International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 02, 2020
ISSN: 1475-7192

An Empirical Investigation on Contract Farming of Medicinal plants and its impact on farmers in Kerala

[1]Ms. Ann Mary Jones,[2] Dr. Sony Vijayan

ABSTRACT--*The Model Contract Farming Act,2018 is a revolutionary step which promises a win-win situation for both farmers and ayurvedic firms. By entering into contract farming agreement, the farmers ensure to cultivate medicinal plants according to the specified quantity and quality standards stipulated by the ayurvedic firms. The ayurvedic firms will get supplies of cultivated material of uniform quality, which is otherwise difficult in case of medicinal plants collected from the forest. In return, farmers receive a fixed remuneration from the company at the time of delivery. It provides an assured market at a pre-agreed priceand also promote sustainable development for rural farmers. The present paper analyses the result of farmer's perception towards contract farming. The Census method was used to collect data, and population size is 196 farmers. Data was collected from medicinal plant farmers in Thrissur, Malappuram, Palakkad, Wayanad and Ernakulam districts of Kerala through a structured questionnaire. Using Statistical Package for Social Sciences various relevant test was administered like Factor analysis and Multiple regression test. Based on the reliability test the minimum value of Co-efficient alpha (Cronbach's Alpha) obtained was* ***.862***

KEYWORDS*-- Contract farming, Technology, Perception, Sustainable development*

I. INTRODUCTION

Medicinal plants have significantly influenced the socio-cultural and spiritual lives of the rural population in Kerala. It has two-fold dimensions; one from an industrial and health care perspective and another from a sustainable rural development perspective. Medicinal plant sector is commonly projected as one of the potential industries of employment promotion in rural areas, mainly because of the growing demand for Ayurveda. Rising demand for Ayurveda has paved the way for too many manufacturing units in Kerala. There are around 700 Ayurvedic drug industries producing medicines worth 1,000 crores a year in Kerala. Medicinal plants are the primary raw materials used for the preparation of drugs in these ayurvedic industries. It is a source of living for many rural populations which makes an earning through medicinal plant cultivation. Aside from this even in many of the modern medicines, the elemental content is extracted from the medicinal plant base, and these have become very well recognized due to fewer aftereffects, less price, lasting therapeutic properties and nature - friendly attitude. This has further intensified the demand for medicinal plants.Therefore, cultivation of medicinal plants to meet the growingdemands can be a potential provider of returns to the rural farmers and also promoting health tourism in Kerala. It is a labor-intensive activity which involves preparation of land, planting and

[1] *PhD Research Scholar Department of Commerce and ManagementSchool of Arts and Sciences, Amrita University, Kochi, India,email id:ann11mary@gmail.com,Contactno:+91-9846046764*

[2] *,Associate Professor*

Received: 02 Dec 2019 | Revised: 24 Jan 2020 | Accepted: 16 Feb 2020

weeding, collection of plants, drying, harvesting and processing, packing, transporting and selling of plants. In addition to industries-based jobs, medicinal plant cultivation also enhances the possibilities by value-added processing method, which increases the cash earnings of the rural farmers and helps to gain sustainable development in the economy.

II. GROWTH OF CONTRACT FARMING IN MEDICINAL PLANTS SECTOR

Even though there is a rise in demand for medicinal plants, which is evolved from thedemand for Ayurvedic medicines and health tourism has not upgraded the standard of living of the farmers. This is because there is no correlation between the price paid to farmers and the actual wholesale price prevailing in the medicinal plant market. The cultivators of the medicinal plants get only a fraction of the amount paid by the ayurvedic industries. This is because, there involve many players in the supply chain like private traders, commission agents, wholesalers, final consumers etc. and price of these plants varies when it passes from one player to another. The players in the supply chain usually increase their profit margin by purchasing the medicinal plants at a lower cost because of the less bargaining ability and ignorance of farmers about the market price. So, this will ultimately end up in the exploitation of farmers in the supply chain.

Considering the problems faced by farmers, the State Medicinal Plant Board (SMPB), attached to the Department of Health and Family Welfare, in association with the Kerala Forest Research Institute (KFRI) encourages large scale cultivation of medicinal plants by forming a direct link between the farmers and ayurvedic manufactures through a contractual agreement. By entering into contract farming agreement, the farmers ensure to cultivate medicinal plants according to the specified quantity and quality standards stipulated by the company. The company will get supplies of cultivated material of uniform quality, which is otherwise difficult in case of medicinal plants collected from the forest. In return, farmers receive a fixed remuneration from the company at the time of delivery. It provides the farmers with an assured market at a pre-agreed price. Availability of assured markets and a remunerative price for the products are two essential factors that play a significant and decisive role in encouraging farmers. The contract contains clauses which provide inputs like planting material, fertilizers, monetary incentives, technology and training from experts. Contract farming will increase their yield in substantial quantity and thereby, farmers could sell the plants directly to ayurvedic companies without depending on intermediaries.

III. RESEARCH OBJECTIVES

a. To understand the farmers' perception towards contract farming of medicinal plants.

b. To find out the important factors of contract farming among medicinal plant farmers.

IV. HYPOTHESES

There is relationship among the factors that have an impact on contract medicinal plant farmers in Kerala.

Received: 02 Dec 2019 | Revised: 24 Jan 2020 | Accepted: 16 Feb 2020

V. METHODOLOGY

The study is a descriptive one, and the census method was used to collect data. The population size was 196 respondents. Data was collected from medicinal plant farmers in Thrissur, Malappuram, Palakkad, Wayanad and Ernakulam districts of Kerala through a structured questionnaire. The Likert five-point rating scale was used. Based on the reliability test, Cronbach's Alpha value obtained was **.862**. By applying Statistical Package for Social Sciences, the various relevant test was administered in this study like 1) Factor analysis 2) Multiple regression test.

a. Explanation of the study area: The study was operated in Thrissur, Malappuram, Palakkad, Wayanad and Ernakulam districts of Kerala.These districts were purposively selected because of the highest achievable medicinal plants from this state. The quality and yield are exceptional, and the soil is suited for medicinal plant production.

b. Location of the study: There were 196 contractmedicinal plant farmers in these districts compose the population of the study. The farmers were practicing contract farming since 3-4 season considered in selecting them as the respondents.

VI. RESULTS AND DISCUSSIONS

A. Factor Analysis

KMO and Bartlett's Test

For the purpose of study 16 factors which impact on contract farming of medicinal plants was examinedthrough factor analysis method and the reliability was tested to find its internal consistency for grouping of each item. The factors were presented in the form of statements with five-pointLikert scale to collect response from contract farmers. The factor analysis has been used to reduce the data collected on 17 variables into smaller number of manageable variables by exploring common dimensions existing among the variables.

TABLE 1

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.780
Bartlett's Test of Sphericity	Approx. Chi-Square	2270.373
	Df	120
	Sig.	.000

KMO measure of sampling adequacy is an index to examine the appropriateness of factor analysis. High values between 0.6 to 1.0 indicate factor analysis is appropriate. Values below 0.6 imply that factor analysis may not be appropriate. Here, high value ofKaiser-Meyer-Olkin Measure of Sampling Adequacy index is .780, which indicates that factor analysis is useful for the present data set. The significant value for Bartlett's test of Sphericity is 0.000 and is less than .05 which indicates that there exist significant relationships among the

variables (Table-1). The resultant value of KMO test and Bartlett's test indicate that the present data is useful for factor analysis.

TABLE 2

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.150	38.440	38.440	6.150	38.440	38.440	3.540	22.123	22.123
2	2.352	14.697	53.137	2.352	14.697	53.137	2.871	17.945	40.068
3	1.615	10.092	63.229	1.615	10.092	63.229	2.035	12.716	52.784
4	1.200	7.499	70.728	1.200	7.499	70.728	1.969	12.303	65.087
5	1.027	6.420	77.148	1.027	6.420	77.148	1.930	12.061	77.148
6	.842	5.262	82.410						
7	.723	4.521	86.931						
8	.579	3.619	90.550						
9	.375	2.347	92.897						
10	.293	1.832	94.730						
11	.205	1.283	96.012						
12	.178	1.112	97.125						
13	.154	.964	98.089						
14	.130	.811	98.900						

15	.108	.675	99.575						
16	.068	.425	100.000						
Extraction Method: Principal Component Analysis.									

Inference

The number of factors for which 'Eigen values' with greater than unity is taken by using Principal Component Analysis method.Extraction communalities are estimates of the variance in each variable accounted for by the factors (or components) in the factor solution. The "Total" column gives the amount of variance in the observed variables accounted for by each component or factor. In this study there are 16 factors that impact on contract farming of medicinal plants.The "% of Variance" column gives the percent of variance accounted for by each specific factor or component, relative to the total variance in all the variables. The "Cumulative %" column gives the percent of variance accounted for by all factors or components up to and including the current one. The extraction sums of squared loadings give data about the extracted factors. Here from the above table it is inferred that the extraction of sum of loading gives 5 major factors.

TABLE 3

Rotated Component Matrix (a)					
	Component				
	1	2	3	4	5
Assured market	.890				
Promote export quality	.807				
Access to local &reliable mkt	.737				
Increase demand for local input	.655				
Easy access to credit and incentives	.499				
Production and Marketing training		.773			
Improvement in skills		.759			
Providing technical advice		.752			
Guaranteed pricing system	.579	.588			
Women empowerment	.534	.570			
Provide self-employment opportunities			.921		
Provision better input			.889		

Improved local infrastructure				.873	
Reduce unemployment among youth				.859	
Improving management skills					.947
Application of better technology					.935
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. A. Rotation converged in 6 iterations.					

The total variance accounted for, by all the five factors with Eigen value greater than 1 is 77.14 percent and the remaining variance is explained by other variables. Among the five factors, the first factor accounts for around 22.12 percent of variance which is the prime criteria considered by any contract farmers.

Inference

Hence from the above table it is inferred that the following factors namely assured market, promote export quality, access to local &reliable market, increase demand for local input, easy access to credit and incentives are **Factor 1** with the factor loading value of 0.890,0.807,0.737,0.655 and 0.499. In Factor 2production and marketing training, improvement in skills, providing technical advice, guaranteed pricing system, women empowerment with factor loading value of 0.773,0.759,0.752,0.588 and 0.570. In **Factor 3**provide self-employment opportunities and provision better input contributes with the factor loading of 0.921 and 0.889. In **Factor** 4improved local infrastructure and reduce unemployment among youthcontributes with the factor loading value of 0.873 and 0.859. In **Factor 5**improving management skills and application of better technologycontributes with the factor loading value of 0.947 and 0.935.

B. Multiple Regressions

TABLE 4

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.745[a]	.554	.515	.705
a. **Predictors**: (Constant), Provide self-employment opportunities, Improving management skills, Reduce unemployment among youth, providing technical advice, easy access to credit and incentives, Assured market, Increase demand for local input, Women empowerment, production and marketing training, improvement in skills, improved local infrastructure, promote export quality, provision better input, Application of better technology, Access to local &reliable mkt, guaranteed pricing system b. **Dependent Variable**: Farmers motivated towards contract farming				

R is the correlation, its value is 0.745 and R square is degree of determination, its value is 0.554.The degree of determination shows the extent to whichimprovement of management skills,provide self-employment opportunities, reduce unemployment among youth, providing technical advice, easy access to credit and incentives, assured market, increase demand for local input, women empowerment, production and marketing training, improvement in skills, improved local infrastructure, promote export quality, provision better input, application of better technology, access to local &reliable mkt and guaranteed pricing system influence the factors towards contract farming.

TABLE 5

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	110.774	16	6.923	13.918	.000[b]
	Residual	89.042	179	.497		
	Total	199.816	195			

I.

.

CONCLUSION

ANOVA table shows that the significant value is less than 0.01, which means dependent variable that is, factors motivates towards contract farming is significantly predicted by independent variables namely improvement of management skills, provide self-employment opportunities, reduce unemployment among youth, providing technical advice, easy access to credit and incentives, assured market, increase demand for local input, women empowerment, production and marketing training, improvement in skills, improved local infrastructure, promote export quality, provision better input, application of better technology, access to local &reliable mkt and guaranteed pricing system at 99 % of confidence level.

The uneasiness of the people with western medicines due to its after-effects and flying increase in price has enforced people to consider and revive their faith in traditional medicines, especially Ayurveda. The rural population also depend upon traditional medicines, chiefly medicinal plants for their primary health care. This rejuvenation in traditional insight had led to an expansion in the large-scale production of Ayurvedic medicines. The Oushadhavanam tripartite model of contract farming will act as a working model for large scale cultivation of medicinal plants that will create employment opportunities in rural areas and promote the sustainable development of rural farmers.

Improvement of management skills, provide self-employment opportunities, reduce unemployment among youth, providing technical advice, easy access to credit and incentives, assured market, increase demand for local input, women empowerment, production and marketing training, improvement in skills, improved local infrastructure, promote export quality, provision better input, application of better technology, access to local

&reliable mkt and guaranteed pricing system are the different factors which motivated farmers towards contract farming

REFERENCE

1. PP Joy, J Thomas, Samuel Mathew And Baby P Skaria. (2001) “Scope of Medicinal, Aromatic and Dye Yielding Crops in Kerala”. pp 4-7
2. Joerg Gruenwald. (1998) “The emerging role of herbal medicine in health care in Europe, January”. pp (10-15
3. Sunil Kumar. (2009) “Economics of ayurvedic medicine manufacturing industry in Kerala, October”, pp (40-53
4. Sahana, S. (2013) “A study on contract farming in Karnataka”, pp (55-80)
5. Pandya Chetan. (2010) “A critical analysis of socio-economic status of organic farming, November” pp (112-130)
6. Resmy, C. (2002) “Effectiveness of Grama Panchayats in implementing people’s plan programme in Kerala” pp (120-140).
7. Mercy Maiwa, Judith oduol. (2014) “Does contract farming improve small holder income? The case of avocado farmer in Kenya”. pp (48-60).
8. Vasanth P. (2014) “Growth and transformation of the agribusiness sector: drivers, models and challenges” pp .45-48
9. Manjunatha A.V, Ramappa K.B(2016) “ Present status and prospects of contract farming in India”.pp 10721074
10. Nguyen Hun Dang (2017) “Determinants of profit efficiency among rice farmers in Kien giang province, Vietnam” pp-5-9.