



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

AN ECONOMIC ANALYSIS OF COMMERCIAL CROP FARMING: A CASE STUDY OF PRAKASAM DISTRICT

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Abstract

Prakasam is one of the major commercial growing districts. In Andhra Pradesh, Prakasam is the second largest producer of commercial crops and holds the same position in the case of fruits with introduction of improved production techniques. Commercial crops occupy a place of special signification in human nutrition. Andhra Pradesh is well known as a cereal producing state. Since the advent of Green Revolution, agriculture of Andhra Pradesh has slowly shifted from subsistence to commercialized one due to good yield and minimum support price. In Prakasam wheat-paddy rotation become most popular rotation which is the root cause of various problems related to the soil and environment. Recently emphasis has been placed on the diversification of Andhra Pradesh agriculture. Commercial crops farming are considered to be good replacement for wheatpaddy rotation. But in Andhra Pradesh farmers are less interested to grow commercial crops as these crops cannot provide assured returns to the farmers on the account of their perishable nature, forces of demand and supply, inefficient marketing system, inadequate storage facilities, processing etc. India produces a wide variety of commercial and has a major position in production among many countries. India is the second largest producer of commercial crops with annual production of 118.60 million tonnes. Area of commercial crops in India is 6.10 million hectares which is more than 11.80% of the total area of the World. India is rich in commercial crops and fruits production because of agro climatic variations, biodiversity, fertility of soil, and cultivable area. In India, commercial crops production has reached the peak of production level. On the other hand farmers can also take various steps to empower themselves through forming co-operative societies and developing organization skills to prevent their exploitation by the middlemen and commission agents.

Key words: Farming, Climatic Variations, Middleman, Land holdings

Introduction

India is known as the commercial basket of the world. India has a wide variability of climate and soil and therefore produces a variety of horticulture crop such as fruits, commercial crops and medicinal plants. India produces a wide variety of commercial and has a major position in production among many countries. India is the second largest producer of commercial crops with annual production of 118.60 million tonnes. Area of commercial crops in India is 6.10 million hectares which is more than 11.80% of the total area of the World. India is rich in commercial crops and fruits production because of agro climatic variations, biodiversity, fertility of soil, and cultivable area. In India, commercial crops production has reached the peak of production level. In India various types of commercial crops are grown like Pumpkin, Cotton, Tomato, Sugarcane, Tobacco, Cauliflower, Cabbage, Brinjal, Radish, Okra, Bottle Guard, Ginger, Carrot, Capsicum, Turnip, and Peas. Commercial is the basic need of human being. The horticulture has potential of raising farmer's income and generating production. Commercial production of commercial crops is a good source of Income. Commercial crops are grown for two purposes: 1. Commercial 2. Domestic Commercial crops are also an important source of nutrition for the household. Cultivation of commercial crops promotes health because they are rich in nutrients and great source of energy. These crops play very important role in national economy, because the yield per unit's area of commercial is much higher than other crops. The economic reform in India has changed the agriculture in favour of commercial crops. India accounts for 16 percent of world production of commercial crops and 11 percent of the world fruit production. India is also the largest producer of Cotton which accounts for 54% of the world production. The higher production & increase in area are due to NATIONAL HORTICULTURE Mission (NHM) and other national programs. India also exports commercial crops to other countries like Nepal, Pakistan, Sri Lanka, Bhutan etc. The importance of commercial crops has been increasing on the account of increase in domestic as well as international demand for them.

After having discussed the challenges faced by the farmers it is crystal clear that government needs to invest a large sum of capital in horticulture development such as improving the infrastructure, fair marketing system, getting farmers acquainted to the modern techniques of cultivation, and most importantly establishing post harvest industries for better handling of produce. On the other hand farmers can also take various steps to empower themselves through forming co-operative societies and developing organization skills to prevent their exploitation by the middlemen and commission agents.

REVIEW OF LITERATURE

Todkari Gu. (2012) in this study a regional disputes of fruit and commercial farming in Solapur District of Maharashtra have been analyzed. The commercial crops are nature's gift to mankind. The standard of living of people can be judged by production 21 and consumption of commercial crops and fruits. Fruit and commercial cultivation is labour intensive industry. So in present paper an attempt has been made to assess the regional disparities in level of fruit farming in study region.

Soumya kanda Dwibey (2013) this study examine estimation of price spread and marketing efficiency of Brinjal in different marketing channels. A case study 'highlighted efficient marketing plays an important role in increasing the producers share in consumers' rupee. In this study profit, cost of cultivation, market efficiency by price spread, in the marketing of Brinjal Khurdha district of Odisha were analysed during the year 2011-2012. Primary data was collected from 80 framers through interview method using a specially designed pre tested schedule.

Binoy Goswami (2016), in this study using farm level data from the plains of Assam, the paper has estimated farm business income across different land-size classes and land tenure status. The analysis has been carried out at the aggregate level as well as at disaggregate level for three specific crops, viz. winter paddy, summer paddy and winter commercial crops. It has been found that sharecropping and fixed rent tenancy contracts have a negative and significant impact on farm business income. The lower level of farm business income on leased-in land, especially under sharecropping, can be attributed to payment of a significant amount as rent, which is higher than even that stipulated in the tenancy law. The study has suggested a shift in the cropping pattern from the presently predominant winter paddy to more remunerative crops such as commercial crops, which is also desired for a healthy transition of Assam agriculture from subsistence cultivation to a profitable venture.

A. Narayanamoorthy (2017), in his study concludes that the farm income is not only very low but the year-on-year fluctuation is also very high. Mere increase of minimum support price (MSP) for crops alone would not guarantee better income for farmers unless procurement infrastructures are sufficiently strengthened. Therefore, along with remunerative MSP for different crops, if procurement arrangements and other non-price (technology, credit and irrigation) incentives are packaged and sequenced appropriately, farm income can be increased in a sustainable manner.

RELEVANCE OF STUDY

Andhra Pradesh is one of the Primary states in the field of commercial crops. In Andhra Pradesh use of new technology have been increased the production. The Andhra Pradesh government improves the marketing system. The present study is an attempt in this direction and it also analyse the trends in area and production of commercial. The study will also indentify the constraints in the production of commercial and problems

faced by the farmers. Andhra Pradesh farmers also face problems in case of production and marketing of commercial. There is an urgent need to examine indeed the detail of commercial farming, the present system of production of commercial crops in Prakasam. The efforts made by the government to improve the marketing system have increased the efficiency and production of commercial crops. This study shows the increasing importance of commercial's farming and cost & Benefits analysis of commercial farming. The present study shows that there is a need to improve marketing system in Andhra Pradesh which is one of the basic drawbacks of Horticulture development. It also highlights the problems& perspectives of commercial farming. The study would be very useful for the state of Andhra Pradesh as well as for Prakasam district.

NEED OF THE STUDY:

Andhra Pradesh is an agricultural state, but now there is a need felt to diversify agriculture, due to various reasons. The cropping pattern needs to be changed for the survival of farmers and government also emphasis on horticulture in these days. The Previous studies are about the commercial crops cultivation but those studies were based on only commercial crops .So these are not providing much information regarding successive diversification and cost benefit analysis. The aim of present study is not only to examine the cost and benefit structure of commercial crops cultivation, but also to compare it with commercial crops, it also analysis the growth performance and shows light on major problems of commercial farming. Prakasam district has been selected on the basis of maximum area and production of commercial crops cultivation all over the Andhra Pradesh. Farmers in this area are brave & courageous; they can bear the initial losses if any. Moreover it is interesting to know whether this cultivation is beneficial or not and result can be generalized at least to some extent.

SCOPE OF STUDY

Structurally it is a research study (a case study) on the production of commercial crops in Prakasam district. The present study has been done on nine major commercial crops, contributing near about 67.38% of total commercial production in Prakasam district at micro level; the study would be useful for farmers to examine the cost and revenue structure of commercial crops. At macro level, it would be useful for farmers and Horticulture Department of Prakasam.

OBJECTIVES OF THE STUDY

The main objective of the study is as follows.

1. To examine growth performance of commercial cultivation in Prakasam.
2. To analysis cost & Benefits of commercial farming.

RESEARCH METHODOLOGY

The present study is based on both the primary and secondary data. The primary data has been collected through survey schedule. The secondary data has been collected from other un published thesis, government reports, Articles and journals.

SELECTION OF STUDY AREA

Prakasam district of Andhra Pradesh state has been selected for the present study randomly and it is a study of this district only. This district has been selected on the basis of maximum area and production of commercial crops cultivation all over the Andhra Pradesh.

The Prakasam district is selected for the Purpose as it holds the good position in the production of commercial crops in Andhra Pradesh state. In the year 2018-19, the area under commercial crops cultivation was grown 8035 hectare in Prakasam district. The primary and secondary data of commercial crops is also related to Prakasam district.

SELECTION OF COMMERCIAL CROPS.

Main commercial crops grown in Andhra Pradesh are Cotton, Sugarcane, Tobacco, Cotton, Sugarcane, Tobacco, Tomato, Brinjal, Cauliflower, Cabbage, Okra, Chillies, Peas, Root commercial crops and vine etc. Among all these crops, nine main commercial crops are having been selected for the study.

SELECTION OF MANDALS

Addanki, Chirala, Darsi, Giddalur, Ongole, Yarragondapalem and Zarugumilli mandals have been selected for studying of commercial crops cultivation. These mandals are famous for the main nine commercial crops cultivation, which have been taken in this study.

SELECTON OF VILLAGES

The sampled villages have been selected randomly from Prakasam district's different mandals. The list of villages growing commercial crops is collected from the ground survey report. Some information is collected from Deputy Director, Horticulture office Prakasam. The villages have been selected from each mandal. Nannurupadu, wada, Annavaram, Uyyulavada, Karavadi, Allipuram, Darabayalu, Nandanavanam, Seeta sagaram etc are the selected villages. In these villages all most all main crops have been sowing by farmers since so many years

SELECTION OF FARMERS

In this study firstly the list of farmers growing commercial is made. Selection of farmers has been done by a ground survey and there are 200 farmers who grow commercial crops in selected villages. In these villages farmers grow Cotton, Sugarcane, Tobacco, Tomato, Brinjal, and cauliflower, Peas, Chilli and Pumpkin etc.

ANALYSIS OF THE STUDY

I. TO EXAMINE GROWTH PERFORMANCE OF COMMERCIAL CULTIVATION

The horticulture crops play an important role in human life. In Prakasam the production of commercial has increased with the use of hybrid/high yielding variety seeds, proper use of fertilizer and intensive use of chemicals. Andhra Pradesh is major producer of commercial crops on account of its diverse climatic condition. In Andhra Pradesh, the area under commercial crops has increased in the recent years. In Andhra Pradesh, Prakasam district is the sixth largest producer of commercial crops. It is pertinent to note that in the present study nine major commercial crops crop have been taken. The Comparison has been done on the basis of preceding year i.e. every time/year last year considered as base year.

Table-1., Area under Commercial Crops in Prakasam District from 2011 to 2019 (In Hectares)

Year	Cotton	Sugarcane	Tobacco	Tomato	Brinjal	Cauliflower	Peas	Chilli	Pumpkin	Total: Veg Area Under Major Crops
2011-12	5320	285	275	210	98	120	95	285	270	6958
2012-13	5180	338	285	245	125	178	122	312	300	7085
2013-14	5680	342	--	298	131	168	120	139	250	7128
2014-15	5982	293	-	246	129	188	142	146	290	7416
2015-16	5983	300	245	245	136	198	153	346	300	7906
2016-17	6500	345	253	260	145	208	152	390	340	8593
2017-18	5925	350	256	288	174	252	157	405	350	8157
2018-19	4980	354	259	288	174	252	190	494	354	7345

Source: Primary source

There are nine commercial crops studied in the present study the highest area of Cotton was 6500 hectare in 2016-17 and lowest area of 5180 hectare was in 2012-13. Other crops like the lowest area of peas 95 hectare was in 2011-12.

It is to be noted that diagram of table No. 4.2 has not been made due to some reason and it is not necessary as well.

Table-2., Growth Rate of Area Under Commercial Crops in Prakasam District (Annual Basis Of)

Year	Cotton	Sugarcane	Tobacco	Tomato	Brinjal	Cauli Flower	Peas	Chilli	Pumpkin	Total: Veg Area Under Major Crops
2011-12 to 2012-13	-2.6	18.5	3.6	16.6	27.5	48.3	0.28	9.4	11.1	1.82
2012-13 to 2013-14	9.6	1.1	--	19.5	4.8	-5.6	-1.6	-55	-16.6	0.60
2013-14 to 2014-15	5.3	-14.3	--	-16.4	-1.5	11.9	10	5	16	4.04
2014-15 to 2015-16	0.01	2.3	--	0.4	5.4	5.3	7.7	136.9	3.44	6.60
2015-16 to 2016-17	8.6	-1.6	2.45	3.2	6.1	5.05	-0.65	12.7	13.3	8.68
2016-17 to 2017-18	-8.8	1.4	1.1	1.9	2.7	3.3	3.2	3.8	2.9	-5.07
2017-18 to 2018-19	-21	1.14	1.1	8.6	14.3	17.2	21	21.9	1.14	-9.9

Source: Primary source

It is to be noted that diagram of table no 4.3 has not been made due to some reason and it is not necessary as well

Table -3., Area, Production And Yield Of Commercial crops In Prakasam District Year (2011-12)

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	Cotton	Sugarcane	Tobacco	Tomato	Brinjal	Cauliflo wer	Peas	Chilli	Pumpkin	Total: Veg Area Under Major Crops
A- (AREA)	5320	285	275	210	98	120	95	285	300	6988
Y- (YIELD)	18600	18000	13000	20500	14000	19000	8000	18000	19000	148100
P- (PROD UCTIO N)	98952	5130	3575	4305	1372	2280	760	5130	6000	127504

Source: Primary Source

II. COST & BENEFITS ANALYSIS OF COMMERCIAL CROPS

High loss is involved in the production of commercial crops owing to its perishable nature. Some farmers are in a position to take the decision towards the cultivation of commercial crops but others are not due to lack of sufficient inputs and cost benefit analysis information. If some knowledge such as cost of cultivation, cost of production, input output ratio and marketing cost can be provided to the farmers, then the production of commercial crops can be make sufficient in the Prakasam region for the benefit of the farmers. In the light of above, the present study is taken up to examine cost benefits of commercial crops. It is to be noted that cost & benefit analysis of different crops have been examined one by one.

Table -4 Cost benefit analysis of cauliflower crops: -

Name of Commercial crop	Yield (per Acre) In quintal	Price (in quintal)	Total cost (Rs/Acre)	Gross Return (Rs/Acre) Qty.*Price 81*790= 17560	Net Return (Rs/Acre) =Gross Return-Total cost 63990- 17560= 46430
Cauliflower	81	790	63990	17560	46430

Primary source

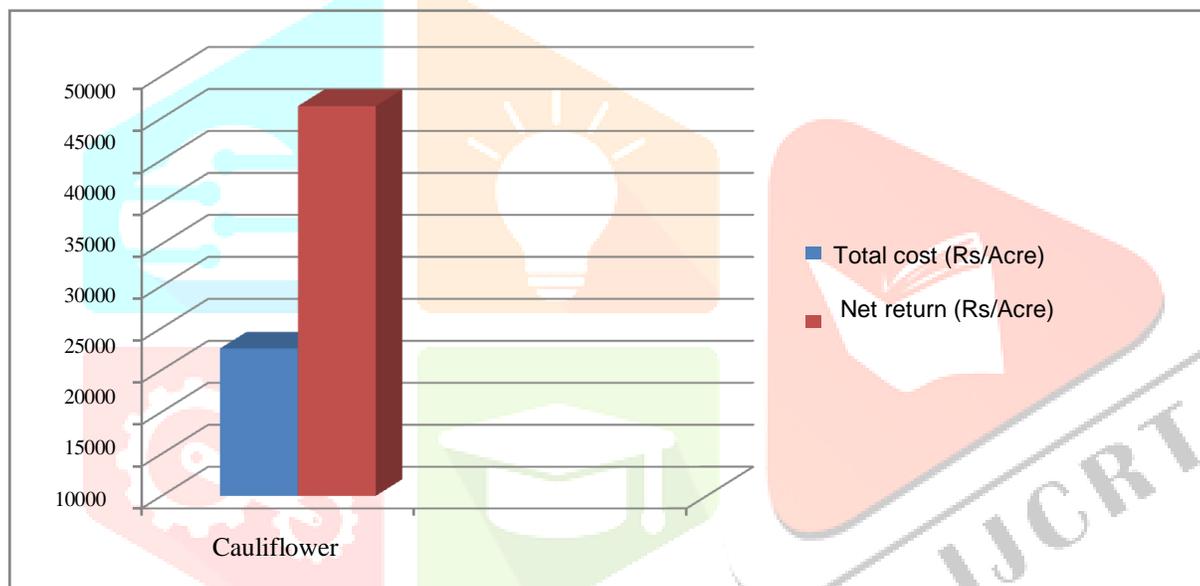


Fig. 1

It was showed in table 4 that on mean basis cauliflower productivity was 81 quintal per acre. The price of cauliflower was 790 per quintal. The gross return from cauliflower crop was Rs 64040(per acre) and cost of cultivation of cauliflower was 17560 (Rs/acre). Total cost of cultivation includes seedlings, spray materials, labour cost and devaluation of equipments. Net return from cauliflower crop was 46480 (Rs/acre).

Table 5 Cost benefits analysis of Cotton crops:-

Name of Commercial crop	Yield (in Acre) In quintal	Price (in quintal)	Total cost (Rs/Acre)	Gross Return (Rs/Acre) Qty.*Price 76*1005= 76380	Net Return (Rs/Acre) =Gross Return- Total cost 76380-40760= 35620
Cotton	76	1005	40760	76380	35620

Primary source

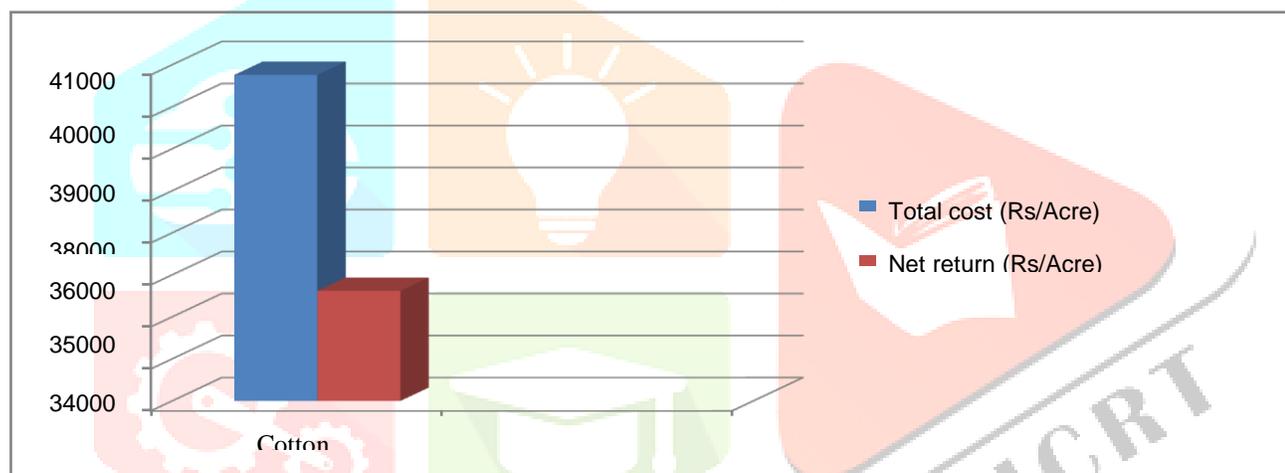


Fig. 2

It was remarked in the table 5 that on mean basis Cotton productivity was 76 quintal per acre. The price of Cotton was 1005 per quintal. The gross return from Cotton crop was Rs 76400(per acre) and cost of cultivation of Cotton was 40760 (Rs/acre). Total cost of cultivation includes seedlings, spray materials, labour cost and devaluation of equipments. Net return from Cotton crop was 35640 (Rs/acre).

Table 6 Cost benefits analysis of Sugarcane crops: -

Name of Commercial crop	Yield (in Acre) In quintal	Price (in quintal)	Total cost (Rs/Acre)	Gross Return (Rs/Acre) Qty.*Price= 80*1000= 8000	Net Return (Rs/Acre) Gross Return- Total cost= 80000-16400= 63600
Sugarcane	80	1000	16400	80000	63600

Primary source

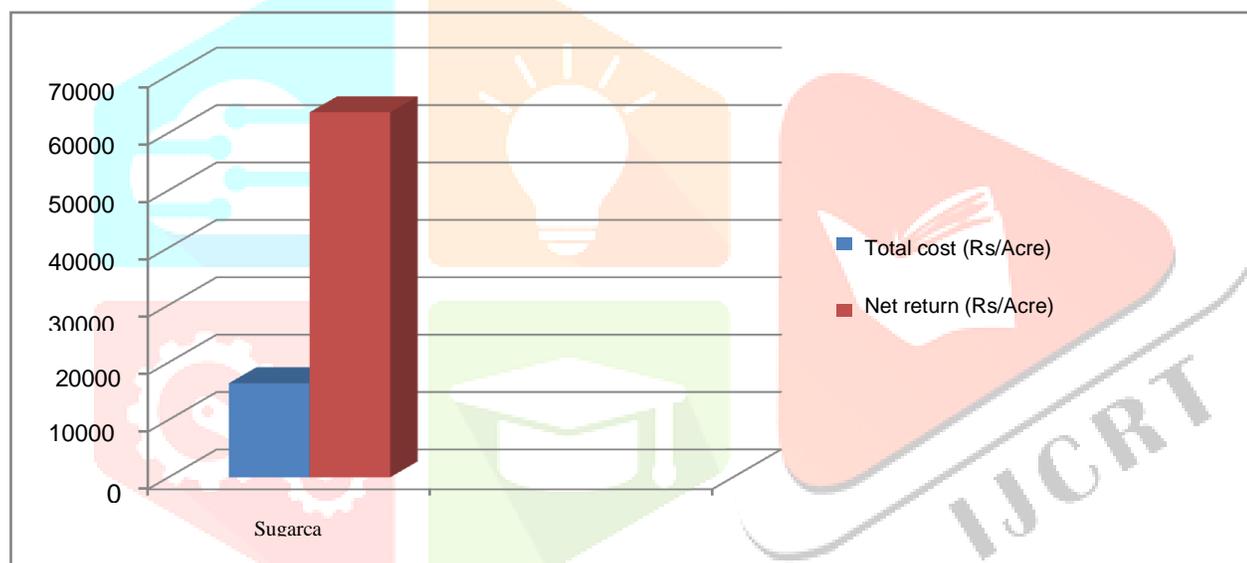


Fig. 3

It can be seen from table 6 that on mean basis Sugarcane productivity was 80 quintal per acre. The price of Sugarcane remained Rs.1000 per quintal. The gross return from Sugarcane crop was Rs 80000(per acre) and cost of cultivation of Sugarcane was 16400 (Rs/acre). Total cost of cultivation included seedlings, spray materials, labour cost and devaluation of equipments. Net return from Sugarcane crop was 63600 (Rs/acre).

Table 7 Cost benefits analysis of Tomato.

Name of Commercial crop	Yield of (in Acre) In quintal	Price (in quintal)	Total cost (Rs/Acre)	Gross Return (Rs/Acre) Qty.*Price= 76*1000 76000	Net Return (Rs/Acre) Gross Return- Total cost= 76000-20000 56000
Tomato	76	1000	20000	76000	56000

Primary source

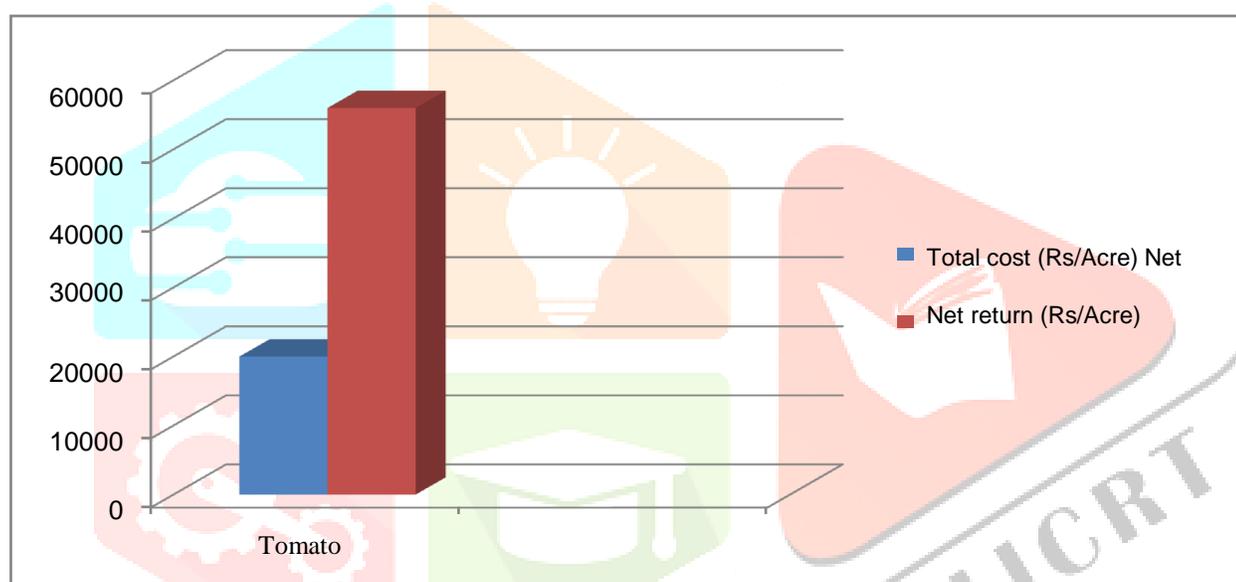


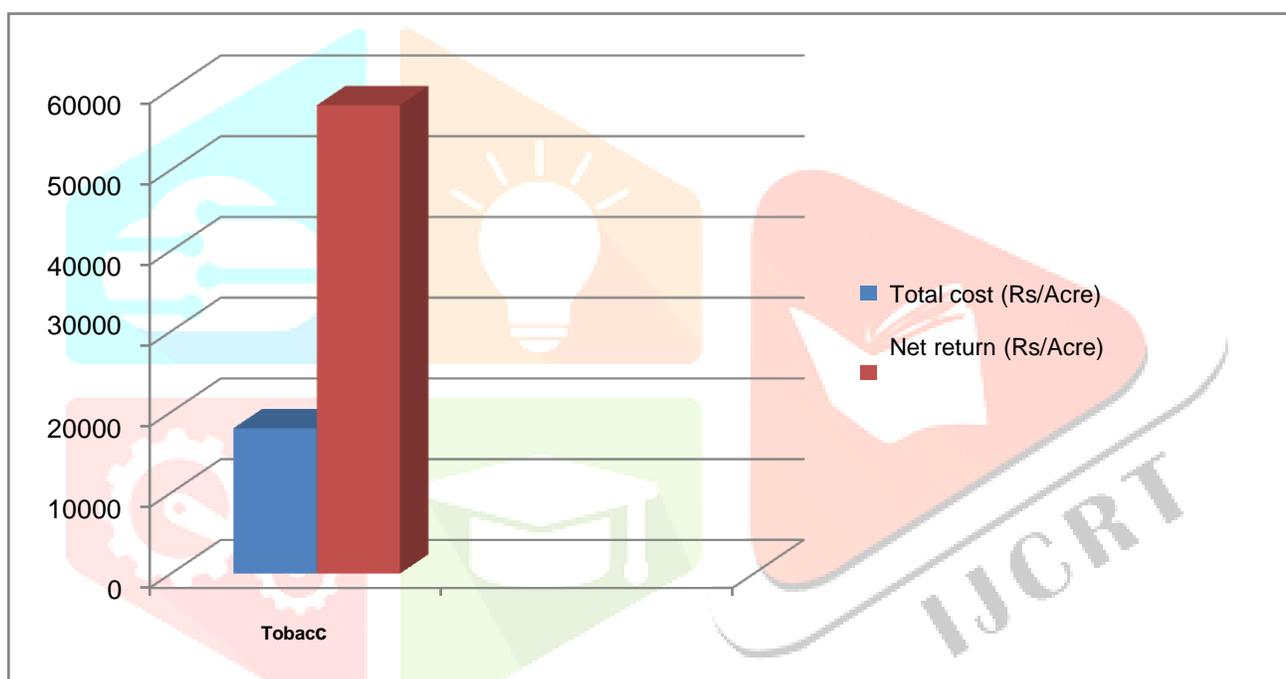
Fig. 4

It was remarkable from table 7 that on mean basis Tomato’s productivity was 76 quintal per acre. The price of Tomato was Rs.1000 per quintal. The gross return from Tomato crop was Rs 76000(per acre) and cost of cultivation of Tomato was 20000 (Rs/acre). Total cost of cultivation was of seedlings, spray materials, labour cost and devaluation of equipments. Net return from Tomato crop was 56000 (Rs/acre).

Cost benefits analysis of Tobacco crops:-

Table 8

Name of Commercial crop	Yield (in Acre) In quintal	Price (in quintal)	Total cost (Rs/Acre)	Gross Return (Rs/Acre) Qty.*Price= 76*1000= 76000	Net Return (Rs/Acre) Gross Return- Total cost= 76000-18000= 58000
Tobacco	76	1000	18000	76000	58000



Source: Primary source, Fig: 5

It was remarked in the table 8 that on mean basis Tobacco productivity was 76 quintal per acre. The price of Tobacco was 1000 per quintal. The gross return from Tobacco crop was Rs 76000(per acre) and cost of cultivation of Tobacco was 18000 (Rs/acre). Total cost of cultivation was of seedlings, spray materials, labour cost and devaluation of equipments. Net return from Tobacco crop was 58000 (Rs/acre).

Table 9 Cost benefits analysis of Brinjal crops.

Name of Commercial crop	Yield (in Acre) In quintal	Price (in quintal)	Total cost (Rs/Acre)	Gross Return (Rs/Acre) Qty.*Price= 80*1000= 80000	Net Return (Rs/Acre) Total cost= 80000- 28000= 52000
Brinjal	80	1000	28000	80000	52000

Source: Primary source

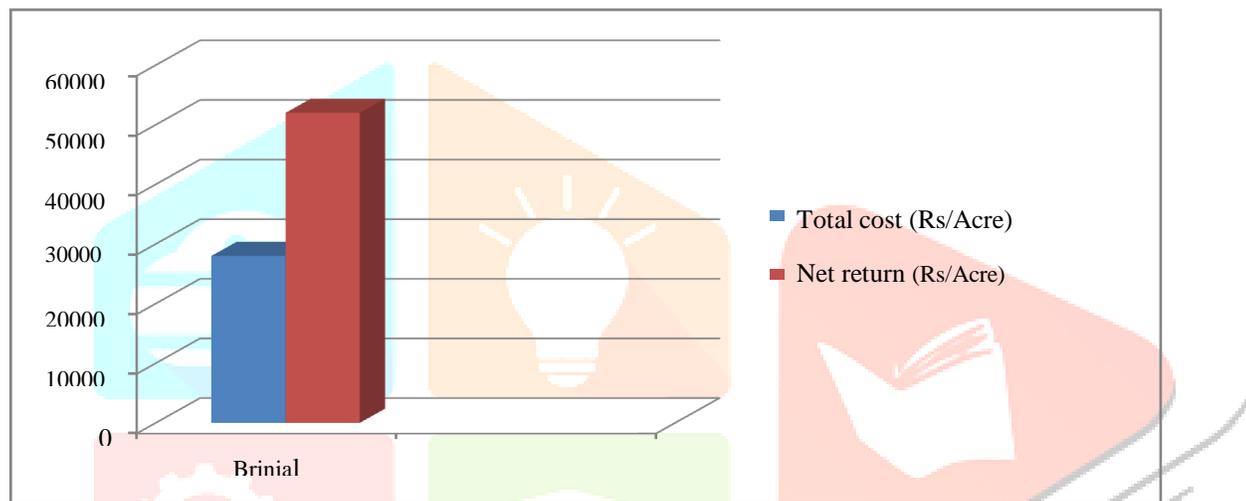


Fig.6

It was shown in table 9 that on mean basis Brinjal productivity was 80 quintal per acre. The price of Brinjal was 1000 per quintal. The gross return from Brinjal crop was Rs 80000(per acre) and cost of cultivation of Brinjal was 28000 (Rs/acre). Total cost of cultivation encompassed the cost of seedlings, spray materials, labour cost and devaluation of equipments. Net return from Brinjal crop was 52000 (Rs/acre).

Table 10 Cost benefits analysis of Peas crops:-

Name of Commercial crop	Yield (in Acre) In quintal	Price (in quintal)	Total cost (Rs/Acre)	Gross Return (Rs/Acre) Qty.*Price= 90*1000=90000	Net Return (Rs/Acre) Gross Return-Total cost= 90000-35000=55000
Peas	90	1000	35000	90000	55000

Source: Primary source

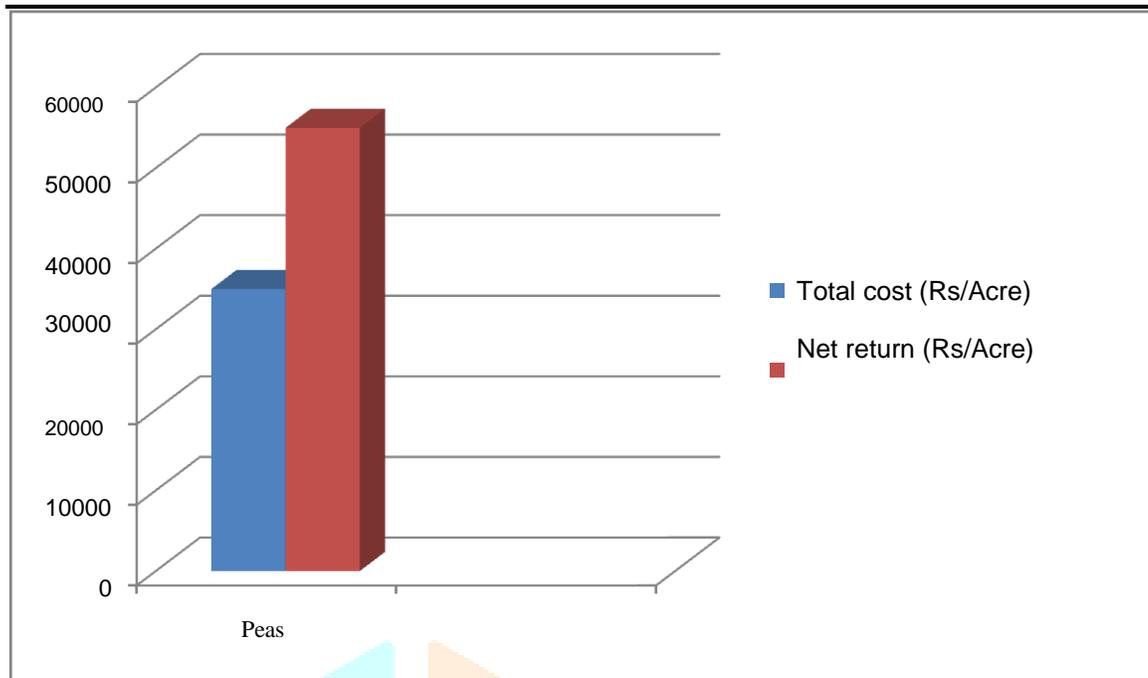


Fig. 7

It was remarked in the table 10 that on mean basis Peas productivity was 90 quintal per acre. The price of Peas was 1000 per quintal. The gross return from peas crop was Rs 90000(per acre) and cost of cultivation of Peas was 35000 (Rs/acre). Total cost of cultivation included seedlings, spray materials, labour cost and devaluation of equipments. Net return from Peas crop was 50000 (Rs/acre).

Table 11 Cost benefits analysis of Pumpkin crops:-

Name of Commercial crop	Yield (in Acre) In quintal	Price (in quintal)	Total cost (Rs/Acre)	Gross Return (Rs/Acre) Qty.*Price= 80*800= 64000	Net Return (Rs/Acre) Gross Return-Total cost= 64000-25000= 39000
Pumpkin	80	800	25000	64000	39000

Source: Primary source

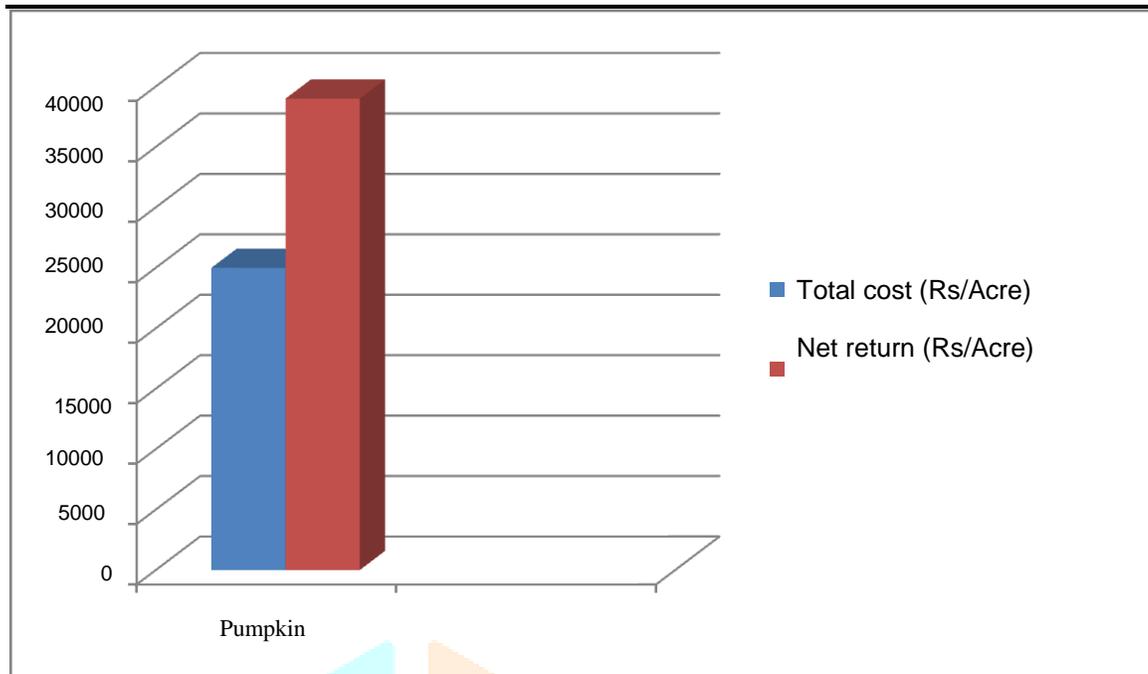


Fig.8

It was remarkable from table 11 that on mean basis Pumpkin productivity was 80 quintal per acre. The price of Pumpkin was 800 per quintal. The gross return from Pumpkin crop was Rs 64000(per acre) and cost of cultivation of Pumpkin was 25000 (Rs/acre). Total cost of cultivation includes seedlings, spray materials, labour cost and devaluation of equipments. Net return from Pumpkin crop was 39000 (Rs/acre).

Cost benefits analysis of Chilli crops:-

Table 12

Name of Commercial crop	Yield (in Acre) In quintal	Price In (in quintal)	Total cost (Rs/Acre)	Gross Return (Rs/Acre) Qty.*Price=	Net Return (Rs/Acre) Gross Return- Total cost=
Chilli	95	900	35000	85500 95*900=85500	50500 85500-35000=50500

Source: Primary source

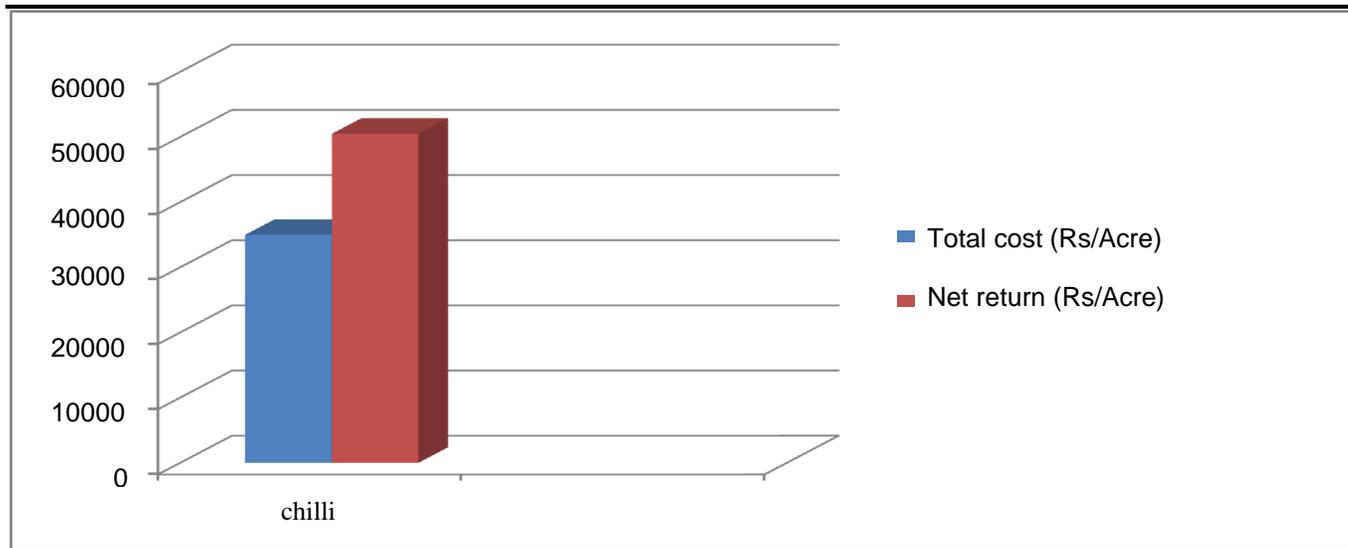


Fig.9

It was remarked in the table 12 that on mean basis Chilli productivity was 95 quintal per acre. The price of Chilli was 900 per quintal. The gross return from Chilli crop was Rs 85500(per acre) and cost of cultivation of Chilli was 35000 (Rs/acre). Total cost of cultivation included seedlings, spray materials, labour cost and devaluation of equipments. Net return from Chilli crop was 50500 (Rs/acre).

It can be seen from the above analysis that all the commercial crops were giving good return, although some were giving more and some were giving a little less in comparison to the other commercial crops. It can be concluded that commercial crops cultivation is a profitable occupation.

Conclusion

To sum up the production growth performance of commercials in Andhra Pradesh state as well as in Prakasam district was mainly due to change in area rather than change in yield. Further it may be noted that land is a natural resource and fixed in its supply. So land is a limiting factor for production. Hence it is very much necessary to raise the productivity level to meet the growing demand of commercial crops. In the case of commercial crops both of the state level as well as of the district level, again the production growth performance was mainly attributable to expand in area rather than enhancement in yield. The technology improvement in the case of commercials is not comparable to cereals like wheat and rice. On the other hand, in the case of commercials both of the state level as well as the district level the area showed reverse growth. Here in Prakasam district yield was found to be mainly responsible for the production growth performance.

In Prakasam district potato is the main commercial. Highest area is under potato crop in Prakasam district. Chirala and Darsi mandals are hub of the potato crop. Many cold stores are situated in this area. The second main crop of the Prakasam district is tomato. In case of Prakasam district good climatic conditions are suitable to all commercials like cotton, tomato, cauliflower etc.

In other words, in the case of commercials yield revealed a positive growth due to some technological advancement in explaining the production behavior in the state as well as in the district. At the national level and at the state level, the maximum stress is on the breeding of Hi-Tech and environmental resistant varieties of cereals pulses, etc. Due to perishable nature and lack of long time storage, there is a need of developing good varieties of seeds and build more cold stores in the district.. So on the basis of these findings, it may be interesting to know that there is a need to increase yield of both commercials as well as cereal crops. Cultivation of commercials crops is good for the Andhra Pradesh economy.

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