



Vegetable Cropping and Marketing -A Case Study in Godavari Delta Region, AP

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Abstract: *The ATC of production of <1 acre land holdings is recorded at Rs 68300, followed by Rs 114305 and Rs 147100 in case of 1-2 acres and 2-4 acres. The share of cost A_2 is higher in TC of the land holdings. The IOR is recorded by 1:0.62, 1:0.65 and 1:0.64 levels. It shows more or less returns over the costs. Differences in feasibility of market facilities are caused to the price and FBI variations. The profit range among the selected farmers is 38.53% - 35.79% = 2.74% respectively. However, the X^2 test results rejected the null hypothesis @ 5 percent level of significance between availability markets and price received. The regression results show that four independent variables have significant role at one percent level in extension of farm operations. Implementation of MSP is suggested to reduce uncertainty in horticulture sector.*

Key words: *Input- Out Put, Farm size, Price Spread, Marketing Channels, Farm Business, Cost-Benefit*

Introduction:

In India, diverse climate and spread of new agricultural technology etc is extending agriculture especially in the vegetable production. It is evident that India has occupied second place next to china with 11.5 percent of vegetable production in the world. The state of Andhra Pradesh (AP) has also attained 19 percent of share in India's total vegetable production due to development of horticulture in the state as well as in the study area of Godavari delta region. The present paper is aimed to find out the input-out put relationship of vegetable production in the contemporary global retailing economic scenario by marginal cultivators who are recorded as an average at 48 percent in the study area.

From the earlier studies, it is found that increase in cost of cultivation due to hike in charges of human labour and fertilizers (Raman & Sharma 1981)⁵, problems in marketing (Bhogal 1994)², low prolific share (Agarwal & Saini 1995¹, Chinnappa³ - 1997 and Srinivas et al, 1997)⁷, lack of integration of production, processing and marketing of agricultural products in view of globalization and liberalization policies (Malar & Pandey, 2008)⁴ have discouraging the vegetable growers. Further improper use of land has reducing the cropping of vegetable production and it is also caused to wide gap between costs/input and out put - (IOP) (Seidu AI-Hassan,2009)⁶.

Meanwhile, there is no specific and systematic study regarding the



prototype of vegetable cropping, marketing & its determinants in Godavari delta region. The agricultural profile of the region shows that many of the marginal and small farmers have committed to shifting cultivation from paddy to vegetable production even though cob-web conditions have taken place in this cropping. Besides, the increasing rate of consumer price index based inflation has favored to vegetable growers and consequently, price of vegetables increased to 4-5 five times recently in East Godavari, AP (according to the report of Chief Planning Officer, Kakinada AP)

In this view, the present paper try to carry out the IOP relationship which indicates performance of vegetable cultivation, farm business income (FBI)/ net returns, role of various marketing channels and price spread; identify the factors effecting vegetable production in the study area..

Materials and methods:

Farm level data were collected with pre-designed questionnaire using randomly selected 100 farmers from 10 villages of Godavari delta region. The specific study district has been selected because of the area is situated near to the river Godavari and also called as RICE BOWL of Andhra Pradesh. Data on farm features including form size, values of input and out put and accessibility of markets etc is covered.

Input costs are classified in to Cost A_1 and Cost A_2 . Cost A_1 refers to human labour and Cost A_2 denotes material costs including fertilizers, pesticides, seeds, rent for land etc. Thus, total cost (TC) = $(A_1 + A_2)$. In the examination of data- *ratios, mean and cross table analysis* is applied. *Regression model* in the form of semi-logarithm which minimizes the errors is also used to find out the factors influenced on the level of inputs used to produce vegetables in the study area. Five variables have been identified to analyze the determinants of input use to produce traditional vegetables. We propose to estimate the following model.

It is assumed that all the independent variables have positively associated with Y, i.e., if the values of independent variable increases, the input level varies positively and vice-versa.

Empirical Results and discussion

Varieties of vegetable production:

The experience of the East Godavari district, Andhra Pradesh indicates the vegetable forming usually found in low lands with canals, lift irrigation and favorable for seasonal or year round irrigation. Traditional vegetables like Chikkudu (Beens), Benda (lady fingers), Tomato and Bringals are the major crops and these are preferred as cash crop because of their potential for lifting poor farmers out of poverty. The district occupied 9.11 percent of area to the total cropping area of the state (table 1).



Table -1 Area under selected vegetable crops in AP and East Godavari District

Area under cropping (in hectares)					
	Bringals	Beens	Tomato	Lady fingers	Total
Andhra Pradesh	23464	9271	12714	9747	55196
East Godavari	3192	572	929	333	5026
East Godavari %	13.60	6.17	7.31	3.42	9.11

Source: statistical abstract of Andhra Pradesh (2008), Govt. of AP

Distribution of input costs:

Input costs vary farm to farm and crop to crop. Only the operational costs are considered in the analysis and ignored family labour and other own inputs. It is found from the table-2 that the TC of beens, lady fingers, Tomato and bringal production of less than one acre land holdings is recorded at Rs 68300 and occupied these crops by 19.18 percent, 21.82 percent, 34.11 percent and 24.89 percent respectively. The range of inputs costs have varied among the selected farm size holders. The cost of cultivation in case of 1-2 acres of land holdings is registered by Rs 114305 and the respective percentages for the four types of products are 23.97 percent, 22.40 percent, 33.79 percent and 19.84 percent. An increasing level of cost of productive expenditure is found in 2-4 acres of land holdings. It is increased about 77.71 percent than costs of 1-2 acres of land holdings and the

expenditure/cost spread to beens by 27.87 percent, lady fingers occupied 21.38 percent, tomato 32.91 percent and Bringals shared by 17.84 percent respectively.

The share of cost A_1 to TC was recorded by 15.23 percent in less than one acre but it is 24.61 percent in 1-2 acres and 23.18 percent in case of 2-4 acres of land holdings. The remaining percentage of expenditure is related to cost A_2 . It is also observed that the cost of plantation/harvesting is higher in cost A_1 , and fertilizers, pesticides rent for leased-in land has occupied major portion (27 to 34 percent) in cost A_2 .

The response of erudite farmers regarding cost A_2 is – removal of fertilizer subsidies in the early 1990s has exacerbated price seasonality leading high transaction costs resulting discourage the supply of producers to different markets.



Table-2 Particulars of farm operation costs & input out put ratio etc

Description		Size of land holdings (in acres)		
		<1 acre	1-2	2 -4
1	Cost A ₁ (% to total cost)	15.23	24.61	23.18
2	Cost A ₂ (% to total cost)	84.77	75.39	76.82
3	Total Cost (=column 1 +2) in Rs	68300	114300	147100
4	(VOP) in Rs	94172	158340	199746
5	FBI (=column 3- 4) in Rs	25872	44040	52646
6	% age profit to inputs used	37.88	38.53	35.79
7	IOR(=columns $\frac{3}{4}$)	1:0.62	1:0.65	1:0.64
8	% age profit from Beens cropping	26.24	29.74	26.39
9	% age of profit from Lady fingers	25.20	36.27	26.78
10	% age of profit from Tomato	48.45	45.43	45.48
11	% age of profit from Bringals	37.18	37.0	37.0

Source: Compiled from field survey

VOP= Value of output; FBI= Farm business income; IOR= Input out put ratio

Channels of vegetable marketing & price spread:

From the preliminary survey conducted in the study area, it was observed that the marketing of vegetables from farm place to consumer was done mainly through three channels as shown in figure 1. Channel I was related to weekly mandies and Rythu bazaars which the producer sells their products directly to the consumer and there is no sales tax or commission paid to mediators. Therefore, this is treated as profitable channel to both producer and the customer. In the second (General markets) and third (Farm

place) channels, the processes of vegetable marketing is complex situation and possible to rise price when it reached to customer.

Net value of output: The net value of output soled [(net value of output) = gross value of out put - (input costs, processing & transport costs, sales tax etc)] in three channels of markets is present in table-2.

As per the perceptions of vegetable growers, the average value of out put of less than one acre land holding farmers is recoded about Rs



94172 per annum and it varies to Rs 158340 in 1-2 acres of farm size and Rs 199746 in case of 2-4 acres of farm size tables 2 and 3).

The study hypothesized that there may be a correlation between marketing channels and revenue through sale of vegetables in these markets (null hypothesis).

Table -3. Marketing Channels of vegetable and sales

(Rs. in Rupees)

Marketing channel	Sales/revenue from different marketing channels		
	>1 acre	1-2 acres	2-4 acres
Weekly Mandies	29608 (31.44)	333267 (21.01)	-
Rythubazar	7317 (7.77)	15771 (9.96)	26606 (13.32)
General markets	43922 (46.64)	86438 (54.59)	113716 (56.93)
Farm price	13325 (12.15)	22864 (14.44)	59424 (29.75)
Total	94172 (100.0)	158340 (100.0)	199746 (100.0)
Calculated X^2 value= 26.40; Table value =16.80 d.f=9.60. hence null hypothesis is rejected			

Source: compiled from field data: Figures in the brackets are percentages to the respective totals

It is identified that the derived X^2 value 26.40 is greater than table value of 16.80. The difference in degree of freedom is recorded at 9.60. Thus, the results rejected the null hypothesis @ 5 percent level of significance. On the other words, theoretically, the two

variables have significant level of correlation but statistically it is not found.

IOR and FBI: An attempt is made to analyze the input- out put coefficients and farm business income (returns from the inputs used) of the cultivators. It



indicates the relative efficiency of inputs used across different size of operational holdings. The input out put ratio (IOR) of the selected farmers of concerned land holdings is recorded by 1:0.62, 1:0.65 and 1:0.64 levels respectively. The IOR shows the more or less returns over the costs in the study. As a result, the net returns/ FBI from the costs has recorded at significant level at 37.88 percent in less than one acre land holdings followed by 38.53 percent and 35.79 percent to the land holdings of 1-2 and 2-4 acres (Table 2). The profit range among the selected farmers is 38.53% - 35.79 % = 2.74% respectively. The difference in earnings among the farmers may be due to price variation in the marketing channels, type of vegetable cropping and use of own human labour. Farmers who have chosen 1st and 2nd marketing channels have benefited more than 3rd channel choosers.

Conclusion and policy implications:

The study identified that there is no more negative effects as the earlier studies have found in different areas in the country. The vegetable growing is found remunerative and profitable compared with other crops like cereals according to the perceptions of the farmers. However, the returns are at squat level due to high input costs. Consequently, the growers of vegetables have facing problems at the time of production and marketing. It is assumed that cooperative farming may be reduced cost of vegetable production and help to countenance the competition from the large farmers.

Lack of tenancy rights and due to small size of the holdings, the commercial banks is not providing credit facilities to the vegetable growers in the study area. Therefore, the farmers have mostly depended on the money lenders for credit at high interest rate and this ultimately led to debt trap. Hence, there should be a need of institutional credit facilities at lower interest rate. The banks should relax their norms in favor of farmers to become manifest from debt.

Due to lack of Minimum Support Price to these products, this sector has been facing uncertainty and cob-web conditions. Extension of MSP can encourage vegetable growers. It is also suggested that a separate mechanism will necessitated for the vegetable farming to provide day to day latest information about -the market, price, new technology and new implementations in vegetable cropping.

Vegetables are most essential commodities for the human beings as a better nutrient. It indicates that the price of vegetables should be at minimum level as feasible to common men. To attain this, the growers have to get quality seed, fertilizer and pesticide at cheaper cost. The government has to provide subsidy to these inputs which ultimately reduces the cost of production. Owing the perishable nature of the vegetables and to stock them upto remunerative price, should provide storage facilities either by the government departments or concerned authorities in every market at



reasonable maintenance and user charges.

These implications may be positively improved the vegetable production and life style of the growers.

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