

A study on Coconut cultivation based on size of land possessed by local farmers

*MR. S.Jacob Pratabaraj **Dr. J. Reeves Wesley

ABSTRACT

Work on value chains stems from original work by Porter who described the value system as the sum of value chains of suppliers, manufacturers, distributors and end customers, i.e. he used the phrase value chain to refer to the internal chain and the value system to be a string of these internal chains. Some authors have viewed supply chains more holistically as the total chain of exchange from original source of raw material, through the various firms involved in extracting and processing raw materials, manufacturing, assembling, distributing and retailing to ultimate end customers.

Traditionally, economic theory mentions the following factors for comparative advantage for regions or countries hence in this empirical study following factors were studied: Land, Location, Natural resources (minerals, energy), Labour, and Local population size. Because these four factors can hardly be influenced, this fits in a rather passive (inherited) view regarding national economic opportunity. The study was carried in nine villages near udumalpet and the survey was mainly focused on land possessed by local farmers.

Objective of study

Traditionally, economic theory mentions the following factors for comparative advantage for regions or countries hence in this empirical study following factors were studied: Land, Location, Natural resources (minerals, energy), Labor, and Local population size.

Because these four factors can hardly be influenced, this fits in a rather passive (inherited) view regarding national economic opportunity. The study analysis the cost of cultivation for coconut in the local area, this may vary based on land possessed by local farmers (money value and

* Research Scholar, Karunya School of Management, Karunya University, Coimbatore. 641 114.
Email:jacobjabs@gmail.com

**Professor, Karunya School of Management, Karunya University, Coimbatore. Email: jreeveswesley@yahoo.co.in | 159

price fluctuation). The major objectives were like, what are the individual farmer's land rights in relation to the community and the state? Are the farmer's long-term rights insecure? What is the specific tenure issues giving rise to insecurity?

Are there factors other than tenure causing farmers not to invest in new technologies or practices, such as the unavailability of product markets or low returns to investment? If non-tenure factors become less constraining, will tenure still constrain adoption or might tenure rules themselves adjust?

What are the options for enhancing security, taking into account the whole array of costs associated with any given strategy? Achieving tenure change is not a matter of simply changing land law. Land titling and registration systems based on Western models require establishment of costly administrative machineries which could place severe strains on many budgets.

Methodology

The researcher undertook field work from January 2009 to July 2009. Questionnaires were prepared so as to obtain required data. The data collected through questionnaires was transferred to master table which various tables were prepared for future analysis

Tools of analysis

The cultivation of coconut has been measured in a three/five point scale. Scores were allotted to the

responses for each component. The total of the scores of the various component constitute the overall awareness of each investor. Further, mean scores have been calculated and Standard deviation was determined. To test the significance of relationship between demographic factors and difficulties faced while investing and also regarding the awareness about right of investors, chi-square test has been applied.

Hypothesis

The following hypothesis have been formulated and tested.

- a) There is no significant relationship between demographic variables and difficulties faced by the farmers. (Demographic variables used: - Age, education, Family income, family size and residence (rural or urban).
- b) There is no significant relationship between coconut cultivation based on size of land possessed by local farmers.

Limitation of study

- a) Only local farmers have been taken into consideration.
- b) The study area is confined only to local villages situated near udumalpet.
- c) The sample size is restricted to 50 only.

The scientific name for coconut is 'Cocos Nucifera'. Early Spanish explorers called it coco, which means "monkey face" because the three indentations (eyes) on the hairy nut resemble the head and face of a monkey. Nucifera means "nut-bearing." Globally 5.5 million tons of coconut is produced annually. The share of leading producers, Indonesia, Philippines and India, are 27%, 23% and 22% respectively. Sri Lanka, Mexico, Vietnam, New Guinea and Brazil are other important producers.^[2]

Coconut tree is cultivated in an area of about 91,000 hectares in this district. Coconut has been the life-blood for nearly 9,000 farm families. Due to inadequate rainfall during the last three years, the agricultural economy of this district suffered a set back, with the coconut plantations languishing in many areas.

Farmers, it is learnt, did not have the wherewithal to root out the fully dried trees, sell the bark and plant afresh. As per the enumeration, the number

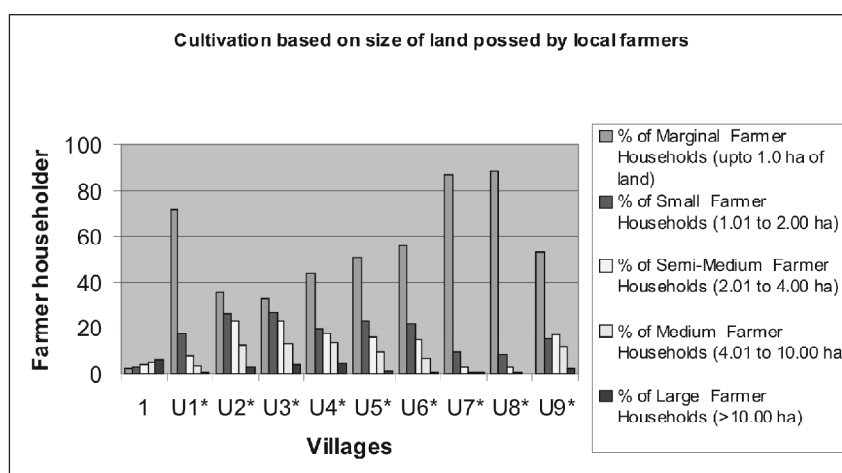
of affected trees in Coimbatore district has been estimated at 11.124 lakhs, of which 2.920 lakh trees were fully dried and the rest (8.204 lakh trees) partly affected. Pollachi taluk, including Negamam and Kinnathukadavu blocks has been the worst hit, accounting for over 6 lakh trees. The rest was in Udumalpet taluk. Out of the Rs 30.48 crore allotted to the State towards coconut drought relief, a sum of Rs 8.48 crore was assigned for Coimbatore district alone, (2003).⁽³⁾

The price of coconut oil is shaped by variations in production, global demand and supply situation and price of other vegetable oils. Philippines is one of the major player globally in coconut oil. Rotterdam is the centre of global coconut oil trade. However based on this analysis a small study was conducted in udumalpet farmers. This area farmers cultivate all type of food products like, Coconut, Paddy, Sunflower, Maze, Hybrid Mango, Sugarcane, etc..). In the survey conducted following information was obtained.

Fig 1: Coconut cultivation based on size of land possessed by local farmers

State	% of Marginal Farmer Households (upto 1.0 ha of land)	% of Small Farmer Households (1.01 to 2.00 ha)	% of Semi-Medium Farmer Households (2.01 to 4.00 ha)	% of Medium Farmer Households (4.01 to 10.00 ha)	% of Large Farmer (>10.00 ha)
1	2	3	4	5	6
U1*	71.3	17.4	7.8	3.4	0.3
U2*	36.0	26.2	23.3	12.2	2.4
U3*	33.0	27.1	23.1	13.0	3.9
U4*	43.9	19.8	17.8	14.1	4.5
U5*	50.7	22.8	15.9	9.3	1.2
U6*	55.7	21.8	15.1	6.6	0.7
U7*	86.9	9.2	2.8	0.7	0.6
U8*	88.7	8.5	2.4	0.4	0.0
U9*	53.3	15.8	17.0	11.8	2.2
All	61.0	18.9	12.5	6.4	1.2

Fig. 2 Coconut cultivation based on size of land possessed by local farmers



The relationship between demographic variables is compared with the land possessed by the farmers. (Demographic variables used: - Age, education, Family income, family size and residence (rural or urban) are been analysed through one-way ANOVA.

Fig 3. The above analysis shows the output of demographic factors based on the land possessed by the farmer household.

→ **Oneway**

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
EDUCATIO	Between Groups	2.693	4	.673	.877	.485
	Within Groups	34.527	45	.767		
	Total	37.220	49			
INCOME	Between Groups	4.228	4	1.057	1.207	.321
	Within Groups	39.392	45	.875		
	Total	43.620	49			
FSIZE	Between Groups	2.338	4	.585	3.879	.009
	Within Groups	6.782	45	.151		
	Total	9.120	49			
AGE	Between Groups	17.794	4	4.448	5.161	.002
	Within Groups	38.786	45	.862		
	Total	56.580	49			

Marketing of coconut, copra and coconut oil is mainly in the hands of private traders in Tamil Nadu. Co-operative organisations and Government agencies have also entered the field of processing and marketing of coconuts. The coconut Development Board is marketing limited quantity of coconut oil and non-traditional coconut based products through its sales counters. The Government agencies intervene in the market in times of price crash by procuring copra at the support price fixed by the Government of India.

In rural areas where migration and non agri-employment are uncommon, natural resources are the basic of sustenance. Flow of benefits from these resources is an important determinant of community

well being. Hypothesis under scrutiny is that land regulation can enable the natural resources to meet subsistence needs and thus help reduce poverty and improve well-being in forest fringes. This is recognizing the fact that access to areas other than owned as operated land in the rural landscape is increasingly difficult and benefit flows are diminishing from all types of available land resources.

Natural resources (minerals, energy): Plants require 16 essential elements for their normal growth and development. The essential elements exist as structural components of a cell, maintain cellular organizations and function in energy transformations and in enzyme reaction. Carbon, Hydrogen and Oxygen are three naturally

occurring nutrients and form about 94 per cent of the dry weight of plants. These are the major components of carbohydrates, proteins and fats. Besides their structural role, they provide energy required for the growth and development of plants by oxidative breakdown of carbohydrates, proteins and fats during cellular respiration. Nitrogen, Phosphorus and Potassium are three major or primary nutrients which are to be made available in larger quantities.

Calcium, magnesium and sulphur are secondary nutrients which are required in relatively smaller but in appreciable quantities. Calcium, a constituent of the cell wall, an activator of different plant enzymes and is essential for the stability of cell membranes.

Table 1

Organic manures		Inorganic manures
Bulky	Concentrated	Artificial
Bulky (Slow acting with large quantities of organic matter) Eg: Cattle, Sheep Poultry, Pig, Goat,, Horse manures, Compost, Green Manures, Sewage.Sludge.	Concentrated(Quick acting with small quantity of organic matter. Eg: Groundnut cake, Castor cake, Bonemeal, Blood meal, Horn meal, Wood ash, Cotton and Linseed Meal.	(Artificial manures,Chemical fertilizers very quick acting with No organic matter. Eg: Nitrogenous, Ammonium,Phosphatic, Potassic and Sulphate fertilizers.

Coconut pricing: The coconut based economy in the country is dependent on a single commodity i.e., coconut oil. The prices of coconut and copra are arrived at based on the ruling price of coconut oil. The price of oil is subject to wide fluctuations depending on the demand and supply, availability of substitute oils and fats etc. The Government of India fixes the support price for milling copra and ball copra to avoid fall in prices. Current market price : Tender coconut : Rs. 4-6 per nut, Coconut : Rs. 5 per nut, Coconut oil: Rs.67 per litre.

Copra procurement in Tamil Nadu: The Assistant Director of Agriculture, Department of Agriculture, Govt. of Tamil Nadu in different districts/areas where coconut is largely cultivated are issuing identification cards to the coconut farmers. After proper verification and certification by the officials of the Department of Agriculture and Revenue Department the farmers are entitled to sell the copra to National Agricultural Co-operative marketing Federation (NAFED) (Government of India) through TANFED (Tamil Nadu Agricultural Federation). NAFED procures copra from the farmers through TANFED which is assisted by other co-operative marketing societies in Tamil Nadu.

The coconut farmers sell their dried copra to the NAFED. Quality and quantity of the copra is verified by the NAFED officials. Currently the copra is being procured by NAFED at six different places viz., Pollachi, Udumalpet, Palladam, Thiruppur, Avinashi and Kinathukadavu in Coimbatore district. At present NAFED procures copra @ Rs.3250/= per quintal in Tamil Nadu.

Rejuvenation of Existing Garden

- Low yield in majority of gardens is due to thick population, lack of manuring and irrigation.

These gardens could be improved if the following measures are taken.

- Thinning of thickly populated gardens: In the farmer's holdings, 41 per cent of the trees give yield of less than 20 nuts/palm/year. By cutting and removal of these trees, the yield could be increased by 1750 nuts/ha.
- Besides, there is a saving in the cost of cultivation and increase in net profit to the tune of Rs.2000/ha. After removal of low yielding trees, the population should be maintained at 175-200 palms/ha.
- Ensuring adequate manuring and irrigation : Research results have shown that the yield of coconut palms could be increased by 23 nuts/palms/year by applying the manurial schedule of 50 kg of FYM or green leaf plus NPK at 560, 320, 1200 g/palm.
- When irrigation at 10 days interval is also given during summer months in addition to manuring, the yield increase was 44 nuts/palm and when all these were combined (manuring + irrigation + cultural practices), the yield increase was 67 nuts/tree over control.

Conclusion

The study was very much helpful by comparing the different villages and the farmers cultivating coconut based on size of land possessed by local farmers while comparing the nine different villages percentage of marginal farmer households (up to 1.0 ha of land) has the highest rating. U7 and U8 have the maximum marginal farmer households.

There is significant relationship between demographic variables and difficulties faced by the farmers. Because of Age, education, Family income, family size and residence.

Only few percent of large farmers household are there in these villages. (>10.00a) U2 and U3 village has the maximum number of large farmer households. Comparing semi-medium farmer households (4.01 – 10.00 ha) the villages U2, U3, U4 and U9 have more land possessed than other areas. Considering percentage of small households (1.01 – 2.00 ha) U2, U3, U5, U6 have the major percentage than compared to other villages.

Apart from the land possessed by the local farmers Higher degree of control over the entire value chain was analysed through major factors name Land in are (1418 sq. Km), Production (14243 in ha), Location (Udumalpet, 55 villages), Natural resources (minerals, energy), Labor and Local population size .

References

- Farmers Rise in Challenge to Chinese Land Policy by Edward Cody Washington Post Foreign Service.
 - Gopal K. Bhargava C Shankarlal C. Bhatt, Land and people of Indian states and union territories. Tamil Nadu.
 - Kopeva, D., Noev, N. & Evtimov, V. 1999–2000. Land fragmentation and land consolidation in Bulgaria. Study commissioned by FAO.
 - Lipton, Michael: Land Assets and Rural Poverty, World bank staff working papers, The World bank, Washington.D.C. 1985.
 - Mamoria, C.B., Agricultural problems of India. Kitab Mahal. New Delhi. 12th Edition. 1985.
 - Porter, M.E., Competitive Strategy, Free Press, New York, NY, 1980.
 - Protection for Indigenous Peoples' Land Claims and Poor Farmers' Access to Land - Behoa and Napu Valley, Central Sulawesi, Indonesia.
 - F. Rembold, Land fragmentation and its impact in Central and Eastern European countries and the Commonwealth of Independent States.
 - Rusu, M., Florian, V., Popa, M., Popescu, M. & Pamfil, V. 1999–2000. Land fragmentation and land consolidation in Romania. Study commissioned by FAO, in cooperation with the German Agency for Technical Cooperation.
 - Seño-Ani, 1995-2002, Participatory territorial planning: the farming systems development approach in community planning in the Philippines.
 - Tesliuc, E.D. 1999. Agriculture policy: achievements and challenges. Paper read at the conference "Romania 2000: 10 Years of Transition – Past, Present, Future". Bucharest.
- * Note the village names are not specified as directed from the agriculture Department.**