

# COMPARISON OF PROFIT EARNED BY MANGO FARMERS FROM LOCAL, PROVINCIAL AND INTERNATIONAL MARKETS IN SINDH PROVINCE OF PAKISTAN

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**ABSTRACT:** *This study is aimed to explore costs incurred and revenues earned by mango growers from sale of their mangoes in various markets i.e. local, provincial and international. Mango is worldwide known as King of the Fruits and frequently grown in tropical and sub-tropical regions of the world including subcontinent. Due to that inefficiency farmers are helpless to sell their mangoes in local markets therefore they earn less income. Result of this study show that per acre average net revenue earned by farmers who export mango in international markets was highest (Rs. 4273765) as compared to other two categories of farmers in this study. Local farmers earn lowest net revenue (Rs. 454689), provincial farmers earned on average (Rs. 687973) per acre. Results of this study reveal that farmers who export their mango in international markets are earning higher income while the farmers who are selling their mango within Pakistan are earning very less as compared to mango exporting farmers.*

**Keyword:** Marketing, Mangoes, local, provincial and international markets, net revenues.

## 1. INTRODUCTION

Mango (*Mangifera Indica* L.) is worldwide known as King of the Fruits and frequently grown in tropical and sub-tropical regions of the world including subcontinent. It is an excellent source of Vitamin A, B and C. Mango is a delicious fruit being grown in more than 100 countries of the world including China, India, Indonesia, Mexico and Pakistan. Pakistan ranked 4th most mango producing country in the world [11, 14, 26]. Over 160 varieties of mangoes are grown worldwide but the most famous varieties grown in Pakistan [16]. It is the national fruit and the second most important and national fruit of Pakistan in terms of area under cultivation and production [19, 9]. At present the worldwide mango production estimated around 25 million tons annually. The cultivation of fruits in Pakistan is 863.4 thousand hectares with overall production of 7178.8 thousand tons, whereas the mango cultivated on 167.5 thousand hectares with the production of 1,732 thousand tons and mango is second major fruit crop of Pakistan [11]. Pakistani mangoes are internationally famous for their sweetness, juiciness, nutrition and flavor [13, 22, 6]. The domestic demand for mangoes is very high during the summer season. Mango is commonly consumed both as a fresh fruit and also in the shape of juices, jams, squashes, nectars, milk-shakes and jellies [7]. Many mango varieties with different harvesting times and quality attributes, such as sweetness, colour and size, are grown and consumed in Pakistan [23]. However, Chaunsa and Sindhri are the two most popular varieties of Pakistan [5, 10). Sindh produces 390, 486 tons and also exporting 61,632 tons of mangos annually [16]. Mangoes produced in Sindh are very sweet, soft, aromatic, and yellowish skin. There is so many varieties of mango which are almost produces mainly in the Districts of Hyderabad, Tando Allahyar, Mirpurkhas, Matli, Sanghar and Nausheroferoz; accounting for 62 % of the total production of mango in Sindh. Commonly the varieties grown in Sindh are Sindhri, Langra, Saroli, Desi, Dasehri, Almas, Anwar ratol and Bengan pali. Sindhri the most Producing variety of Sindh, it is very tasty than other [11]. In addition to the production issues the marketing of mangoes in Pakistan is inefficient, due to the involvement of numerous

intermediaries, the poor physical condition of markets, and an absence of modern infrastructure and logistical arrangements, such as cold storage, transportation and modern grading equipment [20, 6]. Although modern retail formats such as supermarkets are emerging in Pakistan [2], mangoes flow mainly through traditional channels and these create little value for consumers. Furthermore, the distribution of profits among chain participants is uneven and growers receive a relatively low share of the price paid by consumers [6, 18]. The collective impact of these challenges is that Pakistan's mango industry is failing to contribute to the country's socio-economic development. At the same time, new challenges are being posed by changes in consumer needs in both domestic and export markets, rapid urbanization, population growth, growing environmental concerns and stringent international compliance requirements on exports from developing countries. Some participants in the mango industry have upgraded their operations and acquired quality certifications, such as Eurep-Gap and Global-Gap [19]. Pakistan's mango industry is heterogeneous. The industry's main actors are orchard owners/growers, pre-harvest contractors, commission agents, exporters, wholesalers and retailers [18]. Both production and marketing of mangoes for domestic and export markets is handled by the private sector [3]. The role of Government sectors is very limited to support through its different research and development, elevation of markets and extension institutes. Mango industries provide seasonal employment opportunities for the rural peoples ranging with different activities, such as orchard management and picking to packaging and other postharvest operations [21, 17]. Economically the importance of trade for development cannot be overstressed. This specifically more important for many developing countries having weaker natural resources and only depending upon trade with other countries to catalyze the development process. Time to time agricultural need and its importance has been increased by the supply of natural important resources to the needy and poor countries. These all made increase in domestic production and export, also seeming improvement in system of employment which leads to enhance the food security in

developing countries [1]. Increase in participation in international trade encourage many developing countries, to raise their export earnings and capable to overcome social and economic issues [4]. The demand for mango is rapid growing at international levels; USA and Europe are the largest importers. Pakistan also stands among the world's leading producers and exporters of mangoes. In terms of its exports, Pakistan is ranked eighth after Mexico, India, the Netherlands, Brazil, Peru, Thailand and the Philippines [8]. Pakistan exports mangoes to numerous countries, but its main export markets are the United Arab Emirates, the United Kingdom, Saudi Arabia, Iran, Oman, Qatar and Afghanistan [23, 12, 11, 24]. Exports are destined mostly for low-value markets due to poor quality, short shelf life, non-compliance with standards, pesticide residues, fruit fly infestation and poor packaging [15, 10, 20, 25]. As a result, Pakistani mangoes receive the lowest price, US\$425 per tonne, among all major mango exporting countries of the world [8]. Due to lack of management skills of mango farmers, lack of new harvest and post-harvest technologies of mango crop, mango diseases, lack of knowledge of disease management and climate change, both mango production and mango quality is affected. Therefore, in spite of producing many varieties of mangoes at very high scale, export of good quality mangoes and income earned from mango farming is reduced. Mango farmers in Sindh are selling their mangoes in various markets such as local, domestic and international markets. There is a significant gap of information regarding the comparison of cost incurred and revenues earned by mango growers from various markets. This study will help to fill the gap of that information.

## 2. OBJECTIVE

Specific objectives of the study are as under:

1. To explore costs incurred and revenues earned by mango growers from sale of their mangoes in various markets i.e. local, provincial and international.

## 2. METHODOLOGY

In this study both primary data will be used. The data were collected through a survey of mango farmers. For this study 60 farmers were selected including three categories of farmers such as 20 farmers of mango who sell their mango in local market (will be written as local farmers), 20 farmers of

mango who sell their mango in domestic market of in other provinces (will be written as provincial farmers) and only 20 farmers of mango who sell their mango in international market (will be written as exporting farmers). District and villages were selected purposively in order to ensure the availability of above different categories farmers while households for the study were selected randomly.

## 4. RESULTS

General characteristics (age, years of education, family size, number of educated members in household family, number of earning members, acres of land and farming experience) of the sample respondents are shown in Table-1. Age is very important demographic factor which influences the efficient allocation of resources' it shows the ability to do work, efficiency, willingness to make progress and attitude towards various social and economic aspects of life. According to the data it was observed that the average years of age of local farmers were less (38 years), Provincial farmers bearing 51 years while the exporting farmers were bearing 61 average years of age which shows more aged people are more skillful. Education in its general sense is a form of learning in which the knowledge, skills and habits are develops. The data shows that the average years of education of exporting farmers were highest (14.6 years), Provincial farmers (9 years) while the average years of education of local farmers were lowest i.e. 8.7 years whereas the number of educated persons in household family of exporting farmers and Provincial farmers were same (8 members) while local farmers (6 members). The average numbers family members of exporting farmers were highest (13 members), Provincial farmers (10 members) and local farmers (7 members).

The data shows that the average acres of land of local farmers were lowest (7 acres), provincial farmers (63.7 acres) while exporting farmers have (153 acres). The result revealed that exporting farmers were more experienced than local and provincial farmers i.e. exporting farmers have on average 28 years of farming, provincial (24.6 years) while local farmers farming since on average 15 years. The results regarding the cost incurred by the sample respondents are presented in

**Table 1 General characteristic of the sample respondents**

	Local farmer	Provincial farmers	Exporting farmers
Variables	Mean	Mean	Mean
Years of Age	38	51	61
Years of education	8.7	9	14.6
Family size	7	10	13
Number of educated family members	6	6.5	8
Number of earning members in family	1.7	2.2	1.8
Acres of land	7	63.7	153
Years of farming/ experience	15	24.6	28

**Table-2. Per acre cost incurred by the sample respondents**

Cost Components	Local farmer	Provincial farmers	Export farmers
	Avg. cost per acre (Rs.)	Avg. cost per acre (Rs.)	Avg. cost per acre (Rs.)
Production cost			
Fertilizer/FYM	7830	8910	13000
Orchard maintenance	5120	7630	10465
Picking	9390	13860	32062
Marketing cost			
Packing	102375	122062	342000
Custom clearance	--	--	85500
Loading & unloading	51534	97845	34200
Storing	--	--	85500
Transport	13237	148890	2992500
Grant total	189486	399197	3595227

Table-2. The average cost incurred by the exporting farmers on different production and marketing costs including (fertilizer/FYM, orchard maintenance, picking, packing, loading unloading and transport) were highest (Rs. 3595227), provincial farmers incurred on average cost of (Rs. 399197) while local farmers incurred less amount of cost i.e. Rs. 189486. Table-3 shows the result regarding per acre yield of

**Table 3 Per acre average yield of mango in mounds**

Particular	Average number of trees per acre	Average yield mounds/40kg per tree	Average mound/40kg per acre
Local farmer	35	9	315
Provincial farmer	35	9.3	325.5
Export farmer	38	11.25	427.5

**Table 4 Per acre average revenue earned by respondents**

Particular	Average 40kg per acre	Average price per 40kg	Avg. Revenue earned per acre (Rs.)
Local farmer	315	2045	644175
Provincial farmer	325.5	3340	1087170
Export farmer	427.5	18407	7868992

**Table 5 Per acre net return earned respondents**

Respondents	Average revenue/acre (A)	Total cost/acre (B)	Net return per acre (C) C=A-B
Local farmer	644175	189486	454689
Provincial farmer	1087170	399197	687973
Export farmer	7868992	3595227	4273765

mango in mounds. The data highlights that per acre yield of mango of exporting farmers were highest (427.5 mounds), provincial farmers (325.5 mounds) while per acre yield of mango of local farmers were lowest i.e. 315 mounds. Table 4 highlighted per acre average revenue earned by the local farmers were lowest (Rs. 644175), provincial farmers earned on average (Rs. 1087170) per acre while exporting farmers earned highest amount of revenue on average (Rs. 7868992) per acre. Per acre net return earned by the sample respondents expressed in Table 5. The result revealed that exporting farmers were earning highest amount of net return on average

(Rs. 4273765 per acre) while provincial farmers earned on average (Rs. 687973 per acre) and local farmers earned lowest amount of net return on average i.e. Rs. 454689 per acre.

## 5. CONCLUSION

This study is aimed to explore costs incurred and revenues earned by mango growers from sale of their mangoes in various markets i.e. local, provincial and international. Mango is worldwide known as King of the Fruits and frequently grown in tropical and sub-tropical regions of the world including subcontinent. Over 160 varieties of mangoes are grown worldwide but the most famous varieties grown in Pakistan. In addition to the production issues the marketing of mangoes in Pakistan is inefficient marketing system. Due to that inefficiency farmers are helpless to sell their mangoes in local markets therefore they earn less income. Due to lack of management skills of mango farmers, lack of new harvest and post-harvest technologies of mango crop, mango diseases, lack of knowledge of disease management and climate change, both mango production and mango quality is affected. Mango farmers in Sindh are selling their mangoes in various markets such as local, domestic and international markets. There is a significant gap of information regarding the comparison of cost incurred and revenues earned by mango growers from various markets. This study will help to fill the gap of that information. The data shows that the average years of education of farmers involved in export of mango were young. This shows that as young people can easily take risk and they are enthusiastic to improve standard of life therefore they are involved in export of mango.

The per acre average cost incurred by the farmers involved in export of mango on production and marketing of mangoes was highest (Rs. 3595227), as compared to provincial farmers who incurred less per acre average cost (Rs. 399197) while local farmers incurred less amount of cost i.e. Rs. 189486. This highlight that farmers who export mango invest more on management of mango orchards and as result per acre yield of their mango orchard is higher as compared to farmers who sell mango in local and provincial markets. As result per acre average net revenue earned by farmers who export mango in international markets was highest (Rs. 4273765) as compared to other two categories of farmers in this study. Local farmers earn lowest net revenue (Rs. 454689), provincial farmers earned on average (Rs. 687973) per acre. Results of this study reveal that farmers who export their mango in international

markets are earning higher income while the farmers who are selling their mango within Pakistan are earning very less as compared to mango exporting farmers. Therefore it can be suggested to the policy makers to make such policies by which government can take efforts to provide easy installment loans, knowledge of new and updated mango production technologies, skills and facilities to the farmers so that they can sell their mango in international markets and earn higher incomes.

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