

ECONOMIC ANALYSIS OF CASHEW CULTIVATION

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Introduction

India is the world's largest producer and exporter of cashew kernels. The country earns a sizeable foreign exchange of Rs.882 crores per annum through the export of Kernels and it accounts for 44 per cent of global production and nearly 53 per cent of global export of cashew kernels.¹ The raw cashewnut production is a source of sustenance to over two million small and marginal resource poor farmers of the peninsular India. The area under the crop, has increased from 1.1 lakh ha during 1955, to 4.6 lakh ha during 1982 and to nearly 5.4 lakh ha during 1993. The corresponding production of raw cashewnut in lakh tons are respectively 0.8, 1.96 and 3.49 and the per ha productivity are respectively 0.73, 0.43 and 0.65. Kerala state leads the country in cashew area (28.84%) and rawnut production (43.39%) and tops the country in the yield by producing 974 kg/ha.² The other major cashew growing states are Andhra Pradesh, Orissa, Goa, Karnataka, Maharashtra, Tamil Nadu and West Bengal.

According to CCI, there are about 677 cashew processing industries in the country, most of them functioning as a small-scale sector providing employment to over two million people mostly for rural women and most of them are located in Kerala State. These factories altogether has a processing capacity of about 5.5-6.0 lakh tons of raw cashewnuts per annum. However, at present level of 3 lakh tons of domestic rawnut production, only 50 per cent of their efficiency is being utilized.

The world cashew trade scenario is fast changing with India's monopoly has already been lost and further being eroded by the

production factors and export policies. To meet the stia challanges from countries like Brazil, India should become self sufficient in production of rawnuts to sustain her position in the world market and to maintain her export performance vis-a-vis domestic sales.³

As the global demand for cashew kernels is increasing at a faster rate, and the supply of rawnuts from the domestic sources is unable to meet them, India has to import rawnuts from countries like Indonesia, Nigeria, Tanzania and Vietnam. To achieve full utilization of these processing units, to reduce the imports from other countries and to meet the future domestic demand, rawnut production has to increase to a substantial level and this in turn is possible only through increase in productivity. By increasing the yield per ha, the cost of rawnut production per unit of land can be reduced as they are negatively correlated.

To boost the domestic raw cashewnut yield, many significant research findings have been achieved in Cashew Production Technologies during recent past in various research institutes including NRCC Puttur and SAU centres under AICCIP. However, cashew being a perennial crop having an economic life span of about 35 Years, the investment on cashew is subject to various production and price ricks. Hence, before making such investments, farmers and financial institutions should have a clear understanding about the capital and costs involved in cashew production and the likely returnsto be received from the investment so as to know whether it is worth while to invest on cashew crop.

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Materials and Methods

Cashew being a perennial crop, the flow of cost and returns spreads over a number of years with varying magnitude. Hence to estimate the cost of production per ha of cashew plantation, the concept of Annuity approach adopted by Das (1985)⁴ was used and to know whether the investment on cashew crop is worthwhile, Rao (1986)⁵, Senthilnathan & Balamohan (1992)⁶ adopted the survey method respectively in the states of Andhra Pradesh and Tamil Nadu whereas Mahapatra & Sahani (1974)⁶, Naik et al (1992)⁸ used the cash flow discounting method. In this study, a similar discounting method was used and the major financial indicators viz., the Benefit-Cost Ratio (B-C Ratio), Net Present Worth (NPW), the internal Rate of Return (IRR), Pay-Back Period and the Break-Even Point are worked out to study the economic viability of cashew crop. Accordingly, all future costs and returns are discounted to present value at appropriate discount rate of 13 per cent considering the total life period of 40 years for initial investment and this will compensate the variations in factor costs and product prices over the period of 40 years under normal inflationary conditions. The input-output data for cashew production are taken as suggested by Rao et al (1993) and the current market prices prevailing in the region are considered both for the factor cost and product price.

Results and Discussions

Cashew is a perennial crop with two years of pre-bearing period followed by four phases of bearing period from 3rd to 40th year, viz., i) Initial Yield increasing phase ii) Stabilised yield phase iii) Yield declining phase and iv) Senile and uneconomic phase. The flow of costs and returns in these crops spreads over 40 years with varying magnitude. The per hectare input requirement and their expenditure, and their returns during the pre-bearing and bearing stage are given in Table I.

It can be observed from the table I that labour costs leads other factors in its share in the respective total factor costs accounting for 52.42% during second year and 39.18% during the bearing stage. To reduce this if suitable factor substitution in the form of family labour takes place then it will have a considerable impact in reducing the cost of production. Fertilizer costs increases from 2.14% during first year to about 21.26% after third year. The costs of seedlings is 13.77% and 3.95% respectively during the first and second year of production and that of fencing ranges between 34.45% during the first year to 10.62% after 3rd year. The total costs ranges from Rs. 14,515 during the first year to Rs. 4707 from fourth year onwards.

The returns which starts during the 3rd year as Rs. 700, continue to increase and gets stabilized at Rs. 32,500 between 13th and 33rd year and then starts declining and it will be only Rs. 3750 during the 40th year.

(i) Cost of Production of Raw Cashewnut:

The estimated cost of production of raw cashewnut based on annuity approach using discount rate of 13 per cent is given in Table II. From the table it is evident that to produce one Kg of raw cashewnut under ideal management practices based on the current prices of factor costs and product price only Rs. 6.30 is required.

(ii) Economic Viability:

It is further evident from the table II that the NPW is Rs. 36,996 which is greater than the discounted cost and the benefit-cost ratio at 13% discount rate is 1.83 and the IRR is 18 per cent which is higher than the opportunity cost of capital. Moreover the pay back period is only nine years after initial investment which means that whatever invested during the first year can fully be recovered by ninth year and the returns during the remaining years of the economic life

span is accounting for profits. The break-even point under the existing level of factor costs and product price is 36th year after initial investment which indicates that at the 36th Year of production the additional returns equals to additional costs and it is a loss to continue with the same plantation after 36th year.

Summary

The National Commission on Agriculture indicated, a target of 7 lakh MT of cashew production by 2000 A.D. from an area of 3.5 lakh ha. Considering the current rate of growth of cashew area and production, it is expected that the target can be achieved, but for this an average yield of one tone per ha should be made possible only through adoption of improved cashew production technologies. The study concludes that as the B-C ratio is greater than unity, NPW is positive within the stated period and IRR is as high as 18 per cent investment on raw cashewnut production in the Malanad regions of Karnataka. To reduce the cost of production only increase in yield per unit of land is the major solution and this is possible only through efficient management of cashew gardens by adopting modern technologies. The study also recommends wherever possible to substitute family labour for hired labour to further reduce the production costs.

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Table. I Factor Costs For Cultivation And Returns Per Hectare

S.No	Particulars	Years			
		I	II	III	IV
01	Sedlings Number @ Rs 10/unit	2000	200	-	-
02	Fencing and its Maintenance	5000	500	500	500
03	Farm Yard Manure @ Rs 400/t	400	-	-	-
04	Fertilizers	310	620	1001	1001
05	Plant Protecton	90	90	185	363
06	Labour @ Rs 45/manday	5715	2655	1530	1845
07	Miscellaneous	1000	1000	1000	1000
08	Total	14515	5065	4216	4709
09	Returns (Rs.)	-	-	700	32500*

*From 13th to 33rd year.

Table II. Cost Of Production Of Raw Cashewnut From One Ha Of Gadrden

S.No	Particulars	Value (Rs.)
01	Investment during the period of establishment	19,580
02	Compound Interest @ 13% on the Investment	5,422
03	Total Investment Cost (01+02)	25,002
04	Annuity value @ 13%	187.5
05	Annual Maintenance cost	4,462.5
06	Total Cost per year (04+05)	4,650.0
07	Average production of raw cashewnut (Kg)	740 Kg/ha
08	Cost of production /Kg (06/07)	6.30

Table III. Economic Viability Of Raw Cashewnut Production (per ha)

S.No	Particulars	Value
01	Benefit-Cost Ratio at 13% discount rate	1.83
02	Net Present Worth (Rs.)	36,996
03	Internal Rate of Return (%)	18.0
04	Pay Back Period (Years)	9
05	Break Even Point (Years)	36