

Comparison of marketing margins earned by contractors and farmers from sale of mango crop in Mirpurkhas district, Sindh

TEHMINA MANGAN¹
ABDUL GHAFOOR KALWAR
MEHARUL NISSA RAIS

Department of Agricultural Economics
Sindh Agriculture University, Tandojam Pakistan
MUSTAFA NANGRAJ
Agriculture Extension
Agriculture Department Government of Sindh
Pakistan

MUHAMMAD ALI SHAIKH
Department of Rural Sociology
Sindh Agriculture University, Tandojam Pakistan

Abstract:

Mango is known as king of fruits and native to the south Asia from where it was distributed worldwide. Mango is produced in more than 85 countries in the world. In Pakistan mango is cultivated on about 167.5 thousand hectares; yield of mango is 1732 thousand tones. Mango is second important fruit of Pakistan and is ranked number fourth in the world due to its yield. Due to perishable nature of mango, high price, weather risk and financial insecurities farmers mostly sell their orchards to the contractors. Farmers who contract out their orchards earn less profit and yield of mango orchards is also affected because contractors do not take interest in proper management of mango orchards. This research attempts to compare marketing margins earned by farmer and contractor/middle man and the causes of the decision of farmers to sell their orchards to contractors in Mirpurkhas Sindh. Results of the study reveal that per acre gross

¹ Corresponding author: t.economist@hotmail.com

margin earned by the contract farmers is less (Rs. 28405) as compared to non contract farmers (Rs. 94804) and contractors (Rs. 112379). Similarly Per acre net margin earned by the contract farmers is also less (Rs. 16515) as compared to non contract farmers (Rs. 40186) and contractors (Rs. 73719).

Key words: Mango, marketing, revenue, contract, orchard, net margins

1. Introduction

Mango (*Mangifera indica*) mango is known as king of fruits and native to the south Asia from where it was distributed worldwide. It is national fruit of Pakistan, Philippines and India. Mango is produced in more than 85 countries in the world. In Pakistan mango is cultivated on about 167.5 thousand hectares yield of mango is 1732 thousand tones (Alam, 2008; Vayssières *et al.*, 2012). Mango fruits are very much relished for their exotic flavor and delicious taste. They are also an excellent source of dietary fiber, pro-vitamin A and vitamin C. A fruit with many versatile properties has naturally found application for processing into several products (Elias, 2007; Saxena and Arora, 1997; Srinivasan *et al.*, 2000; Singh *et al.*, 2005). Many mango value added products are also prepared from mango such as jam, jellies and marmalades. In Pakistan and total area under mango cultivation is 167.5 thousand hectares with the production of mango 1732 thousand tones. Mango is second important fruit of Pakistan and is ranked number fourth in the world due to its yield (FAO, 2009; GOP, 2014; Nafees *et al.*, 2014). Sindhri, Dasehri, Langra, Anwar Ratul, Chaunsa, Maldha, and Fajri are important commercial mango varieties in Pakistan (Alam, 2008).

In Sindh province of Pakistan it is mainly grown in Mirpurkhas, Hyderabad, Tando Allahyar and Thatta. Good

quality of mango that can fetch good prices for the farmers needs good quality of packaging, quick and efficient transport from farm gate to consumers, careful handling and completion of all operations at their proper timings (Marini, 1997). High price of mango and weather risk, lack of storage facilities, skills, capacity building opportunities and government support to face the risk compel the farmers to contract out their orchards to contractors and middlemen in order to avoid risk factor. To sell mango orchards to contractors or middlemen farmers need to sign a contract or with mutual understanding go through Agricultural contracts that are of different kinds. Contract farming is an agreement between marketing firms and farmers for buying and selling of agricultural commodities under certain specific terms and conditions (agreements) and at the prices which are settled with mutual understanding between farmers and marketing agent. Based on these agreements purchaser is sometime responsible to provide different types of support in production of agricultural products such as providing inputs and technical advices. These contracts vary in terms of their type, sometime contracts are oral and sometime they are written. These contracts are also different according to their contractual arrangement such as fixed wage rate, fixed rent, time of entry into contract and duration of contract (Khushk and Smith, 1996).

In Sindh Province of Pakistan mango orchard contracts are mostly verbal and are executed based on trust and relationship between contractors, middlemen and farmers. Most of the literature reveals that 90% of mango orchard contracts are verbal (Khushk and Smith, 1996). To avoid risk in production and marketing of mango, farmers mostly sell their mango orchard at pre-harvest stage. The time duration for contracting orchard is decided by farmer/ producer and contracting person with mutual understanding. Most of the contracts are of short duration such as for single production

season. Farmers also contract out orchards with reference to the flowering stages of their orchards such as pre-flowering or post flowering stages. Generally farmers prefer to contract out their orchards about three to four months before harvesting time. As at pre flowering stage of mango crop, risk of mango production is higher as compared to the post flowering stage of mango therefore mostly contractors prefer to contract orchards after flowering stage. Under prevailing contracting system farmers are paid some of the contract amount in cash and remaining amount is paid to them in installments. This contract amount is paid to the farmers without including interest rate (Khushk and Smith, 1996).

This contract system enables the middlemen and contractors to become share partners in the profit earned by the farmers from the sale of their mango crop (Dhankar et al., 2002). Due to this reason mango farmers have less income and investment for mango orchards. Contractors do not take interest in proper management of mango trees management therefore yield of mango orchards is also affected. Therefore it is essential to investigate in mango contract system that is getting higher profit and to explore the reasons why farmers contract out their orchards to contractors. This research attempts to compare marketing margins earned by farmer and middle man and the factors that affect the decision of farmers to sell their orchards to contractors in Mirpurkhas Sindh.

2. Methodology

In this study both primary and secondary data is used. Primary data was collected through a survey of mango farmers and contractors. Four villages Hot Khan Leghari, Dolat Leghari, Hamzo Leghari and Haji Muhammad Ummar Bughio of district Mirpurkhas district were purposively selected as study area. Sample size was 60 respondents including, 20 farmers of mango

who sell their orchards to contractors, 20 farmers of mango who did not sell their mango orchards to the contractors and do the marketing of their mango by themselves and 20 contractors of mango crop. Villages are selected purposively (keeping in mind that both categories of the farmers involved in contracting mango orchards and the farmers do the marketing by themselves are available in the village). Households for the study are selected randomly. Before starting survey an informal survey of mango producers in the study area was carried out in order to understand regarding existing Mango marketing system in study area and test the prepared questionnaires. Pretested questionnaires were used to interview 60 respondents. For data analysis Microsoft Office Excel software package and STATA software was used.

Gross margins are estimated for farmers and contractors involved marketing of mango. Gross margins were calculated to estimate the difference between selling and buying price of two or more than two agencies for equivalent quantity of a specific commodity.

$$\text{Gross Margins} = \text{Price selling} - \text{Price buying}$$

Net margins represent the benefit received by the farmers and contractors after deduction of cost incurred by each as marketing cost.

$$\text{Net margins} = \text{Gross margin} - \text{Marketing cost}$$

3. Results

3.1 General Characteristics of respondents

General characteristics of three categories of sample respondents are shown in Table 1. Three categories of sample respondents are (1) farmers who sell their orchard on contract

(hereafter contract farmers), (2) Framers not involve in contract (hereafter non contract farmers) and (3) contractors who involve in mango contract business. The results explain that the average age of farmers and contractors is almost same and average family size of contract farmers (7 members), non contract farmer's (9 members) and contractors (11 members) is higher than average family size of Pakistan (6.5 members).

Education is an important indicator of standard of living. The average number of educated members in family of non contract farmers is higher (7 members) as compared to the average number of educated members in family of contract farmer (3 members) and contractors (5 members). Average number of years of education of contract farmers is less (8 years) as compared to and non contract farmers (11 years) and contractors (10 years). According to the results the average size of farm which contract farmers give on contract to the contractors is 6 acres while average acres of land owned by non contract farmer was 7 acres and the average size of farm which contractors have on contract is higher i.e. 15 acres of land. According to the data farmers respond that on average since 11 years they are selling their orchards on contract, farmer have 12 year experience of contracting out their orchards and contractors also respond that they are involved in contract business since 11 years.

Table 1 General characteristic of sample respondents

Variables	Farmers involve in contract (contract farmer)			Farmers not involve in contract (non contract farmers)			Contractors		
	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
Years of Age	27	70	47	24	60	45	27	65	44
Years of education	5	16	8	0	16	11	0	14	10
Family size	3	15	7	3	21	9	5	23	11
Number of educated family members	1	9	3	3	17	7	2	13	5
Number of acres on contract	2	42	6	1	60	7	2	125	15
Years of contracting experience	2	20	11	5	25	12	2	25	11

3.2 Per acre costs incurred by sample respondents in study area

The results pertaining to the average per acre maintenance and marketing costs incurred by the respondents are presented in Table 2. The results revealed that average per acre production and marketing costs incurred by contract farmers is Rs. 11890. These costs include wages of hired labor, prices of farmyard manure, and other costs incurred in other maintenance activities of mango orchard. Non contract farmers paid Rs. 70739 as production and marketing cost including wages of hired labor, maintenance of mango orchard, packing material, loading charges and transport costs. While contractors spend Rs. 77839 as average per acre costs. These costs include maintenance and marketing cost such as packing material charges, loading unloading and transport costs.

Table 2 Per acre marketing and production costs incurred by sample respondents in study area

	Farmers involve in contract	Farmers not involve in contract	Contractors
Cost Components	Avg. cost per acre (Rs.)	Avg. cost per acre (Rs.)	Avg. cost per acre (Rs.)
Cost paid by farmers	11890		39179
Packing		18133	16128
Loading & unloading		27245	12125
Maintenance cost		16122	6250
Transport		9239	4157
Grant total	11890	70739	77839

3.3 Revenues and gross and net margins earned by sample respondents

The results regarding the average per acre revenue earned by sample respondents are presented in Table 3. The results revealed that contractors and farmers who are not involved in contract business of mango and manage their orchards by themselves earn higher per acre average revenue as compared to contract farmers who contract out their orchards to the

contractors. The results revealed that per acre average revenue earned by farmers who are involved in contract business of mango orchards is Rs. 28405 and the average per acre revenue earned by the farmers who do not contract out their orchards is Rs. 155818, while average per acre revenue earned by contractors is Rs. 153920. Per acre gross margin earned by the contract farmers is less (Rs. 28405) as compared to non contract farmers (Rs. 94804) and contractors (Rs. 112379) (Table 4). Similarly Per acre net margin earned by the contract farmers is also less (Rs. 16515) as compared to non contract farmers (Rs. 40186) and contractors (Rs. 73719).

Table 3 Per acre average number of boxes and revenue earned by farmers and contractors

Particulars	Avg. number of boxes/ acre	Price per box	revenue earned per box (Rs.)
Farmers involve in contract			28405
Farmers not involve in contract	461	338	155818
Contractors	416	370	153920

Table 4 Gross margins per season per acres earned by farmers and contractors in study area

Respondents	Price paid per acre of mango (A)	Price received per acre of mango (B)	Gross margin per acre (C) C=B-A	Production / marketing cost per acre (D)	Net margin per acre (E) E=C-D
Farmers involve in contract	-	28405	28405	11890	16515
Farmers not involve in contract	70740	165544	94804	54618	40186
Contractors	39179	151558	112379	38660	73719

4. Reasons why farmers involve in contract system

During survey farmers were also asked open ended questions regarding the reasons involving in contracting out orchards. 90% of farmers replied that they contract out their orchards

due to the lack of information about market prices. More than 70% of farmers respond that they contract out their orchards because they depend on contractors for credits and loan to buy inputs (fertilizers, farmyard manure and labor force). 50% sample respondent farmers respond that when they need money they contract out their orchards to the contractors. 45% farmers also inform that as mango fruit is highly perishable in nature and there is high market prices fluctuation therefore to avoid these risks they contract out their orchards.

5. Conclusion

Results of the study show that per acre gross margin earned by the contract farmers is less (Rs. 28405) as compared to non contract farmers (Rs. 94804) and contractors (Rs. 112379). Similarly per acre net margin earned by the contract farmers is also less (Rs. 16515) as compared to non contract farmers (Rs. 40186) and contractors (Rs. 73719). In spite of these incentives farmers contract out their orchards to the contractors due to lack of information about market prices, poverty and perishable nature of mango fruit. Contracting out orchards and role of contractors can be reduced if government takes efforts to support mango farmers to bear price and weather risks.

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