higher in contract farming (Rs. 74909/ha) as compared to non-contract farming (Rs. 70705/ha) and the contract farming gave good return of Rs. 15000 per hectare while non-contract farming gives loss to the farmer.

Begum (2005) identified the incentives for poultry farmers to participate in contract farming in Bangladesh. It was revealed in the study that contract farmers get several incentives from the vertically integrated firm, which includes credit, production and price risk reduction, marketing assistance, technical know-how etc. It also concluded that contract farmers were better off in terms of net income by getting a high net return from the poultry farm.

Gnanakumar (2007) compared the returns of vertically integrated contract farming system in broiler production and independent poultry system in Tamil Nadu and Andhra Pradesh. He estimated that the net returns in the vertically integrated contract farming system in broiler production were 1.7 times higher as compared to the independent farming system.

METHODOLOGY

The present study was conducted in Sathyamangalam taluk of Erode district. The Erode district was purposively selected as the area under marigold cultivation is higher in this district and it accounts 15 per cent of the total area in the state. The data were collected through a well structured and pre-tested interview schedule. Totally 100 farmers selected through random sampling (50 contract and 50 non-contract farmers) were contacted individually at their fields and the objectives of the study were clearly explained to them to ensure their cooperation and accuracy in their response. Apart from the farmers, the market intermediaries such as wholesalers and retailers (each ten numbers) were also contacted for this study. Collected data were analyzed using percentage analysis, Rank based quotient (RBQ) and price spread analysis.

ANALYSIS AND DISCUSSION

The findings of the present study as well as relevant discussion have been presented under following heads :

Reasons for participation in contract farming:

The major factors influencing the participation in contract farming system in the study area were collected, analyzed and the results are furnished in Table 1.

Table 1: Reasons for participation in contract farming

Sr. No.	Reasons	Mean score	Rank
1.	Assured price	76.53	I
2.	Higher yield	59.83	II
3.	Better returns	53.26	III
4.	Timely input availability	44.41	IV
5.	Consultancy services	37.46	V

From Table 1, it could be inferred that the main reasons for participation of the sample farmers in contract farming was assured price given by the sponsoring company followed by higher yield and better returns. The other reasons for participation in contract farming were timely input availability and consultancy services provided by the firms involved in contract farming.

Marigold supply chain:

The supply chain represented the full range of activities from the selection of seed through processes along the chain, to delivery of the final product to the consumer. It included input suppliers, producers, processors, packers and movers, wholesalers, traders, retailers, and final consumers.

Marigold is valued as a loose flower for making garlands and also it is used to extract the oleoresins and xanthophyll for export purpose. M/s. AVT Natural Products Ltd. and Synthite were the companies involved in contract farming of marigold for xanthophyll production. Following three important supply chains were identified in the study area in case of marigold marketing (Fig. 1). These channels were transmitting more than 70 per cent of the marigold flowers traded in the study area:

Supply chain of marigold in non-contract farming:

Channel I: Producer→Commission agent→Retailer→Consumer

Channel II: Producer→Commission agent →Wholesaler →Retailer →Consumer

Channel III: Producer→Processor-cum-exporter →Consumer

The channel I and II were the important channels in non-contract farming, because major portion of the produce was marketed through these channels. Channel III is another important channel where the farmers were selling the flowers directly to the processor through the contract farming system.

Price spread of marigold :

The price paid by the consumer and the price received by the farmer is not the same and as the crop produce passes through marketing channel the produce is reprised again. In the marketing of agricultural commodities, the difference between the price paid by the consumer and the net price received by the producer for an equivalent quantity of the crop produce is known as price spread. This represented the difference between the net price received by the producer-seller (PNP) and the price paid by the ultimate consumer *i.e.* difference between Producer’s Net Price (PNP) and Retailer’s Selling price (RP):

$$PS=RP-PNP$$

In other words, it includes (i) the total costs of marketing (TMC) incurred by producer-sellers and market intermediaries excluding the commission agent and (ii) the net

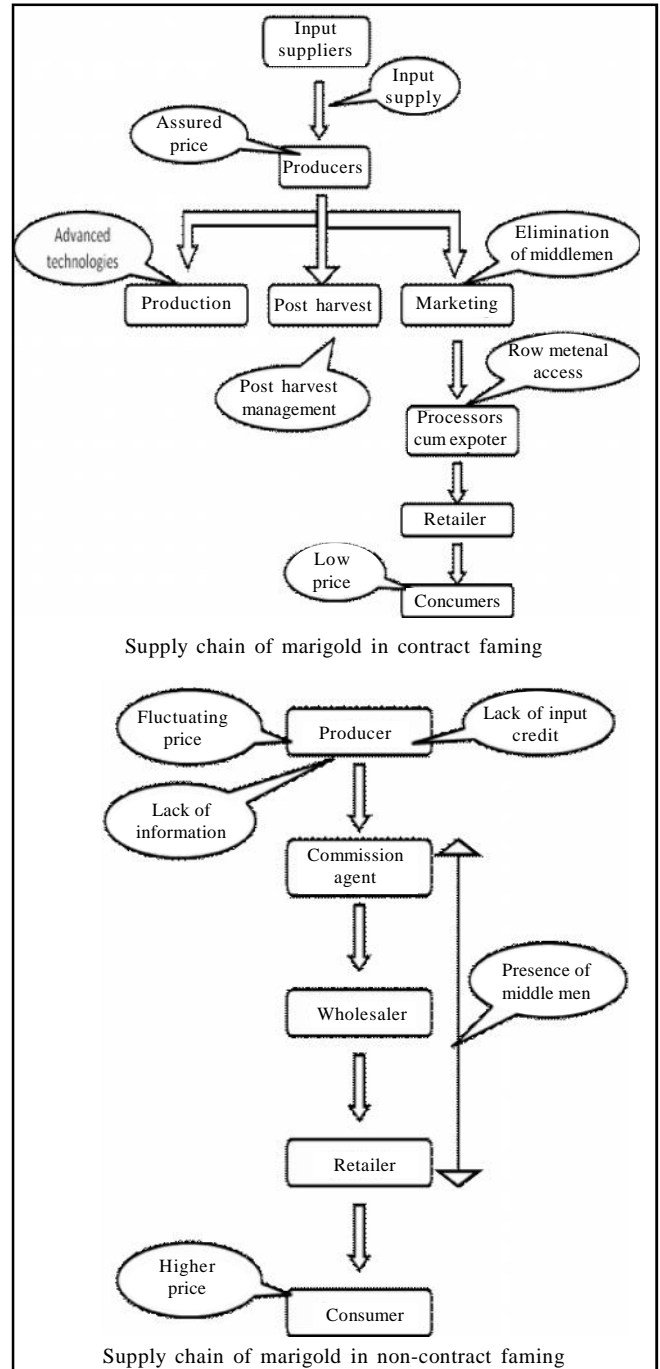


Fig. 1 : Supply chain of marigold farming

profit (NP) accrued to the intermediaries in the process of moving the produce from the producer-seller to consumer (Chole, 2003).

$$PS=TMC+NP$$

Producer:

From Table 2, it could be inferred that producer was

getting a net price of Rs. 372.5 per quintal of marigold in channel I and II and Rs. 600 in channel III. Marketing cost incurred by the producer was Rs. 27.5 in non-contract farming channels I and II, but in channel III marketing cost was nil because they directly used to sell the flowers to processor through contract farming. The channel III gave the highest net price (Rs. 600) to the producer because of the contract farming arrangement between producer and processor.

Commission agent:

A commission agent does not take the title of the flowers traded and receives the commission of 1-2 per cent from the wholesaler and retailer in non-contract farming. The involvement of middlemen is nil in contract farming channel III.

Wholesaler:

The wholesalers incurred marketing cost of Rs. 10 and got the marketing margin of Rs. 100 which was 11.97 per cent of consumer’s price in channel II.

Retailer:

The marketing cost incurred by the retailers in various channels were worked out to be Rs. 22 and Rs. 25, whereas marketing margins worked out to be Rs. 250 and Rs. 300,

respectively for the channels I and II. This accounted for 37.20 and 35.92 per cent of the consumer’s price.

Consumers:

Consumers purchased the flowers from the final retailers for Rs. 672 and Rs. 835 in channel I and II and III, respectively.

Processor-cum-exporters:

The companies such as AVT Natural Products Ltd., Synthite etc., were involved in contract farming of marigold for xanthophyll production and they were directly purchasing the flowers from producers at Rs. 600 per quintal.

Grading and standardization:

In absence of scientific grading and sorting mechanism, the quality of flowers is graded to different classes based on colour and flower size in non-contract farming. Under contract farming, the producers have to follow certain guidelines given by the sponsoring company in plant protection aspects.

Packaging and handling:

After harvesting, the flowers are packed in the gunny bags and transported to the flower market. From the flower market, flowers were packed in large sized gunny bags with

Table 2 : Price spread of marigold (Amount in Rs. / Quintal)

Particulars	Non-contract		Contract
	Channel I	Channel II	Channel III
Producer			
Gross price	400 (59.52)	400 (47.90)	600
Marketing cost	27.5 (4.09)	27.5 (3.29)	-
Net price	372.5 (55.43)	372.5 (44.61)	600
Commission agent			
Wholesaler	-	-	-
Purchase price	-	400 (47.90)	-
Marketing cost	-	10 (1.19)	-
Marketing margin	-	100 (11.97)	-
Sale price	-	510 (61.07)	-
Processor	-	-	600
Retailer			
Purchase price	400 (59.52)	510 (61.07)	-
Marketing cost	22 (3.27)	25 (2.99)	-
Marketing margin	250 (37.20)	300 (35.92)	-
Sale price	672 (100)	835 (100)	-
Price paid by consumer	672	835	-
Price spread	272 (40.47)	435 (52.09)	-
Marketing efficiency	12.57	12.36	-

proper ventilation and transported to the Bangaluru, Hyderabad and Coimbatore markets under non-contract farming. In contract farming the flowers are packed in gunny bags and transported to the processing industry through trucks and vans.

Supply chain improvement through contract farming:

The supply chain represented the full range of activities from the selection of seed through processes along the chain, to delivery of the final product to the consumer. It included input suppliers, producers, processors, packers and movers, wholesalers, traders, retailers, and final consumers.

Traditionally marigold flowers are marketed mostly in the local markets through two different channels (Channel I and II). But the farmers in these channels were affected by exploitation of middlemen, lack of assured market price, lack of advanced production and post harvest technologies and timely availability of inputs etc. Apart from the producers, the processor-cum-exporter in the supply chain were also constrained by availability of raw materials (marigold flowers) both in terms of quantity and quality for continuous operation of the firm. The consumers in the traditional channels were also affected by increased retail price of flowers.

Contract farming system emerges as one of the potential mechanisms to eliminate all those constraints in the traditional supply chain of marigold. According to the contract, the farmer is required to plant the marigold crop on his land, and to harvest and deliver to the contractor a quantum of produce, based upon anticipated yield and contracted acreage based on pre-agreed price. Towards these ends, the contractor supplies the farmer with selected inputs, including the required technical advice. In contract farming system, the farmers were entered into written contract with the sponsoring company, here the harvesting is done by farmers and transportation and processing are done by sponsoring company.

Under contract farming the farmers were able to get required inputs timely, input credit, advanced production technologies and advisory services from the sponsoring company. Farmers were also getting assured price Rs. 6 per kg of marigold, through contract farming by the way of elimination of middlemen in the marketing channel. In this way the contract farming in marigold cultivation tremendously improved the efficiency of marigold supply chain by improving the efficiency of individual participants in the supply chain.

Conclusion:

The study revealed that assured price, higher yield and

return were the important reasons for participation in marigold contract farming. In marigold supply chain three channels were identified, Channel I and II in non-contract farming and channel III in contract farming. In non-contract farming channels the performance of supply chain was affected by lack of assured price, timely availability of input, input credit and lack of advanced production technologies etc. to the farmers, lack of quantity and quality of raw materials to the processors and higher price to the final consumers. The supply chain efficiency was improved through contract farming system (channel III) where the farmers were getting timely inputs, technologies and advisory services from sponsoring company and the company also gets right quantity and quality of raw materials from producers. Labour shortage, lack of insurance cover and inadequate field visits by the company staffs were major problem faced by the farmers in marigold contract farming. Even though the farmers face few constraints in contract farming they like to continue with the contract farming arrangement in the future.

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