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Problems and prospects of mango marketing: A case study of Jagtial District of Telangana State

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Abstract

Mango is the leading horticultural commodity of the Jagtial district a major share of the total horticultural produce and provides employment to the labourers in management operations like pruning, ring basins preparation, spraying of plant protection chemicals, irrigation, harvesting. Since it is a major commodity facing problems in recent years due to climate change. After all the hurdles faced by growers in management of the crop at the final stage of produce, marketing is also a major challenge. The present study was formulated to understand the problems and probable solutions to mitigate the marketing problem to strengthen mango marketing systems and enhance farmers returns.

Keywords: Mango, auction, farmer producer organization, Jagtial, value-chain management

Introduction

Mango (*Mangifera indica* L.) cultivation in India is an age-old practice and holds significant importance due to its rich nutritional value, including vitamin A and dietary fibre, and its affordability to economically weaker sections of society. India is the leading producer of Mango in world (APEDA, 2024) and exports to United Arab Emirates, USA, U.K., Kuwait and Qatar (India's Agriculture and Food Exports, 2022) ^[1]. India has a rich diversity of more than 1000 varieties in different agro- climatic zones across the country but a few are on commercial scale that includes Alphonso, Himayath, Banganepalli, kesar, Rasalu, Chausa, Totapuri, Dasher, Langra, Fazli, Himsagar are being cultivating in states of Maharastra, Uttar Pradesh, Bihar, West Bengal, Gujarat, Andhra Pradesh, Karnataka, Tamil Nadu and Telangana. According to 2023-24 data, in Telangana, area under Mango cultivation is 3,06,396 acres with a production of 9,39,230 MT (WWW.CEICDATA.COM). In Telangana, Jagtial, Nagar Kurnool, Sanga Reddy, Khammam, Vikarabad are the major mango growing districts.

Jagtial district shares the major area of 38,277 acres with average production of 3 MT per acre which covers 95% of the area by Banganepalli variety (DHSO, Jagtial). This district is blessed with red to black soils and is experienced favourable temperature from flowering to fruit maturation stage. Due to the presence of river belt, high temperatures at fruit development stage lowers the water content and increases the total soluble solids. Due to its sweetness, it has huge demand and got Geographical Indication Tag in 2017 (GI application number 241). Since the changing climate, Mango growers are facing problems in recent years due to

sucking pest especially mango hoppers at the time of flowering, humid and cloudy days at the time of full bloom stage, delayed flowering and unseasonal rains at fruit development stage.

However, farmers are practicing the various management practices to get flowering and fruiting by adopting plant protection measures, irrigation, fertilizers application they are facing problem in marketing of the produce which ultimately resulting high cost of cultivation with less returns. Keeping in view, the present study was formulated to address the problems in marketing of the mango in Jagtial district during 2023-24.

Methodology

The present study adopted an ex post facto research design and was carried out in Jagtial district of Telangana, which was purposively selected due to its prominence in mango cultivation. The district recorded the highest area under mango cultivation in the state, covering 38,277 acres during the year 2023-24, thereby providing a suitable setting for analyzing constraints in mango marketing.

A multistage sampling technique was employed for the selection of study units. In the first stage, the district was selected purposively. In the second stage, the top ten mandals with the highest area under mango cultivation were purposively selected to ensure adequate representation of major mango-growing regions within the district. In the third stage, one village from each selected mandal, having the highest area under mango cultivation, was chosen purposively. Thus, a total of 10 mandals and 10 villages constituted the sampling frame for the study.

In the final stage, simple random sampling was used to select the respondent farmers. From each selected village, 10 mango growers were randomly chosen, resulting in a total sample size of 100 respondents. This sampling procedure ensured representativeness of mango growers across the major production areas of the district (Kothari, 2004) [4].

Garrett's ranking technique was employed to analyze and prioritize the constraints faced by mango growers in marketing their produce. This technique is particularly useful for converting qualitative rankings provided by respondents into quantitative scores, thereby enabling meaningful comparison and objective prioritization of various constraints (Garrett and Woodworth, 1973) [6].

Under this method, the identified marketing constraints were listed and the respondent mango growers were asked to rank them according to the severity of the problem as perceived by them. The ranks assigned by individual respondents were then converted into percent positions using the following formula.

$$\text{Percent Position (PP)} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

Where,

R_{ij} = Ranking given to i^{th} attribute by the j^{th} individual.

N_j = Number of attributes ranked by the j^{th} individual.

The calculated percent positions were subsequently referred to the Garrett's conversion table to obtain the corresponding Garrett scores for each rank. These scores reflect the relative importance attached to each constraint by the respondents. For each constraint, the individual Garrett scores obtained from all respondents were summed and then divided by the total number of respondents to derive the mean Garrett score.

The constraints were finally arranged in descending order of their mean Garrett scores, and ranks were assigned accordingly. A higher mean Garrett score indicated a more severe constraint, while a lower score signified a relatively less important problem. This systematic approach enabled the study to identify the most critical constraints in mango marketing particularly in study area.

Findings: Based on the study, the constraints faced by the growers were analyzed and presented (Table 1).

Table 1: Constraints in marketing of Mango:

S. No.	Constraint	Garrett score	Rank
1	Absence of direct market linkage between producers and consumers	76.40	1
2	Price fluctuation every year	71.60	2
3	Lower prices offered for undersized and oversized fruits by trader	54.53	3
4	Rejection of marketable fruits by traders owing to superficial pest and disease scars	52.1	4
5	Prevalence of a syndicated (cartelized) auction system	44.16	5
6	Ownership of a majority of mango orchards by non-farming sector investors	40.69	6
7	Inadequate post-harvest infrastructure	28.16	7
8	High transportation costs incurred in marketing produce to distant major urban markets	23.84	8

Absence of direct market linkage between producers and consumers emerged as the most critical constraint, securing the first rank with a high Garrett score (76.40). This indicates that farmers are heavily dependent on intermediaries for marketing their produce, which reduces their share in the consumer's rupee and exposes them to exploitative trade practices.

Price fluctuation was ranked as the second most severe problem with the highest Garrett score (71.60), highlighting the high degree of uncertainty in mango prices. This volatility adversely affects farmers' income stability and discourages long-term investment in orchard management. According to respondents, Price during the months of third week of March to first week of April is high and it falls down in May and June months. In recent years, price for Himayath and Dasher varieties are more compared to Banganepalli, though it is an extensively cultivated variety.

The lower prices offered for undersized and oversized fruits by traders occupied the third rank (54.53), suggesting that non-uniform fruit size significantly influences price realization, often to the disadvantage of farmers. This reflects inadequate grading mechanisms and limited alternative market channels for non-standard fruits.

The rejection of otherwise marketable fruits due to superficial pest and disease scars was ranked fourth (52.1). This constraint points to the dominance of cosmetic standards in the market and the lack of awareness or

acceptance of quality produce with minor visual defects, leading to avoidable post-harvest losses.

The prevalence of a syndicated auction system stood at the fifth position (44.16), indicating restricted competition among traders in regulated markets. Such collusive practices limit price discovery and weaken farmers' bargaining power. As the orchards are taken by the bidders from different parts of North Indian, local Mudiraj community at flowering stage- fruit set stage and syndicated auction leading to less auction amount. While auction people offer the amount by considering the factors such as age of the trees, canopy of the tree, labour costs for harvesting, price fluctuation etc., as majority of the orchards are more the 15-20 years old and alternate bearing of variety Banganepalli are also the reasons for fetching low auction amount.

The ownership of a majority of mango orchards by non-farming sector investors was ranked sixth (40.69). Although relatively less severe compared to marketing-related constraints, it suggests emerging structural issues related to control over production decisions and profit sharing. As the majority of the orchards are owned by non-farming people through lease system for two-three years. The tenant farmers are bearing all the costs for management practices out of all fixation of price by middlemen making the tenant farmers in loss.

The inadequate post-harvest infrastructure, with a Garrett score of 28.16, was ranked seventh, implying that while

infrastructure gaps exist, farmers perceive market-related inefficiencies as more pressing than physical infrastructure constraints. Cold storage units and ripening chambers are the need of hour to store the produce until for getting good price in the market.

Finally, high transportation costs incurred in marketing produce to distant major urban markets was ranked eighth (23.84), indicating that although transportation expenses affect net returns, they are considered relatively less critical compared to issues related to market access, pricing, and trader dominance. As it is not well connected by railways where it is difficult to transport to North Indian cities hence leading to dependence on the traders.

Overall, the analysis underscores that market access, price instability, and trader-mediated inefficiencies are the dominant constraints in mango marketing. Addressing these issues through direct marketing channels, price stabilization mechanisms, transparent auction systems, and value addition would substantially enhance farmers income and marketing efficiency.

Probable suggestions

Based on the identified constraints, the following measures are suggested to strengthen mango marketing systems and enhance farmers returns. These suggestions include promotion of Farmer Producer Organizations (FPOs) can facilitate collective marketing, improve bargaining power and enable direct market linkages between producers and consumers as this district is having Farmer Producer Organizations, thereby reducing dependence on intermediaries and mitigating exploitative trade practices. The encouragement of warehouse receipt systems and development of cold storage units would help farmers manage price fluctuations by enabling scientific storage, staggered sales, and access to institutional credit against stored produce.

Establishing processing and value-addition units for products such as pulp, juice, slices, and dried mango can absorb unmarketable fruits, thus reduce rejection losses and improve overall price realization where it can be making use of the common incubation centre on Mango processing lines facility sanctioned under one district one product scheme at Regional Agriculture Research Station, Jagtial which can provide employment to the women and also as means of entrepreneurship opportunities to the rural youth.

Training the farmers on Good Agricultural Practices (GAP) and Integrated Pest and Disease Management (IPDM) would enhance timely management of the crop and minimize superficial pest and disease scars that lead to market rejection. The promotion of e-auction systems and digital bidding platforms can improve transparency in price discovery, curb collusive practices in regulated markets, and enhance competition among buyers. Finally, fostering Public-Private Partnerships (PPP) in post-harvest infrastructure, logistics, processing, and market access can address structural bottlenecks by leveraging private sector efficiency alongside public support, thereby improving marketing efficiency and income stability for mango growers.

Conclusion

Based on the study, it can be concluded that training and

demonstrations to the growers towards scientific management of the orchard operations should be provided. Government initiatives and support is needed for cold storage, ripening units and packing units by strengthening infrastructure facilities and promotion of Farmer Producer Organizations in direct linkage between growers and consumers by avoiding middlemen and steps to be taken towards value addition of Mango by products.

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