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A Study on Production and Marketing of Pineapple in Kolli Hills, Namakkal District, Tamil Nadu – India

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Abstract

India is the second largest producer of fruits (44 million tons) and vegetables (87.5 million tons) with a unique position in fruits like mango, litchi, banana, pineapple, sapota and grapes. India's share in the world production is about 10.1% in fruits and 14.4% in vegetables. The future of the Indian farmers depends on the success of the agriculture sector as India's prosperity is predominantly linked to the growth in income in the agrarian sector of the economy. India has been bestowed with wide range of climate and physio geographical conditions and as such is most suitable for growing various kinds of horticultural crops. Pineapple is the most important American fruit, and the third most important tropical fruit, after banana and mango citrus fruits being produced mainly in subtropical areas. It is cultivated in all tropical and subtropical countries. The common name for one member of and for the Bromeliaceae, a family of chiefly epiphytic herbs and small shrubs. The spiny leaves of various species of the genus Ananas yield a hard fiber called gravata in South America and pina, or pineapple cloth, in the Philippines. The fruit, whose spiny skin is yellowish brown when ripe, is sweet and juicy; it is topped by a distinctive rosette of green leaves. It is grown throughout warmer regions. The economics of pineapple production is indispensable since there is no proper farm business data on its cost of production. The accurate figure on establishment cost, operating cost and input requirement of pineapple orchard would be greatly helpful to the pineapple producers in general. This information will be of immense use to farm financing institutions. Area under pineapple is gradually expanding in the study area district. The present study is an attempt to analyze the feasibility of investment in pineapple gardens and to find out the profitability of pineapple crop.

Keywords: *Pineapple Production, Agricultural Marketing, Marketing Management Concepts, Regulated Markets, Product Concept, Selling Concept*

1. Introduction

The common name for one member and for the Bromeliaceae, a family of chiefly epiphytic herbs and small shrubs. The spiny leaves of various species of the genus Ananas yield a hard fiber called gravata in South America and pina, or pineapple cloth, in the Philippines. The fruit, whose spiny skin is yellowish brown when ripe, is sweet and juicy; it is

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topped by a distinctive rosette of green leaves. It is grown throughout warmer regions. Thailand, the Philippines, and Brazil are the largest producers of canned pineapple. It is known botanically as *Ananas comosus* Merr. The existing marketing system for the fruit in selected areas of Bogra district, Bangladesh was examined based on data from 40 market intermediaries (Begum and Raha 2002). The fruit has acquired few vernacular names. In China, it is Po-lo-mah; sometimes in Jamaica, Sweet Pine; in Guatemala often merely "Pine". In India it is successfully grown in West Bengal, Assam, Karnataka, Meghalaya, Manipur, Bihar, Goa, Tamil Nadu and Kerala. It is one of the most common fruits in India. The growers faced such as lack of road facility unawareness inadequate storage facility delayed payment and lack of market facilities (Brij Bala, 2006). Pineapple may be consumed fresh, canned, juiced, and are found in a wide array of food stuffs dessert, fruit salad, jam, yogurt, ice cream, candy, and as a complement to meat dishes (Sivakkolundu, 2012; 2013) Pineapple enzymes can interfere with the preparation of some foods, such as jelly or other gelatin-based desserts, but would be destroyed during cooking and the canning process (Sivakkolundu, 2016). The region, consisting of 18 nadus (villages) including the present Rasipuram and Senthamangalam, were under this rule (Chapke, 2000).

2. Objectives

- To find out the socioeconomic status of farmers in the study area.
- To study the trends in cost of pineapple cultivation.
- To analyze estimate the economics of pineapple production on the basis of benefit cost analysis in the study area.
- To find out the problems faced by the sample farmers in study area.
- To suggest some suitable policy measure to enhance the sustainability of pineapple cultivation in the study area on the basis of findings of the present study.

3. Statement of the Problem

In the process of marketing the producer has to incur various marketing costs. The use of chemical pesticides need to be minimized so that it would be ecologically least destructive, economically viable (Gunjate, 1997). These costs are determined by the producer's performance and efficiency of different marketing functionaries which in turn influence the returns to the growers. During marketing stage, the pineapple producers may be faced with manifold problems which have direct bearing upon the prosperity of producers. The main marketing problems are market finance, price fluctuation etc. Even if the production technology is advanced, unless marketing is improved simultaneously, efforts to increase the yield and production may go waste (Hiremath, 1993; More, 1999). The increase in production and productivity was due to the use of improved cultural practices, increased use of manures, fertilizers and plant protection chemicals (More *et al.*, 2000).

4. Hypotheses

- There is significant difference in socioeconomic status of farmers in the study area.
- There is a significant inter village variation and farm size variation in cost of pineapple cultivation from the stage of growing period to the stage of production of pineapple among the selected farm households in Kollimalai, Namakkal district.
- There is significant farm wise variation with respect to economics of pineapple production on the basis of benefit cost analysis in the study area.
- The respondents differ significantly in their mode of marketing pineapple.

5. Methodology

This study aims at analyzing the pattern of pineapple cultivation in Kolli hills, Namakkal district. It analyses various components of cost of cultivation of pineapple on the basis of results obtained through field survey. It also examines the economics of pineapple cultivation in terms of gross or net profit of pineapple cultivation. The design of the study is analytical method.

5.1. Sampling

Kolli hills has about 35 revenue villages. Out of them six villages are selected as sample according to the performance of pineapple cultivation. Arasampatty village has 78 pineapple growing farmers and among them 50 are selected as sample constituting 64.10% of the universe. Keeraikadu village has 82 pineapple growing farmers and among them 50 are selected as sample constituting 60.97% of the universe. Sellipatty village has 95 pineapple growing farmers and among them 50 are selected as sample constituting 52.63% of the universe. Bellakadu village has 76 pineapple growing farmers and among them 50 are selected as sample constituting 65.78% of the universe (Patil and Pramod Kumar,1986). Thottikadu village has 98 pineapple growing farmers and among them 50 are selected as sample constituting 51.02% of the universe. Vadugarpatty village has 89 pineapple growing farmer and among them 50 are selected as sample constituting 56.17% of

the universe. Thus in total 300 pineapple growing farmers are selected as sample on the basis of purposive random sampling method. The growth rates in area, production and productivity and the factor responsible for change in acreage under the crop (Pawan *et al*., 2002).

6. Data Collection

The relevant primary data are collected from the respondents by employing a well structured interview schedule. The researcher has visited each village and met the respondents. The relevant secondary data are collected from the various government reports, such as reports of District Rural Development Agency, and Director of Statistics.

7. Data Analysis

The collected data are classified and tabulated with the help of computer programming. Cross tabulation is made for data pertaining to socioeconomic background of the respondents.

7.1. Limitations

- The chances of recall bias among the respondents maybe greater, which will not give a true picture about the study area.
- There are chances for human bias and most of them do not maintain account for their expenditure on the inputs.
- Kolli Hills is a truly rugged terrain and is not meant for the faint-hearted. It takes courage to even consider and plan a trip to this virgin hill.
- Located just 100 kms from Salem town, it is accessible yet outside the reach of unadventurous souls.

8. Results and Discussion

Data presented in Table 1 indicates out of 300 respondents 14.33 per of them belong to the backward caste and 23.67% of them belong to the most backward caste. It was found the schedules caste and scheduled tribes contributed 22.67% and 39.33% respectively in the total respondent. The concentration of scheduled tribes was found in the areas of Arasampatti, Bellakadu and Vadagurpatty.

Table 1: Caste Wise Distribution of Respondents

Area	Backward Caste	Most Backward Caste	Schedule Caste	Schedule Tribe	Total
Arasampatti	8 (16.00)	10 (20.00)	9 (18.00)	23 (46.00)	50
Keeraikadu	7 (14.00)	21 (42.00)	8 (16.00)	14 (28.00)	50
Sellipatty	6 (12.00)	12 (24.00)	21 (42.00)	11 (22.00)	50
Bellakadu	9 (18.00)	8 (16.00)	11 (22.00)	22 (44.00)	50
Thottikadu	5 (10.00)	9 (18.00)	13 (26.00)	23 (46.00)	50
Vadagurpatty	8 (16.00)	11 (22.00)	6 (12.00)	25 (50.00)	50
Total	43 (14.33)	71 (23.67)	68 (22.67)	118 (39.33)	300

Source : Primary Data

The Table 2 indicates the age wise distribution of respondents. Out of 300 respondents 33% of them belong to the age group of 20-30 years, 25% of them come under the age group of 30-40 years and 20.33% of them belong to the age group of 40-50 years. Moreover 21.67% of them belong to the age group of 50-60 years. Majority of the respondents in

Table 2: Age Wise Distribution of Respondents

Area	20-30	30-40	40-50	50-60	Total
Arasampatti	19 (38.00)	11 (22.00)	12 (24.00)	8 (16.00)	50
Keeraikadu	15 (30.00)	13 (26.00)	12 (24.00)	10 (20.00)	50
Sellipatty	19 (38.00)	9 (18.00)	10 (20.00)	12 (24.00)	50
Bellakadu	20 (40.00)	15 (30.00)	7 (14.00)	8 (16.00)	50
Thottikadu	18 (36.00)	12 (24.00)	11 (22.00)	9 (18.00)	50
Vadagurpatty	8 (16.00)	15 (30.00)	9 (18.00)	18 (36.00)	50
Total	99 (33.00)	75 (25.00)	61 (20.33)	65 (21.67)	300

Source : Primary Data

the areas of Bellakadu village, Thottikadu village, Sellipatty village, Keeraikadu village, and Arasampatti village fall under the age group of below 40 years.

The Table 3 indicates the farm wise distribution of respondents. It is observed that out of 300 respondents, 33% of them are marginal farmers and 31.33% of them belong to the small farmers group. In this study 22.33% of them belong to the medium farm group and the rest 13.33% of them belong to the large farm group. The areas such as Arasampatti village (54.00%), Sellipatty village (34.00%), and Thottikadu village (32.00%), witnessed large number of small farmers.

Table 3: Farm Wise Distribution of Respondents

Area	Marginal	Small	Medium	Large	Total
Arasampatti	27 (54.00)	12 (24.00)	6 (12.00)	5 (10.00)	50
Keeraikadu	11 (22.00)	24 (48.00)	8 (16.00)	7 (14.00)	50
Sellipatty	17 (34.00)	13 (26.00)	11 (22.00)	9 (18.00)	50
Bellakadu	7 (14.00)	9 (18.00	26 (52.00)	8 (16.00)	50
Thottikadu	21 (42.00)	14 (28.00)	9 (18.00)	6 (12.00)	50
Vadagurpatty	16 (32.00)	22 (44.00)	7 (14.00)	5 (10.00)	50
Total	99 (33.00)	94 (31.33)	67 (22.33)	40 (13.33)	300

Source : Primary Data

The Table 4 presents the education wise distribution of respondents. Among the total farmers, 30% of them completed their primary education, 25.67% of them completed pre secondary level education and 19% of them completed secondary level education. It was found that 13% of the respondents are educated up to higher secondary and the rest (12.33%) of them are degree holders. Areas such as Arasampatti village (40.00%), Bellakadu village (34.00%), Thottikadu village (32.00%), and Vadagurpatty village (44.00%) have more numbers of respondents with primary education.

Table 4: Education Wise Distribution of Respondents

Area	Primary	Pre Secondary	Secondary	Higher Secondary	Degree	Total
Arasampatti	20 (40.00)	12 (24.00)	7 (14.00)	6 (12.00)	5 (10.00)	50
Keeraikadu	7 (14.00)	21 (42.00)	9 (18.00)	7 (14.00)	6 (12.00)	50
Sellipatty	8 (16.00)	11 (22.00)	16 (32.00)	8 (16.00)	7 (14.00)	50
Bellakadu	17 (34.00)	12 (24.00)	9 (18.00)	7 (14.00)	5 (10.00)	50
Thottikadu	16 (32.00)	13 (26.00)	7 (14.00)	6 (12.00)	8 (16.00)	50
Vadagurpatty	22 (44.00)	8 (16.00)	9 (18.00)	5 (10.00)	6 (12.00)	50
Total	90 (30.00)	77 (25.67)	57 (19.00)	39 (13.00)	37 (12.33)	300

Source : Primary Data

The Table 5 reveals the income wise distribution of respondents. Out of 300 respondents, 23% of them earn monthly income below Rs. 5000, 22% of them earn monthly income in the range of Rs. 5000 to Rs. 7500 and 20.67% of them belong

Table 5: Income Wise Distribution of Respondents

Area	Below 5000	5000-7500	7500-10000	10000-12250	Above 12250	Total
Arasampatti	17 (34.00)	10 (20.00)	8 (16.00)	6 (12.00)	9 (18.00)	50
Keeraikadu	8 (16.00)	11 (22.00)	12 (24.00)	7 (14.00)	12 (24.00)	50
Sellipatty	8 (16.00)	10 (20.00)	14 (28.00)	9 (18.00)	9 (18.00)	50
Bellakadu	13 (26.00)	10 (20.00)	10 (20.00)	8 (16.00)	9 (18.00)	50
Thottikadu	15 (30.00)	12 (24.00)	6 (12.00)	5 (10.00)	12 (24.00)	50
Vadagurpatty	8 (16.00)	13 (26.00)	12 (24.00)	9 (18.00)	8 (16.00)	50
Total	69 (23.00)	66 (22.00)	62 (20.67)	44 (14.67)	59 (19.67)	300

Source : Primary Data

to the monthly income group which covers the range of Rs. 7500-10000. It was found that 14.67% of them belong to the income bracket of Rs. 10000-12250 and the rest (19.67%) belong to the monthly income group of above Rs. 12250. It is obvious that majority of the sample farmers fall under the lower income categories.

Data presented in Table 6 indicates the family size wise distribution of respondents. A considerable number of respondents of Arasampatti village (44.00%), belong to the large family size. From this analysis it is concluded that a vast majority of the respondents fall under the categories of small and medium sized families.

Table 6: Family Size Wise Distribution of Respondents

Area	Small	Medium	Large	Total
Arasampatti	12 (4.00)	16 (32.00)	22 (44.00)	50
Keeraikadu	11 (22.00)	21 (42.00)	18 (36.00)	50
Sellipatty	26 (52.00)	12 (24.00)	12 (24.00)	50
Bellakadu	15 (30.00)	27 (54.00)	8 (16.00)	50
Thottikadu	28 (56.00)	13 (26.00)	9 (18.00)	50
Vadagurpatty	23 (46.00)	16 (32.00)	11 (22.00)	50
Total	115 (38.33)	105 (35.00)	80 (26.67)	300

Source : Primary Data

Table 7 presents the housing type wise distribution of respondents. It was observed that out of 300 respondents, 12.67% of them live in the thatched houses, 21.67% of them dwell in the tiled houses and 20.33% of them live in terraced

Table 7: Housing Type Wise Distribution of Respondents

Area	Thatched	Tiled	Terraced	Partly Tiled and Terraced	Partly Thatched and Tiled	Total
Arasampatti	20 (40.00)	7 (14.00)	8 (16.00)	9 (18.00)	6 (12.00)	50
Keeraikadu	12 (24.00)	20 (40.00)	6 (12.00)	5 (10.00)	7 (14.00)	50
Sellipatty	8 (16.00)	9 (18.00)	21 (42.00)	7 (14.00)	5 (10.00)	50
Bellakadu	20 (40.00)	9 (18.00)	7 (14.00)	8 (16.00)	6 (12.00)	50
Thottikadu	9 (18.00)	13 (26.00)	11 (22.00)	9 (18.00)	8 (16.00)	50
Vadagurpatty	14 (28.00)	7 (14.00)	8 (16.00)	11 (22.00)	10 (20.00)	50
Total	83 (27.67)	65 (21.67)	61 (20.33)	49 (16.33)	42 (14.00)	300

Source : Primary Data

houses. A considerable number of respondents of Keeraikadu village (40.00%) and Thottikadu village (26.00%) reside in the tiled houses.

The Table 8 shows the village wise cost-benefit of pineapple cultivation. The yield of pineapple per acre was found to be 7038 kg. This analysis exhibited that an average of pineapple production per acre was calculated to be 7038 kg. It is observed that inter village variation is observed in income generation from pineapple cultivation. Vadagurpatty village ranks the first position in income generation from pineapple cultivation, Thottikadu village the second, Sellipatty village the third, Bellakadu village the fourth, Keeraikadu village the fifth and Arasampatty village the last.

Table 8: Cost – Benefit Profile of Pineapple Cultivation (Village Wise)

Village	Total Cost Of Production	Yield Per Acre	Income Per Acre Pineapple Cultivation	Income From Inter Crop Cultivation	Total Income
Arasampatty	104614	6557	131140 (87.92)	18025 (12.08)	149165
Keeraikadu	105031	6819	136380 (87.74)	19046 (12.26)	155426
Sellipatty	112900	6915	138300 (86.79)	21035 (13.21)	159335
Bellakadu	119597	6795	135900 (85.02)	22450 (14.18)	158350
Thottikadu	126641	7028	140560 (82.39)	30035 (17.61)	170595
Vadagurpatty	131805	8115	162300 (83.45)	32165 (16.55)	194465
Total	118837	7038	140760 (85.54)	23792 (14.46)	164552

Source : Primary Data

The Table 9 portrays the farms wise cost benefit analysis of pineapple cultivation in the study area. The marginal farmers were ranked the first position with respect to yield of pineapple as it was worked out to be 8015 kg per acre. The

Table 9: Farm Wise Cost Benefit Analysis

Farm	Total Cost of Production	Yield per Acre	Income per Acre Pineapple Cultivation	Income from Inter Crop Cultivation	Total Income
Marginal	105959	8015 (86.01)	160300 (13.99)	26165	186365
Small	115125	7632 (85.61)	152640 (14.39)	25655	178295
Medium	125700	6890 (81.63)	137800 (12.37)	19450	157250
Large	132550	6985 (88.30)	139700 (11.70)	18500	158200
Total	118837	7038 (85.54)	140760 (14.46)	23792	164552

Source : Primary Data

small farmers take the second position with respect to yield of pineapple as it was worked out to be 7632 kg per acre. The large farmers occupy the third position with respect to yield of pineapple as it was worked out to be 6985 kg per acre. The medium farmers rank the fourth position with respect to yield of pineapple as it is worked out to be 6890 kg per acre.

It is seen clearly from the Table 10 that overall cost ratio of pineapple cultivation is worked out to be 1.38 including inter-crop cultivation and 1.18 for pineapple cultivation alone. Among the sample farmers, the performance of marginal farmers is best with respect to economics of pineapple cultivation and it is last in the case of large farmers. The cost of marketing was higher in guava than in mango and apple (Sathihal, 1993).

Table 10: Farm Wise Cost of Pineapple Cultivation

Farm	Total Cost of Production	Income from Pineapple Cultivation	Cost Ratio	Total Cost of Production	Total Income Including Inter Crop	Cost Ratio
Marginal	105959	160300	1.51	105959	186365	1.75
Small	115125	152640	1.32	115125	178295	1.54
Medium	125700	137800	1.09	125700	157250	1.25
Large	132550	139700	1.05	132550	158200	1.19
Total	118837	140760	1.18	118837	164552	1.38

Source : Primary Data

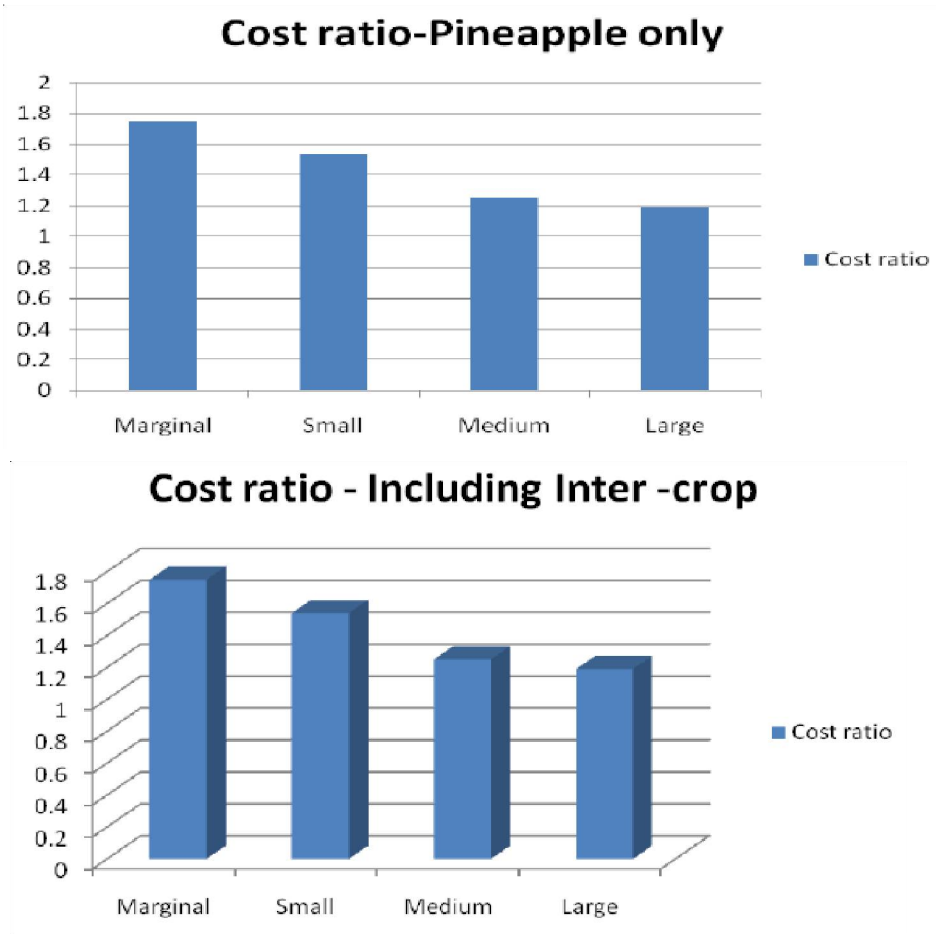

Figure 1 : Farm Wise Cost of Pineapple Cultivation

The Table 11 presents the results of multiple regression results on pineapple production in the case of large farmers. There are ten independent variables were chosen.

Among these independent variables, mechanization, caste, fertilizer used, education and pesticide level are the important independent variables which positively affect the pineapple production. The year to year fluctuations in area and production of fruit crops were examined with the help of index numbers and their percentage changes from the previous years (Satyanarayana, and Punna Rao, 2000; Senthilnathan and Srinivasan 1994).

Table 11: Multiple Regression Results of Large Farms

Pineapple Production			
Variable	**Coefficient**	**Standard Error**	***t*-Value**
Constant	627315.92	241632.75	2.59
Caste	87812.55	21615.59	4.04
Age	59312.23	19623.44	-3.02
Education	86415.27	78918.37	1.09
Family Size	59815.65	19781.27	-3.02
Farm Income	57318.38	18723.72	3.06
Non-farm Income	67332.49	18742.77	3.59
Land Holding	52436.5	39672.0	1.32
Fertilizer use level	87432.5	20415.	4.28
Pesticide use level	67813.3	21765.6	3.11
Mechanization	97416.7	12192.5	7.98
R^2	0.9269		
F-ratio	29.65		

Source: Computed

9. Problems Faced by the Sample Farmers

This section deals with farmers' problems in production of pineapple. It can be assessed with the help of 16 factors on a 5-point rating scale (Sivakkolundu, 2021). These include high cost of planting material delay in payments, fluctuation in market price, high cost of borrowing, non-availability of adequate labor, weighment problems, lack of grading facilities, heart rot disease of pineapple, non-availability of credit in time, inadequate electricity for irrigation, non-availability of market information, lack of cold storage facilities, non-availability of fertilizers in time, non-availability of planting materials in time, absence of regulated markets, and lack of technical knowhow. The per quintal marketing cost of producer seller was the highest in Bangalore market followed by Hubli market and Bijapur market (Shivamurthy, 1991).

Table 12: Problems Faced by the Sample Farmers

Variables	**Arasampatti**	**Keeraikadu**	**Sellipatty**	**Bellakadu**	**Thottikadu**	**Vadagurpatty**	**Total**
Non-availability of planting materials in time	2.16	2.42	3.12	3.01	2.45	2.66	2.64
Non-availability of fertilizers in time	2.2	2.32	3.26	3.29	2.45	2.61	2.69
Inadequate electricity for irrigation	2.31	2.52	3.56	3.74	2.63	2.57	2.89
Non-availability of adequate labor	3.31	3.52	3.11	3.63	3.63	2.54	3.29

Table 12 (Cont.)

Variables	Arasampatti	Keeraikadu	Sellipatty	Bellakadu	Thottikadu	Vadagurpatty	Total
Lack of technical know how	2.19	2.52	2.26	2.59	2.63	2.81	2.50
High cost of planting material	3.85	3.54	3.31	3.7	3.57	3.64	3.60
Non-availability of credit in time	3.06	3.11	2.84	2.58	3.28	3.35	3.04
High cost of borrowing	3.37	3.28	3.09	2.97	3.51	3.85	3.35
Heart rot disease of pineapple	3.18	3.07	3.16	2.81	3.09	3.36	3.11
Absence of regulated markets	2.34	3.27	2.16	2.71	2.45	2.61	2.59
Fluctuation in market price	3.21	3.09	3.4	3.49	3.58	3.8	3.43
Lack of grading facilities	2.59	2.87	3.25	3.11	3.43	3.74	3.17
Lack of cold storage facilities	2.17	2.6	3.02	3.11	2.46	3.12	2.75
Delay in payments	3.37	3.62	3.22	3.81	3.7	3.49	3.54
Weighment problems	3.09	3.13	3.27	3.18	3.59	3.06	3.22
Non-availability of market information	3.02	3.29	2.89	2.69	2.59	2.46	2.82
Average	2.81	2.89	3.01	3.21	3.05	3.16	3.05

As far as the sample villages are concerned, the Bellakadu Vadagurpatty village was ranked at first in facing the problems on the basis of mean scores and this followed by Thottikadu village, Sellipatty village, Keeraikadu village and Arasampatti village respectively.

The village wise analysis reveals the following facts. Majority of the farmers of Bellakadu (60%) and Arasampatti village make use of lorry to transport their pineapples. A vast majority of the farmers of Keeraikadu village (58%) and Thottikadu village (60%) make use of tractor to transport their pineapples. The bullock cart usage is quite common among the farmers of Vadagurpatty village.

Table 13: Mode of Transportation of Pineapple - Village Wise

Villages	Bullock cart	Tempo	Tractor	Lorry	Total
Arasampatty	12 (24.00)	8 (16.00)	9 (18.00)	21 (42.00)	50
Keeraikadu	6 (12.00)	8 (16.00)	29 (58.00)	7 (14.00)	50
Sellipatty	9 (18.00)	30 (60.00)	6 (12.00)	5 (10.00)	50
Bellakadu	7 (14.00)	8 (16.00)	5 (10.00)	30 (60.00)	50
Thottikadu	9 (18.00)	5 (10.00)	30 (60.00)	6 (12.00)	50
Vadagurpatty	29 (58.00)	8 (16.00)	6 (12.00)	7 (14.00)	50
Total	72 (24.00)	67 (22.33)	85 (28.33)	76 (25.33)	300

Note: Figures in parentheses denote percentage.

Source: computed

It is obvious that tractor usage is quite common in marketing pineapples and it occupies the first position followed by lorry, bullock cart and tempo usages.

A study of data in Table 14 indicates the farm wise respondents' views on grading pineapple for marketing purpose. Majority of the marginal farmers (57.14%) and small farmers (44.74%) stated that fleshy nature of pineapple determines the quality of pineapple. The medium farmers (48.89%) stated that moisture content of pineapple determines the quality of pineapple. A more than half of the large farmers stated that freshness determines the quality of pineapple. These costs are determined by the producer's performance and efficiency of different marketing functionaries which in turn influence the returns to the growers (Shivanand, 2002).

Table 14: Opinion of Respondents on Grading of Pineapples – Farm Wise

Farm Size	Quality Wise Classification of Vegetables		Factors Determining Quality of Vegetables			Total	Grand Total
	Yes	No	Freshness	Moisture Content	Fleshy Nature		
Marginal	63 (57.80)	46 (42.20)	14 (22.22)	13 (20.63)	36 (57.14)	63	109
Small	76 (89.41)	9 (10.59)	29 (38.16)	13 (17.11)	34 (44.74)	76	85
Medium	45 (86.54)	7 (13.46)	14 (31.11)	22 (48.89)	9 (20.00)	45	52
Large	46 (85.19)	8 (14.81)	27 (58.70)	10 (21.74)	9 (19.57)	46	54
Total	230 (76.67)	70 (23.33)	84 (36.52)	58 (25.22)	88 (38.26)	230	300

Note: Figures in parentheses denote percentage.

Source: computed

It is seen clearly from the above analysis that majority of the farmers are satisfied with the present pricing system. In general, farmers are dissatisfied with preset pricing system owing to lack of coordination among the farmers while fixing the price, lack of price control mechanism among the farmers and low selling price of pineapples.

Table 15: Village Wise Respondents' Views on Pineapple Pricing System

Villages	Satisfaction of Present Pricing System		Reasons for Dissatisfaction of Pricing			Total	Grand Total
	Yes	No	Low Price	No Discussion Among Farmers	No Price Control Among Farmers		
Arasampatty	18 (36.00)	32 (64.00)	18 (56.25)	8 (25.00)	6 (18.75)	32	50
Keeraikadu	6 (12.00)	44 (88.00)	12 (27.27)	10 (22.73)	22 (50.00)	44	50
Sellipatty	11 (22.00)	39 (78.00)	9 (23.08)	8 (20.51)	22 (56.41)	39	50
Bellakadu	14 (28.00)	36 (72.00)	8 (22.22)	12 (33.33)	16 (44.44)	36	50
Thottikadu	15 (30.00)	35 (70.00)	24 (68.57)	6 (17.14)	5 (14.29)	35	50
Vadagurpatty	10 (20.00)	40 (80.00)	25 (62.50)	8 (20.00)	7 (17.50)	40	50
Total	74 (24.67)	226 (75.33)	96 (42.48)	52 (23.01)	78 (34.51)	226	300

Note: Figures in parentheses denote percentage.

Source: computed

10. Findings

- Among different farmers, the marginal farmers are more in number and they contributed 33% in the total farmers.
- Farmers who fall under the higher income categories are low in number when compared to first two income categories.
- Only a few farmers live in the thatched and tailed houses.
- The total cost of pineapple production is worked out to be Rs. 118837 per acre during first years of cultivation.
- In general small farmers have less cost of pineapple cultivation when compared to large farmers.
- The overall benefit cost ratio of pineapple cultivation is worked out to be 1.38 including inter crop cultivation and 1.18 with pineapple cultivation alone.
- Among the sample villages, the performance of Keeraikadu village is best with respect to economics of pineapple cultivation and it is last in the case of Thottikadu village.
- The moderate problems are identified as weighing problems, lack of grading facilities, heart rot disease of pineapple, and non-availability of credit in time.
- It is concluded that large farmers have high distance of accessing to market place for their pineapples in contrast to marginal farmers.
- It was concluded that large farmers make use of mainly lorry and tractor service to market their pineapples.
- As far as the marketing function is concerned the greatly depends upon the grading.
- In general, it is concluded that medium farmers occupy the first position in rating moisture content quality of pineapple.
- These advantages are realized mainly among the respondents of Sellipatty, Bellakadu and Arasampatti villages.
- It is observed that that majority of the farmers are not satisfied with the present pricing system.
- In general, majority of the large farmers are dissatisfied with preset pricing system due to lack of price control mechanism among the farmers and low selling price of pineapples.
- The findings of respondents' views on marketing problems indicate the following facts.

11. Results of Hypotheses Testing

1. There is no significant difference in the prospects of pineapple cultivation among the farmers of different villages in the study area.
2. There is no significant difference in the problems faced by the farmers of different villages in the study area.
3. There is no significant difference in the problems faced by the farmers of different farm sizes in the study area.
4. There is no significant difference in the opinion of the farmers of different villages on the problems of marketing of pineapples.

12. Suggestions

- The pineapple production depends upon the quality of inputs given by the farmers. The inputs such as fertilizers, pesticides, seeds are not continuously available to the farmers. Government should come forward to ensure the availability of these inputs in time.
- It is inferred that there is lack technical knowhow to promote the pineapple production in the study area. The department of horticulture and agriculture has to carry out many researches to promote the pineapple production.
- A special board can be set up for pineapple just like tea board, coffee board to promote the pineapple cultivation.
- Periodical training should be given to the farmers on pineapple cultivation. This would help them to improve their cultivation.

13. Conclusion

The role of agricultural commodities produced in the hilly area play a crucial role in Indian economy. The present study deeply analysed the economics of pineapple cultivation in the Kollihills of Namakkal district, India. Since the maximum number of farmers are backward and scheduled group, their socio and economic status are still worse. Regarding the cost benefit of the pineapple cultivation, the large farmers benefited much when compared to small farmers. This is

because of the fact that the large farmers enjoy from the economies of large scale production. The farmers of pineapple cultivation in this study face some sorts of problems which should be overcome. If the above said suggestions are fulfilled, the farmers of pineapple cultivation in this study area get new life in their cultivation.

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