

# Economic Analysis of Cashew Cultivation in Tamil Nadu: A Micro Level Empirical Study

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## Abstract:

Agriculture is the primary sector of our country giving livelihood and employment opportunities for vast majority of Indian rural population. India was the first country to hit the world market with cashew kernels and it was shed who pioneered cashew processing as an industry. Even though not much is known of the origins of the industry, it has been recorded that cashew processing on a commercial scale was first started in the mid 1920s. India is the third largest producer and exporter of cashew in the world next only to Vietnam and Nigeria.. The average yield of all these varieties is 8 to 10 kg. Of cashew per tree, i.e. one tone of nuts per hectare. Therefore, the yield per cashew tree is estimated at 8 to 15 kg. Cashew plantation of Cuddalore District has been considered to be the key source of global gardens for VRI 3 cashew graft production in Tamilnadu and Panruti Cashews have unique demand in the world market for its nut quality. The present study tries to analyse the aspects of cashew cultivation in one of the Cashew intensive area of Tamilnadu, Panruti Taluk, Manadikuppam Revenue Village. The specific objectives are to know the social economic status of farmers in the study area; to analyse the farm size wise and cost wise and returns of cashew cultivation in the study area to explore the problems faced by farmers in the Cashew cultivation in the study area and to suggest possible policy measures for strengthening cashew cultivation in the study area. It is very obvious that the State has taken all efforts to increase agricultural production, enhance productivity and explore the untapped potential in general and cashew cultivation in particular. To conclude, to encourage the Cashew Economy further in the study region a combined efforts by the Department of Horticulture, Rural Development Agencies, Educational and Research Organisations, Service Organisations like Lions Club, Rotary Club, Jeyceesetc functioning in the study area by arranging Farmers Awareness Campaigns, Exhibitions, Extension Activities etc, are needed and it is a fond hope that which can ensure for flourishing the Cashew cultivation in the study region.

**Keywords:** Cashew Cultivation, Farm Size, Cost Structure, Returns, C-B Ratio

## Rationale and Statement of the Problem

Agriculture in India is one of the most important sectors of its economy, Agriculture accounts for 15 per cent of India's GDP. Though, the share of Indian agriculture in the GDP has been steadily declining over the years. Yet it is still the single largest contributor to the GDP and plays a vital role in the overall socio economics development of country. Agriculture is the primary and critical sector of our country giving livelihood and employment opportunities for vast majority of Indian population. India is

still the home to the large number of poor and malnourished people in the world, higher priority to agriculture will achieve the goals of reducing poverty and malnutrition as well as of inclusive growth. Accelerating the growth of agricultural production is therefore necessary not only to achieve an overall GDP target and meet the rising demand for food, provide food for more than 1 billion people and yields raw materials for agro based industries. Horticulture sector is gaining lot of importance in India due to its contribution to Indian economy in terms of income and employment generation to millions of people in rural areas. Among horticulture crops, plantation crops (cashew nut) are high valued commercial crops because of their vital role in the Indian economy. These crops contribute to export earnings, provide employment to many millions of people and conserve the soil and ecosystem. Cashew tree is believed to be a native of Brazil, is cultivated mainly in the Asian, African and Latin American zones. The Asiatic zone includes India and Vietnam as the major producers, besides Indonesia, Philippines, Malaysia, Thailand and Sri Lanka. In India, the Portuguese introduced cashew in the Malabar Coast in the 16<sup>th</sup> century and the Malabar Coast served as a locus of dispersal to other centres in the country and South East Asia. In the beginning, cashew was mainly considered as a crop for afforestation. As it can adapt to varied agro-climatic conditions, it has become a crop of high economy and commercial value.

India is the largest producer, processor, consumer and exporter of cashew in the world. The current Cashew nut production in India accounts for 45 per cent of the global production. India being the leader in the world in raw Cashew nut production and is also the largest supplier of cashew kernels to the major world markets. It is grown in Kerala, Karnataka, Goa, and Maharashtra along the West coast and Tamil Nadu, Andhra Pradesh, Odissa and West Bengal along the East-coast, occupies an area of 10.30 lakh hectares in the country with a production of 9.98 lakh metric tonnes. Even though strong competition from other countries has reduced India's share in the global cashew exports, India's advantage in terms of less percentage of broken kernels has brought European and US buyers to its proximity. To strengthen cashew exports, there is scope for increasing production by developing cashew as plantation crop on commercial basis, exploring new markets and strengthening non-traditional markets, adding value to the product by introducing innovations in processing and branding them. Among the major states in the country, Maharashtra tops with respect to area, production and productivity of cashew nut. Cashew nut is presently grown in an area of 1041 thousand hectares with an annual production of 7,79,335 M.T. in the country. The main cashew growing and processing states are Kerala, Karnataka, Tamilnadu, Andhra Pradesh, Maharashtra, Goa and Orissa. Andhra Pradesh is the largest producer of cashew nut in the country after Maharashtra, with an area of 185.57 thousand hectares and production of 111.39 (000 MT) in the country. More than 30 varieties of cashew will be cultivated in differently areas and good yields will be achieved in practice. The average yield of all these varieties is 8 to 10 kg. of cashew per tree, i.e. one tone of nuts per hectare. Therefore, the yield per cashew tree is estimated at 8 to 15 kg. However, the maximum yield of vengurlar-3, vengurla-4 and vengurla 5 is 20.78 kg. 27.34 kg. and 31.26 kg. respectively. The share of agricultural products in the total export earnings of the country normally is 6.65 per cent and cashew kernels ranked 7<sup>th</sup> among them contributing 4.30 per cent of the agri products exports. This accounts to 0.29 per cent of the total foreign exchange earnings of the country through exports. The annual total export of cashew kernels from India was 82,302 M.T. valued at Rs. 5168.78 Cr. USA, Netherland, U.K., Japan, UAE, France, Canada, Saudi Arabia, Singapore, Italy, German Fed. Republic, Austria, Israel and Spain are the major International buyers of Indian Cashew. The annual production of raw cashewnuts in India was 7,79,335 M.T. In this context, an attempt has been made in this investigation to make an economic analysis of cashew

cultivation in one of the Cashew Intensive area, Panruti, Cuddalore District of Tamil Nadu. The core objective of the present paper is to study the aspects of cashew cultivation in Panruti Taluk, Cuddalore District, Tamilnadu. However, the specific objectives are to know the Socio Economic Status of the selected Farmers; to analyse the Farm Size wise Component wise Cost and Returns of Cashew Cultivation; to explore the Problems faced by Farmers in Cashew Cultivation in the Study Area and to Suggest Possible Policy Measures for Strengthening Cashew Cultivation in the Study Area.

### Methods and Materials

The Multi Stage Random Sampling technique is adopted to execute the survey. In the First stage, the Cuddalore District of Tamil Nadu was chosen as it is labeled as Cashew Capital, out of Seven taluks of this district, Panruti- the Cashew Bowl of Tamil Nadu, which annually has a processing capacity of 1,50,000 tonnes with a turnover of about Rs.2000 Crores. Out of the 1, 42,000 hectares under cashew cultivation in the state, Panruti accounts for about 35,000 hectares. There are around 32 Export Oriented Cashew Production Units in this area besides 250 processing units and over 500 cottage industries. Hence it has been selected as the study taluk. In this taluk, among 42 villages, one of the Cashew Intensive village, Manadikuppam has been chosen finally as the study area for survey. Hence, in the first stage the study area Cuddalore District was chosen then Panruti Taluk was chosen as the study taluk followed one representative revenue villages of the taluk Panruti, Manadikuppam on the basis of the number of farmers have been chosen in the second stage. In the third stage a total 60 farmers consisting 18 Marginal Farmers; 18 Small Farmers and 24 Large Farmers were selected randomly.

The present study has been based on primary data only. Survey method has been adopted for the primary data collection. The primary data relating to demographic characteristics, socio-economic profiles of the sample farmers, information on component wise cost of cashew cultivation component wise return from cashew cultivation problems faced by the farmers etc. have been gathered through a well structured and pre-tested interview schedule.

### Earlier Studies

Comprehensive reviews of the earlier studies on Financial Feasibility of Cashew Farming; Economics of Cashew Processing; Marketing Channel, Price Spread; Growth and Instability in Production and Export of Cashew; Direction of export, Export Competitiveness; Problems in Cashew Production and Marketing and others have been considered to know the Research Gap. Studies by Jayaraman (1981) Giriappa (1989) ; Dalvi et al. (1990); Raikar (1990); Balamohan et al.(1992); Senthilnathan and Balamohan (1992); Sivanantham et al. (1992); Deorukhaka et al. (1995) ; Debdudd et al. (1997); Singh (1998); Ashalatha (2000); Balasubramaniam (2001); Siju (2001); John (2002); Mamatha et al. (2002); Sundaravaradarajan et al.(2002); Sivakumar (2002); Sundaravardarajan and Ramanathan (2003); Prasant (2004); Gulati et al.(2004); Gupta et al.(2004) ; Shibu et al. (2004) Guledgudda (2005); Mythili and Shanugam (2005); Umesh et al. (2005); Harilal et.al (2006), Singh et al.(2006); Vilasachandran (2007); Shalini Yadav (2010); Pavaskar and Kshirsagar (2013) Senthil and Mahesh (2013); Karthikeyan R. and S.Selvi (2016); Karthikeyan R. and S.Usha Rani (2016); Karthikeyan R. and D.Elango (2018); Karthikeyan R. and S.Bharathi (2019) to mention a few.

### Analysis and Discussion

Cashew nut production and cashew cultivated widely through the tropics for its kernals. In India it is grow in west coast, east coast and in a few plain area in Tamilnadu, Karnataka, Kerala and Madhya Pradesh, the highest productivity is noticed in Tamilnadu and Maharastra.

Cashew industries have much economic significance as it employees more than 10 lakh people on farms and factories in rural area. The cultivation of cashew in India cover total of 0.07 million hectares of land, it spreads in the coastal regions of the Peninsula and also cashew in the pioneering processing and export around the globe.

Cashew nuts play vital role to growth of India and it exports throughout 60 countries spread across different part of the world.

With regard to the social profile of the sample farmers, relating to the gender status, out of 60 respondents, 50 respondents are male and 10 respondents are female. Thus it is found that the majority are more than 83.3 percent of respondents are male respondents who have primarily engaged in Cashew Farming.

With regard to the age distribution, 05 respondents are less than 35 years old. The majority 24 respondents are above 65 years old which infers that well experienced farmers have engaged in this cultivation. With regard to the religion status of sample respondents witnessed that all are belonging to the Hindu in this study area. It is also found that this study area is MBC intensive area i.e 80% of the sample farmers are belonging to MBC Community, followed by seven respondents (11.67 percent) belong to BC community and 5 respondents (8.3 percent) belong to SC community.

It is also noticed that 48 respondents have resided with the nuclear family which accounts to 80 percent and even now 12 respondents have resided to the Joint family and they contribute 20 percent of the sample respondents. With regard to the family size distribution in the 70% households have less than 4 members in their family, 16.6 percent households have the family members in between 5 and 8 and rest of the 13.3 households have the family size above 8 members in the study area.

The distribution of educational status of the sample respondents infers that among the sample respondents majority (i.e.) 36.6% are higher level educated , 16.6% are the primary level educated and only 6.6% of secondary level educated. Further it is pathetic to note that still 16.6% are respondents are illiterates in the study village.

**Table 1. Socio- Economic Profile of the Respondents**

| Sl. No. | Social Profile   | Respondents |         | Sl.No | Economic Profile           | Respondents |         |
|---------|------------------|-------------|---------|-------|----------------------------|-------------|---------|
|         |                  | Nos.        | Percent |       |                            | Nos.        | Percent |
| 1       | <b>Sex</b>       |             |         | 1     | <b>Annual Income (Rs)</b>  |             |         |
|         | Male             | 50          | 83.30   |       | Below 50000                | Nil         | Nil     |
|         | Female           | 10          | 16.60   |       | 1 Lakh to 5 Lakh           | 12          | 20      |
| 2       | <b>Religion</b>  |             |         |       | 5 Lakh to 10 Lakh          | 30          | 50      |
|         | Hindu            | 60          | 100.0   |       | 10 Lakh and above          | 18          | 30      |
|         | Christian        | Nil         | Nil     | 2     | <b>Asset Position (Rs)</b> |             |         |
|         | Muslim           | Nil         | Nil     |       |                            |             |         |
| 3       | <b>Community</b> |             |         |       | Below 4 Lakh               | 18          | 30      |
|         | SC/ST            | 05          | 8.30    |       | 4 Lakh to 6 Lakh           | 12          | 20      |
|         | MBC              | 48          | 80.00   |       | 6 Lakh and above           | 30          | 50      |

|   |                       |    |       |   |                                      |    |      |
|---|-----------------------|----|-------|---|--------------------------------------|----|------|
|   | BC                    | 7  | 11.67 | 3 | <b>Consumption - Food items (Rs)</b> |    |      |
|   |                       |    |       |   | 6000 to 8000                         | 10 | 16.7 |
| 4 | <b>Age</b>            |    |       |   | 40000 to 80000                       | 20 | 33.3 |
|   | Less than 35          | 05 | 8.30  |   | 150000 and above                     | 30 | 50   |
|   | 35 to 45              | 15 | 25.00 | 4 | <b>Non Food items ( Rs)</b>          |    |      |
|   | 45 to 55              | 10 | 16.60 |   | 15000 to 25000                       | 10 | 16.7 |
|   | 55 to 65              | 6  | 10.00 |   | 25001 to 50000                       | 20 | 33.3 |
|   | Above 65              | 24 | 40.00 |   | 50001 and above                      | 30 | 50   |
|   |                       |    |       | 5 | <b>Indebtedness ( Rs)</b>            |    |      |
| 5 | <b>Family type</b>    |    |       |   | Below 25000                          | 2  | 3.3  |
|   | Nuclear               | 48 | 80.00 |   | 25001 to 50000                       | 3  | 5.0  |
|   | Joint family          | 12 | 20.00 |   | 50001 to 75000                       | 8  | 13.3 |
| 6 | <b>Family size</b>    |    |       |   | 75001 to 100000                      | 18 | 30.0 |
|   | Less than 4           | 42 | 70.00 |   | 100000 and above                     | 29 |      |
|   | 5 to 8                | 10 | 16.60 | 6 | <b>Savings ( Rs in Lakhs)</b>        |    |      |
|   | More than 8           | 8  | 13.30 |   | Less than 2                          | 06 | 10.0 |
| 7 | <b>Marital status</b> |    |       |   | 2 to 4                               | 13 | 22.0 |
|   | Married               | 45 | 75.00 |   | 4 to 6                               | 15 | 25.0 |
|   | Unmarried             | 5  | 8.30  |   | Above 6                              | 26 | 43.0 |
|   | Widow                 | 10 | 16.60 |   |                                      |    |      |

Source:Primary Data.

With regard to the Economics Profile of the Sample Respondents, the income distribution the sample farmers reveals overall 20 percent of the respondents have earned Rs.1 lakh to 5 lakh, annually followed by 50 percent belong to the income group of Rs.5 lakh to 10 lakh and it is to be appreciated that 30 percent belong to the income group of above Rs.10 lakh per annum.

With regard to the consumption expenditure 16.6 percent of respondents have spent Rs.6000 to Rs.8000 per month on food items, 33.3 percent have spent in between Rs.8000 and Rs. 120000, 50 percent households have spent above Rs.120000 and above per month on food items. Similarly, about 33% have spent Rs.25001 to Rs. 50000 per month on non food items and only 16.6 percent of the respondents spent less than Rs. 25000 per annum on non food items. Further it is observed that 50 percent of the respondents have spent above Rs. 50000 per annum on non food items.

In the case of savings, it is found that 10 percent of the respondents have saved Rs.1 lakh to 2 lakhs and 43 percent of the respondents have saved more than Rs. 6 lakhs so far in the study area. Similarly, the Debt distribution reveals that 3.3 percent have borrowed less than Rs.25000 and only 5 percent have borrowed from Rs 25000 to Rs.50000. With regard to the Asset Position of the sample respondents, about 30 percent of the respondents have owned assets valued less than Rs.4 lakhs and 20 percent of respondents owned asset worth of Rs.4 - 6 lakhs and 50 percent of the respondents have owned assets worth of above Rs.06 lakhs.

It is observed from the survey that among the Five different varieties of Cashew, the VR1 has been cultivated by 18 farmers consisting of 10 Marginal Farmers, 07 Small Farmers and 01 Large Farmers; VR 2 by 40 farmers consist of 14 Marginal Farmers, 06 Small Farmers and 20 Large Farmers;



VR3 by 58 farmers comprising of 17 Marginal Farmers, 22 Small Farmers and 19 Large Farmers. VR 4 by 25 farmers consisting 06 Marginal Farmers, 13 Small Farmers and 06 Large Farmers; and VRI (CW)H1 has been cultivated by 34 farmers- 14 Marginal Farmers, 07 Small Farmers and 03 Large Farmers. Further the maximum of 58 farmers have cultivated VR3 varieties of cashews in the land area. It has come to know that since the variety VR3 is Hybrid Variety, to make high profitability by getting more yield advantage, most of the farmers i.e. 58 out of 60 farmers have preferred to cultivate it in their farms invariably.

**Table 2. Farm Size Wise Variety of Cashew Cultivated Distribution**

| Sl.No | Cashew Variety | Marginal Farmers | Small Farmers | Large Farmers | Total |
|-------|----------------|------------------|---------------|---------------|-------|
| 1     | VR-1           | 10               | 7             | 1             | 18    |
| 2     | VR-2           | 14               | 6             | 20            | 40    |
| 3     | VR-3           | 17               | 22            | 19            | 58    |
| 4     | VR-4           | 6                | 13            | 6             | 25    |
| 5     | VRI (CW)H1     | 14               | 7             | 13            | 34    |

Source: Primary data.

**Table 3. Farm Size Wise Cost Structures in Cashew Cultivation Distribution**

| Sl.No | Cost Structures (per Acre) | Marginal Farmers | Small Farmers | Large Farmers | Total |
|-------|----------------------------|------------------|---------------|---------------|-------|
| 1     | Nursery Land Preparation   | 1200             | 1800          | 1800          | 1400  |
| 2     | Seed Cost                  | 180              | 180           | 180           | 180   |
| 3     | Sowing Cost                | 200              | 300           | 450           | 316   |
| 4     | Main field Preparation     | 1200             | 1200          | 1200          | 1200  |
| 5     | Farm Yard Manure           | 1000             | 1100          | 900           | 950   |
| 6     | Transplanting              | 2000             | 3000          | 4500          | 3166  |
| 7     | Fertilizer                 | 1800             | 2300          | 3200          | 2560  |
| 8     | Weeding                    | 1250             | 2000          | 4500          | 3750  |
| 9     | Plant Protection           | 450              | 550           | 650           | 550   |
| 10    | Pesticides                 | 1100             | 1550          | 1750          | 1550  |
| 11    | Irrigation                 | 400              | 400           | 400           | 400   |
| 12    | Harvesting                 | 1200             | 2000          | 4500          | 3556  |
| 13    | Marketing                  | 400              | 600           | 800           | 550   |
|       | Total                      | 12380            | 16980         | 19130         | 20128 |

Source: Primary data.

It is found from the study that among the three categories of farmers the average cost per acre is more for Large Farmers (Rs.8580) than that of Small Farmers (Rs.7580) and then Marginal Farmers (Rs.6430). It infers that the Cost of cultivation is directly related with the Size of Farms. Further it is known that among the various inputs the maximum amount was incurred on fertilizers about Rs. 2560

followed by the pesticides about Rs.1550 next in the list is seed and machinery for which the accounts goes about 180 and 1500 respectively. Where for plant protection, it is found to be around Rs.450 for the irrigation it is Rs.400 only.

Relatively, among the various cost of cashew cultivation, the farmers have spent more on applying farm yard manures which account 13 percent, which is followed by weeding 14 percent next farmers spent on pesticides 14.5 percent and 15.6 percent on fertilizer, and also 13.9 percent for harvesting. It was followed by the plant protection which account about 7.2 percent and 1.2 percent for seed cost. It is followed by 17.4 percent and transplanting and the average of about 2.3 percent was spent on irrigation. About 4.2% as spent on nursery field preparation. The percentage spent on showing the cost about 2.3 percent for marketing. The majority of component were utilized by large farmers are about 27.2 percent in weeding which was common component was mostly used for all farmers.

With regard to the total Cost of Cultivation, it differs with Size of Farms, i.e., the average cost of cultivation per acre was Rs.12380/- for marginal farmers, Rs.16980 and Rs.19130 for small and large farmers. In this study area, majority is formed by the large farmers who have spent a lot for cultivation followed by small and marginal farmers. From the analysis it could be observed that both the small farmers and large farmers spent more than the overall average cost of cultivation while the marginal farmers spent less than the overall average cost of cultivation.

**Table 4. Educational Status Wise Average Cost of Cultivation of Farmers**

| Sl.No | Educational status     | Marginal Farmers | Small Farmers | Large Farmers | Total |
|-------|------------------------|------------------|---------------|---------------|-------|
| 1     | Illiterate             | 18660            | 20670         | 0             | 19320 |
| 2     | Primary Level          | 16690            | 20540         | 0             | 18360 |
| 3     | Secondary Level        | 16540            | 20240         | 24550         | 20443 |
| 4     | Higher Secondary Level | 14350            | 20140         | 22140         | 18876 |
| 5     | Higher Level           | 0                | 19270         | 20750         | 20010 |
|       | Total                  | 12380            | 16980         | 19130         | 16460 |

Source: Primary data.

**Table 5. Educational Status wise Average Returns of Cultivation**

| Sl.No | Educational Status     | Marginal Farmers | Small Farmers | Large Farmers | Total |
|-------|------------------------|------------------|---------------|---------------|-------|
| 1     | Illiterate             | 69950            | 179151        | 757000        | 63000 |
| 2     | Primary Level          | 59950            | 169141        | 701000        | 65000 |
| 3     | Secondary Level        | 59950            | 159130        | 650000        | 50550 |
| 4     | Higher Secondary Level | 49950            | 140210        | 700000        | 43230 |
| 5     | Higher Level           | 69950            | 160110        | 720000        | 53320 |
|       | Total                  | 65550            | 158300        | 680000        | 65340 |

Source: Primary data.

**Table 6. Farm Size wise Net Profit from Cultivation of Cashewnut**

| Sl.No | Farm Size        | Number of Farmers | Net Profit | Average Cost | Average Return | BCR  |
|-------|------------------|-------------------|------------|--------------|----------------|------|
| 1     | Marginal Farmers | 18                | 69950      | 12380        | 16267          | 1.31 |
| 2     | Small Farmers    | 18                | 179151     | 16980        | 29932          | 1.76 |
| 3     | Large Farmers    | 24                | 757000     | 19130        | 50671          | 2.64 |
|       | Total            | 60                | 335367     | 16460        | 32290          | 1.96 |

Source: Primary data.

The educational status wise cost of cultivation reveals that among illiterate farmers they spent Rs.19320. Higher educational category farmers spent Rs.20010, which is more than that of other categories of farmers. In the case of farmers who have done their higher secondary and secondary education have spent about Rs.18876 and Rs.20443. It could be understood from the study that the illiterate are intensively doing their contribution. There is such much of difference in the cost of cashew cultivation among the different level of educated.

The relative profit earned from cashew cultivation is measured through Cost Benefit Ratio. The profit earned in the cashewnut cultivation in the study area reveals a direct relationship between the farm sizes since the net profit of Marginal Farmers is calculated to Rs.69950 and it is Rs. 179151 and Rs.757000 for Small and Large Farmers respectively. Further with the view to find out the relative profitability of various Farm Sizes the BCR has been made use of. From the calculation of BCR it is very clear that there is a positive relationship between the Farm Size and Profitability of Cashew Cultivation, i.e. the BCR for Marginal Farm is 1.31 and it is 1.76 and 2.64 for Small Farms and Large Farms respectively in the study area.

**Table 7. Problems Faced in the Cashew Cultivation Distribution**

| Sl. No | Particulars                                | Mean Score | Rank |
|--------|--|------------|------|
| 1      | Irrigation Problem                         | 64.19      | I    |
| 2      | Poor Quality of Input                      | 57.63      | II   |
| 3      | Middlemen Exploitation                     | 42.17      | III  |
| 4      | Lack of Financial Availability             | 39.73      | IV   |
| 5      | Availability of Labour During Peak Periods | 39.01      | V    |

Source : Primary Data

With regard to the major problems in the Cashew Cultivation in the study area, it is found that the irrigation problem faced in the cashew cultivation is ranked first with the mean scores of 64.19 followed by the poor quality of input, middle man exploitation, lack of financial availability. It is known from the analysis that the 2/3 of farmers are facing problems in cashew cultivation. Among the problems about 39.01 farmers are suffering from scarcity of labour during the peak periods and 39.73 farmers are need and availability of money, middleman exploitation and labour shortage during the peak period.



### Suggestions

It is suggested that suitable, cost effective and eco friendly technological change has to be upgraded to improve the yield of cashew in the study area. Though over the time, several minor, medium and major irrigation projects have been launched, they should be increased and monitored effectively.

The cashew productivity of the agricultural land has to be increased in order to increase the income of farmer. VR3 seeds have absolutely revolutionized Indian agriculture by increasing yield per acre. Hence proper knowledge diffusion measures may be taken in the study area to crop the suitable variety of seed.

It is observed from the survey that though cashew has been considered as ‘maintenance free’ crop and the recommended package of practices are not followed in the study area which lead to low yield and hence a prompt attempt should be made by the research and extension personnel in this regard to encourage the cashew cultivation further .

It is suggested the Government interventions are highly needed for plantations of Cashew in wastelands, watershed areas and subsidy support for private plantations for increasing the area under cashew plantations further.

Proper measures may also be taken to overcome the problems in not only in cropping but also in marketing by establishing special Marketing Agencies to afford for remunerative prices and free from the exploitation of intermediaries.

It is also suggested that measures may be taken for the Development and introduction of Eco Friendly production packages such as Organic Farming and Integrated Pest Management System in the study area.

It is observed that the study area is lacking in Cold Storage facilities and hence the farmers stored their cashew either in small facilities owned by the farmers or transported to the Govt Warehouses in Panruti, Virudhachalam and Cuddalore. Further, it is observed that these warehouses are common for multiple farm produces. Hence Pucca Cold Storage facilities especially for storing the Cashew nut should be established by the govt in the study area.

To tone up the Cashew Cultivation in the study region, Alternative measures may also be taken by the governments for effective utilisation of Cashew Apples since the entire stock is wasted after extraction of the nuts, Cashew Apple Processing Units may be established in the study area.

It is also suggested that policy makers, researchers and extension officials need to join forces to understand better the needs of the farmers and thereby develop technological solutions which fit into the farming.

It is suggested for a commitment of policy making institutions involved in providing sufficiently credible signals to cashew farmers is also necessary and critical to foster their willingness to invest more of their resources in cashew production

Further, to encourage the Cashew Economy in the study region, it is suggested for a combined efforts of the Department of Horticulture, Rural Development Agencies, Educational and Research Organisations, Service Organisations like Lions Club, Rotary Club, Jeyceesetc functioning in the study area by arranging Farmers Awareness Campaigns, Exhibitions, Extension Activities etc...

## Conclusion

During the last four decades Indian agriculture has been facing major challenges like deceleration in growth rate, degradation of natural resources, inter sectoral, inter-regional inequity, declining input efficiency, etc. Realising potential of the sector would require substantial increase in public expenditure in agriculture, rural infrastructure, post harvest market infrastructure including storage and processing, reforms to laws related to land markets, and marketing of agricultural products, promotion of farmers organization/groups, self help groups etc. and appropriate agricultural price and food procurement and distribution policy should also be formulated. From the foregoing analysis, it is observed that the State has taken all efforts to increase agricultural production, enhance productivity and explore the untapped potential in general and cashew cultivation in particular. Presently, India is the second largest producer of cashew nuts in the world and most of her productions were processed for export. The study area is very potential for cashewnut plantation, the concerned department or agencies must take serious measures to identify the reasons or constraints, than it will be helpful to increase the area of cashewnut. Cashew since its introduction has adapted well to the climatic conditions prevailing in the study region, Cuddalore district and by adopting proven management technologies along with planting of grafts of high yielding varieties, the production and productivity of cashew can be enhanced, thereby boosting the cottage and export oriented units through Agri Export Zone, particularly Cashew Board in Panruti with the scope of attaining self-sufficiency in the near future

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