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SOCIO-ECONOMIC CONDITIONS OF THE MANGO CULTIVATORS: A CASE STUDY IN KADAPA DISRICT OF ANDHRA PRADESH

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Abstract
Mango is the national fruit of India, well-known as the 'King of Fruits'. It is one of the most important and popular Asian fruits. Cultivation of Mangoes is extremely embedded in Indian history. Mangoes are widely obtainable year-round, as additional fruit and in frozen and processed foods. Mangoes thrive in tropical regions, and are cultivated throughout India and even in home-grown yards, along field boundaries and pavement avenues. It is believed that Mangoes originated in northeast India, northwestern Myanmar and Bangladesh. They later spread to the rest of Asia by themselves and with the help of humans. They have been cultivated, praised and revered since ancient times. Mango is grown in India in tropical and subtropical regions from sea to an altitude of 1500 meters. It is grown virtually in all states of India. Conversely, it is mainly cultivated in, Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal.The fruit is consumed in both forms raw and ripe. Raw fruits of local varieties of Mango trees are used for preparing various traditional products like raw slices in brine, amchur, pickle, murabba, chutney(sharabat) etc. Raw fruit of local varieties of Mango are used for preparing pickle and raw slices in brine on commercial scale while fruits of Alphonso variety are used for squash.52.78 per cent of the respondents in the age group between 36-45 years. About 50.56 per cent respondents are up to 10th class education. The marginal and large mango cultivators are more than 53(88.33 per cent) and 47(78.33 per cent) in the selected the main category. A low 10(16.67 per cent) selected the cultivation on a secondary basis in small size mango cultivators, compared to marginal and large mango cultivators.

Introduction

India ranks first in the world fabrication of 10.5 m.mt when it comes to mango production. India subsidizes 45 per cent of the total mango production of the world. In spite of the India's strong hold on the production of mango it is upsetting to know that India progressions just 2 per cent of the total mango production with a frightening loss of around 40 per cent. Only 20 per cent of the production of handled mango products is being exported. India's share of global exports of fresh mangoes and treated mango products is quite inadequate when we compare the same with other major mango producers of the world, i.e., China, Thailand, Mexico, Pakistan, Philippines, Brazil, Indonesia, and Nigeria.

Mango is the nationwide fruit of India, known as the 'King of Fruits'. It is one of the most significant and popular Asian fruits. Cultivation of Mangoes is deeply surrounded in Indian history. Mangoes are declared in early Arialkrit literature. Mangoes are widely available year-round, as fresh fruit and in frozen and processed foods. Mangoes increase in tropical regions, and are cultivated all over India and even in home yards, along field boundaries and roadside avenues. It is believed that Mangoes invented in northeast India, northwestern Myanmar and Bangladesh. Theylater feast to the rest of Asia by themselves and with the help of humans. They have been civilized, praised and well-regarded since early times.

Mango is a large, divided constant upright tree with wide immortal crown which attains a great height. Flowers appear in large terminal inflorescences producing fruit. The skin of the fruits may be emerald, yellow, or red, depending upon the variety of the fruit. The fruits have a small point at one end, known as the beak. The seed within the fruit is large and compressed. Tree is medium to large in height, immortal with symmetrical, rounded canopy ranging from low and dense to upright and open. Bark is typically dark grey-brown to black, rather smooth, superficially cracked or quietly fissured, peeling off in irregular, rather thick pieces. The leaves are alternately arranged, lance late shaped, 6 to 16 inches (15 to 40.6 cm) in length and leathery in texture. They are pinkish, amber or pale green-coloured when early, and become dark green at prime of life. Seedling trees live much more than 100 years whereas grafted ones live only 80 years or less. Mangoes vary in shape (nearly round, oval, ovoid-oblong), size and color, conditional upon the variety. Suitable Mangoes may be greenish, greenish-yellow, yellow, red, orange, or elaborate and deliberate about from a few ounces to more than 5 pounds (2.3 kg). The skin is smooth and leathery, immediate the overweight, pale-yellow to deep-orange edible portion. The fruits possess a single large, trampled, kidney-shaped seed that is enclosed in a timbered husk.

Economic Importance

The fruitlet is actual popular with the masses due to its wide range of malleability, high nutritive value, richness in variety, delicious taste and outstanding favour. The fruit is consumed in both forms raw and ripe. Raw fruits of local varieties of

Mango trees are used for preparing various out-of-date harvests like raw slices in brine, anchor, plight, murabba, chutney, panhe sharabat etc. Raw fruit of local varieties of Mango are used for preparing pickle and raw slices in brine on profitable weighing machine while fruits of Alphonso variety are used for squash. The wood is used as timber, and dried twigs are used for religious determinations. Mango kernel also contains about 8-10% good superiority fat, which can be used for saponification. Its arrowroot is used in sweetmeat manufacturing. Mango also has medicinal uses. The ripe berry has stuffing, diuretic and laxative possessions. It helps to increase digestive capacity.

Facts about Mango

- The name 'Mango' is derived from Tamil word 'mangkay' or 'man-gay'.
- When Portuguese traders settled in Western India, they adopted its name as 'manga'.
- The Mango is known as the 'king of fruit' through the world.
- Mangos invented in North-East India, Burma and Andaman Islands and bordering Bay of Bengal.
- In the opposite direction 5th century B.C., Buddhist monks are believed to have introduced Mango to Malaysia and eastern Asia.
- Persian buyers took the Mango into the Middle East and Africa, from there Portuguese brought it to Brazil and West Indies.
- Mango growers arrived in Florida in the 1830's and in California in the 1880's.
- The Mango sapling plays a sacred role in India. It is a symbol of love and particular believe that the Mango tree can scholarship wishes.
- In the Hindu culture, hanging fresh Mango leaves outside front door during Pongal (Hindu New Year) and Deepavali is considered a blessing to house.
- Mango leaves are used at marriages to ensure the couple bears plenty of children
- Hindus also brush their teeth with Mango twigs on holy days.
- Many Southeast Asian kings and nobles had their own Mango groveswith private cultivars being sources of great pride and social standing.
- Scorching of Mango wood leaves and debris announcements the toxic fumes, which can cause serious irascibility to eyes and lungs. Mangos are bursting with protective nutrients.
- The vitamin content depends upon the variety and maturity of the fruit, when the Mango is green, amount of vitamin C is higher, as it ripens the quantity of beta carotene (vitamin A) increases.
- The fruit of the Mango is so-called a Drupe - containing of the monocarp(edible fleshy part) and endocarp(large woody, flattened pit).
- Mango is a member of the Anachardiaceae family. Other distant relatives include the cashew, Jamaica plum, poisonous and poison oak.
- Dermatitis can result from communication with resinous latex sap that drops from stem end when Mangos are gathered. Mango fruit covering is not considered edible.

Major Mango Producing States in India

Mango is full-grown in India in steamy and subtropical sections from sea to an altitude of 1500 meters. It is grown practically in all states of India. However, it is mainly educated in, Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal.

Botanical description

Mango Mangifera indica , family Anacardiaceae, is a large, spliteverlasting erect tree with wide evergreen crown which attains a great height. Flowers appear in large terminal inflorescences producing fruit. The skin of the fruits may be green, yellow, or red, dependent upon the variety of the fruit. The fruits have a small point at one end, known as the beak. The seed within the fruit is large and compressed. Tree is medium to large in stature, immortal with balanced, rounded canopy fluctuating from low and dense to upright and open. Bark is usually dark grey-brown to black, rather smooth, casually splintered or unobtrusively fissured, peeling off in irregular, rather thick pieces. The leaves are consecutively arranged, lance late shaped, 6 to 16 inches (15 to 40.6 cm) in length and leathery in texture. They are pinkish, amber or pale green-coloured when undeveloped, and become dim green at adulthood. Seedling trees live much more than 100 years whereas attached ones live only 80 years or less. Mangoes differ in shape (nearly round, oval, ovoid-oblong), size and color, contingent upon the variety. Ripe Mangoes may be greenish, greenish-yellow, yellow, red, orange, or exaggerated and evaluate from a few modicums to more than 5 pounds (2.3 kg). The skin is smooth and leathery, surrounding the fleshy, pale-yellow to deep-orange edible portion. The fruits possess a single large, flattened, kidney-shaped seed that is enclosed in a woody husk.

Andhra Pradesh ranks 1st in the production of the Oil Palm, Tomato, Chillies Turmeric and Mango 2nd in production of loose flowers in India. Area wise Andhra Pradesh occupies 21.55 per cent of the total area under mango in the country, followed by Maharashtra (19.79 per cent), Uttar Pradesh (11.74 per cent), Bihar (6.2 per cent) and Karnataka (6.1 per cent).

Harvesting

Harvesting is the most significant influence, governing the post-harvest management. The gathering of the fruit is done, either by hand alternative, or plucking with a harvester at green mature stage. When the Mangoes are fully-grown and ready for picking, the stem will snap easily with a insignificant pull. If a durable pull is to be applied, then fruit is still somewhat immature and should not be harvested. A long-poled picking bag, which can hold nearly four fruits, is also used for plucking of the fruits. During harvesting precaution should be taken so that the fruit is held in the pouch and between the divider and knife and as the device is pulled, otherwise the blade may cut the stalk. This process avoids the falling of the fruits. Low fruits are generally harvested with the help of clippers. At the time of harvesting, precaution is to be taken to leave a four-inch stem to avoid the spurt of milky/resinous sap that exudes if the stem is cut close. Such fruits are less prone to stem-end rot and other storage diseases. Therefore, proper care should be taken to harvest the fruit cleanly and be kept as clean as possible.

It is a common practice to harvest fruits early in the season (premature stage) to capture early market. But, fruits should be harvested, when there is some yellow colour on the tree on the fruits. If immature fruits are harvested then white patches or air pockets are developed and effects the taste and flavors, whereas over-mature fruits lose their storage life. Such fruits present frequent problems during management. For export market, fruit should be harvested, when firm and at the mature-green colour stage. Fruits harvested at the mature green stage ripe quite rapidly after harvest and begin to turn yellow within 3 to 5 days at ambient temperature, while fruits harvested undeveloped green will not ripen appropriately, having poor taste and shrivel soon. Fruits should also not be harvested by switch, which may cause injury / bumps due to impact, subsequent in decay, poor quality and attract low price. Mango fruits are taken into the pouch and held between the divider and knife and as the device is pulled the blade cuts the pedicel. Then they the fruits are conveyed through an chute to collecting boxes without bringing down the device every time. This saves time and protects fruits from machine-driven damage due to impact. It also protects machinist's hand from the sap. On an average, a man can harvest about 800 to 1000 fruits per hour with the help of this device, depending on the skill of the worker, maturing and height of the tree. It munches 50 per cent less energy as compared to local methods. Harvested Mangoes should be placed in field containers of not more than 25 kg capacity for movement to the packing shed. The harvested fruits should be reserved in the shade and touched carefully at all times.

Precautions during harvesting

The following precautions should be taken during harvesting.

- Harvesting should be done by using correct implements like clippers or by carefully twisting and heaving the fruit from the tree.
- The harvesting under wet environments should be avoided, since wet fruits are more vulnerable to microbial growth and soil particles may cling to wet crops, kiss-and-tell them to soil-borne rot animals.
- Harvesting of fruits is best in the late morning, because the oil glands of these fruits are full in the early morning, initiating immediate yellowing.
- Stems left on the fruit should be cut off closely because they can puncture other fruit, producing post harvest decay and fruit damage.
- The tree should never be shake to harvest the fruits. The fruits should not be allowed to fall on the soil to avoid the mechanical injury that makes fruit more prone to decay.
- The interaction of fruits with the soil should be circumvented and should be kept carefully into padded field crates, well-ventilated plastic containers, or picking bags.
- Alternative bags either should strapped everywhere the waist or put over the shoulder.
- Picking bags should be calculated to empty from the bottom so that fruits can roll out of the sack onto the bottom of a greater field ampule or atop fruits previously present.

Mango Varieties of Andhra Pradesh

Alphonso (Happus)

Fruit is moderate in size, ovate leaning in shape, orange creamy in colour. Juice is moderate-abundant, excellent possession superiority, good for crushing and canning. Mainly exported as the fresh fruit flesh develops spongy tissue.

Bangalora (Totapuri)
The fruit is medium-large, rectangle shaped with sharp base with golden yellow colour. Good keeping quality; used for processing; heavy and regular bears variety, susceptible to bacterial spot.

Banganapalli (Baneshan, Safeda)
Fruit is large sized, obliquely oval in shape, golden yellow in colour, good keeping excellence, and good for dismissing, two-yearly in habit. Variability suitable for dry areas.

Bombai (Malda)
The Variety is alternate bearer fruit is medium, ovate and beige in color. Possession eminence is average. Bombay Green Fruit size is medium, figure ovate oblong with spinach green colour. Keeping quality is intermediate. Early seasoning variety. Biennial in habit highly susceptible to both somatic and florescent abnormality.

Himsagar
Fruitlet is medium sized ovate fruit with yellow color. Good charge quality. Early season variety and mostly used for table purpose. Fruit is very large, obliquely oval in shape. Fruit colour is light chrome. Fruit inferiority and keeping quality are medium. This is a late season variety.

Statement of the Problem
Mango marketing systems have been an important role to play in the predominantly agrarian economy. Insufficient market organization and uncreative prices accelerated agricultural expansion in India. Markets for farm foodstuffs have been found to be familiarly imperfect with a few well organized buyers and a large number of unorganized manufacturers please acquisitions to eradicate this watermark. Dumping their produce under the periodic patterns of production and gathering. While market inadequacy and the resultant known promotion competence are the mutual problems in admiration of all the farm foodstuffs, they are found to have been more pronounced in the markets for unpreserved products. Among all the perishables, fruits have to face all the marketing problems discussed in this section and the performance of the markets for fruits has much scope for upgrading. Mango has a pride of place not only for its miscellaneous uses but also for its special partiality by the customers, rich and the poor, alike while it is also exposed to the construction and the promotion mango referred to in this section. Therefore, an analysis of mango cultivation in the study area of socio-economic conditions of the mango cultivators Kadapa district of Andhra Pradesh has deserved a special attention not only to understand the problems in respect of production but also to identify the specific strategies that could be adopted to improve the performance of the mango cultivators.

Sample District of Andhra Pradesh
Mango is the most important popular fruit in Y S R Kadapa district. It is well-thought-out to be the ruler of steamy fruits. It is similarly liked by both the rich and the poor. Mango grows under varying soil and climatic conditions. Soil, dampness conditions, temperature and moistness largely determine the flexibility and production of mango.

Objectives
The following are the main objectives of the present study:

1. To study the socio economic conditions of the sample respondents in the study area
2. To study the cost and returns of mango cultivation in the study area

Sample Design
This study is based on the Primary data as well as secondary data. The primary data was collected through interview Schedule conduct in the Kodur mandal of YSR Kadapa district. The sample was drawn in simple random sampling technique for choosing 180 sample respondents from selected villages of kodur mandal in Y S R Kadapa district and for analyzing the data we have been used percentages only. One pragmatic study is presented to personal profile of sample respondents and for in depth analysis.

The age of the sample respondents is expected to narrate with their involvement and routine in mango cultivation. Generally middle and aged person are doing the mango cultivation analytically and totally. The age-wise classification of the sample mango cultivators have been presented in table-1.

Table-1,Age-wise distribution of the sample respondents in the study area

Sl. No.	Age of the Cultivator	Small Farmers	Marginal Farmers	Large Farmers	Total
1	Below-35	10 (16.67	13 (21.67)	11 (18.33)	34 (18.89)
2	36-45	30 (50.00)	34 (56.67)	31 (5167)	95 (52.78)
3	46-55	13 (21.67)	08 (13.33)	12 (20.00)	33 (18.33)
4	56 And above years	07 (11.66)	05 (08.33)	06 (10.00)	18 (10.00)
Total		**60 (100.00)**	**60 (100.00)**	**60 (100.00)**	**180 (100.00)**

Source: Primary Data. n**ote:** Figures in parentheses indicate percentages.

The table shows that 34 respondents (18.89 per cent) are in the age group of below 35 years, 95 respondents (52.78 per cent) are in the age group between 36-45 years, 33 respondents (18.33 per cent) are in the age group between 46-55 years, and 18 respondents (10.00 per cent) are in the age 56 and above years. It is concluded that 52.78 per cent of the respondents in the age group between 36-45 years.

Literacy Level

The Education has a inordinate influence on the financial lifetime of the people. It makes the inhabitant very accountable in their business actions. Education was creates better thoughtful of exertion and thereby increases the productivity. In the study area, the sample mango cultivators, on the basis of education, were classified in groups of Illiterate, School Level, and College Level. The table-2 highlights the educational status of the sample mango cultivators.

The table-2 presents that the 24 respondents (13.33 per cent) are illiterates, 91 respondents (50.56 per cent) have up to 10^{th} class, 45 respondents (25.00 per cent) have Inter mediate education, 12 respondents (6.67 per cent) have Degree qualification and 08 respondents (4.44 per cent) are Post-graduates. It is concluded that 50.56 per cent respondents are up to 10^{th} class education.

Table-2, Educational-wise distribution of the sample mango cultivators in the study area

Sl. No.	Education	Small Farmers	Marginal Farmers	Large Farmers	Total
1	Illiterate	08 (13.33)	09 (15.00)	7 (11.67)	24 (13.33)
2	Up to 10^{th}	32 (53.33)	28 (46.67)	31 (51.67)	91 (50.56)
3	Inter mediate	13 (26.67)	15 (25.00)	17 (28.33)	45 (25.00)
4	Degree	04 (6.67)	06 (10.00)	02 (3.33)	12 (6.67)
5	PG And above	03 (5.00)	02 (3.33)	03 (5.00)	08 (4.44)
Total		**60 (100.00)**	**60 (100.00)**	**60 (100.00)**	**180 (100.00)**

Source: Primary Data.Note: Figures in parentheses indicate percentages.

Number of Family Members Engaged in Mango Cultivation

Y.S.R Kadapa district is very popular for its mango cultivation. In the cultivation performs both hired labourers and family labourers have their role. Here, family labourers is an significant influence contributing to better manufacture and productivity in agriculture. The following table-3 stated the details of members engaged in mango cultivation.

Table-3,Family members engaged in mango cultivation in the study area

Sl. No.	No. of family members	Small Farmers	Marginal Farmers	Large Farmers	Total
1	Below-3	30 (50.00)	32 (53.33)	28 (43.33)	88 (48.89)
2	3-5	20 (33.33)	22 (36.67)	18 (30.00)	60 (33.33)
3	5-7	06 (10.00)	04 (6.67)	16 (16.67)	20 (11.11)
4	8 And above	04 (6.67)	02 (3.33)	06 (10.00)	12 (6.67)
Total		**60 (100.00)**	**60 (100.00)**	**60 (100.00)**	**180 (100.00)**

Source: Primary Data. Note: Figures in parentheses indicate percentages.

It is understood from the table-3 that the 88(48.89 per cent) of the sample mango cultivators could involve a maximum of below-3 numbers from their families. The participation of the cultivation of 3 to 5 numbers from the family constitute 60(33.33 per cent) and 5 to 7 numbers working on their field have 20(11.11 per cent). Participation of more than 8 numbers from a family is not a general practice. As such family constituted only 12(6.67 per cent).

Occupation in Agriculture

Mango agriculture in Kodur mandal is a very well-known one. The mango cultivators are involved in cultivation performs and doing other happenings like business, government job and the like. Hence, the profession is both main and secondary. Table-4 explains the details of the mango cultivators' occupation in agriculture.

Table-4,Occupation of the sample Respondents in the study area

Sl. No.	Occupation	Small Farmers	Marginal Farmers	Large Farmers	Total
1	Main	50 (83.33)	53 (88.33)	47 (78.33)	150 (83.33)
2	Secondary	10 (16.67)	07 (11.67)	13 (26.67)	30 (16.67)
Total		**60 (100.00)**	**60 (100.00)**	**60 (100.00)**	**180 (100.00)**

Source: Primary Data. Note: Figures in parentheses indicate percentages.

It is evident from the table-4 that out of 180 mango cultivators more than three fourth of the mango cultivators 150(83.33 per cent) selected the mango cultivation in main category whereas only 30(16.67 per cent) on cultivators selected the secondary basis. The marginal and large mango cultivators are more than 53(88.33 per cent) and 47(78.33 per cent) in selected the main category. A low 10(16.67 per cent) selected the cultivation on a secondary basis in small size mango cultivators, compared to marginal and large mango cultivators.

In the table-5 the sample mango rototillers represents the kodur mandal of Kadapa district in equal per cent in the small marginal and large size mango cultivators. According to form practice in India in mango cultivation those who have below-2.5 acres of lands are called small size mango cultivators and those who have 2.5 to 5 acres of lands are marginal mango cultivators. Likewise those who have above 5 acres of land are called large size mango cultivators.

Table-5,Land holdings of the sample respondents in study area

Sl. No.	Land Holdings	Small Farmers	Marginal Farmers	Large Farmers	Total
1	Below-2.5	60(100.00)			60(33.33)
2	2.5 to 5		60(100.00)		60(33.33)
3	5 to 8			50(83.33)	50(27.78)
4	9 And above			10(16.67)	10(5.56)
Total		**60(100.00)**	**60(100.00)**	**60(100.00)**	**180(100.00)**

Sour**ce:** Primary Data.

Years of Experience in Mango Cultivation

The experience of the mango ploughs in the cultivation of mango is another imperative factor for snowballing the area, production and productivity of mango. Experience is helpful to a better accepting of work and thereby it makes the citizen very accountable in their cultivation and choosing the current channel for advertising of mango. Table -6 indicated the classification of the sample grower based on farming experience.

It is evident from the table-6 that 98(54.44 per cent) respondents have below 8 years of experience in the mango cultivation. 39(21.69 per cent) respondents have experience of 9 to 18 years. Only 06(10.00 per cent) in the small, 05(8.33 per cent) in the marginal mango cultivators and 05(8.33 per cent) in the large mango cultivators have experience of 29 years and above.

Table-6,Years of experience in the mango cultivation of the sample respondents

Sl. No.	Experience	Small Farmers	Marginal Farmers	Large Farmers	Total
1	Below-8	33 (55.00)	30 (50.00)	35 (58.34)	98 (54.44)
2	9 to 18	13 (21.67)	15 (25.00)	11 (18.33)	39 (21.67)
3	19 to 28	08 (13.33)	10 (16.67)	09 (15.00)	27 (15.00)
4	29 And above	06 (10.00)	05 (8.33)	05 (8.33)	16 (8.89)
Total		**60 (100.00)**	**60 (100.00)**	**60 (100.00)**	**180 (100.00)**

Source: Primary Data. Note: Figures in parentheses indicate percentages.

Water Problems in Mango Cultivation

Irrigation is a very important basis of mango cultivation. The amount and incidence of irrigation to be assumed to mango orchard depend on the type of soil and climatic conditions especially rainfall and its circulation, age of the tree and the like. Water problems in mango cultivation can be distributed into two groups, adequate and inadequate. Table-7 explains the details of adequacy of water facilities for the mango cultivators in the study area.

Table-7,Water problem of the mango cultivation in the study area

Sl. No.	Water problem	Small Farmers	Marginal Farmers	Large Farmers	Total
1	Adequate	43(71.67)	28(46.67)	34(56.67)	105(58.33)
2	Inadequate	17(28.33)	32(53.33)	26(43.33)	75(41.67)
Total		**60 (100.00)**	**60 (100.00)**	**60 (100.00)**	**180 (100.00)**

Source: Primary Data.Note: Figures in parentheses indicate percentages.

It is clear from the table-7 that 105(58.33 per cent) of the mango cultivators have been facing water problems in mango cultivation. The rest of 75(41.67 per cent) of the mango cultivators are getting sufficient water supply in their field. The table-7 further shows that 17(28.33 per cent) of the small size mango cultivators and 32(53.33 per cent) of the marginal mango cultivators are facing inadequate water problem. The same problem in the other case is also 26(43.33 per cent).

Varieties of Mango Cultivated

In India, there were thousands of varieties of mangoes cultivated, then only about 30 varieties are grown on money-making weighing instrument. The search for higher excellence and enhanced varieties of mangoes has been successful on for many years. For successful mango growing, it is essential that the varieties established in a commercial orchard are productive, of good quality and adoptable to the temperature of the area. Different varieties are suitable for growing in different climate situations. Table -8 explains the major variety of mangoes in the sample district.

From the table-8 that most of the 70(38.89 per cent) cultivators have Neelum variety in their field and 66(36.67 per cent) and 27(15.00 per cent) Banginapalli and Bangalora respectively. Remaining 17(9.44 per cent) cultivate the Mallika variety

Table-8,Varieties of mango cultivation in study area

S. No.	Varieties of Mango	Small Farmers	Marginal Farmers	Large Farmers	Total
1	Banginapalli	20 (33.33)	25 (41.67)	21 (35.00)	66 (36.67)
2	Neelum	25 (41.67)	20 (33.33)	25 (41.67)	70 (38.89)
3	Bangalora	10 (16.67)	11 (18.33)	06 (10.00)	27 (15.00)
4	Mallika	05 (8.33)	04 (6.67)	08 (13.33)	17 (9.44)
Total		**60 (100.00)**	**60 (100.00)**	**60 (100.00)**	**180 (100.00)**

Source: Primary Data. Note: Figures in parentheses indicate percentages.

From the table-9 it is sound acknowledged that the maximum number of mango cultivators 83(46.11 per cent) are affected the problems of shortage of labour at the time of mango cultivation, 55(30.56 per cent) of the mango cultivators are facing the problems of high cost of labour. It is also clear that 36(20.00 per cent) of them suffer from the inefficient of labour.Only 06(3.33 per cent) of the mango cultivators are not facing any problem in this respect.

Table-9,Labour problems of the mango cultivators in the study area

Sl. No.	Labour Problems	Small Farmers	Marginal Farmers	Large Farmers	Total
1	Shortage of Labour	28 (46.67)	26 (43.33)	29 (48.33)	83 (46.11)
2	High Cost of Labour	16 (26.67)	18 (30.00)	21 (35.00)	55 (30.56)
3	Inefficient of Labour	14 (23.33)	12 (20.00)	10 (16.67)	36 (20.00)
4	No Problem	02 (3.33)	04 (6.67)	(0.00)	06 (3.33)
Total		**60 (100.00)**	**60 (100.00)**	**60 (100.00)**	**180 (100.00)**

Source: Primary Data. Note: Figures in parentheses indicate percentages.

It is inferred from table-10 that the total Establishment Cost per acre worked out to Rs. 1, 18,616.48, which includes Variable Cost of Rs. 40,465.75 and Fixed Cost of Rs. 78150.73.It consists of digging of pits in the orchard, ploughing of land, harrowing and the like. The cost of such practices is included in this item. The overall average cost of such operation was Rs. 1518.36 per acre. The cost of tillage practice accounted for 1.28 per cent of the total establishment cost.The growers are getting mango grafts from sources like Own Nurseries, Government Horticulture Department and Private Nursery. The cost of mango grafts is wide oscillating considerably conditional upon the sources from which they were gotten, variety and the distance of transport. The cost incurred towards the mango grafts amounted to Rs. 2, 945.56 meeting 2.48 per cent in the total formation cost.It was found from the study that the farmers have been appealing both rented labours and family labours. Normally the hired labour is additional than the family labour. The amount of labour rummage-sale in the production of mango was to some amount less when associated to the other returning.

Table-10,Establishment Cost of Mango Cultivators

S.No.	Cost components	Amount in Rs. Per acre	percentage
1 Variable cost			
1	Tillage practice	1518.36	1.28
2	Mango Grafts	2945.56	2.48
3	labour	4500.60	3.79
4	Manure	6675.47	5.62
5	Pesticides	2179.89	1.83
6	Irrigation	5318.81	4.48
7	Fertilizers	3512.36	2.96
8	Watch and ward	4000.00	3.37
9	Interest on working capital	9814.71	8.27
Total variable cost		**40465.75**	**34.11**
II Fixed Cost			
1	Land Tax	815.00	0.68
2	Rental value of land	24450.00	20.61
3	Others fixed costs	45200.73	38.10
Total fixed costs		**78150.73**	**65.88**
Total establishment cost(I+II)		**118616.48**	**100.00**

Source: Primary data. **Note:** Figures in parentheses indicate percentages.

The price of labour encompassed the labour working for digging pits for planting the mango implants, tilling of land and plantation fortification which is essential to provide favourable illness for early establishment and growth of trees, establishing, and application of nourishment, compost, irrigation and insecticide. The labour cost contains the wages remunerated for hired labour and imputed wages for family labour. The total labour cost incurred was Rs. 4, 500.60 per acre. The share of labour cost in the total establishment cost was 3.79 per cent.

Compost requires the use of organic and mineral manure at the initial stage. The total average cost of manure was Rs. 6675.47 per acre, which is 5.62 per cent of the total establishing cost and ranked second among the various costs component of establishment cost. Pesticide is very much an integral part of mango cultivation especially during the time of blossoming period. The farmers are using pesticides to control pests in order to improve the mango output. The cost of pesticide amounted to Rs. 2179.89 per acre. The percentage share of establishment cost was found to be 1.83 per cent. Irrigation is one of the essential sources at the time of the growing stages of mango grafts. The charges for electricity or fuel used were calculated at the actual prices paid. If hiring the oil engine for the irrigation, then the hire charges were included. The overall average cost of irrigation was Rs. 5318.81 per acre, which accounts for 4.48 per cent of the total establishment cost. The usage of fertilizer is essential in the mango cultivation from the grafts stage to the last stage. The application of chemical fertilizer helped the fast growth of the tree resulting in a rich yield of quality mangoes. The total expenditure was Rs. 3, 512.36 per acre and its share to total establishment cost was 2.96 per cent.

Mango has been good money-making value in local markets, coast-to-coast and domestic markets. The watch and ward is essential for protection the mango trees and also minimizing the damage of mango fruits. The cost of watch and ward was Rs. 4000.00 per acre and its percentage in the total establishment cost was 3.37.The Fixed Cost includes Rental Value of Land, Well, Pumpset, Storage Room and Land Tax. The fixed cost amounted to Rs. 78150.73 and the percentage share of total fixed cost to the total establishment cost incurred was 65.88 per cent. The rental value of land for the first five years worked out to Rs. 24, 450.00 per acre and had represented 20.61 per cent of the total establishment cost. The other fixed cost includes the land revenue, interest on fixed capital, depreciation on capital assets, staff salary and the like. The other fixed cost worked out to Rs. 45, 200.73 per acre registering 38.10 per cent of the total establishment cost. The land tax amounted to Rs. 815.00 per acre for five years and represented only small share of 0.68 per cent of the total establishment cost.

Operation and Maintenance Cost

The process and conservation cost of mango cultivation comprises all the recurrent costs experienced every year during the behavior period. It includes the cost of labour, manure, pesticide, watch and ward, irrigation, compost and attention on working capital. The input wise circulation of annual procedure and conservation cost of mango construction per acre from sixth year headlong was subtracted and presented in Table-11.

From the Table-11 it is clear that the entire run-of-the-mill annual procedure and conservation cost per acre was Rs. 14, 363.39. Among these costs, the cost of labour establishes the supreme share trailed by the charge of fertilizer. The cost of labour comprises the expenditure on labour working for application of manure, pesticide, gathering mango, tidying, tilling, mulching, earthling up around the tree and the like.

Table-11,Average annual operation and maintenance cost of mango

S.No	Cost component	Amount in Rs. Per acre	Percentage
1	Labour	2812.32	19.57
2	Manure	2515.27	17.51
3	Pesticides	2000.18	13.92
4	Watch and ward	449.28	3.12
5	Irrigation	2150.28	14.97
6	Fertilizer	2500.19	17.40
7	Interest on working capital	1935.87	13.47
Total operating and maintenance cost		**14363.39**	**100**

Source: Primary Data. Note**:** Figures in parentheses indicate percentages.

The average cost of the labour was Rs. 2, 812.32 per acre, which was contributed 19.57 per cent of the procedure and conservation cost. Costs of composts are placed 2nd amongst the significant constituent of the process and upkeep cost of the mango cultivation. The average spending on fertilizer amounted to Rs. 2, 515.27 and the percentage share to the total operation and maintenance cost is 17.51 per cent. The average spending on insecticide amounted to Rs. 2000.18 per acre and the percentage of share to the total process and upkeep cost was described at 13.92 per cent.

Returns from Mango Cultivation

The Gross Returns of mango growers were computed and presented in Table -12.

Table-12,Statement of Income from Mango Cultivation

S.No	Particulars	Amount Rs. Per acre
1	**Gross sales**	**39,758.21**
2	Less: marketing cost	4,853.72
3	**Gross return**	**4,853.72**
4	Less: variable cost	13,582.22
5	**Contribution**	**21,322.27**
6	Less: fixed cost	17,168.82
Net profit		4,153.45

Source: Primary Data. Note: Figures in parentheses indicate percentages.

From Table-12 it could be experimental that the Gross Earnings were 34, 904.49 per acre, which was calculated after subtracting the promotion cost, incurred by the growers from the sale proceeds of mangoes. The influence was calculated at Rs. 21, 322.27 per acre after subtracting the adjustable cost from gross earnings. The net profit per acre arrived after withdrawing the immovable cost from the influence was Rs. 4, 153.45.

Table-13,Annual Income of the sample respondents in the study area

S. No.	Income Levels	Small Farmers	Marginal Farmers	Large Farmers	Total
1	Rs. Below 20000	20(33.33)	18(30.00)	07(11.67)	45(25.00)
2	Rs. 20001 to 40000	27(45.00)	25(41.67)	12(20.00)	64(35.56)
3	Rs. 40001 to 60000	10(16.67)	12(20.00)	26(43.33)	48(26.67)
4	Rs. 60001 and above	03(5.00)	05(8.33)	15(25.00)	23(12.77)
Total		**60(100.00)**	**60(100.00)**	**60(100.00)**	**180(100.00)**

Source: Primary Data. **Note:** Figures in parentheses indicate percentages.

It is evident from the table-13 clearly reveals that the 64(35.56 per cent) earn income at Rs. 20001 and 40000 from sale of mango, 48(26.67 per cent) get Rs.40001 to 60000 from sale of mango, 45(25.00 per cent) get below Rs. 10000 and 23(12.77 per cent) get above Rs. 60001 and above from sale of mango from an acre per year.

Conclusion

The India ranks first in the world production of 10.5 m.mt when it came to mango production. India contributes 45 per cent of the total mango production of the world. In spite of the India's strong hold on the production of mango.It is alarming to know that India processes just 2 per centof the total mango production with an alarming loss of around 40 per cent. Only 20 per cent of the production of processed mango products is being exported. It is found in study area that out of 180 mango cultivators more than three fourth of the mango cultivators 150(83.33 per cent) selected the mango cultivation in main category whereas only 30(16.67 per cent) selected the cultivators on the secondary basis. The marginal and large mango cultivators are more than 53(88.33 per cent) and 47(78.33 per cent) in the selected the main category. A low 10(16.67 per cent) selected the cultivation on secondary basis in small size mango cultivators, compared to marginal and large mango cultivators. About 98 (54.44 per cent) of the respondents have below 8 years of experience in mango cultivation. 39(21.69 per cent) of the respondents had experience of 9 to 18 years. It is observed that in the study area there are two problems like water and labour problems for mango cultivators. Hence, the mango production is increase the employment and income of rural mango cultivator.

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