CONSTRAINTS IN THE UTILIZATION OF DEVELOPMENTAL SCHEMES BY THE CARDAMOM GROWERS OF KERALA

BY

KUNCHU V.

THESIS

SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENT FOR THE DEGREE

MASTER OF SCIENCE IN AGRICULTURE

(AGRICULTURAL EXTENSION)

FACULTY OF AGRICULTURE
KERALA AGRICULTURAL UNIVERSITY

DEPARTMENT OF AGRICULTURAL EXTENSION
COLLEGE OF HORTICULTURE
VELLANIKKARA, TRICHUR

1989

DECLARATION

I hereby declare that this thesis entitled "Constraints in the utilization of developmental schemes by the cardamom growers of Kerala" is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship or other similar title of any other University or Society.

Vellanikkara,
--12--1989

KUNCHU, V.

CERTIFICATE

Certified that this thesis, entitled "Constraints in the utilization of developmental schemes by the cardamom growers of Kerala" is a record of research work done independently by Shri.Kunchu, V. under my guidence and supervision and that it has not previously formed the basis for the award of any degree, fellowship or associateship to him.

F.M.H.KALEEL
Chairman
Advisory Committee
Directorate of Extension
Mannuthy

Vellanikkara,
--12--1989

APPROVED BY

Chairman:

F.M.H. KALEEL

Members:

Dr.A.G.G. MENON

Shri.V.K.G.UNNITHAN

Dr.R.MURALEEDHARA PRASAD

EXTERNAL EXAMINER

ACKNOWLEDGEMENT

I wish to place on record my deep sense of gratitude and indebtedness to Shri.F.M.H. Kaleel, Associate Professor, Department of Agricultural Extension, Directorate of Extension, Mannuthy and Chairman of my Advisory Committee for his valuable guidance and constant encouragement throughout the course of study and research work.

My sincere thanks are also due to the members of my Advisory Committee, Dr.A.G.G.Menon, Director of Extension, Kerala Agricultural University, Mannuthy, Shri.V.K.G.Unnithan, Professor, Department of Agricultural Statistics, College of Horticulture, Vellanikkara and Dr.R.Muraleedhara Prasad, Associate Professor, Department of Agricultural Extension, College of Horticulture, Vellanikkara for the helpful suggestions and constructive criticisms rendered in the preparation of this thesis.

I gratefully acknowledge the keen interest shown by Dr.Ranjan S.Karippai, Smt.P.S.Geethakutty, Assistant Professors, Department of Agricultural Extension, College of Horticulture; Dr.S.Bhaskaran, Associate Professor, Department of Agricultural Extension, College of Agriculture, Vellayani, Shri.Jose Joseph, Assistant Professor and Shri.Sherif,

Junior Assistant Professor, Directorate of Extension, Mannuthy in the successful completion of this thesis.

I also owe a great deal to Shri.P.L.Luka, Assistant Director of Spices Board for his help in the collection of data.

With a deep sense of obligation, I recall the efforts of my friends, particularly Mr.Rasheed Sulaiman, V., Mr.Rajan, N., and Mrs. Anitha Vijayan in bringing out this thesis.

Profound thanks are also due to Mr.Viswanathan Nair, M. and Dr.(Mrs.) Molly Thomas, of the Computer Centre, Kerala Agricultural University for the analysis of the data.

I also owe a great deal to Mr.Asokan, V.P. and Manager, Stantly Commercial Institute, Trichur for the neat typing and preparation of the thesis.

I also express my deep sense of obligation to my wife Smt.Geetha, P.A. and my parents for the moral support throughout the study.

I thankfully acknowledge all the respondents of my study for their kind co-operation.

Vellanikkara,
--12--1989

KUNCHU, V.

CONTENTS

		Page
INTRODUCTION	..	1
THEORETICAL ORIENTATION	..	8
RESEARCH METHODOLOGY	..	33
RESULTS AND DISCUSSION	..	59
SUMMARY AND CONCLUSION	..	165
REFERENCES	..	i - xi

APPENDICES

ABSTRACT

LIST OF TABLES

Table No.	Title	Page
1	Annual compound growth rate (percentage) of cardamom during 1975 to 1985 in Kerala	3
2	Attitude score of the respondents of the low group	42
3	Attitude score of the respondents of the high group	42
4	't' values of the 24 statements attitude statements	44
5	Categorisation of the respondents according to their level of awareness about the developmental schemes	60
6	Categorisation of the respondents according their level of awareness and age	61
7	Categorisation of the respondents according to their level of education and their awareness	65
8	Categorisation of the respondents according to their level of awareness and farm size	68
9	Categorisation of the respondents according to their level of income and their level of awareness	71
10	Categorisation of the respondents according to their level of awareness and their farming experience	73
11	Categorisation of the respondents according to their level of awareness and their level of risk orientation	76
12	Categorisation of the respondents according to their level of economic motivation and their awareness.	78

13	Categorisation of the respondents according to their extent of utilization of mass media sources and their awareness	80
14	Categorisation of the respondents according to their contact with extension agencies and their level of awareness	83
15	Categorisation of the respondents according to their utilization of personal localite information sources and level of awareness	85
16	Categorization of the respondents according to their cosmopoliteness and their level of awareness.	87
17	Categorisation of the respondents according to their level of attitude towards the developmental schemes	88
18	Categorisation of the respondents according to their level of age and level of attitude	91
19	Categorisation of the respondents according to their level of education and level of attitude	93
20	Categorisation of the respondents according to their farm size and level of attitude	96
21	Categorisation of the respondents according to their income and level of attitude	98
22	Categorisation of the respondents according to their farming experience and level of attitude	100
23	Categorisation of the respondents according to their risk orientation and level of attitude	102
24	Categorisation of the respondents according to their economic motivation and level of attitude	104

25	Categorisation of the respondents according to their extent of utilization of mass media sources and level of attitude	107
26	Categorisation of the respondents according to their contact with extension agencies and level of attitude	110
27	Categorisation of the respondents according to their extent of utilization of personal localite information sources and level of attitude	112
28	Categorisation of the respondents according to their cosmopoliteness and level of attitude	114
29	Categorisation of the respondents according to their extent of utilization of developmental schemes	116
30	Categorisation of the respondents according to their level of age and extent of utilisation of developmental schemes.	118
31	Categorisation of the respondents according to their level of education and extent of utilization	121
32	Categorisation of the respondents according to their level of farm size and extent of utilization	123
33	Categorization of the respondents according to their level of income and extent of utilization	126
34	Categorisation of the respondents according to their farming experience and extent of utilisation	128
35	Categorisation of the respondents according to their level of risk orientation and extent of utilisation	130
36	Categorisation of the respondents according to their level of economic motivation and extent of utilisation	132

37	Categorisation of the respondents according to their level of utilisation of mass media sources and extent of utilisation.	135
38	Categorisation of the respondents according to their level of contact with extension agencies and extent of utilisation	137
39	Categorisation of the respondents according to their level of utilisation of personal localite information sources and extent of utilisation	139
40	Categorisation of the respondents according to their level of cosmopoliteness and extent of utilisation of developmental schemes.	141
41	Results of the step-wise regression analysis of awareness with selected independent variables.	153
42	Results of the step-wise regression analysis of attitude with selected independent variables	154
43	Results of the step-wise regression analysis of extent of utilisation with selected independent variables	155
44	Constraints experienced by the farmers in the utilization of developmental schemes from the farmers own side	159
45	Constraints experienced by the farmers in the utilization of developmental schemes from the organisational side.	162

introduction

Chapter I

INTRODUCTION

India enjoys an honourable reputation as the "home of spices" all over the world. Indian spices were treated on par with precious stones outside the country. The Indian cardamom (Elattaria cardamom Maton) with its unique taste, flavour, colour and quality popularly known as the "Queen of Spices" had an enviable position in the international trade of spices. Cardamom is used for flavouring various preparations of food, confectionary, beverages and liquor. It is also used for preparing allopathic and ayurvedic medicines.

The cultivation of cardamom is concentrated in South India especially on the evergreen rain forests of Western Ghats spread over Kerala, Karnataka and Tamil Nadu. The pattern of land holdings under cardamom cultivation had been undergoing constant changes over the years particularly in favour of small size groups. *Small and marginal growers owning upto 20 acres constitute the backbone of the industry. They account for 95 per cent of total holdings covering 55 per cent of the total

cultivated land. The average size of these small holdings is around 4.20 acres.

In Kerala the production and productivity of cardamom per acre is far from satisfactory when compared to the productivity levels of countries like Guatemala. Not only that over the years 1975-85 though the production of cardamom in Kerala has increased the growth rate was very meagre i.e. 3.35 (Table 1). In the case of area and productivity the growth rates were as low as 1.74 and 1.11 respectively. When we break up the entire period into two as 1975-80 and 1980-85 we could see that in the earlier period the growth rates in the area (1.75) production (9.99) and productivity (7.14) of cardamom was much higher compared to that of the latter period. During 1980-85 the production and productivity showed a declining trend at the rate of -2.85 and -4.57 respectively.

---

* Jose, C.A. "Size of cardamom holdings in India" Cardamom Vol. No.12, 1982.

** Cardamom Board, Cardamom Statistics 1984-85, Statistics Department, Cochin, 1986.

Table 1 Annual compound growth rate (percentage) of cardamom during 1975 to 1985 in Kerala

Period	Area	Production	Productivity
1975-80	1.75	9.99	7.14
1980-85	1.73	-2.89	-4.57
1975-85	1.74	3.35	1.11

Source: Cardamom Board, Cardamom Statistics 1974-75, 1979-80 and 1984-85, Statistics Department, Cochin.

The unprecedented and prolonged drought in the first six months of 1983 could be one of the reasons for deteriorating production levels. The cultivation of cardamom and regular return from it depends much upon climatic factors. Moreover, non-adoption of improved cultivation practices is also another important reason for low yield in cardamom.

Of the number of measures undertaken for the development of cardamom, Spices Board is one of the important agencies established for its overall development with a view to providing extension support and financing of cardamom growers had opened development units. These development units provide financial assistance to cardamom growers in terms of loans, subsidies and subsidy cum loans.

One of the important functions of the Spices Board is to provide financial and other assistance for improved method of cultivation and processing of cardamom, for replanting of cardamom and for extension of cardamom growing areas. The Board reaches the cardamom growers through a net work of extension units which function as centres for implementing various developmental programmes. Though there are many schemes formulated by the Board for the benefit of cardamom growers, it is noted that the growers are not taking full advantage of the schemes.

When considering the extension efforts of the Spices Board, it becomes essential to have a thorough understanding of the awareness, attitude and utilization pattern of the developmental schemes by its clientele so that the extension efforts can be made more meaningful. The proposed study will throw light on various dimensions of this problem.

Need for the study

Improved cultivation practices necessitate the need for the application of costly inputs like high yielding seeds, fertilizers and pesticides under assured irrigated conditions. It is particularly to be noted that irrigation is the most essential factor for better production and productivity of cardamom. There arises the importance of finance on account of farmers' dependence on artificial irrigation sources and on machines like pumpsets, sprinkler and other more sophisticated irrigation/ agricultural implements. In addition to such increased importance of finance, it has also been found that capital in the use of modern technology in cardamom plantation has not only increased productivity of land but also encouraged labour absorption than labour saving. Such a role of

finance is quite favourable in the case of Kerala where there is surplus labour and the scope of diversion to urban sector is limited.

However, the poor economic conditions of the small growers of cardamom together heavy investment cost involved in the adoption of modern technological inputs thwarts any attempt to augment input use among small and marginal growers. For efficient operation of production, finance is a pre-requisite. Cardamom cultivators, especially the marginal growers, require institutional financial assistance to carry on their cultivation.

The adoption of improved farm technology and the intensified farming system depend upon the proper utilization of credit borrowed. It is with this intention that this study was undertaken to analyse the credit utilization behaviour of farmers and the associated factors. The investigation into the problems faced by the farmers, their awareness about the developmental schemes and their utilization of the schemes too become necessary to evolve a suitable strategy for cardamom cultivation. Hence the present study was undertaken with the following objectives.

1. To study the awareness about the developmental schemes by the cardamom growers of Kerala.
2. To study the attitude of cardamom growers towards the developmental schemes.

3. To study the behavioural characteristics of the cardamom growers in relation to utilization of developmental schemes.
4. To identify the reasons for not availing the developmental schemes by the cardamom growers.

Scope and importance

1. The study wanted to provide information in general awareness and attitude of the cardamom growers based on that suitable extension studies can be suggested.
2. Utilization pattern of farmers could suggest necessary modification in the programme content and simplify the procedures.
3. The constraints identified could be utilized for recommending suitable suggestions to the institution to overcome such constraints.

Limitations of the study

Being a student's research, it has all the limitations of time, money and other resources. However, carefull and rogorous procedures have been adopted to carryout this systematically. The generalisation of findings of this study is related to the similar areas.

theoretical orientation

Chapter II

THEORETICAL ORIENTATION

A perusal of the available literature is of great importance in gaining insight into the various aspects of the research problem under study. In this chapter an attempt is made to review the related literature which will provide a basis for empirical investigation. The review is presented under the following heads.

1. Awareness about the developmental schemes by the farmers.
2. Association of behavioural characteristics of farmers with their awareness.
3. Attitude of farmers towards the developmental schemes.
4. Association between attitude of farmers towards the developmental schemes and their behavioural characteristics.
5. Extent of utilisation of developmental schemes by the farmers.
6. Association of behavioural characteristics of farmers with their utilisation of developmental schemes.
7. Constraints experienced by the farmers in the utilisation of developmental schemes.
8. Theoretical concepts and operational defonitions of the selected variables.

1. Awareness about the developmental schemes by the farmers

Krishnaswamy and Patel (1974) found that only five farmers out of 240 farmers were aware of the dry farming research stations and many were not even aware of crop competitions.

Oliver (1974) reported that only 25 per cent of the farmers were aware of the demonstration at one stage or another.

Menon and Duraisamy (1975) observed that 79 per cent of the small farmers were aware of the subsidy paid for pesticides and fungicides.

Moni (1977) found that the awareness about Agricultural Refinance Development Corporation and its activities had been high (70%) with the beneficiaries while 66.6 per cent of the non-beneficiaries had low awareness.

Gosh and Reddy (1978) reported that majority of the farmers and contact farmers belonged to the category of below mean value in terms of their awareness on different aspects of T & V system.

Muthuraj (1979) observed that the user small farmer possessed greater awareness about the organisations.

Vijayaraghavan (1979) reported that the awareness of IDADP amongst participants was medium to high while the same for non participants was low to medium, participants belonged whereas nearly one third of the non-participants belonged to low category.

Balu (1980) found that nearly three fourth of the participants (71.67%) and nearly half of the non-participants (40.0%) belonged to medium awareness category. He further added that 13.33 per cent of participants were at high awareness level while only 1.67 per cent of the non-participants were at this stage of low awareness.

Nandakumar (1980) reported that majority of the participants (68.33%) and non-participants (75.0%) belonged to the medium category of awareness. About 15 per cent of the participants and 13.35 per cent of the non-participants belonged to low awareness category.

Singh (1987) reported that an ICAR funded research project of 2 blocks in Nalanda District (Bihar) revealed that 84 per cent of IRDP beneficiaries selected the schemes by themselves without knowing the details of the programme.

Thirty seven per cent of the beneficiaries were unaware of the variety of schemes.

2. Association of characteristics of farmers with their awareness

Subramanian et al (1978) found that major categories of sources through which the respondents became aware of the poultry farming included the Government agencies followed by neighbourhood agencies, mass media and commercial agencies.

Vijayaraghavan (1979) stated that the age of the participants and non-participants of IDADP had negative and significant association with awareness, while education, occupation, social participation, farming experience, farm size, economic status, and overall modernity maintained a positive and significant association with awareness of IDADP among participants and non-participants. He further stated that the cropping intensity and risk preference of both categories of respondents did not show any significant association with awareness about IDADP.

Balu (1980) found that age, education, occupation, social participation, farm size, farming experience and economic status other than cropping intensity, risk

orientation and overall modernity were positively and significantly associated with the awareness of participants and non-participants.

Moni (1980) stated that age, education, farm size, socio-economic status, social participation, mass media exposure, economic motivation and level of aspiration of participants were positively and significantly associated with awareness about facilities available at regulated markets.

Nandakumar (1980) found that amongst participants the characteristics like educational status, occupational status, social participation, economic status, mass media exposure, risk orientation, level of aspiration and economic motivation showed positive and significant relationship with awareness. Amongst non-participants occupational status, mass media exposure, risk orientation level of aspiration and economic motivation showed positive and significant relationship with awareness. Amongst non-participants occupational status, mass media exposure, risk oriengation, scientific orientation, level of aspiration and economic motivation showed significant and positive relationship with awareness while age and

farming experience showed negative but significant relationship with awareness.

Balasubramani (1981) stated that 30 per cent of small farmers, 17.50 per cent of big farmers and only 2.50 per cent of marginal farmers possessed high degree of awareness about the facilities offered by the Farmers' Service Co-operative Society.

3. Attitude of farmers towards developmental schemes

Attitude is a tendency to accept or reject an individual or group of people or ideas or institution.

Allport (1935) defined attitude as a mental and neural state of readiness organised through experience, exerting a directive of dynamic influence upon the individuals response to all objects and situations with which it is related.

According to Krech and Crutchfield (1948), attitude is an enduring organisation of motivational, emotional, perceptual and cognitive processes with respect to some objects of an individuals world.

Thurstone (1946) defined attitude as the degree of positive or negative affect associated with some phychological object. By a pshychological object, Thurstone means any symbol, phrase, slogan, person, institution, ideal or idea towards which people can differ with respect to positive or negative effect.

Guilford (1940) defined an attitude as a predisposition on the part of an individual to evaluate some concept, relationship or object in a positive or negative fashion.

Rokeach (1954) states that an attitude is a learnt orientation or disposition towards an object, or a person, or a situation which provides a tendency to respond favourably or unfavourably to the object or situation.

Ghorpade (1977) defined attitude as a relatively stable system or an organisation of behaviour displayed by an individual towards a particular object, person, event, issue or a symbol, and that this mental organisation usually has affective, cognitive and action components, which may interact and influence an individual's behaviour.

Lokhande (1973) reported that the credit users of Nationalised banks and Co-operatives differed in their attitude towards respective sources.

Bahadur and Rashid (1974) identified that the farmers who had borrowed loans from the Nationalised Banks possessed more favourable attitude than their counterparts who did not borrow from the Nationalised Banks.

Keleta (1974) observed borrowers attitude and experience as favourable towards Nationalised Banks. The same was reported by Malik (1976) in his study on borrowers of a Nationalised Bank.

Kher and Jha (1978) reported the success of Primary Agricultural Co-operative Societies largely depended upon farmers' attitude towards the same and they indicated that majority of the farmers possessed favourable attitude towards Primary Agrl. Co-operative Societies while few farmers (19 per cent) possessed infavourable attitude towards the same.

Mani and Knight (1981) reported that there was significant difference between the mean scores of the participants turmeric growers and the non-participants in their attitude towards regulated market.

Ramalingam (1981) found that more than 60 per cent of the respondents had more favourable attitude towards Regional Rural Bank.

Srinivasan (1981) found that nearly one-half of the marginal farmers, small farmers and big farmers showed the most favourable attitude towards Dryland Technology. About 55 per cent of the marginal farmers, 50 per cent of the big farmers and 41 per cent of the small farmers showed more favourable attitude.

In the light of the above references, it was assumed that the developmental schemes would be effective in creating a favourable attitude among the farmers.

4. Association between attitude of farmers towards developmental schemes and their behavioural characteristics

Singh and Singh (1968) pointed out a negative association between age of the farmer and attitude. They also reported a positive relationship between the attitude of the farmers and their level of education, family type, occupation, farm size, annual income, social participation and caste.

Sarkar (1970) noted that education was found to be associated with the attitude of the farmers.

Kamalsen (1971) identified that there was a steady increase in the change of attitude as with the increase in age of the trainee farmer.

Singh and Singh (1971) emphasised a positive association between the attitude of the farmers and their size of holding.

Lokhande (1973) concluded that there existed positive relationship between credit behaviour of farmers and their farm size.

Makkar and Sohal (1974) reported a significant relationship between age and education level and attitude of the farmers.

Tewari et al. (1974) expounded a negative relationship between age and attitude. They also found a positive relationship between the attitude of the farmers and their educational level.

Bahadur and Rashid (1974) stated that attitude of the farmers and holding of the farmers had positive and significant association amongst themselves.

Kennedy et al. (1975) concluded that the farm size of the loanee had no relationship with his attitude. They also reported a non-significant association between age and attitude.

Balasubramanian (1977) found non-significant association between age and attitude. He also reported a highly significant association between education and attitude of the farmers.

Tripathy (1977) had established positive and significant association between risk orientation and adoption of developmental schemes.

According to Balasubramanian (1977) the farm size and attitude of the farmers to HYV programme were found to maintain a significant and positive association.

Kher and Jha (1978) reported non-significant association between age and attitude.

Bahadur and Reddy (1976) inferred that 40 per cent of the co-operative beneficiaries belonged to the young age group, while 33 and 27 per cent were found to be of middle and old aged respectively.

Kher and Jha (1978) and Thangavelu (1979) observed a non-significant association between attitude and education. They also reported that the farmers size of holding did not play a significant role in shaping their attitude towards primary Agricultural Co-operative Societies.

According to Thangavelu (1979) about 70 per cent of the loanees recognised friends and neighbours as their main source of information. The next best source as pointed out by 65 per cent of the loanees was the field staff of the bank. He further reported that as much as 23 per cent of the loanees identified their local extension workers as their source of information.

Thangavelu (1979) noted a highly significant and positive association between farm size and attitude..

Prakash (1980) reported negative and significant association between age and attitude of tribal farmers towards settled agriculture.

Pathak (1981) observed that extra village contact had negative but non-significant relationship with attitude of farmers towards improved practices of jute cultivation.

Shushama et al. (1981) reported non-significant relationship between age of tribal people and their attitude towards modern practices.

Vijayakumar (1983) observed age having negative and significant correlation with attitude towards improved agricultural practices in the case of non-beneficiaries of

Special Agricultural Development Units. But there was no significant relationship found in the case of beneficiaries.

Vijayakumar (1983) found that cosmppoliteness and attitude of both beneficiaries and non-beneficiaries of SADU towards improved coconut cultivation practices were positively and significantly correlated.

Philip (1984) reported non-significant influence of age on attitude of farmers towards the programme content of the agricultural information support provided through radio.

5. Extent of utilization of developmental schemes by the farmers

Misra and Baldeoram (1966) reported that 60 per cent of the members utilised the loan for productive purposes and they utilised about 67 per cent of the total amount advanced.

Lokhande (1973) observed that farmers of small holdings utilized maximum credit for the purpose of irrigation followed by improved seeds and fertilizers, while the medium farmers invested maximum amount on implements and machinery, followed by irrigation. Only

the big farmers were reported to have invested the loan on plant protection measures.

Singh (1976) inferred that 72 per cent of those who obtained credit from the co-operative credit society utilised it for productive purposes while the remaining percentage used for non-productive purposes such as repayment of old debts, day today living and on marriage expenses.

Singh et al. (1976) reported that on an average about 73.71 per cent of the co-operative loan was utilised for productive purposes. They further generalised that the greater was the farm size, more was the credit utilisation.

Hanumappa (1979) found that the poor households spent a higher share of the loan amount on the non-productive (household) items indicating compulsions under which they allocated their debt amount on different items of expenditure.

Srivastava et al. (1979) observed that the full amount of credit was not utilised for productive purposes. The farmers who received credit invested more on cash inputs than those who did not receive any credit.

Bisaliah and Nagaraj (1985) found inverse relationship between amount of overdues and age. Thus it can be inferred that as age increased, overdues decreased and vice versa.

Viju (1985) found non-significant association between cosmopoliteness and attitude of tribal farmers.

6. Association of behavioural characteristics of farmers with their utilization of developmental schemes

Anonymous (1970) stated negative relationship between land holding and extent of utilization.

Sangel et al. (1973) reported positive and significant association of farmers age and education with utilization of irrigation. The utilisation decreased with size of holding.

Ayyathurai (1980) found that education and contact with extension agency were positively and significantly associated with the extent of utilisation of facilities offered by TAPCO. Age, farm size, social participation, mass media exposure and risk orientation were negatively and significantly associated with extent of utilization of facilities offered by TAPCO.

Kailasom (1980) found that farming experience, social participation and socio-economic status of small farmers and urban contact of big farmers were positively and significantly related to credit utilisation behaviour. However, age, education, farm size, annual income urban contact and information need perception were found to have non-significant association with credit utilisation behaviour of small farmers.

Ramakrishna (1980) stated that six characteristics viz., educational status, social participation, farm size, income, socio-economic status and contact with extension agency were found to be negatively and significantly related with extent of utilisation of trained practices. He further stated that age and farming experience were found to be negatively and significantly related while the occupational status and mass media exposure maintained non-significant association with extent of utilisation of trained practices.

7. Problems or constraints in the utilisation of developmental schemes

Muniraj (1970) identified that the legal requirements for obtaining loan from commercial banks were much more than in the co-operative or government services.

Singh (1971) highlighted the high rate of interests, inadequate supply, undue delays, sophisticated process and malpractices as the major problems of credit.

Pathak (1972) stressed that the expenditure incurred by the farmers in executing the documents in favour of commercial banks was higher than the one that was spent in other institutional sources.

Lokhande (1973) indicated that the punitive action for defaulters of Nationalised Banks was felt as a problem by the borrowers. He also stressed non-availability of credit in time, under valuing of assets, high interest rates, difficulty in getting the consensus of the co-owners for borrowing and prestige of the farmer at stake for lack of secrecy as the major problems of availing credit.

Gurusami and Baluswamy (1974) found that only 39.7 per cent of the farmers repaid their loans from their income and about 33.56 per cent of the farmers mentioned the non-availability of reasonable prices for the produce while 21.92 per cent faced the difficulty of crop failure.

Seetharaman (1975) observed that the major problems experienced by the beneficiaries pertained to the

production of the requisite documents and fulfilling the stipulations of the bank. He noted that the beneficiaries faced difficulties in obtaining certificates from village officials.

Singh et al. (1976) considered co-operative credit as inadequate, delayed, unevenly distributed unsupervised and more of asset oriented rather than production oriented.

Vijayaraghavan (1977) reported that untimely disbursement of the loan was the most important problem with delay in obtaining loan and difficulty in getting security acting as important problems of credit.

Subbarao (1979) indicated that providing adequate and timely institutional credit to the small farmers consisted one of the major intracable problems especially in the context of technological change.

Singh et al. (1979) inferred that the functionally illiterate farmers faced neumerous difficulties with regard to information on land, farm income, verification procedures adopted by the institution. They further observed that the farmers had to pay a number of visits to

the institutions that lent the loan with the result that the acquisition of loan became costly.

Thangavelu (1979) reported that the inadequate and untimely credit, high rate of interest, group guarantee, system and complicacy of the loan application procedures were felt as major problems by the borrowers of Nationalized banks. He also stated that about 52.5 per cent of the loanees found it difficult to obtain the necessary documents from village officials.

Duraisamy (1981) said that security problems, delay and high cost involved in getting the benefits, favouratism, complex procedures in getting certificates from the village officials, inadequate credit and technical guidance were the major problems reported by beneficiaries.

Verma (1982) listed the constraints in implementation of the programme under three main heads i.e. credit, organisational factors in State Government, and infrastructure. Under credit he had found that the flow of credit for financing the various programmes has not been adequate.

Ashok kumar et al. (1987) found that capital is one of the important factors influencing adoption of modern technology. The existing capital resources of majority of farmers are inadequate to meet their requirements of production investment.

Saikia (1988) stated that the success of agricultural credit in raising farm productivity and income depends largely in its efficient utilisation for the stipulated purposes. He also stated that loans should be offered at liberal terms and the official formalities should be simplied to attract the farmer to avail credit facilities on a larger scale. Lastly, it is also important to ensure the supply of improved inputs at the required time, and in sufficient quantity.

Deasi (1988) revealed that the credit delivery system has to be streamlined and strengthened to undertake the task ahead. There is no place for compliancy. Instead of ideological considerations the major problem is to provide adequate and timely credit to agriculture.

8. Theoritical concepts and operational definition of selected variables

8 (a) Dependent variables

(a) (i) Awareness

Awareness is more or less a cognitive behaviour of an individual. In this study awareness in operationally defined as the respondents consciousness about developmental schemes of the Spices Board.

8(a) (2) Attitude

In this study attitude is conceptualized as the farmers mental readiness to accept or reject the developmental schemes of the Spices Board.

8(a) (3) Extent of utilization

Extent of utilization is operationalised as the number of developmental schemes of the Spices Board utilized or availed by the farmers.

8 (b) Independent variables

(b) (i) age

Age is operationally defined as the number of completed years of the respondent at the time of the interview.

8(b) (2) Education

Education is operationally termed as the number of years of formal education completed by an individual.

8(b) (3) Farm size

This referred to the total extent of cultivated land under the command of an individual farmer at the time of study.

8(b) (4) Annual income

Annual income is operationalized as the total gross income obtained by an individual farmer in an year from both agricultural and subsidiary occupations.

8(b) (5) Farming experience

Farming experience is defined as the number of years the respondent had been engaged in cardamom cultivation.

8(b) (6) Risk orientation

Risk orientation is operationalised as the capability of the farmer to bearing risk and uncertainity while availing the developmental schemes.

8(b) (7) Economic motivation

Economic motivation is defined as desire of the

farmer to maximise by income from cardamom cultivators by availing the developmental schemes.

8(b) (8) Mass media utilization

Mass media utilization is operationally defined as the frequency of utilizing mass media and the number of media used as sources of information on agriculture and development programmes.

8(b) (9) Contact with extension agency

This is referred to the degree of an individual's contact with extension agencies to get information on agriculture/or allied aspects such as developmental schemes.

8(b)(10) Personal localite sources of information

It is operationalised as the extent of utilization of sources other than extension agencies and mass media such as friends, relatives, cardamom planters, etc. with a view to get information relating to cardamom cultivation.

8(b) (11) Cosmopoliteness

Cosmopoliteness has been operationally defined as the farmers extent of contact with varied persons outside the village.

9. Hypotheses formulated for testing in this study

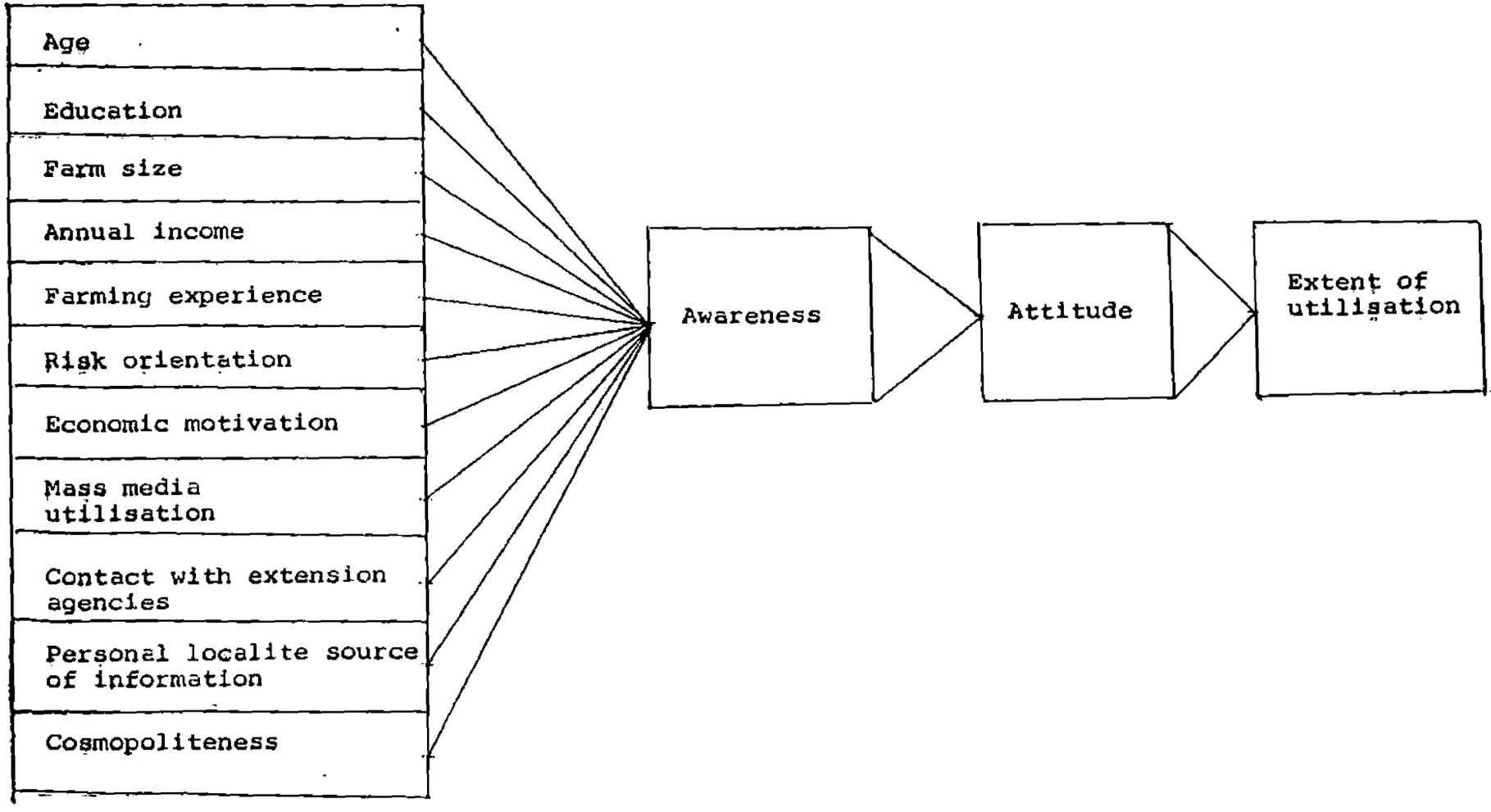
Based on the review of literature and discussion with experts, the following hypotheses were formulated for testing.

There exists a relationship between awareness and age, education, farm size, annual income farming experience, risk orientation, economic motivation, mass media participation, contact with extension agencies, personal localite source of information and cosmopoliteness of the respondents.

There exists an association between attitude of cardamom growers and age, education, farm size, farming experience, risk orientation, economic motivation, mass media utilisation, contact with extension agencies, personal localite source of information and cosmopoliteness towards the developmental schemes.

There exists a relationship between extent of utilisation of developmental schemes and age, education, farm size, farming experience, annual income risk orientation, economic motivation, mass media utilisation, contact with extension agencies, personal localite source of information and cosmopoliteness.

Conceptual frame work, showing the relationship between dependent and independent variables



methodology

Chapter III

RESEARCH METHODOLOGY

This chapter deals with the methods and procedures employed in the study. The methodology adopted is presented under the following sub heads.

1. Location of the study
2. Selection of the sample
3. Selection of variables
4. Measurement of variables
5. Technique employed in data collection
6. Statistical methods used

1. Location of the study

The objectives of the study necessitated to select Idukki district since the maximum area under cardamom cultivation is in this district.

Idukki district is located in the eastern ghats which is at an altitude of 1100 M from MSL. This district is bounded by Kottayam and Ernakulam districts and Tamil Nadu State is in one side. The district receives an average annual rainfall of

3375 mm. Mostly the soil of Idukki district is forest soil which is more conducive for cardamom crop. Other crops like pepper, coffee, ginger and turmeric also grown extensively in this district.

There are various schemes implemented by the Spices Board for the betterment of cardamom cultivation. They are as follows:

1. Extension Advisory Scheme.
2. Departmental nursery scheme.
3. Schemes for supply of sprinkler irrigation and other specialised equipments on hire purchase terms.
4. Scheme for installation of Electric Driers.
5. Scheme for opening Demonstration plots.
6. Scheme for subsidy supply of copper sulphate.
7. Scheme for subsidised supply of plant protection equipments.
8. Scheme for subsidised supply of Bee hives.
9. Scheme for financial assistance for soil conservation works in cardamom plantations.
10. Scheme for financial assistance for construction of conventional curing houses.
11. Cardamom replanting subsidy scheme.

12. Cardamom replanting loan-cum-subsidy scheme for drought affected areas.
13. Scheme for subsidised supply of irrigation pumpsets.
14. Scheme for financial assistance for opening certified nurseries.
15. Scheme for financial assistance for production of 10 month old seedlings in polybags.
16. Scheme for soil testing and fertilizer recommendation.

These schemes are implemented through the various extension units. There are twelve extension unit in Idukki district.

2. Selection of the sample

(i) Selection of the Extension unit (Development unit)

Two Extension units were selected using simple random technique from among the 12 extension units of the Spices Board operating in Idukki district. The selected units were Pampadumpara and Vandenmedu.

(ii) Selection of respondents

Seventy five cardamom growers were selected by simple random sampling technique from each of the selected extension units. The list of cardamom growers available in the two selected Agricultural Development Offices were

used as the sampling farmers. Thus a total of 150 cardamom growers constituted the sample.

3. Selection of variables

Based on the specific objectives and review of past studies and in consultation with the experts in the field of Agricultural Extension and extension personnel of the Spices Board, the variables were selected for the study. A pilot study was also conducted for the finalisation of variables to be included. Accordingly, the following variables were selected.

3 (a) Dependent variables

1. Awareness about the development schemes by the cardamom growers.
2. Attitude of cardamom growers towards the developmental schemes.
3. Extent of utilization of developmental schemes by the cardamom growers.

3 (b) Independent variables

1. Age
2. Education
3. Farm size

4. Income
5. Farming experience
6. Risk orientation
7. Economic motivation
8. Mass media utilisation
9. Contact with extension agencies
10. Personal localite source of information
11. Cosmopoliteness

Besides the above variables, constraints in the utilisation of developmental schemes by the cardamom growers also formed an important aspect of the study. The variables were measured by the procedure described as under.

4. Measurement of variables

4(a) Dependent variables

4(a) (i) Awareness about the developmental schemes by the cardamom growers

In this study, all the 16 developmental schemes were listed out and asked the farmers to indicate the schemes individually whether they were aware of the scheme or not.

Sixteen developmental schemes listed earlier are being implemented by the Spices Board. In this study

awareness was used to refer as to whether the growers are aware or not about these developmental schemes, which indicated whether they have come across these developmental schemes through one or another source.

Naik (1981) measured awareness of the farmers about T x V system by asking a number of questions on several aspects of the system. The scoring index developed for the purpose of the study was used as a guideline to score each response. By summing up these scores of a farmer on the different individual items, the total score on awareness was calculated.

In this study, the procedure adopted by Nak (1981) was followed to measure the awareness of respondents about developmental schemes.

Scoring procedure

The list of developmental schemes of the Spices Board was first prepared. The respondents were asked to express their awareness about these schemes by giving either 'aware' or 'unaware' response to each scheme. The responses were quantified by assigning a score of two and one for the response 'aware' and 'unaware' respectively. Thus a

maximum score of an individual respondent would get 32 and the minimum would be one.

The scores thus obtained were added up for all the respondents and the mean and standard error were worked out. Based on the score thus obtained, the respondents were categorised as follows:

Total score less than mean - 1.96 SE = Low awareness
Total score between mean ± 1.96 SE = Medium awareness
Total score greather than mean + 1.96 SE = High awareness

4(a) (2) Attitude towards developmental schemes by the cardamom growers

In this case attitude is operationally defined as the positive or negative affect towards the developmental schemes of the Spices Board held by the respondents.

The objective of the study necessitated to develop a scale on attitude towards developmental schemes by the cardamom growers.

There are different types of scales developed by Thurstone, Likert, Guttman, Bogardus, Remmers, Corey and other researchers. Though scales differ markedly in type and in method of construction, their objective in every case

is to assign an individual a position along a continuous extending from one extreme of proneness to the other extreme of con-ners.

In this study, Likert technique was used to measure the attitude of the growers towards the developmental schemes.

The statements reflecting views for and against the topic under study were taken from printed sources as well as from general comments noted during discussion with various personnel of the development agencies and farmers involved in cardamom cultivation. Twenty four statements were collected which were classified and edited. Preliminary evaluation of these 24 statements was made by administering them to the extension personnel of the Spices Board and experts of Kerala Agricultural University for judging the relevance of these statements.

These statements were administered to the development personnel of the Spices Board (n = 50).

For positive statements, the "strongly agree" response was given a weightage of five, the 'agree' response a weightage of four, the "undecided" response a weightage of

three, the 'disagree' response a weightage of two and the "strongly disagree" response a weightage of one. For negative statements, the scoring procedure was reversed with the 'strongly disagree' response being given the weightage of five and "strongly agree" response a weightage of one.

The total score of a respondent was computed by summating his scores for the individual items. These scores were then arranged in descending order. For this 25 per cent of the respondents, as per the procedure followed by Edwards and Kilpatric (1948) with highest total score and another 25 per cent of the respondents with the lowest total scores were selected to form the criterion groups, to compute the critical ratio of the individual statement discriminating between the two groups. The respondents with low and high score values are presented in Table 2 and 3.

The critical ratio was then calculated by using the formula given by Edward (1957). This formula was choosen because the number of respondents in the low and high groups were equal.

Table 2. Attitude score of the respondent of the low group

Sl. No.	Respondent No.	Total value
1	33	67
2	41	70
3	26	72
4	34	76
5	39	77
6	29	80

Table 3. Attitude scores of the respondents of the high group

Sl.No.	Respondent No.	Total value
1	22	102
2	35	106
3	21	113
4	8	117
5	30	119
6	17	120

$$t = \frac{\bar{X}H - \bar{X}L}{\sqrt{\frac{\Sigma(X_H - \bar{X}_H)^2 + \Sigma(X_L - \bar{X}_L)^2}{n\,(n-1)}}}$$

where: $$\Sigma (X_H - \bar{X}_H)^2 = \Sigma X_H^2 - \frac{(\Sigma X_H)^2}{n}$$

and $$\Sigma (X_L - \bar{X}_L)^2 = \Sigma X_L^2 - \frac{(\Sigma X_L)^2}{n}$$

Where $\bar{X}_H$ = the mean score on a given statement for the high group.

$\bar{X}_L$ = the mean score on the statement for the low group

n = number of subjects in a group

From the selected 24 statements, four positive and four negative statements having high 't' values were selected discarding the rest. The discarding of items serves to ensure a degree of functional unity for the final instruments. The statements thus selected were arranged randomly by consulting a two digit random table. The selected items and their critical ratio values are given in Table 4.

The final attitude scale consists of eight items which comprise four positive end four negative statements.

Table 4. 't' values of the 24 statements

Sl. No.	Critical ratio	Sl. No.	Critical ratio	Sl. No.	Critical ratio
1	0.82	9	2.96*	17	0.84
2	1.54	10	4.25*	18	2.40
3	1.76	11	1.00	19	3.36
4	0.88	12	3.42*	20	0.10
5	2.69	13	1.11	21	3.93*
6	0.56	14	4.03*	22	0.40
7	2.92*	15	2.29	23	2.93*
8	1.29	16	2.31	24	1.94

* Selected statements

The response to the statements were collected on five point continum viz., "strongly agree", "agree", "undecided", "disagree" and "strongly disagree" with weightages of 5, 4, 3, 2 and 1 respectively for positive and the weightages reversed for negative statements. The minimum scale value is eight and the maximum is forty.

2(a)(1) Testing reliability and validity of the constructed scale

The most important consideration in the construction and use of any scale is its validity i.e. the extent to which it measures what it proposed to measure. The validity of a scale is dependent upon its reliability i.e. the degree to which it measures (Krech and Crutchfield, 1948). It was therefore deemed essential to estimate the reliability of the attitude scale developed for this study. The reliability of a scale can be determined in a number of ways.

In this study "Test-Retest" method was used. The correlation coefficient as per 'Test Retest' method was found to be 0.803 and this value was found to be highly significant. Thus the scale constructed to measure the attitude of cardamom growers towards the developmental schemes was estimated to be reliable.

2(a) (2) Evidence of validity of the scale

One method of determining the validity of a scale is to judge what the scale does measure. This was done in the present study ao as to estimate the 'content validity' of the scale. As the scale value differences for almost all the statements included in the scale had high discriminating values, it seemed reasonable to accept the scale as a valid measure of the desired dimension.

The final score was arrived at by summing up the scores of the eight attitude statement on the five point continum for each respondent.

For computing the attitude, the total score obtained by a respondent were summed up. According to the total score thus obtained by each respondents, the attitude of the respondents were categorised into three as follows:

Total score less than mean - 1.96 SE = Low attitude
Total score between mean $\pm$ 1.96 SE = Medium attitude
Total score greater than mean $\pm$ 1.96 SE + High attitude

4(a) (3) Extent of utilization of developmental schemes by the cardamom growers

In this study extent of utilisation is used as an indicator of the number of developmental schemes availed by the respondent from among the listed sixteen developmental schemes of the Spices Board. The differences in the utilisation of the developmental schemes by each respondent, had been viewed in this study as extent of utilization of developmental schemes.

In order to assess the extent of utilisation of developmental schemes by the cardamom growers, the respondents were asked to give their responses about the extent of utilization of the various schemes from among the listed sixteen developmental schemes. The respondents were asked to indicate whether they had availed the various developmental schemes listed or not. A score of 'two' and 'one' were assigned to 'availed' and 'unavailed' responses respectively.

The number of schemes availed by a respondent were also taken into account for calculating the overall utilization scores.

The score obtained for each scheme was summed up to arrive at the total score of a respondent. Extent of utilization of developmental schemes by the cardamom growers was categorised as low, medium and high by using mean and standard error as follows.

Total score less than mean - 1.96 SE = Low utilization
Total score between mean ± 1.96 SE = Medium utilization
Total score greater than mean + 1.96 SE = High utilization

4(b) Independent variables

4(b)(i) Age

Sohal and Singh (1968) classified age into three categories. This classification was used in this study for measuring age.

Young = Upto 35 years
Middle = 36 to 55 years
Old = Above 55 years.

4 (b) (ii) Education

The scoring procedure developed by Trivedi (1963) was used in this study for measuring education. The different categories are as follows.

Illiterate	..	1
Primary education	..	2
Secondary education	..	3
Collegiate education	..	4

4 (b) (iii) Farm size

This referred to the total extent of land an individual farmer possessed and cultivated. The conversion procedure as specified by the State Government notification on "Guidelines for New Projects" (1974), of equating two acres of dry land to an acre of irrigated land was followed to arrive at the total area of land. The area was then classified into four categories and the scores allotted to them were as under.

Category			Score
a. Marginal farmers	=	Uptc 2.50 acres	1
b. Small farmers	=	From 2.51 acres to 5.00 acres	2
c. Medium farmers	=	From 5.01 acres to 10 acres	3
d. Big farmers	=	Above 10.00 acres	4

4(b) (iv) Annual income

The scoring procedure followed by Ramamurthy (1973) was used and farmers were classified as

a. Low income	=	Upto an annual income of Rs 5000/=
b. Medium income	=	Annual income from Rs.5001/= to Rs.10,000/=
c. High income	=	Annual income above Rs. 10,000/=

4 (b) (v) Farming experience

Farming experience was measured in terms of the number of years a respondent had been engaged in cardamom cultivation.

Ramamurthy (1973) developed the scoring procedure as:

Low	=	Upto 5 years
Medium	=	5 to 10 years
High	=	Above 10 years

In the present study the actual number of years of experience in cardamom cultivation of the respondent was taken for categorising the respondents.

4 (b) (vi) Risk orientation

In this study, the scale developed by Supe (1969) was used with slight modification to measure the risk orientation of the respondents. The responses were collected on a five point continum. The response categories

were "strongly agree", "agree", "undecided", "disagree" and "strongly disagree". A weightage of 5, 4, 3, 2 and 1 were given respectively for the responses.

The total score thus obtained by an individual was taken as his score for risk oriengation. The respondent were categorised as low, medium and high as follows:

Total score less than mean - 1.96 SE = Low risk
Total score between mean $\pm$ 1.96 SE = Medium risk
Total score greater than mean + 1.96 SE = High risk

4(b) (vii) Economic motivation

Economic motivation was operationalised as the farmers attitude towards farming, as a profit oriented enterprise.

The economic motivation scale developed by Supe (1969) was used for this study with slight modifications. The scale consists of 10 statements and response pattern and scoring procedure followed was similar to that of risk orientation scale. The total score thus obtained by an individual was taken as his score for economic motivation.

The respondents were categorised as low, medium, high the principle of dividing the entire data into three

groups as follows:

Total score less than mean − 1.96 SE = Low economic motivation

Total score between mean ± 1.96 SE = Medium economic motivation

Total score greater than mean + 1.96 SE = High economic motivation

4 (b) (viii) Mass media utilization

In the present study the frequencies of utilization of mass media sources like radio, television, newspapers and periodicals by the respondents were studied.

In order to assess the extent of utilization of mass media sources by the respondents through television, radio, newspaper, periodicals, etc, the respondents were asked to indicate as to how often they used these sources for getting information relating to cardamom cultivation. The frequency of use was given as: once in a fortnight, once in a month, rarely and never with a weightage of 5, 4, 3, 2 and 1 assigned respectively for the above frequencies. The number of mass media sources used was also taken into account for calculating the overall scores.

The scores of each respondent was summed up and was taken as his score for mass media utilization. The respondents were categorised as low, medium and high by employing the formula as follows:

Total score less than mean - 1.96 SE = Low mass media utilization

Total score between mean $\pm$ 1.96 SE = Medium mass media utilization

Total score greater than mean + 1.96 SE = High mass media utilization

4 (b) (ix) Contact with extension agencies

Jaiswal and Singh (1971) had developed a scoring technique for measuring contact with extension agencies. In this study, the technique used by them was used with slight modifications. This was done on the basis of the frequency of the respondents meetings with cardamom extension officers, contact with development agencies etc. either in the office of this personnel or elsewhere in connection with the cardamom cultivation. The respondents were asked to indicate the frequency of their meetings with the above agencies. The scores were assigned in such a way that for frequencies "once in a week", "once in a fortnight", "once in a month" "rarely" and "never" with weightages of 5, 4, 3, 2 and 1 were assigned respectively.

The total score obtained by individual respondents were added together. Mean and standard error were worked out. Based on the scores thus obtained, the respondents were categorised as follows:

Total score less than mean - 1.96 SE = Low contact with extension agencies

Total score between mean ± 1.96 SE = Medium contact with extension agencies

Total score greater than mean + 1.96 SE = High contact with extension agencies.

4(b) (x) Personal localite sources of information

The scoring was done on the basis of the frequency of the respondents meetings with friends, neighbours relatives, cardamom planters and others either in their homestead or elsewhere in connection with the cardamom cultivation.

The respondents were asked to indicate the frequency of their meetings with the above. Scores of 5, 4, 3, 2 and 1 respectively were assigned for the responses "once in a week", "once in a fortnight", "once in a month", "rarely" and "never".

The total score thus obtained by the individual respondents were added together. Mean and standard error

were worked out. Based on this, the respondents were categorised as follows.

Total score less than mean - 1.96 SE = Low personal localite source of information

Total score between mean ± 1.96 SE = Medium personal localite source of information

Total score greater than mean + 1.96 SE = High personal localite source of information

4 (b) (xi) Cosmopoliteness

The cosmopoliteness was measured on two dimensions viz., frequency and purpose of visits at the respondents to neighbouring villages/towns.

The frequencies adopted were "once in a week", "once in a fortnight", "once in a month", "rarely" and "never" and the weightages were given as 5, 4, 3, 2 and 1 respectively.

The purpose of visits were given as agricultural, personal, entertainment and others with the weightages assigned as 4, 3, 2 and 1 respectively.

Considering the frequency of visits and purpose, the total score obtained by the respondents were

categorised as follows:

Total score less than mean - 1.96 SE = Low cosmopoliteness

Total score between mean ± 1.96 SE = Medium cosmopoliteness

Total score greater than mean ± 1.96 SE = High cosmopoliteness

4(c) Constraints in the utilisation of developmental schemes by the cardamom growers

A tentative list of possible constraints confronted by the farmers at their own level and at the organizational level in the utilisation of developmental schemes by the cardamom growers were prepared in consultation with Development officers of the Spices Board, Agricultural Officers, experts of the Kerala Agricultural University, Farmers and relevant literature.

The selected seven constraints each were administered to the respondents and were asked to indicate their response in terms of the importance on a five point continuum as "Most important", "important", "neither important nor unimportant", "less important" and "least important" with scores 5, 4, 3, 2 and 1 respectively.

Based on the responses, the constraints were ranked based on the total score obtained for each important statement and summed up for all the respondents.

5. Method of data collection

The data were collected from the cardamom growers using an interview schedule. The interview schedule was prepared in English. But during data collection, a Malayalam version of the same was used by the researcher for easy administration. Necessary precautions were taken to ensure that the questions in the schedule were unambiguious, clear, complete and comprehensive.

The interview schedule was pre-tested and necessary modifications were carried out to suit the area under study. The data were collected from the respondents personally from January 1989 to February 1989. The data collected were coded and tabulated for statistical analysis.

6. Statistical methods used

6 (1). Use of mean and standard error method

This method was used to classify the respondents characteristics into three categories viz., low, medium and high.

Total score less than mean - 1.96 SE = Low

Total score between mean $\pm$ 1.96 SE = Medium

Total score greater than mean + 1.96 SE = High

6(2) Chi-square test of significance

In order to find out the association between the dependent variables and the independent variables a chi-square test of significance was computed.

The formula used for computing the chi-square value was as follows:

$$\frac{\leq (O - E)^2}{E}$$

where,

O = Observed frequency

E = Expected frequency

6 (3) Step-wise regression analysis

This was done to know the relative effect of the independent variables in predicting the dependent variable and for elimination of unimportant variable. The step-wise regression analysis selects the best subset of variables.

6 (4) Simple percentage analysis

Statistical analysis was done with the help of computer facilities available in the Kerala Agricultural University.

results and discussion

Chapter IV
RESULTS AND DISCUSSION

In this chapter, the findings of this study along with the discussion are given under the following headings.

(A) Awareness about the developmental schemes of the Spices Board by the cardamom growers.

(B) Association of selected characteristics of farmers with awareness.

(C) Attitude of the cardamom growers towards the developmental schemes.

(D) Association of selected characteristics of farmers with attitude towards developmental schemes.

(E) Extent of utilisation of developmental schemes by the cardamom growers.

(F) Association of selected behavioural characteristics of farmers with the utilisation of developmental schemes.

(G) Result of step-wise regression analysis of selected characteristics of farmers with awareness, attitude and extent of utilisation of developmental schemes.

(H) Constraints experienced by the farmers in their utilisation of developmental schemes.

(I) Suggestions for improvement.

(A) Awareness about the developmental schemes by the cardamom growers

The distribution of the respondents according to their awareness of the developmental schemes is presented in Table 5.

Table 5. Categorisation of the respondents according to their awareness about the developmental schemes

Level of awareness	No. of farmers	
	F	%
High	44	29.33
Medium	77	51.33
Low	29	19.34
	150	100.00

From the above table it could be seen that only 29.33 per cent of the respondents belonged to high awareness group, 51.33 per cent of farmers belonged to

(B) Association of selected characteristics of farmers with awareness

(B)(1) Age

The distribution of the respondents according to their level of awareness at different age group is presented in Table 6.

Table 6. Categorisation of respondents according to their level of awareness and age

Age	Level of awareness							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
Old	4	2.67	14	9.33	6	4.00	24	38.33
Middle	22	14.67	40	26.67	14	9.33	76	50.67
Young	18	12.00	23	15.33	9	6.00	50	16.00
Total	44	29.34	77	51.33	29	19.33	150	100.00

$X^2 = 3.07$ NS

medium group, whereas 19.33 per cent of the respondents was in low group.

Hence it is inferred that more than 80 per cent of the farmers were aware of the developmental schemes into either high level of medium level of awareness.

The Table 6 reveals that nearly half of the sampled farmers fall under middle age, one third as old aged and remaining as young aged category.

Whereas majority of the farmers (51.33 per cent) were having medium level of awareness followed by high level (29.34 per cent) and low level (19.33 per cent) about the developmental schemes.

The table further reveals that 26.67 per cent of farmers were having high level of awareness ranging the age group from young to middle and the same category of age groups (about 42.00 per cent) were having medium level of awareness. Regarding aged farmers they had medium level of awareness of 9.33 per cent, negligible percentage of awareness in high and low level.

Hence it is inferred that most of the farmers of young and middle aged had medium to high level of awareness regarding developmental schemes.

The chi-square value was 3.07, where when compared with the table value revealed that age and awareness were not significantly related.

The developmental activities of the Spices Board do not confine to any particular age group and as one all the cardamom growers irrespective of age of farmer the target audience of the Spices Board.

(B) (2) Education

The distribution of the respondents according to their level of education and level of awareness is presented in Table 7.

The table very clearly revealed that a large majority of (94 per cent) farmers were having education level ranging from primary to collegiate level. Of these, 16.67 per cent were at collegiate level, while 36 and 41.33 per cent farmers were at secondary and primary level respectively. Only 6.00 per cent were illiterate.

The table shows that majority of farmers (24.67 per cent) under high level of awareness had the education level of secondary and collegiate level and

large majority (nearly 48.00 percent) of farmers were medium level of awareness had primary to collegiate level of education. Whereas the illiterate farmers had less than 3.5 per cent of farmers in medium and low level of awareness.

Hence it is inferred that most of the educated farmers had medium to high level of awareness regarding the developmental schemes.

The chi-square value of education with awareness was 33.84 where when compared with the table value was found to be significant.

From the above it is understood that educational level of the farmer was significantly related to awareness. This may be due to the reason that more the education, greater will be the inquisitiveness of farmers to know more about the developmental schemes of the Spices Board. Moreover, table 7 reveals that except a few almost all are having educational level from primary to collegiate level which also evidently indicates that based on their level of education there is an increase in awareness level. It is observed that most of the farmers were registered growers who are constantly in touch with the developmental

Table 7. Categorisation of the respondents according to their level of education and their awareness.

Education	Level of awareness							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
Collegiate	14	9.34	8	5.34	3	1.99	25	16.67
Secondary	23	15.33	26	17.33	5	3.33	54	36.00
Primary	7	4.67	38	25.33	17	11.33	62	41.33
Illiterate	0	0	5	3.33	4	2.68	9	6.00
Total	44	29.34	77	51.33	29	19.33	150	100.00

^{2} = 33.84** (Significant at 1% level)

agencies. These may be the reasons for the significant relationship with awareness and educational level.

This study is in agreement with Vijayaraghavan (1979), Balu (1980), Moni (1980) and Nandakumar (1980) who had also reported the significant relationship between educational level and awareness.

(B) (3) Farm size

Distribution of the respondents according to their size of holding with their awareness about the developmental schemes is presented in Table 8.

The table shows that 85 per cent of farmers fell under either marginal or small farmer category followed by 10.00 per cent of farmers under medium level while only 4.00 per cent were big farmers.

Regarding the awareness level all the big farmers were having medium to high level of awareness. More than 20.00 and 45.00 per cent of small and marginal farmers had high and medium level of awareness only 19.33 per cent of medium to marginal farmers had low level of awareness. Hence it is inferred that the small and marginal farmers had either high or medium level of awareness.

It could be observed from the chi-square value i.e. 14.98, that there exists a significant relationship between farm size and awareness. This may be due to the reason that as farm size increases, the desire to increase the production and profit from their farm also increases. This may lead the farmers to know more about the developmental schemes so as to utilize the opportunities to reap high profit. Since most of the schemes extend subsidies and provide relief to the economic burden of the farmers, the farmers with large size of holdings would have taken pain to know more about the developmental schemes in order to avail these benefits. Moreover, Table 8 reveals that according to increase in farm size there is an increase in their awareness level of the farmers.

This study is in agreement with Vijayaraghavan (1979), Balu (1980), Moni (1980) and Nandakumar (1980), who had indicated that as farm size increases the awareness level of farmers also increases.

(B) (4) Income

Distribution of the cardamom farmers according to their level of awareness with their income level is presented in Table 9.

Table 8. Categorisation of the farmers according to their level of awareness and farm size

Farm size	Level of awareness							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
Big	4	2.69	2	1.34	0	0	6	4.00
Medium	9	5.99	6	3.99	1	0.67	16	10.67
Small	17	11.34	27	17.99	9	5.98	53	35.33
Marginal	14	9.34	42	27.99	19	12.68	75	50.00
Total	44	29.36	77	51.31	29	19.33	150	100.00

χ^2 = 14.98* (Significant at 5% level)

The table reveals that nearly half of the farmers (48.00 per cent) had low level of income and the remaining belonged to medium to high level of income group.

It further reveals that almost equal percentage of farmers in all the income group had high level of awareness and 28.00 per cent of farmers of high and medium income group had medium level of awareness. The low level of income group of farmers, had (14.68 per cent) low level of awareness.

Hence it is inferred that majority of farmers medium to low income group had either medium or high level of awareness, while majority of farmers with low income group had low level of awareness.

It could be seen from the chisquare value (14.09) that the income of the farmers was significantly related to awareness. This may be due to the following reasons.

One would normally expect to improve the income level in his farming enterprise. Actually most of the farmers who belonged to lower income group will naturally expect some sort of economic incentives to raise their income

level. This process might not have operated to the desired extent leading to the result obtained.

The Table 9 reveals that high income group farmers, majority have medium to high level of awareness. That substantiates the reason that increase in income level would increase the awareness of developmental schemes.

This study is in agreement with Vijayaraghavan (1979), Balu (1980), Moni (1980) and Nandakumar (1980) who had also indicated the positive and significant relationship between income of the farmers with their awareness level.

(B) (5) Farming experience

Distribution of the respondents according to their farming experience with their awareness about the developmental schemes is presented in Table 10.

The table shows that 70 per cent of farmers had high farming experience in cardamom cultivation followed by medium and low with 16.67 and 13.33 per cent respectively.

With reference to their awareness level the low level of farming experience farmers had nearly 4.00 and 8.00 per cent of high to medium level of awareness

Table 9. Categorisation of the farmers according to their level of income and their level of awareness

Income	Awareness level							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	15	9.99	17	11.33	2	1.53	34	22.67
Medium	14	9.34	25	16.67	5	3.33	44	29.33
Low	15	9.99	35	23.34	22	14.68	72	48.00
Total	44	29.32	77	51.34	29	19.54	150	100.00

X^2 = 14.09** (Significant at 1% level)

respectively. Under high level of farming experience nearly 14.00 per cent of farmers had low level of awareness. Majority of farmers under mediumto high level of farming experience had medium to high level of awareness.

Hence it is inferred that medium to high level of farming experience had high to medium level of awareness regarding developmental schemes.

It could be observed from the chi-square value (3.93) that there was no significant relationship between farming experience and awareness about the developmental schemes.

It is not the experience of the farmers that counts; but the confidence developed within them towards the developmental activities which are important. This will probably be the reason for the non-significant relationship between these two variables. The farmers irrespective of the experience might have developed a confidence in the activities of Spices Board which had made them become aware of the different development activities of the Board.

Table 10. Categorisation of the respondents according to their level of awareness and their farming experience

Farming experience	Level of awareness							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	28	18.67	56	37.34	21	13.99	105	70.00
Medium	10	6.69	9	5.99	6	3.99	25	16.67
Low	6	3.99	12	7.99	2	1.35	20	13.33
Total	44	29.35	77	51.32	29	19.33	150	100.00

$X^2 = 3.93$ NS

(B) (6) Risk orientation

Distribution of respondents according to their level of risk orientation with their awareness is presented in Table 11.

The table reveals that more than three fourth of farmers had medium level of risk orientation and only 10.67 per cent had high risk orientation, while the remaining had low level of risk orientation.

Regarding the awareness level, nearly 44.00 and 27.00 per cent medium to high level of awareness had medium to high level of risk orientation.

Hence it is inferred that the farmers with medium to high level of risk orientation had medium to high level of awareness.

The chi-square value of the risk orientation with awareness was 12.38. When comparing with the table value, it could be observed that this value was significant.

Thus risk orientation had a significant relationship with awareness. It is true that farmers who do not prefer to take risk in their crop enterprise will be always aware of the various developmental schemes for

cardamom cultivation which can reduce risk, since most of the farmers are registered growers of the Spices Board, almost all the farmers are likely to be aware of the various developmental programmes of the Board which are useful to cardamom. This could be the reasons for the significant relationship between these two variables.

The result of this study is in agreement with the findings of Balu (1980) and Nandakumar (1980) who were also indicated a significant relationship with awareness.

(B) (7) Economic motivation

Distribution of the farmers according to their level of economic motivation with their level of awareness is presented in Table 12.

The Table shows that 80.00 per cent of the farmers had medium level of economic motivation while almost equal percentage of farmers (10.00 per cent) had high and low level of economic motivation.

Whereas the 23.34 per cent farmers with medium level of economic motivation had high level of awareness and 40.66 per cent of farmers in the same category had medium level of awareness and in all the category only

Table 11. Categorisation of respondents according to their level of awareness and their level of risk orientation

Level of risk orientation	Level of awareness							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	9	5.99	5	3.35	2	1.34	16	10.67
Medium	32	21.34	63	41.99	19	12.67	114	76.00
Low	3	1.99	9	5.99	8	5.34	20	13.33
Total	44	29.32	77	51.33	29	19.35	150	100.00

X^2 = 12.38* (Significant at 5% level)

less than 5.00 per cent of farmers had high to low level of awareness.

Hence it is inferred that farmers in the medium level of economic motivation had medium to high level of awareness.

The chi-square value obtained and the association between economic motivation and awareness was 3.49 which when compared to the table value was found to be non-significant.

Farmers irrespective of their level of economic motivation might have become aware of the developmental schemes through use of mass media and other sources.

(B) (8) Mass media utilisation

Distribution of the respondents according to their extent of mass media utilisation with their level of awareness is presented in Table 13.

Regarding the mass media utilisation, the table shows that 64.00 per cent of farmers had medium level of mass media utilisation and almost equal percentage (19.33 and 16.67) had high to low level of mass media utilisation respectively.

Table 12. Categorisation of the respondents with their level of economic motivation and their awareness

Economic motivation	Level of awareness							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	2	1.33	9	5.99	3	1.99	4	9.33
Medium	35	23.34	61	40.66	24	15.99	120	80.00
Low	7	4.67	7	4.68	2	1.35	16	10.67
Total	44	29.34	77	51.33	29	19.33	150	100.00

$X^2 = 3.49$ NS

Nearly 28.00 per cent farmers had high level of awareness with medium to high level of mass media utilisation and nearly 45.00 per cent had medium level of awareness from the same category of farmers.

Hence it is inferred that farmers with medium to high level of mass media utilisation had medium to high level of awareness.

The chi-square value 54.61 was obtained which when compared with the table value reveals that there was significant relationship between mass media utilization and awareness. It needs no explanation that if more the exposure to mass media, more willbe the awareness about the programmes. Various studies had revealed that mass media are mainly used for creating the awareness of the farmers. This result is in agreement with the findings of Subramanian et al. (1978), Moni (1980) and Nandakumar (1980).

(B) (9) Contact with extension agencies

Distribution of the respondents according to the level of contact with extension agencies with their awareness is presented in Table 14.

The Table reveals that more than half of the farmers fall under medium level of extension agencies

Table 13. Categorisation of the respondents according to their extent of utilisation of mass media and their awareness.

Mass media utilisation	Level of awareness							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	22	14.67	6	3.99	1	0.67	29	19.33
Medium	20	13.33	61	40.67	15	9.99	96	64.00
Low	2	1.33	10	6.67	13	8.68	25	16.67
Total	44	29.33	77	51.33	29	19.34	150	100.00

X^2 = 54.61** (Significant at 1% level)

contact followed by 25.33 and 20.00 per cent under high and low level of extension agencies contact respectively.

It further revealed that equal percentage of farmers (14.66 per cent) with high and medium level of extension agencies contact had high level of awareness. Whereas 42.00 per cent of the farmers in the medium level of awareness fall under medium to low level of extension agencies contact of the same category had (18.00 per cent) of farmers with low level of awareness.

Hence it is inferred that farmers with medium to high level of extension agencies contact had medium to high level of awareness.

The chi-square value of the association between contact with extension agencies and awareness is 29.3 and comparing this with the table value, it could be observed that there was significant association between contact with extension agencies and awareness.

Since most of the farmers were registered growers, it is possible that there is frequent contact by extension agencies. In this process the farmers might have been provided with information regarding the various developmental schemes. Hence more the contact, the higher is the level of

awareness. The Table 13 also revealed that the farmers with more mass media utilisation had more awareness about developmental schemes.

The result of the study is in agreement with Subramanian et al. (1978), Vijayaraghavan (1979) and Nandakumar (1980) had also indicated the significant association between awareness and contact with extension agencies.

(B) (10) Personal localite information sources

Distribution of the respondents according to their utilisation of personal information sources with awareness is presented in Table 15.

The table reveals that nearly 60.00 per cent farmers had medium level of utilisation of personal localite information sources followed by 22.00 and 18.67 per cent with high and low level of personal localite information sources were respectively.

Only farmers with (33.99 percent) medium level of personal localite information sources had medium level of awareness and the same category had 17.36 percentage of awareness at high level. Nearly 8.00 per cent of farmers

Table 14. Categorisation of the respondents according to the level of contact with extension agencies and their level of awareness.

Contact with extension agencies	Level of awareness							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	22	14.66	14	9.34	2	1.34	38	25.33
Medium	22	14.66	41	27.34	19	12.66	82	54.67
Low	0	0	22	14.66	8	5.34	30	20.00
Total	44	29.32	77	51.34	29	19.34	150	100.00

X^2 = 29.3** (Significant at 1% level)

of high personal localite information sources had high level of awareness.

Hence it is inferred that only farmers with medium level of personal localite information sources had medium to high level of awareness.

The chi-square value of the association between personal localite information sources and awareness is 10.20. The chi-square value when compared with the table value was found to be significant.

Use of personal localite information sources had a significant relationship with awareness about the developmental schemes. It is quite natural that any information will be diffused easily and effectively through their neighbours, friends, relatives and other cardamom planters. Informal personal contacts with the above category of people are likely to make the cardamom growers aware about the various developmental schemes of Spices Board. This may be the reason for the significant relationship.

The result of this study is in agreement with the findings of Subramaniam et al. (1978).

Table 15. Categorisation of the respondents according to their utilisation of personal locality information sources and awareness.

Personal locality information sources	Level of awareness							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	12	7.99	14	9.35	7	4.68	33	22.00
Medium	26	17.36	51	33.99	12	7.99	89	59.33
Low	6	3.99	12	7.99	10	6.66	28	18.67
Total	44	29.34	77	51.33	29	19.33	150	100.00

X^2 = 10.20* (Significant at 5% level)

(B) (11) Cosmopoliteness

Distribution of the respondents according to their cosmopoliteness and level of awareness is presented in Table 16.

The table reveals that 61.33 per cent of farmers were medium level of cosmopoliteness, followed by 28.00 and 10.67 per cent of farmers fall under low and high level of cosmopoliteness respectively.

Regarding the awareness, 17.35 per cent of farmers with medium level of cosmpoliteness had awareness at high level of the same category had 32.67 per cent medium level of awareness. In equal percentage of farmers (5.99 per cent) had high level of awareness at high and low level of cosmopoliteness.

Hence it is inferred that farmers with medium level of cosmopoliteness had high to medium level of awareness.

The chi-square value of cosmopoliteness with awareness was 7.55. It could be seen from the table value that this was not significant. Cosmopoliteness is defined as the farmers extent of contact with varied persons outside the village. It is likely that the purpose of

Table 16. Categorisation of the respondents according to their cosmopoliteness and their level of awareness

Cosmopo-linteness	Level of awareness							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	9	5.99	4	2.68	3	1.99	16	10.67
Medium	26	17.35	49	32.67	17	11.35	92	61.33
Low	9	5.99	24	15.99	9	5.99	42	28.00
Total	44	29.33	77	51.34	29	19.33	150	100.00

$$x^2 = 7.55 \text{ NS}$$

visit to the city/town by the farmers were mostly related to entertainment and other personal purposes. They were however, not meant for any agricultural purpose as such. Hence the observed result could be justified.

(C) Attitude of cardamom growers towards the developmental schemes

Distribution of the respondents according to their attitude towards the developmental schemes is presented in Table 17.

Table 17. Categorisation of respondents according to their attitude towards developmental schemes.

Level of attitude	No.of farmers	Percentage
High	28	18.67
Medium	94	62.66
Low	28	18.67
Total	150	100.00

From the table, it could be observed that 62.66 per cent of the farmers were having medium level of attitude towards developmental schemes. Whereas almost

equal percentage of farmers fall under high and low category of attitude towards the developmental schemes.

Hence it is inferred that majority of the cardamom farmers were having medium level of attitude towards the developmental schemes.

The fact that majority of farmers possessed medium level of attitude towards developmental schemes has been supported by the findings of Ramalingam (1981).

(D) Association between attitude towards developmental schemes and behavioural characteristics of the farmers

(D) (1) Age

Distribution of the farmers according to level of age and attitude towards the developmental schemes of Spices Board is presented in Table 18.

From the table it could be seen that more than half of the farmers were middle aged followed by one third under young category and the remaining under old aged category.

Nearly 14 per cent of farmers with high level of attitude were under the age category of young and middle and the same category of farmers with 52.65 per cent had only medium level of attitude towards developmental schemes

and majority of them under low level of attitude (16.68 per cent) were also from this category.

Hence it is inferred that farmers with young and middle age had medium to high level of attitude towards developmental schemes.

The chi-square value obtained for this variable is 3.39 which was not significant when compared with the table value. Hence it may be concluded that age is independent with attitude of the cardamom farmers towards the developmental schemes of Spices Board.

This result is in agreement with that of Singh and Singh (1968), Tewari et al. (1974), Kennedy et al.(1975) Balasubramaniam (1977), Kher and Jha (1978), Sushama et al. (1981) and Philip (1984) who had reported the non-significant relationship with age and attitude.

(D) (2) Education

Distribution of the cardamom growers according to their educational status and level of attitude towards the developmental schemes is presented in Table 19.

The table clearly reveals that illiterate farmers of 4.67 per cent had medium level of attitude and high and

Table 18. Categorisation of the cardamom growers according to their age level and attitude

Age	Level attitude							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
Old	6	3.99	15	9.99	3	1.99	24	16.00
Middle	14	9.35	45	29.99	17	11.34	76	50.67
Young	8	5.35	34	22.66	8	5.34	50	33.33
Total	28	18.69	94	62.64	28	18.67	150	100.00

$X^2 = 3.39$ NS

low level of attitude almost in equal percentage. Whereas majority of the farmers (58.00 per cent) with primary to collegiate level of education had medium level of attitude towards developmental schemes. Only 18.00 per cent of the same category had high level of attitude towards developmental schemes.

It is inferred that farmers with primary to secondary education had medium level of attitude towards developmental schemes and collegiate education had high level of attitude towards developmental schemes.

The chi-square value obtained for the association between education of the farmer and attitude towards developmental schemes was not significant.

Due to the intensive efforts of the Spices Board all the farmers irrespective of educational level might have got opportunity to get themselves exposed to the various activities of the Board. In this process all the farmers might have developed a favourable attitude towards the schemes.

Singh and Singh (1968), Sarkar (1970), Kher and Jha (1978), Thangavelu (1979) also had indicated a non-significant relationship with education and attitude.

Table 19. Categorisation of the respondents to their educational status and their attitude level

Education	Level of attitude							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
Collegiate	10	6.67	13	8.67	2	1.33	25	16.67
Secondary	9	5.99	32	21.35	13	8.66	54	36.00
Primary	8	5.33	42	27.99	12	7.99	62	41.33
Illiterate	1	0.68	7	4.67	1	0.67	9	6.00
Total	28	18.67	94	62.68	28	18.65	150	100.00

$X^2 = 11.4$ NS

(D) (3) Farm size

Distribution of respondents according to their size of holding with their level of attitude is presented in Table 20.

The table reveals that out of 50 per cent of marginal farmers more than 35 per cent farmers had medium to high level of attitude. 56.66 per cent small and medium farmers had medium level of attitude. The small and medium farmers more than 11 per cent had high level of attitude towards developmental scheme.

Hence it is inferred that farmers with marginal to medium holding size had medium to high level of attitude towards developmental schemes.

The chi-square value of the association between farm size and attitude obtained was 32.71. On comparing this value with the table value, it was observed that the calculated value was significant at one per cent level.

The farm size had a significant association with attitude of the farmers towards developmental schemes.

As farm size increases, the cardamom farmers may fee the need for improvement of their land for which they

may require loans, subsidies and such other incentives. Since majority of the farmers are registered growers of Spices Board, they might have got acquainted with the developmental schemes of Spices Board and utilize such benefits. It is, but natural, that such farmers who had the first hand experience of such developmental schemes had developed a favourable attitude towards these schemes and hence the result.

It is evident from the Table 20 that farmers with higher farm size had attitude level ranging from medium to high.

This study is in agreement with the findings of Singh and Singh (1968), Singh and Singh (1971), Lokhande (1973). Bahadur and Rashid (1974), Balasubramaniam (1977) and Thangavelu (1979) who had also indicated the significant association between farm size and attitude of the farmers.

(D) (4) Income

Distribution of the farmers according to their income level with their attitude towards the developmental schemes is presented in Table 21.

The table clearly shows that 11.35 per cent of high income had high level of attitude towards developmental

Table 20. Categorisation of the respondents according to their size of holding and their level of attitude

Farm size	Level of attitude							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
Big	3	1.99	3	1.99	0	0	6	4.00
Medium	10	6.67	6	3.99	0	0	16	10.67
Small	8	5.34	37	24.67	8	5.34	53	35.33
Marginal	7	4.69	48	31.99	20	13.33	75	50.00
Total	28	18.69	94	62.64	28	18.67	150	100.00

x^2 = 32.71** (Significant at 1% level)

schemes. Whereas farmers with 42.00 per cent medium level of attitude fall under medium to low income group.

Hence it is inferred that farmers with low to medium income group had only medium level of attitude towards developmental schemes.

The chi-square value of the association between income and attitude of the farmers towards the developmental schemes was 30.25. It could be observed from the table value that it was significant at one per cent level.

It is observed from the table 21 that higher the income, more the attitude level of farmers. Farmers with higher income will have the resources to manage their enterprises more scientifically, such farmers might have come in contact with the Spices Board and utilised the developmental schemes for their own benefits. This could probably explain how income and attitude got themselves associated.

(D) (5) Farming experience

Distribution of the respondents according to their experience in farming with their level of attitude towards the developmental schemes is presented in Table 22.

Table 21. Categorisation of the respondents according to their income level and their attitude

Income	Level of attitude							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	17	11.35	15	9.99	2	1.34	34	22.67
Medium	5	3.35	31	20.66	8	5.34	44	29.33
Low	6	3.99	48	31.99	18	11.99	72	48.00
Total	28	18.69	94	62.64	28	18.67	150	100.00

X^2 = 30.25** (Significant at 1% level)

The table shows that majority of the sampled farmers had high level of farming experience, out of that most of the farmers (58 per cent) had high to medium level of attitude. Regarding the medium level of farming experience category, 12.66 per cent out of 16-67 per cent farmers had medium level of attitude towards the developmental schemes.

Hence it is inferred that farmers with high farming experience group had medium to high level of attitude towards the developmental schemes.

The chi-square value obtained for the association between farming experience and attitude was 6.89, which was not significant when compared with the table value.

The Spices Board do not fix farming experience as a criterian for the selection of farmers in sanctioning developmental schemes. As such no restriction to experience in cardamom cultivation is being imposed. Hence the observed result is justified.

(D) (6) Risk orientation

Distribution of the respondents according to their risk orientation with their level of attitude is presented in Table 23.

Table 22. Categorisation of the respondents according to their farming experience and their level of attitude

Farming experience	Level of attitude							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	20	13.35	67	44.66	18	11.99	105	70.00
Medium	2	1.35	19	12.66	4	2.67	25	16.67
Low	6	3.99	8	5.34	6	3.99	20	13.33
Total	28	18.69	94	62.66	28	18.65	150	100.00

$X^2 = 6.89$ NS

The Table shows that more than 75 per cent of the sampled farmers had medium level of risk orientation. Out of that 11.33 per cent had high and 50.66 per cent had medium level of attitude towards developmental schemes.

Hence it is inferred that farmers with medium to high level of risk orientation had medium level of attitude towards the developmental schemes.

The chi-square value of the association between risk orientation and attitude of the farmers towards the developmental schemes was 9.62. It could be seen from the table value that this value was significant.

Risk orientation is defined as the capability of the farmer to bearing risk and uncertainity while availing the developmental schemes. Farmers who are more oriented towards risk are likely to overcome the same. By behavioural patterns which will result in tension reduction. It is likely that such farmers have come across developmental schemes of the Spices Board which are expected to provide assistance to the farmers and to reduce the risk.

This result of the study is in agreement with the findings of Tripathy (1977) who had also indicated significant

Table 23. Categorisation of the respondents according to their risk orientation and their level of attitude

Risk orientation	Level of attitude							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	4	2.67	7	4.67	5	3.33	16	10.67
Medium	17	11.33	76	50.66	21	13.99	114	76.00
Low	7	4.69	11	7.33	2	1.33	20	13.33
Total	28	18.69	94	62.66	28	18.65	150	100.00

X^2 = 9.62* (Significant at 5% level)

association between risk orientation and attitude of the farmers.

(D) (7) Economic motivation

Distribution of the respondents according to their economic motivation with their level of attitude is presented in Table 24.

The table deplicts that 80 per cent of farmers fell under medium level of economic motivation category followed by 10.67 per cent in low and 9.33 per cent in high category.

Out of the total sampled farmers 51.99 per cent farmers had medium and 11.99 per cent had high level of attitude towards the developmental schemes. Under medium level of economic motivation category and high economic motivation category had only medium level of attitude towards the developmental schemes (57.34 per cent). Hence it is inferred that farmers with medium and high level of economic motivation had medium level of attitude towards developmental schemes.

The chi-square value obtained for the association between economic motivation and attitude was 5.79, where when compared with the table value revealed a non-significant association.

Table 24. Categorisation of the respondents according to their economic motivation AND their level of attitude

Economic motivation	Level of attitude							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	4	2.69	8	5.35	2	1.34	14	9.33
Medium	18	11.99	78	51.99	24	15.99	120	80.00
Low	6	3.99	8	5.33	2	1.33	16	10.67
Total	28	18.67	94	62.67	28	18.66	150	100.00

$X^2 = 5.79$ NS

There are various formalities in relation to obtaining assistance from the Spices Board. Hence though the farmers may be having the economic motive, that may not be in a position to utilize the benefits, which may be the reason for this result.

(D) (B) Mass media utilisation

Distribution of the respondents according to their extent of mass media utilization with their level of attitude is presented in Table 25.

Out of the sampled farmers 64 per cent had medium level of mass media utilisation, of these 43.99 per cent had medium level of attitude towards developmental schemes. The same category had (13.99 per cent) low level of attitude towards the developmental schemes. Out of 19.33 per cent of high level mass media utilisation category, 9.99 per cent had high level of attitude towards the developmental schemes.

Hence it is inferred that farmers with low to medium level of mass media utilisation had medium level of attitude towards developmental schemes and high mass media utilization had medium to high level of attitude towards the developmental schemes.

The chi-square value of the association between mass media utilisation and attitude of the farmers towards the developmental schemes was 26.91. It could be seen from the table value that with the calculated value was significant at one per cent level.

Mass media sources are effective and they are considered as quick dissimination sources of information. The farmers who have more mass media utilization, naturally will have more awareness about these programmes. Awareness about the programmes and detailed enquiry might have created a favourable attitude towards such schemes.

Table 25. Categorisation of the respondents according to their mass media utilisation and their level of attitude

Mass media utilisation	Level of attitude							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	15	9.99	12	7.99	2	1.33	29	19.33
Medium	9	5.99	66	43.99	21	13.99	96	64.00
Low	4	2.69	16	10.69	5	3.34	25	16.67
Total	28	18.67	94	62.67	28	18.66	150	100.00

x^2 = 26.91** (Significant at 1% level)

(D) (9) Contact with extension agencies

Distribution of the respondents according to contact with extension agencies and the level of attitude is presented in Table 26.

The table shows that out of the 54.67 per cent of sampled farmers of medium level of extension agency contact, 45.00 per cent farmers had medium to high level of attitude towards developmental schemes. Whereas under 26 per cent of farmers with high level of extension agency contact, 22.66 per cent had medium to high level of attitude towards developmental schemes.

It is inferred that farmers with increasing in their contact level with extension agencies had increased in attitude towards developmental schemes to medium to high level.

The chi-square value of the association between contact with extension agencies and attitude of the farmers was 16.82 which was highly significant. In other words contact with extension agencies influenced the attitude of the farmers towards developmental schemes.

Since most of the farmers are registered growers and Spices Board is doing lot of extension work through the developmental agencies there is every possibility of persuading the farmers through their extension programmes. The distress experiences can be cleared by the extension personnel of the Spices Board. This might be the reason for the significant association between contact with extension agencies and attitude of the farmers towards the developmental schemes.

(D) (10) Personal localite information sources

Distribution of the respondents according to their extent of personal localite information sources and their level of attitude is presented in Table 27.

Out of the 59.33 per cent of sampled farmers more than 50.00 per cent farmers with medium level of personal localite information sources had medium to high level of attitude towards developmental schemes and more than half of the farmers with high level of personal localite information sources had medium level of attitude towards developmental schemes. 10 per cent of farmers with medium level of personal localite information sources

Table 26. Categorisation of the respondents according to the contract with extension agencies and their level of attitude

Contact with extension agencies	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	14	9.33	20	13.33	4	2.68	38	26.33
Medium	9	5.99	59	39.32	14	9.35	82	54.67
Low	5	3.35	15	9.99	10	6.66	30	20.00
Total	28	18.67	94	62.64	28	18.69	150	100.00

X^2 = 16.82** (Significant at 1% level)

had high level of attitude towards developmental schemes.

Hence it is inferred that farmers with medium to high level of personal localite information sources had medium to high level of attitude towards the developmental schemes.

The chi-square value of association between personal localite information sources and attitude was 5.4, which was not significant . In other words personal localite information sources did not affect the attitude of the farmers. It is possible that localite sources of information can create awareness among the farmers among for different schemes of Spices Board.

However, use of personal localite information sources may not help to develop confidence within the farmers about the various schemes.

(D) (11) Cosmopoliteness

Distribution of the respondents according to the cosmopoliteness and their level of attitude is presented in Table 28.

From the table it could be seen that out of 61.63 per cent of farmers under medium level of cosmopoliteness,

Table 27. Categorisation of the respondents according to the personal localite information sources and their attitude

Personal localite information sources	Level of attitude							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	9	6.00	17	11.33	7	4.67	33	22.00
Medium	15	10.00	61	40.66	13	8.67	89	59.33
Low	4	2.67	16	10.67	8	5.33	28	18.67
Total	28	18.67	94	62.66	28	18.67	150	100.00

$X^2 = 5.4$ NS

more than 50 per cent had medium to high level of attitude towards developmental schemes. Under high level of cosmopoliteness majority of farmers had (8.67 per cent) medium level of attitude towards developmental schemes.

Hence it is inferred that farmers with medium level of cosmopoliteness had medium level of attitude towards developmental schemes.

The chi-square value of the association between cosmopoliteness and the attitude of the cardamom growers towards the developmental scheme was 7.56 which was not significant. The cosmopoliteness level of the farmers did not affect the attitude.

Though cosmopoliteness by definition helps to develop outside contact among the farmers and thereby make them exposed to new information it is possible that most of the visit to the nearest town by the farmers were entertainment purposes or mostly of their domestic purposes and as such not intended for agricultural purposes. Visits are mostly confined to holidays on which the chances to getting exposed to agricultural information sources are quite less.

Table 28. Categorisation of the respondents according to the cosmppoliteness and their level of attitude

Cosmopo-liteness	Attitude level							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	1	0.67	13	8.67	2	1.33	16	10.67
Medium	23	15.35	53	35.32	16	10.66	92	61.33
Low	4	2.67	28	18.66	10	6.67	42	28.00
Total	28	18.69	94	62.65	28	18.66	150	100.00

$$X^2 = 7.56 \text{ NS}$$

The result of this study is in agreement with the findings of Pathak (1981) who had also indicated such a non-significant relationship between cosmopoliteness and attitude.

(E) Extent of utilisation of developmental schemes by the cardamom growers

Distribution of the respondents according to the extent of utilisation of the developmental schemes is presented in Table 29.

The table given above revealed that only 20 per cent of the respondents under study were having high level of utilisation of developmental schemes offered by the Spices Board, whereas 60.67 per cent of the respondents were utilized these schemes in medium level.

Only 19.33 per cent of the respondents were utilised these schemes in low level.

Table revealed that almost all the farmers were utilised these schemes at medium level.

Table 29. Categorisation of the respondents according to the extent of utilisation of the developmental schemes

Extent of utilisation	Number of farmers	
	F	%
High	30	20.00
Medium	91	60.67
Low	29	19.33
Total	150	100.00

(F) Association of selected behavioural characteristics of farmers with the utilisation of developmental schemes

(F) (1) Age

Distribution of the respondents according to their extent of utilisation of developmental schemes and their age is presented in Table 30.

From the table it could be observed that out of 50.67 per cent of middle aged farmers, more than 40 per cent of farmers had utilised the schemes at medium to low level and young farmers (28 per cent) had utilized medium to high level. The aged farmers 13.35 per cent had utilised only medium level.

Hence it is inferred that young farmers utilised the schemes medium to high level and middle and aged farmers utilized the schemes only in medium level.

The chi-square value of association between age and the utilization of developmental schemes was 9.2 which was not significant. The age of the farmers did not have affect on the utilization of developmental schemes.

The same argument put forth earlier in the case of awareness and attitude holds found here also.

Table 30. Categorisation of the respondents according to the extent of utilisation of developmental schemes and their age

Age	Level of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
Old	3	1.99	20	13.35	1	0.68	24	16.00
Middle	14	9.33	42	27.99	20	13.33	76	50.67
Young	13	8.67	29	19.33	8	5.33	50	33.33
Total	30	19.99	91	60.67	29	19.34	150	100.34

$$X^2 = 9.2 \text{ NS}$$

(F) (2) Education

Distribution of the respondents according to their extent of utilization of developmental schemes and their education is presented in Table 31.

It is interesting to note from the Table, that the farmers educated at college level had utilised the schemes at medium to high level (14.68 per cent). In the case of secondary level the farmers had utilized the schemes medium to high level (17.34 per cent and 11.99 per cent respectively).

Primary level educated farmers had utilized these schemes 29.34 per cent and 8.67 per cent medium to low level of utilisation respectively. High level of utilisation of developmental schemes in the case of primary level educated farmers was negligible.

Illiterate farmers had utilisation upto six per cent at medium to low level.

Hence it is inferred that farmers in their increase in level of education had utilization from medium to high level.

The chi-square value of the association between education and extent of utilization of developmental schemes was 16.08, which was significant. In other words educational level of the farmers had affect in the utilization of developmental schemes. This may be explained from the fact that farmers with good educational background could assess the pros and cons of any scheme which are extended to them by the agency. The rational thinking and reasoning ability of educated farmers could help them in proper decision making thereby for the utilization of these schemes.

It is further supported from the table 7, 19 and 31 which reveals that higher the education high will be the awareness, about the schemes and higher the favourable attitude towards the developmental schemes. The result of this study is in agreement with thefindings of Sangle et al. (1973), Ayyathurai (1980), and Ramakrishna (1980) who had also indicated a significant association between extent of utilization and education.

(F) (3) Farm size

Distribution of the respondents according to the extent of utilization and their farm size is presented in Table 32.

Table 31. Categorisation of the respondents according to the extent of utilisation and their education

Level of education	Level of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
Collegiate	7	4.69	15	9.99	3	1.99	25	16.67
Secondary	18	11.99	26	17.34	10	6.67	54	36.00
Primary	5	3.34	44	29.34	13	8.67	62	41.33
Illiterate	0	0	6	3.99	3	1.99	9	6.00

X^2 = 16.08* (Significant at 5% level)

It is evident from the table that out of all the marginal farmers (50 per cent), two third of them had medium level of utilization of schemes. More than two third of big farmers utilized the schemes at high level, whereas the majority of medium and small farmers had utilized at medium level.

Hence it is inferred that almost all the farmers except big had medium level of utilization whereas almost all the big farmers had high level of utilization of schemes.

There was high significant association between farm size and extent of utilization of the developmental schemes. In other words, farm size influence the extent of utilization of the developmental schemes of the farmers considerably.

It is evident from the tables 8, 9 and 32 that the awareness and attitude of the farmers increase with the size of holding. Since the developmental schemes benefits may be extended in large extent according to size of holding, the extent of utilization of developmental schemes also naturally in increasing order. Hence this might be the reason for the significant association between these two variables.

Table 32. Categorisation of the respondents according to the level of utilisation and the farm size

Farm size	Level of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
Big	5	3.33	1	0.68	-	-	6	4.00
Medium	7	4.67	9	5.99	-	-	16	10.67
Small	17	11.34	31	20.67	5	3.33	53	35.33
Marginal	1	0.67	50	33.33	24	15.99	75	50.00
Total	30	20.01	91	60.67	29	19.32	150	100.00

X^2 = 49.08** (Significant at 1% level)

Ayyathurai (1980), Ramakrishna (1980) who had also indicated a significant relationship between farm size and extent of utilization.

(F) (4) Income

Distribution of the respondents according to their extent of utilization of developmental schemes and their income level is presented in Table 33.

It is interesting to note from the table that almost all high and medium income group farmers had utilized the schemes medium to high level. Whereas majority of the low income group of farmers (44 per cent) had utilized the schemes medium to low level.

Hence it is inferred that farmers with increasing in their income had utilized the schemes from medium to high level.

It could be observed from the chi-square value (50.09) income was significantly asscciated with extent of utilization of developmental schemes. It is needless to say that increase in income level and the extent of utilization of developmental schemes also increased in substantial amount, because there will not be any misutilization of

developmental schemes so as to say the credit availed might be characterised for the right performance of cultivation. It is evident from the table 9, 20 and 33 that more income group people have more awareness and favourable attitude towards these schemes. The higher income farmers had convinced that the developmental schemes are beneficial to them. This may be the reason for the significant relationship between these two variables.

Kailasom (1980), Ramakrishna (1980) who had also indicated this significant relationship between income and extent of utilization.

(F) (5) Farming experience

Distribution of the respondents according their extent of utilization of developmental schemes with their farming experience is presented in Table 34.

It is evident from the table that out of 70 per cent of highly experienced farmers in cardamom cultivation had utilization of developmental schemes from medium to high level (60 per cent). Thus the less experienced farmers had medium to low level utilization of such schemes. Whereas the medium level category had the maximum percentage under medium level of utilization.

Table 33. Categorisation of the respondents according to their utilisation of developments schemes and their level of income

Level of income	Level of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	18	11.99	15	9.99	1	0.67	34	22.67
Medium	5	3.34	37	24.67	2	1.34	44	29.33
Low	7	4.68	39	25.99	26	17.33	72	48.00
Total	30	20.01	91	60.65	29	19.34	150	100.00

X^2 = 50.09** (Significant at 1% level)

Hence it is inferred that more the experience in farming of cardamom cultivation had medium to high level of utilization of developmental schemes.

The chi-square value reveals that there exists a high significant association between farming experience and extent of utilization. In other words farming experience of the farmers had influence the extent of utilization of developmental schemes considerably.

The farmers who are traditionally cultivating cardamom are well aware of the returns in situations of favourable and unfavourable conditions. However, their farming experiences never allows them to look for an alternative crop. In the recent years, increase in the cost of inputs and unstalde market system increases the cost of cultivation of the crop. Hence the farmers are bound to sort financial help from outside agencies. This could be the reason for majority of the experienced cardamom farmers to be the beneficiaries of the development schemes of the Spices Board.

This is in agreement with the findings of Kailasom (1980), Ramakrishna (1980) who had also indicated the significant relationship between extent of utilisation and farming experience.

Table 34. Categorisation of the respondents according to the extent of utilisation and their farming experience

Farming experience	Extent of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	22	14.68	68	45.33	15	9.99	105	70.00
Medium	5	3.35	14	9.34	6	3.99	25	16.67
Low	3	1.99	9	5.99	8	5.34	20	13.33
Total	30	20.02	91	60.66	29	19.32	150	100.00

χ^2 = 22.55** (Significant at 1% level)

(F) (6) Risk orientation

Distribution of the respondents according to their extent of utilization of developmental schemes with their risk orientation is presented in Table 35.

It is seen from the table that out of the sampled farmers more than 60 per cent of the farmers had medium level of utilization of scheme in all the category of risk orientation viz., high, medium and low. Only medium category had alone high level of utilization by 14.67 per cent and it is interesting to note that almost equal percentage of farmers under high and low categories of risk orientation had high level of utilization of schemes.

Hence it is inferred that farmers with increasing in their risk orientation had medium to high level of utilization of developmental schemes.

The chi-square value (0.58) obtained for risk orientation and extent of utilization was found as non-significant. In other words risk orientation of farmers did not affect the extent of utilization of the developmental schemes.

This might be due to the reason that the farmers did not have any other option to cultivate crops other

Table 35. Categorisation of the respondents according to their extent of utilisation and their risk orientation

Risk orientation	Extent of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	4	2.68	9	5.99	3	1.99	16	10.67
Medium	22	14.67	69	45.99	23	15.34	114	76.00
Low	4	2.68	13	8.67	3	1.99	20	13.33
Total	30	20.03	91	60.65	29	19.32	150	100.00

$X^2 = 0.58$ NS

than cardamom because of the legislation.

(F) (7) Economic motivation

Distribution of the respondents according to their extent of utilization of developmental schemes by the cardamom farmers and their economic motivation is presented in Table 36.

It is note worthy to observe from the table that farmers with high economic motivation had maximum utilization of medium to high level 8 per cent out of 9.33 per cent. Whereas low economic motivation group had low to medium level. In medium level, majority of them had medium level of utilisation 46.67 per cent and equal percentage under high to low level of utilization of developmental schemes.

Hence it is inferred that farmers with increasing in economic motivation had increased in the utilization of developmental schemes majority of the farmers had medium to high level of economic utilization.

The chi-square value (4.02) shows that there was no significant association between economic motivation of the farmers and the extent of utilization of the developmental schemes.

Table 36. Categorisation of the respondents according to their extent of utilisation of developmental schemes and their economic motivation

Economic motivation	Extent of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	4	2.67	8	5.33	2	1.33	14	9.33
Medium	25	16.67	70	46.67	25	16.67	120	80.00
Low	1	0.67	13	8.66	2	1.33	16	10.67
Total	30	20.01	91	60.66	29	19.33	150	100.00

$X^2 = 4.02$ NS

The same argument put forth earlier in the case of awareness and attitude holds found here also.

(F) (8) Mass media utilisation

Distribution of the respondents according to their extent of utilisation of developmental schemes with their mass media utilisation is presented in Table 37.

It is observed from the table that farmers with low level of mass media utilisation had medium to low level of utilisation of developmental schemes. Under medium category majority of them had medium level of utilisation of developmental schemes.

Hence it is inferred that farmers with maximum utilisation of mass media had high level of utilisation of developmental schemes.

It could be observed from the chi-square value (17.62) mass media utilisation of the farmer had a significant association with extent of utilization of developmental schemes. Mass media help the farmers in increasing their awareness about the developmental schemes. This may be necessitated the farmer to have a close watch

on the extension agencies, their personal sources to get more information about developmental schemes. The table 13, 25 and 37 evidently supported that more the mass media utilization more will be the awareness, favourable attitude and extent of utilization of developmental schemes. Hence the significant association between these two variables.

Ayyathurai (1980) also reported the significant relationship between mass media and extent of utilization.

(F) (9) Contact with extension agencies

Distribution of the respondents according to their extent of utilization of developmental schemes and their contact with extension agencies is presented in Table 38.

It is seen from this table that farmers with low level of extension agencies contact had medium to low level of utilisation. Higher the extension agencies contact group had medium to high level, majority of them had (33.99 per cent) medium level of utilisation of schemes.

Hence it is inferred that farmers with increase in their extension agencies contact had higher the utilization of developmental schemes executed by Cardamom Board.

Table 37. Categorisation of the respondents according to their extent of utilisation of developmental schemes and their mass media utilisation

Mass media utilisation	Extent of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	12	7.99	16	10.67	1	0.68	29	19.33
Medium	18	11.99	56	37.34	22	14.67	96	64.00
Low	0	0	19	12.67	6	3.99	25	16.67
Total	30	19.98	91	60.68	29	19.34	150	100.00

X^2 = 17.62** (Significant at 1% level)

The chi-square value (17.46) shows that there was high significant association between contact with extension agencies and extent of utilisation of developmental schemes.

Contact with extension agencies would have the farmer in acquiring more knowledge about the advantageous of utilizing the developmental schemes. The frequent contact with the farmers also would have convinced the farmers in utilizing the schemes.

Ayyathurai (1980), Ramakrishna (1980) who had also indicated the significant relationship between contact with extension agencies and extent of utilization.

(F) (10) Personal localite information sources

Distribution of the respondents according to their extent of utilization of developmental schemes and their personal localite information sources is presented in Table 39.

It is further found by this table that the farmers with low personal localite information sources had medium to low level of utilization (18.67 per cent). Higher group of the personal localite information sources had 19.98 per cent

Table 38. Categorisation of the respondents according to their extent of utilisation of developmental schemes with their contact and extension agencies

Contact with extension agencies	Extent of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	12	7.99	22	14.69	4	2.68	38	25.33
Medium	18	11.99	51	33.99	13	8.68	82	54.67
Low	0	0	18	11.99	12	7.99	30	20.00
Total	30	19.88	91	60.67	29	19.35	150	100.00

X^2 = 17.46** (Significant at 1% level)

of medium group of personal localite information sources had medium level of utilisation of developmental schemes.

Hence it is inferred that farmers within the high group personal localite information sources had medium to high level of utilisation of developmental schemes.

It could be seen from the table value of chi-square, that the personal localite information sources was significantly associated with extent of utilization. In other words personal localite information sources had influenced the extent of utilization of developmental schemes.

It is obvious that neighbourers, friends, relatives and other cardamom planters can infuse confidence and persuade them in utilising the developmental schemes. This may be the reason for the significant association between personal localite information sources and extent of utilization of developmental schemes.

(F) (11) Cosmopoliteness

Distribution of the respondents according to their extent of utilisation of developmental schemes and their cosmopoliteness is presented in Table 40.

Table 39. Categorisation of the respondents according to the extent of utilisation of developmental schemes and their personal localite information sources

Personal localite information sources	Extent of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	9	5.99	21	13.99	3	1.99	33	22.00
Medium	21	13.99	51	33.99	17	11.37	89	59.33
Low	0	0	19	12.69	9	5.99	28	18.67
Total	30	19.98	91	60.67	29	19.35	150	100.00

X^2 = 11.68* (Significant at 5% level)

It is observed from the table that only 17.99 per cent of farmers within the medium group of cosmopoliteness had high utilization of developmental schemes. Majority of them (31.88 per cent) had medium level of utilization of developmental high group (7.99 per cent) and low group (20.68 per cent) had medium level of utilisation of developmental schemes.

Hence it is inferred that almost all the farmers with medium cosmopoliteness had medium level of utilization of developmental schemes.

The chi-square value (13.38) shows that there was high significant association between cosmopoliteness and extent of utilization of developmental schemes.

This might be due to the fact that the farmers while visiting nearest towns, they are getting more chances to observe the other scientifically farms by utilizing the developmental schemes of the Spices Board. This would have inspired the farmers to develop their farms more productivity.

Kailasom (1980) had also indicated such a significant association between cosmopoliteness and extent of utilization.

Table 40. Categorisation of the respondents according to the extent of utilisation of developmental schemes and their cosmopoliteness

Cosmopoliteness	Extent of utilisation							
	High		Medium		Low		Total	
	F	%	F	%	F	%	F	%
High	1	0.69	12	7.99	3	1.99	16	10.67
Medium	27	17.99	48	31.99	17	11.33	92	61.33
Low	2	1.35	31	20.68	9	5.99	42	28.00
Total	30	20.03	91	60.66	29	19.31	150	100.00

X^2 = 13.38** (Significant at 1% level)

(G) Result of step-wise regression analysis of selected characteristics of farmers with awareness attitude and extent of utilization of developmental schemes.

(G) (1) Stepwise regression analysis of awareness and selected behavioural characteristics

This was employed to select the best regression equation and thereby identify the best set of variables for predicting the dependent variable. The results of the step wise regression of awareness about developmental schemes by the cardamom growers on the selected independent variables are presented in Table 41.

From the table it could be seen that step No.1 with only one variable (X9) included, could explain more than 30 per cent variation in the awareness about the developmental schemes. The predictive power increases with the inclusion of each variable in the successive steps, till a particular step, when the per cent variation do not increase significantly. That step which gives the highest per cent variation is taken as the last step in which all the variables included become significant. In the present case step No.V gave the highest per cent variation.

It could be found that 42.39 per cent was explained by five variables, viz., contact with extension agencies (X9),

mass media utilization (X8), risk orientation (X6), income (X4) and economic motivation (X7). Thus, these five variables became important in predicting the awareness about the developmental schemes of the Spices Board.

(G) (1)(a) Contact with extension agencies

Contact with extension agencies provides a means for the self disclosure of individuals. The farmers who get opportunities to contact with extension agencies are likely to receive information related to the improved techniques of farming to be followed for increased crop production. In this process, it is but natural that the various schemes of the Spices Board towards this end might have been made known to the farmers by the extension personnel. Awareness about the developmental schemes being considered a vital factor to develop a favourable attitude towards these schemes and thereby utilizing such schemes, these farmers might have absorbed the messages of the extension agencies about the developmental schemes and hence the present result.

Subramanian et al. (1978), Vijayaraghavan (1979) and Nandakumar (1980) had also indicated such a significant relationship with awareness.

(G)(1) (b) Mass media utilisation

Now-a-days mass media such as the radio, television and newspapers give due importance to agricultural programmes and trying to make the farmers aware about improved cultivation practices of various crops. Frequent exposure to several such types of programmes may induce a tendency in a farmer to acquire more information with the motive of setting higher performance in farming. A farmer who is exposed to information presented through media of literature, radio, television etc. is actually undergoing social learning which allows for a much more complex kind of response acquisition than simple imitation of role models. The importance of mass media utilization in creating awareness has been reported by Subramanian et al. (1978), Moni (1980) and Nandakumar (1980).

(G)(1)(c) Risk orientation

Perception of risk involved in cardamom cultivation is important. The success and failure of cardamom crop solely depends upon climate. If the rain fails, due to drought, the ultimate result will be a complete loss of the crop. In the recent years cardamom crop failure had became a serious phenomina. To overcome this situation, the cardamom

farmers are coming forward to adopt sprinkler irrigation or provision of other irrigation facilities. The initial investments for such scientific farming technique is quite high. The cardamom farmers are now paying keen interest in such developmental schemes of the Spices Board which offer such facilities. This might be the possible reason for the emergence of this variable as important in relation to awareness about the developmental schemes.

Balu (1980) and Nandakumar (1980) were also reported this type of significant relationship.

(G)(1)(d) Annual income

Farmers with higher income are likely to have more access to different mass media sources including both the print and electronic media. It is known fact that now-a-days a lot of information regarding scientific farming is being dissemenated through these sources. The higher the annual income, the higher will be the social status and higher the chances to get more contact with the development agencies. Analysed in this way, one could expect the greater chances to the farmers with higher income to get in contact with different sources to information might have help to create awareness among the farmers. Vijayaraghavan (1979),

Balu (1980), Moni (1980) and Nandakumar (1980) had also indicated such significant relationship of awareness and annual income of the farmer.

(G)(1)(e) Economic motivation

Economic motivation may be regarded as one of the indication of the degree of willingness of a farmer for investment of his available potential resources in adopting farm innovations, for higher returns. Since the inputs for agricultural production are costly, it is quite likely that the farmers will depend upon some agencies to meet the resources for the inputs. The Spices Board provides assistance to the cardamom growers through their various schemes such as loans, subsidy and loan-cum-subsidy schemes. Board in this propaganda, it is quite to say that the economic motivation of the farmers was generated more awareness about the developmental schemes.

(G) (2) Stepwise recression analysis of attitude towards developmental schemes and selected behavioural characteristics

The results of the step wise regression analysis of the attitude towards the developmental schemes by the cardamom growers on the selected independent variables are presented in Table 42.

A perusal of the table reveals that step No.III gives the highest per cent variation wherein all the variables included are significant. It is seen that out of the total variation explained by all the variables together, 12.82 per cent variation was explained by the three variables, viz., income (X4), risk orientation (X6) and personal localite information sou[illegible]ese variables, therefore, could be considered as important for predicting the attitude towards the developmental schemes by the cardamom growers of Kerala.

(G)(2)(a) Annual income

Farmers with higher annual i[illegible]are likely to have the resource base and also interest in getting more profit from cardamom cultivation. Such farmers through their contact with the extension personal of the Spices Board are likely adopted the various schemes for the betterment of production. Through such direct experiences the farmers might have developed a favourable attitude towards these schemes.

(G)(2) (b) Risk orientation

There is high risk involved in cardamom cultivation due to the unexpected failure of rains. Drought also causes

a serious problem to this crop. At times pest and disease management also become labour intensive and costly practice for cardamom farmers.

The monopoly of the marketing also adversely affect the farmers due to price fluctation. The farmers are thriving to overcome all these risks. Inspite of these difficulties farmers pay attention to the crop. For this finance and other technical guidance is essential. Due to the risk involvement in cardamom, the farmers have the positive attitude towards the developmental schemes. Hence may be the reason for this result.

Thripathy (1977) also indicated the significant relationship between risk orientation and attitude.

(G)(2)(c) Personal localite information sources

The personal localite sources of information such as friends, relatives, neighbours and other cardamom planters help to create confidence within the farmers. They have great influence among the farmers and they are likely to create more credibility to farmers. Personal information form and help to develop favourable attitude towards the various schemes.

Thangavelu (1979) also indicated the same type of significant relationship between personal localite sources of information and attitude.

(G)(3) Stepwise regression analysis of extent of utilisation and selected behavioural characteristics

The results of the step wise regression analysis of the extent of utilisation of developmental schemes by the cardamom growers on the selected independent variables are presented in Table 43.

From the table it could be seen that step No.IV gives the highest per cent variation in extent of utilization of developmental schemes with the variables contact with extension agencies (X9), farm size (X3), mass media utilisation (X8) and age (X1) together explaining 40.47 of the total variation in the extent of utilization. Thus these four variables could be considered as important in predicting the extent of utilizationoof developmental schemes by the cardamom growers.of Kerala.

(G)(3)(a) Contact with extension agencies

As most of cardamom farmers are registered growers of the Spices Board, the frequent contact with extension agencies might have provided opportunities for them to get

adequate information about the various schemes of the Spices Board.

It is a known fact that farmers who have more contact with extension agencies have adopted improved agricultural practices.

Ayyathurai (1980), Ramakrishna (1980) also had indicated the significant relationship between contact with extension agencies and extent of utilization.

(G)(3) (b) Farm size

Farmers who possess large farm are likely to adopt scientific agricultural practices for cultivation of cardamom. It is possible that such farmers have utilized all the available schemes for getting resources and benefits for cardamom cultivation. Farmers also search for resources for maintaining their garden. In a big farm scientific farming can be adopted. Due to these reasons the extent of utilization of developmental schemes will be more to larger farms. Hence may be result of this study.

Ayyathurai (1980), Ramakrishna (1980) also had indicated the significant relationship between farm size and extent of utilization.

(G)(3) (c) Mass media utilization

The use of mass media sources is the easy and effective way of information dissimination. Constant and different way of using more number of mass media sources can increase the level of awareness and formation of favourable attitude of the farmers towards developmental schemes. The farmers with more use of mass media sources may lead to increase the utilization of developmental schemes. Hence may be the reason for the result.

Ayyathurai (1980) also reported the same result.

(G)(3) (d) Age

Age of the farmer is important in the utilization of developmental schemes. Young farmers are found utilizing the various developmental schemes at high level in order to make the farm more productive. Thus they can increase the profit. Now-a-days the amazing development of the farming technology with increased and proper use of inputs and equipments is making tremendous changes in the farming sector. Young farmers are willing to receive this challenges to make their farms more profitable. Hence may be reason for this result.

Sangel et al. (1973), Ayyathurai (1980), Ramakrishna (1980) had also indicated the significant relationship between age and extent of utilization.

Table 41. Results of the step wise regression analysis of awareness with selected independent variables

Step No.	Variables entering regression		'b' coefficient	SE of 'b'	't' value	%age variation explained	R^2
I	X_9	Contact with extension agencies	0.3303	0.0415	7.95	30.01	0.3002
II	X_9	Contact with extension agencies	0.2310	0.0473	4.883	36.43	0.3643
	X_8	Mass media utilisation	0.1791	0.0465	3.851		
III	X_9	Contact with extension agencies	0.2047	0.0472	4.33686		
	X_8	Mass media utilisation	0.1710	0.0456	3.75	39.59	0.3959
	X_6	Risk orientation	-0.1337	0.0484	-2.76239		
IV	X_9	Contact with extension agencies	0.1810	0.0482	3.75519		
	X_8	Mass media utilisation	0.1669	0.0451	3.700665	41.2113	0.4121
	X_6	Risk orientation	-0.1365	0.0479	-2.84969		
	X_4	Income	0.0000	0.0000	0.0000		
V	X_9	Contact with extension agencies	0.1880	0.0481	3.90852		
	X_8	Mass media utilisation	0.1737	0.0450	3.86		
	X_6	Risk orientation	-0.1082	0.0504	-2.14682	42.3891	0.4239
	X_4	Income	0.0000	0.0000	0.0000		
	X_7	Economic motivation	-0.0882	0.0508	-1.71654		

Table 42. Results of the step-wise regression analysis of attitude with selected independent variables

Step No.	Variable/s entering regression		'b' coefficient	SE of 'b'	't' value	Percentage variable explained	R^2
I	X_4	Income	0.0001	0.0000		6.542	0,06542
II	X_4	Income	0.0001	0.0000	-3.02578	12.024	0.1202
	X_6	Risk orientation	-0.3873	0.1280			
III	X_4	Income	0.0001	0.0000			
	X_6	Risk orientation	-0.3667	0.1291	-2.84043	12.8205	0.1282
	X_{10}	Personal localite information sources	0.2121	0.1837	1.15459		

Table 43. Results of the step-wise regression analysis of extent of utilization with selected independent variables

Step No.	Variable/s entering regression		'b' coefficient	SE of 'b'	't' value	Percentage variable explained	R^2
I	X_9	Contact with extension agencies	0.4178	0.0450	9.28444	36.761	0.3677
II	X_9	Contact with extension agencies	0.3831	0.0470	8.15106	38.922	0.3892
	X_3	Farm size	0.0858	0.0376	2.28191		
III	X_9	Contact with extension agencies	0.3453	0.0543	6.35912		
	X_3	Farm size	0.0814	0.0377	2.15915	39.698	0.3970
	X_8	Mass media utilisation	0.0714	0.0521	1.37044		
IV	X_9	Contact with extension agencies	0.3411	0.0543	6.2818		
	X_3	Farm size	0.0778	0.0376	2.06914	40.47	0.4047
	X_8	Mass media utilization	0.0865	0.8531	1.62900		
	X_1	Age	0.0195	0.0142	1.37323		

(H) Constraints experienced by the farmers in the utilization of developmental schemes

The constraints experienced by the farmers in the utilization of developmental schemes can be grouped into two.

(H)(1) Constraints experienced by the farmers in the utilization of developmental schemes from their own side

It could be observed from the Table 44 that out of the seven constraints identified "lack of Pattayam" for the ownership of land (deed) got the maximum score (610) followed by "lack of irrigation facilities in their farms".

Almost all the cardamom growers are registered growers of the Spices Board. The registered cultivators are only eligible for the benefits through the schemes. "Kuṭhakapattam" is enough for registration of cardamom crop. Most of the area under cardamom is only having 'Kuthakapattam' as their land ownership record. But in order to avail the benefits through the developmental schemes especially for long term loans the financing agencies insist on "Pattayam" as the security for the loans.

Due to the absence of Pattayam farmers find it difficult to obtain the loan from the agencies.

Since the Spices Board insist for the establishment of irrigation system the small and the marginal farmers found it difficult in having the initial cost for the establishment of the irrigation system.

Lack of facilities for an independent market and absence of proper grading system, uncertainity in getting true price of produce due to the monopolistic market approach to cardamom was the third constraint experienced by the farmers with a score of 590.

Cardamom is auctioned through the complete monopolistic type of marketing system in which the produces are collected and pooled instead of grading. Since the farmers are not in a position to know the upto date market price of the produce and the produces are not graded before auctioned, the prices obtained are not reasonable as the middlemen's exploitation is too much in fixing the prices at auction centres and the inordinate delay in getting the payment after the auction also causes great inconvenience in the day to day farm operations.

Lack of even and justifiable distribution of developmental schemes and schemes a limited in number obtained 587 scores.

Most of the schemes are limited in number which are not sufficient with respect to the proportion of farmers. This was due to the insufficient allocation of funds earmarked for each schemes.

Avoiding the utilization of developmental schemes due to the fear of indebtedness" obtained a score of 585. The reason for the avoidance of these developmental schemes is mainly due to the policy and procedures imposed by the Spices Board such as insisting for pattayam, initial investment, availability of curing sheds etc.

The constraint "repayment capacity of the farmer is less since cardamom crop is not remunerative like other crops" obtained a score of 416 followed by "tax assessment is based on the acrage and not based on their production" obtained a score of 412.

Table 44. Constraints experienced by the farmers in the utilization of developmental schemes from their own side

Sl. No.	Constraints	Scores	Rank
1	Avoiding the utilization of developmental schemes due to the fear of indebtedness	585	V
2	Repayment capacity of the farmer is less since cardamom crop is not remunerative like other crops	415	VI
3	"Kuthakapattam" as the ownership of land is enough for cardamom registration but for the benefits through the various developmental schemes, Pattayam is essential. So farmers loosing their eligibility to avail the benefits	610	I
4	Tax assessment is based on the acrage and not based on their production	412	VII
5	Lack of facilities for an independent market and absence of proper grading system, uncertainity in getting true price of produce due to the monopolistic market approach to cardamom.	590	III
6	Lack of even and justifiable distribution of developmental schemes and schemes are limited in number	587	IV
7	Lack of irrigation facilities is a major problem to make use of the schemes	606	II

(H) (2) Constraints experienced by the farmers in the utilization of developmental schemes from the organizational level

Among these constraints, Table 45 revealed that the most important constraint was "getting the necessary certificate from the authorities for availing the schemes is a difficult task" with a score of 680. Most of the farmers could not obtaining such certificates in time, which leads to the non availability of the benefits. As the schemes are limited in number early submission of the application is also an important factor.

"Lack of proper and timely information about these schemes from the development agencies is a major constraint in the utilization of developmental schemes" was second with a score of 630. This might be due to the non-accessibility of the small and marginal farmers to contact with the extension agencies.

"No priority is given to small and marginal growers, mostly getting the benefits to the big farmers in the allotment of the developmental schemes" was the third constraint with a score of 600.

"Absence of proper grading facilities and delayed payment for their produce from the auction centre

was obtained a score of 598. Due to the absence of proper grading system and the monopolistic style of cardamom market the farmers could fetch only low price for their produce.

"Schemes benefits are not fulfilling the requirement of the farmers" was obtained a score of 580. This might be due to the reason that schemes formulated could not be implemented in full due to the cost escalation and other procedures which the farmers would not make out. The benefits of schemes were extended for name sack only and not in the required quantity.

"Developmental schemes are not flexible in repayment of loans" obtained a score of 540. Repayment rules are not flexible. There was no consideration in the repayment terms during the time of crop failure.

"Developmental agencies have the time consuming lending process" was ranked as the last but not the least with a score of 485. This might be due to the fact that the farmers have to wait for longer periods in getting sanctioned their schemes due to the procedural delays.

Table 45. Constraints experienced by the farmers in the utilization of developmental schemes from the organisational side

Sl. No.	Constraints	Score	Rank
1	Developmental agencies have the time consuming lending process	485	VII
2	Getting necessary certificates from the authorities for availing the schemes is a difficult task	680	I
3	Lack of proper and timely information about these schemes from the development agencies is a major constraint in the utilisation of developmental schemes	630	II
4	Absence of proper grading facilities and delayed payment for their produce from the action centre.	598	IV
5	No priority is given to small and marginal growers, mostly getting the benefits to the big farmers	600	III
6	Schemes benefits are not fulfilling the requirement of the farmers	580	V
7	Developmental schemes are not flexible in repayment of loans	540	VI

(I) Suggestions for improvement

1) 'Kuthakapattam' has to be considered for availing the loans and other developmental schemes by the developmental agencies.

2) Inordinate delays may be avoided by relaxing cumbersome process in extending the benefits.

3) Proper and timely information regarding the different schemes may be provided through extension services.

4) Provision should be made for grading centers so as to grade the produce in order to ensure the quality.

5) Establish regulated marketing system in order to eliminate the middlemen.

6) Small and marginal farmers have to be given priority in sanctioning the developmental schemes.

7) Lack of irrigation facilities restrict the use of many developmental schemes by the cardamom farmers. Therefore, measures have to be undertaken by the developmental agencies to construct the check dams and ponds which will help the small and marginal farmers to a larger extent in mitigating the irrigation needs.

8) Schemes have to be formulated on long term basis.

9) Due to uncertainity in the cardamom yield, crop insurance scheme facility should be extended so as to avoid the fear of risk and uncertainity.

10) Tax assessment should be based on the produce of the crop and not based on the land area.

11) Even and justifiable manner of distribution of the developmental schemes should be ensured.

12) The schemes should be in accordance with the need of the farmers.

13) Minimise the procedural delays and quick allotment of the schemes may be ensured.

14) There should be common curing sheds for processing cardamom under the developmental agencies in order to ensure the quality of the produce of the poor farmers.

15) Ready payment of cash should be snsured from the auction centre itself.

16) Common collection facilities should be provided through the suggested regulated market so as to reduce the burden of small and marginal farmers.

summary and conclusion

SUMMARY AND CONCLUSION

The development of agricultural innovations has increased the credit needs of Indian peasants. This credit need is met by the institutional credit sources like Spices Board, Banks and primary agricultural societies to a greater extent. Moreover, the agricultural marketing system is inefficient, and inelastic to the hardluck of the farmers who are crushed. Hence this study assumes a paramount importance, since it makes an indepth analysis of cardamom growers who seek financial and other technical assistance from the institutional sources and market their produce through various agencies.

Based on the above facts, constraints in the utilisation of developmental schemes of the Spices Board by the cardamom growers was studied in Idukki district of Kerala State. This study was undertaken with the following objectives.

1. To study the awareness about the developmental schemes by the cardamom growers of Kerala.
2. To study the attitude of the cardamom growers towards the developmental schemes.

3. To study the behavioural characteristics of the cardamom growers in relation to utilization of developmental schemes.

4. To identify the reasons for not availing the developmental schemes by the cardamom growers.

The respondents were selected from two development units of Spices Board by using simple random sampling technique with proportionate allocation. Thus 150 respondents were selected for this study.

Awareness, attitude and extent of utilisation were considered as the dependent variables in this study. Eleven independent variables, viz. "age", "education", "farm size", "income", "farming experience", "risk orientation", "economic motivation", "mass media utilisation", "contact with extension agencies", "personal localite information sources" and "cosmppoliteness" were studied to find out their association with the awareness, attitude and extent of utilization of developmental schemes by the cardamom growers.

The data were collected by using an interview schedule and were subjected to various statistical analyses

such as chi-square and step-wise regression analysis. The salient findings of the study are summarised below.

1. The study revealed that majority of the cardamom growers had medium level of awareness about developmental schemes i.e. 51.33 per cent.

2. Out of the eleven independent variables, studied, seven variables viz. "education", "farm size", "income", "risk orientation", "mass media utilisation", "contact with extension agencies" were significantly associated with awareness about the developmental schemes by the cardamom growers.

3. The step-wise regression analysis indicated that "contact with extension", "risk orientation", "income" and "economic motivation" had contributed significantly in the prediction of awareness about the developmental schemes by the cardamom growers.

4. In the case of attitude of the cardamom growers towards the developmental schemes 62.66 per cent had medium level of attitude.

5. Out of the eleven independent variables studied, with regard to the attitude of the farmers towards the

Developmental schemes five variables viz. "farm size", "income", "risk orientation", "mass media utilization", and "contact with extension agencies" were significantly associated.

6. The step-wise regression analysis pointed out that out of eleven variables studied, three variables viz. "income", "risk orientation", "personal localite information sources" had contributed significantly in the prediction of attitude of the cardamom farmers towards developmental schemes.

7. The study revealed that majority of the farmers i.e. 60.67 per cent were had medium level of utilization of the developmental schemes.

8. Out of eleven independent variables studied with regard to extent of utilization of the developmental schemes, eight variables, viz. "education", "farms size", income, "farming experience", "mass media utilization", "contact with extension agencies", "personal localite information sources" and "cosmopoliteness" were significantly associated.

9. The step-wise regression analysis point out that, out of eleven variable studied four variables viz.

"contact with extension agencies", "farm size", "mass media utilization" and "age" had contributed significantly in the prediction of extent of utilization of developmental schemes by the cardamom growers of Kerala.

10. Out of the seven constraints experienced by farmers, the order of importance of the constraints is as follows. "Lack of pattayam" for the ownership of land, "lack of irrigation facilities" in their farms, "monopolistic nature of cardamom market", "lack of even and justifiable distribution of developmental schemes", "avoiding the utilization of developmental schemes due to the fear of indebtedness", repayment capacity of the farmer is less since cardamom crop is not remunerative like other crops" and tax assessment is based on the acrage and not based on their production.

11. Out of the seven constraints experienced from the organizational side, the order of importance of the constraints is as follows:
"Getting necessary certificates from the authorities for availing the schemes", "lack of proper and timely

information about these developmental schemes", "no priority is given to small and marginal growers", "absence of proper grading facilities and delayed payment", "schemes benefits are not fulfilling the requirement of the farmers" "developmental schemes are not flexible in repayment of loans" and "the developmental agencies have the time consuming lending process".

Implications and suggestions

The following implications and suggestions emerge from the findings of the study.

1. The methodology followed in the present study may be advantageously utilised to identify the level of awareness, attitude and extent of utilization of the developmental schemes by the cardamom farmers.

2. The association established in the study between the behavioural characteristics and the dependent variables viz., utilization of developmental schemes would serve as a guideline for trace out the right constraints in the utilization of developmental schemes by the cardamom growers.

3. The study has brought to the light that those who have more contact with extension agencies had more awareness, favourable attitude and more utilization of developmental schemes operated by the Spices Board.

4. It was an interesting and encouraging finding of the study that farmers with more farm size, income mass media utilization and extension agencies contact had more awareness, favourable attitude and high utilization of developmental schemes.

Suggestions for future research

1. To render the generalisations made in the study more applicable a comprehensive study covering more geographical area and more crops, including more independent variables could be designed, to develop a proper typology for predicting the awareness, attitude and utilization pattern of cardamom growers.

2. Evaluation studies on the performance of cardamom farmers may be designed.

3. Studies on the utility and impact of extension methodology in developmental activities of the Spices Board may be undertaken.

4. Comparative studies on the differential impact of developmental schemes and other systems of agricultural extension on the agricultural production could be taken up.

References

REFERENCES

*Allport, G. 1935. A handbook of Social Psychology. Mirickson, G. (Eds.) Clark University Press, Lorcestor.

*Anonymous, 1970. Report on Purna Project - Department of Power and Irrigation, Purna Project's problems Ascertaining Committee, Government of Maharashtra, Bombay.

Anuva Saikia, 1988. Role of Bank Finance in Agriculture - some findings. Financing Agriculture 20:(2): 13-16.

Ashok Kumar, Pandey, R.K., and Sushila Kaul, 1987. Study of growth and disparity in agricultural advances by commercial banks. Financing Agriculture 19 (1): 11-15.

Ayyathurai, G. 1980. Spatial distribution of poultry farms and facilities offered by Tamil Nadu Development Corporation. M.Sc.(Ag) Thesis (Unpubl.) Agricultural College and Research Institute, T.N.A.U., Coimbatore.

*Bahadur, Tej, and Mohd. Abdul Rashid, 1974. Some aspects of Demand for and supply of Agricultural Credit. Inter Discipline. 2(2): 104-105.

Balasubramani, V. 1981. Farmer's Service Co-operative Society - A participant Analysis. M.Sc.(Ag) Thesis (Unpub.) Agrl. College and Research Institute, T.N.A.U., Coimbatore.

Balasubramanian, S. 1977. A study on the selected phychological correlates for adoption of improved practices in Ragi. M.Sc. (Ag.) Thesis (Unpubl.) Agrl. College and Res. Inst., T.N.A.U., Coimbatore.

Balu, S.R.A. 1980. A study on the functioning of the Integrated Dryland Agricultural Development Programme. M.Sc.(Ag.) Thesis (Unpubl.) Agricultural College and Research Institute, T.N.A.U., Coimbatore.

Bisaliah, S. and Nagaraj, N. 1985. "Production credit overdues - A study of dry land small farmers". Financing Agriculture 17 (1): 17-20.

Desai, Vasant, 1988. Rural Development Vol. IV - Experiments in Rural Development. Himalaya Publishing House, Bombay.

Duraiswamy, K. 1981. Integrated Rural Development Programme - A Beneficiary Analysis. M.Sc.(Ag) Thesis (Unpubl.) Agricultural College and Research Institute, T.N.A.U., Coimbatore.

Edwards, A.L. 1948. On Guttman's scale analysis. Educ. psychol. measmt. 8. 215-224.

Gosh, Hardhan and Reddy, S.V. 1978. Attitude of Farmers and Agricultural Extension workers towards intensive Agricultural Extension systems (T & V systems) in West Bengal. Research Studies in Extension Education. Andhra Pradesh Agricultural University.

Guilford, J.P. 1954. General Psychology (2nd edn.). Van Nostrand Reinhold Company, New York.

Gurusami, P.A. and Baluswamy, P.N. 1974. "Factors affecting securing and repaying of agricultural credit from Canara Bank". Ind. Co-op. Rev., 12: 403-411.

Hanumappa, H.G. 1979. "Rural credit system and the Rural Poor". J. Behavioural Sciences and Rural Development 2 (2): 116-121.

Jaiswal, N.K., Singh, N.N., and Singh, B.N. 1971. A study of interactional association of selected factors with innovativeness in farming. Ind. J. Extn. Edn. 7 (3 & 4): 110-116.

Kailasom, S. 1980. The credit seeking, repayment, utilisation pattern and information need perception of borrowers. M.Sc. (Ag) Thesis (unpubl.) Agricultural College and Research Institute, T.N.A.U., Coimbatore.

Kamalsen, P.S. 1971. "A study on the effectiveness of one day farmers' training camp under High Yielding Varieties Programme in Trivandrum District of Kerala State". M.Sc.(Ag) Thesis (unpubl.) Agrl.College and Res. Inst., Coimbatore.

*Keleta, T. 1974. "Role of a Commercial Bank in Financing Agriculture", M.Sc. (Econ.) Thesis (unpubl.) HAU, Hissar.

*Kennedy, L., Lukey, D.I.F. and Raftery, T.F. 1975. "Co-operative Amalgamation in an Irish Dairying Area". J. Agrl. Econ. and Rural Socio., 5 (2): 253-274.

Kher, A.O. and Jha, P.N. 1978. Factors associated with farmers' attitude towards Primary Agricultural Credit Society in Gujarat. Indian J. Extn. Edn. 14 (1 & 2): 23-29.

Kilpatrick, F.P., 1948. Scale analysis and the measurement of social attitudes. Psychometrika, 13: 99-114.

*Krech, D. and Crutchfield, R.S. 1948. Theory and Problems of Social Psychology. Tata - McGraw Hill Publishing Co. Ltd., New Delhi.

*Krishnaswamy, M.S. and Patel, K.V. 1974. States of Dry land Agriculture Vol.1: C.M.A. Monograph (39) Indian Institute of Management, Ahmedabad.

*Likert, R. 1932. A Technique for the Measurement of Attitudes, Arch. Psychol. 140.

*Lokhande, M.R. 1973. Socio-Psychological factors associated with farm credit behaviour of Delhi farmers. Ph.D. Thesis (unpubl.), I.A.R.I., New Delhi.

Mani, K.C. and Knight, J.A. 1981. Factors associated with participants' and Non-participants', attitude towards regulated market. Indian J. Extn. Edn. 17 (3&4): 39-43.

Makkar, S.L. and Sohal, T.S. 1974. Association of certain personal characteristics of farmers with their attitude towards soil testing. Ind. J. Extn. Edn. 10 (3 & 4)

Menon, K., Radhakrishna and Duraiswamy, K.N. 1975. Small Farmers and utilisation of concessions and loans. Madras Agric. J., 62 (10-12): 791.

Misra, M.D. and Baldeoram, 1966. The role of Service Co-operatives in Agricultural Production, Ind. J. Extn. Edn. 2 (1 & 2).

Moni, M.K.S. 1977. A study on the influence of A.R.D.C. Scheme on coconut growers. M.Sc.(Ag) Thesis (unpubl.). Agricultural College and Research Institute, T.N.A.U., Coimbatore.

Moni, K.C. 1980. Critical Analysis of Factors Associated with participation and non-participation of Turmeric Growers in Regulated Market. M.Sc.(Ag) Thesis (unpubl.) Agricultural College and Research Institute, T.N.A.U., Coimbatore.

Muniraj, R. 1970. "Problems of financing agriculture by Commercial Banks", Fin . Agr. 2 (1): 18-21.

Muthuraj, K. 1979. Factors influencing the use of farm machinery available at Agro-Engineering and Service Co-operative Centre by Small and Marginal Farmers. M.Sc.(Ag) Thesis (unpubl.) Agrl.College and Research Institute, T.N.A.U., Coimbatore.

*Naik, Balram, K. 1981. Awareness and attitude of farmers and extension workers towards intensive Agricultural Extension System (T&V system) in Andhrapradesh. M.Sc.(Ag.) Thesis (unpubl.) Dept.of Extension Education, S.V. Agricultural College, Thirupathi.

Nandakumar, A.C. 1980. Critical analysis of the functioning of Drought Prone Area Programme. M.Sc.(Ag) Thesis (unpubl.) Agricultural College and Research Institute, T.N.A.U., Coimbatore.

Oliver, J. 1974. A study on National Demonstration as a communication medium of knowhow of improved farming technology in Tamil Nadu. R.I.Ag.Extn. 205. Research Project, Agrl. College and Research Institute, T.N.A.U., Coimbatore.

Pathak, S.M. 1972 "Institutional Credit for Agriculture". Ind. J. Agrl. Econ. 27(2): 84-87.

Pathak, S. 1981. A multiple regression analysis of factors related with attitude of farmers. Indian J. Extn. Edn. 15 (1&2): 49.

Philip, S. 1984. Study on the Agricultural information support provided through Radio to farmers by KAU. M.Sc.(Ag) Thesis (unpubl.) Kerala Agricultural University.

Prakash, R. 1980. A study on the impact of Agricultural Development Programmes among the tribals of Kerala. M.Sc.(Ag) Thesis (unpubl.), Kerala Agricultural University.

Ramakrishna, 1980. Impact of Krishi Vijnan Kendras on Trained Farmers. M.Sc.(Ag) Thesis (unpubl.) Agrl. College and Research Institute, T.N.A.U., Coimbatore.

Ramalingam, P. 1981. Farm-Service Performance of Regional Rural Bank. M.Sc.(Ag) Thesis (unpubl.) Agricultural College and Research Institute, T.N.A.U., Coimbatore.

Ramamurthy, S.K. 1973. "A study of factors influencing the use of NPK complex fertilizers by farmers in Poonamalle Block of Chingleput District in Tamil Nadu". M.Sc.(Ag) Thesis (unpubl.) Agrl. College and Res. Inst., T.N.A.U., Coimbatore.

*Rokeach, M. 1954. The nature and meaning of dogmatism. Psychol. Rev., 61: 194-204.

*Sangle, G.K., Mahajan, B.S. and Hingwe, B.S. 1973. Extent of utilisation of Canal irrigation in Command Area ofPurna Project. AGRESCO Report. Marathwada Krishi Vidya Peeth, Perbani.

Sarkar, D.R. 1970. "Diffusion and adoption of farm practices". Research in extension education Indian Society of Extension Education, New Delhi.

Seetharaman, R., Nethaji, 1975. "A study of the differential characteristics of beneficiaries and non-beneficiaries of a nationalisedbank in relation to adoption of improved farm practices, M.Sc.(Ag) Thesis (unpubl.) Agrl. College and Res. Inst., T.N.A.U., Coimbatore.

Singh, A.J., Dhawan, K.C. and Pal, J. 1979. "Critical appraisal of credit problems of small farmers in the Punjab State "Agricultural Banker" 11 (2): 9-12.

Singh, G.N., Singh, D.S., Singh, R.I. and Singh, R.K.1976. Distribution and utilisation of Co-operative credit in District Lucknow (A case study). Indian Co-operative Review, 13 (4): 403-411.

Singh Gurdev, 1971. "Shortcomings in the existing credit systems" Financing Agriculture, 3 (3): pp.24-27.

Singh, Ragunath, 1976. "Utilisation of credit received by the farmers from a large size co-operative credit Society", Ind. J. Extn. Edn. 13 (1&2).

Singh, R.P. and Singh, K.N. 1971. An investigation into differential attitudes of farmers towards improved agricultural practices. Indian J. Extn. 7 (1& 2): 12-20.

Singh, Sitaram, 1987. Nature and scope of People's participation in Rural Development, Kurukshethra. 35 (1): 41.

Singh, S.N., Singh, K.N. and Pal, A. 1976. "Media utilisation for various categories of farmers with varying socio-psychological characteristics". Ind. J. Extn. Edn., 12 (1&2): 35-40.

Sohal, T.S. and Singh, 1968. Association between the personal characteristics of farmers and their level of farming aspiration. Ind. J. Extn. Edn. 4 (3 & 4): 66.

Srinivasan, C.A. 1981. Dryland technology adoption - A critical analysis. M.Sc.(Ag) Thesis (unpubl.) Agricultural College and Research Institute, T.N.A.U., Coimbatore.

Srivastava, D.H., Sirohi, A.S., Singh, D. and Singh, K.N. 1979. "Analysis of productive use of cfedit in IADP Shahbad" Financing Agriculture, 2(2): 1-4, Bombay.

Subbarao, K. 1979. Credit to farmers, who benefits. Kurukshetra, 28 (1): 33-38.

Subramanian, R., Radhakrishna Menon, K. and Nethaji Seetharaman, R. 1978. Information sources and adoption of improved poultry practices. Madras Agric. J. 65 (12): 839-840.

*Supe, S.V. 1969. Factors related to different degrees of rationality in decision - making among farmers. Ph.D. Thesis (unpubl.), I.A.R.I., New Delhi.

Sushama, N.P.K., Menon, A.G.G. and Bhaskaran, C. 1981. Adoption behaviour of selected tribes of Kerala. Indian J. Extn. Edn. 18 (1&2): 71-76.

Tewari, S.C., Bhati, J.P. and Sharma, R.K. 1974. Socio-economic factors and co-operative credit borrowing behaviour. Financing Agriculture 5 (1): 1-2.

Thangavelu, A. 1979. A multi-dimensional study on farm credit of a nationalised bank. M.Sc.(Ag) Thesis (unpubl.). Agricultural College and Research Institute, T.N.A.U., Coimbatore.

*Thurstone, L.L. 1946. Comment. Amer. J. Sociol. 52.

*Tripathy, A. 1977. A study of technological gap in adoption of new rice technology in central Orissa and the constraints responsible for the same Ph.D. Thesis (unpub.), I.A.R.I., New Delhi.

*Trivedi, G. 1963. Measurement and analysis of socio-economic status of rural families. Ph.D.Thesis (unpubl.) I.A.R.I., New Delhi.

Verma, S.C. 1982. Integrated Rural Development Programme - Current Status. Ind. J. Extn. Edn. 18 (1&2): 14.

Vijayakumar, P. 1983. Impact of Special Agricultural Development Units on the agricultural development of rural areas in Kerala. M.Sc.(Ag) Thesis (unpubl.), Kerala Agricultural University.

Vijayaraghavan, P. 1977. Study of the factors affecting the knowledge and adoption of High Yielding Varieties of paddy by small and marginal farmers. M.Sc.(Ag) Thesis (unpubl.). Agrl. College and Res. Instt., Coimbatore.

Vijayaraghavan, P. 1979. Critical analysis of the functioning of Integrated Dry Land Area Development Programme. M.Sc. (Ag) Thesis. (unpubl.), Agricultural College and Research Institute, T.N.A.U., Coimbatore.

Viju, A. 1985. Adoption behaviour of tribal farmers towards improved agricultural practices. M.Sc.(Ag) Thesis (unpub.), Kerala Agricultural University.

*Originals not seen

appendices

APPENDIX

CONSTRAINTS IN THE UTILIZATION OF DEVELOPMENTAL SCHEMES BY THE CARDAMOM GROWERS OF KERALA

Department of Agrl. Extension,
College of Horticulture,
Vellanikkara, Trichur.

Sl.No. Unit No. Respondent No. Date:

Name of the farmer	:	
Address	:	
Village	:	
Age	:	
Caste	:	
Education	:	Illiterate/Primary/ Secondary/Collegiate
Farm size (Ha)		a) Main b) Subsidiary
Net annual income		a) From farming Rs. b) From other sources Rs. --- Total ---

I. Awareness and extent of utilization of the developmental schemes

1. Have you heard about the developmental nursery scheme for the supply of quality cardamom seedlings.	Aware/ Unaware	Availed/ Not
2. Are you aware of the scheme for the supply of sprinkler irrigation and other specialiszed equipments on hire purchase terms.	"	"

3.	Have you heard about the scheme for the installation of Electric Driers	Aware/ Unaware	Availed/ Not
4.	Are you aware of the scheme for opening of Demonstration plots in the farmer's field	"	"
5.	Have you heard about the scheme for subsidised supply of copper sulphate	"	"
6.	Have you heard about the scheme for subsidised supply of plant protection equipments	"	"
7.	Are you aware of the scheme for subsidised supply of Bee-hieves	"	"
8.	Have you heard about the scheme for financial assistance for soil conservation works in cardamom plantations	"	"
9.	Are you aware of the scheme of giving financial assistance for the construction of curing houses	"	"
10.	Have you heard about the subsidy schemes for replanting cardamom	"	"
11.	Have you heard about the subsidy schemes for the supply of irrigation pumpsets	"	"
12.	Are you aware of the scheme of interest subsidy on financial credit availed from banks	"	"
13.	Have you heard about the scheme for financial assistance for opening certified nurseries	"	"
14.	Are you aware of the scheme for the financial assistance for the production of 10 months old polybag seedlings	"	"

15. Have you heard about the scheme for soil testing and fertilizer recommendations	Aware/ Unaware	Availed/ Not
16. Have you heared about the developmental schemes for the development of tribes	"	"

II. Attitude towards the developmental schemes

(Please give a (/) marks for each statement according to your degree of choice

Statements	Strongly agree/agree/ undecided/disagree/ strongly disagree
1. Cardamom developmental schemes lead to overall development of one's family.	
2. Absolute gain in terms of economic return due to cardamom developmental schemes.	
3. Cardamom developmental schemes are not suited for small cardamom growers.	
4. Cardamom developmental schemes help the farmers to solve their problems.	
5. Cardamom developmental schemes is an eye wash.	
6. Cardamom developmental schemes are wastefull expenditure in the state.	

7. Cardamom developmental schemes play in important role in the existence of cardamom crop in the state

8. Cardamom developmental schemes make the cardamom growers indebters

III. Behavioural characteristics

Extension participation

Regularly/rarely/never

1. Have you attended seminars organized by the development agencies.

2. Have you attended group discussions regarding the cardamom crop.

3. Have you seen any of the field demonstrations of the cardamom crop.

4. Whether you have taken up any demonstration in cardamom crop.

5. Have you been participated any publicity campaigns in cardamom developmental schemes.

6. Whether you have attended any training or orientation course for cardamom growers.

IV. Farming experience

1. How long you have been involved in the cardamom cultivation _____ years.

V

V. Risk orientation

Statements	Strongly agree/agree/ undecided/disagree/ strongly disagree
1. Cardamom cultivation is a risk because it gives pest and disease problems.	
2. Raising nursery for cardamom is a risk because it requires soil treatment.	
3. Raising nursery is a risk because cardamom has to be raised in primary as well as secondary nursery.	
4. Applying chemical fertilizer in split doses is a risky practice in cardamom cultivation.	
5. There is a risk in getting all kinds of chemical fertilizers for cardamom cultivation.	
6. Cultivation of cardamom is a risky attempt because it fails due to drought.	
7. Cardamom cultivation is a risk because of the lack of irrigation facilities.	
8. Adopting recommended package of practices in cardamom is a risk because it increases the cost of cultivation.	
9. Cardamom cultivation is risky because good quality seedlings are not available.	
10. Cardamom cultivation is a risk because marketing is a problem.	

Strongly agree/agree/ undecided/disagree/ strongly disagree.

VI. Economic motivation

1. Cardamom cultivation doesnot fetch profit as other crops.

2. Cultivation of cardamom is not economical in certain years.

3. Cardamom crop fails in some seasons and fetches poor yield.

4. Extra expenditure for maintaking the cardamom plantation makes the crop uneconomical.

5. Raising cardamom plantation is a costly affair.

6. Cardamom needs more chemical fertilizers so it is not profitable.

7. Plant protection chemicals are highly costly which will affect the profit.

8. Cardamom crop requires more labour than other crops.

9. Weed is a problem which reduces cardamom yield seriously.

10. Lack of proper marketing facilities makes the crop uneconomical.

VII. Utilization of information sources

1. Whether you have been attending the agricultural programme

1. Mass media sources — Once in a week/once in fortnight/once in month/ rarely/never

a) Radio
b) Television
c) Newspaper
d) Periodicals

2. Contact with extension agencies

Whether you have got any opportunity to discuss with

a) Members of any voluntary group.
b) Cardamom extension officers.
c) Development agency.
d) Others, if any.

3. Personal localite information sources.

Whether you are getting any information support from the following, if so, from whom?

a) Friends
b) Neighbours
c) Relatives
d) Cardamom planters
e) Others, if any.

4. Cosmppoliteness

1. Kindly mention the purpose of your visit to the nearest town/ village.

a) All visits related to the cardamom cultivation.
b) Mostly related to cardamom cultivation.
c) Entertainment and other personal purpose.
d) Any other purpose.

VIII. Major constraints in the utilization of developmental schemes by the cardamom growers of Kerala

1. Constraints experienced by the farmers in the utilization of developmental schemes from their own side	Most important/ important/neither important nor unimportant/less important/least important
1) Avoiding the utilization of developmental schemes due to the fear of indebtedness.	
2) Repayment capacity of the farmer is less since cardamom crop is not remunerative like other crops.	
3) "Kuthakapattam" as the ownership of land is enough for cardamom registration but for the benefits through the various developmental schemes, Pattayam is essential. So farmers loosing their eligibility to avail the benefits.	
4) Tax assessment is based on the acrage and not based on their production.	
5) Lack of facilities for an independent market and absence of proper grading system, uncertainity in getting true price of produce due to the monopolistic market approach to cardamom.	
6) Lack of even and justifiable distribution of developmental schemes and schemes are limited in number.	
7) Lack of irrigation facilities is a major problem to make use of the schemes.	

2. Constraints experienced by the farmers in the utilization of developmental schemes from the organisational side.	Most important/ important/neither important nor unimportant/less important/least important.
1) Developmental agencies have the time consuming lending process.	
2) Getting necessary certificates from the authorities for availing the schemes is a difficult task.	
3) Lack of proper and timely information abbut these schemes from the development agencies is a major constraint in the utilization of developmental schemes.	
4) Absence of proper grading facilities and elayed payment for their produce from the action centre.	
5) No priority is given to small and marginal growers, most getting the benefits to the big farmers.	
6) Schemes benefits are not fulfilling the requirement of the farmers.	
7) Developmental schemes are not flexible in repayment of loans.	

CONSTRAINTS IN THE UTILIZATION OF DEVELOPMENTAL SCHEMES BY THE CARDAMOM GROWERS OF KERALA

BY

KUNCHU V.

ABSTRACT OF THE THESIS

SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENT FOR THE DEGREE

MASTER OF SCIENCE IN AGRICULTURE

(AGRICULTURAL EXTENSION)

FACULTY OF AGRICULTURE
KERALA AGRICULTURAL UNIVERSITY

DEPARTMENT OF AGRICULTURAL EXTENSION
COLLEGE OF HORTICULTURE
VELLANIKKARA, TRICHUR

1989

ABSTRACT

A study was conducted in Idukky district of Kerala with the following objectives.

1. Awareness about the developmental schemes by the cardamom growers of Kerala.
2. Attitude of the cardamom growers towards the developmental schemes.
3. Extent of utilization of developmental schemes by the cardamom growers.
4. Constraints in the utilization of developmental schemes by the cardamom growers of Kerala.

One hundred and fifty cardamom growers were selected by using simple random sampling procedure. The study illumined that the majority of cardamom farmers had medium level of awareness towards the developmental schemes.

In the case of attitude of farmers towards the developmental schemes majority of the respondents were having medium level of attitude.

Regarding the extent of utilisation of developmental schemes 60.00 per cent of the respondents were under the medium level of utilization of developmental schemes.

Out of the eleven independent variables studied, seven variables, viz., 'education', 'farm size', 'income', 'risk oriengation', 'mass media utilization', 'contact with extension agencies' and 'personal localite information sources' were significantly associated with awareness about the developmental schemes by the cardamom growers.

In the case of attitude towards the developmental schemes, out of eleven variables studied, five variables, viz., 'farm size', 'income', 'risk orientation', 'mass media utilisation' and contact with extension agencies were significantly associated.

Out of eleven variables studied with regard to extent of utilisation, eight variables, viz.'education', 'farm size', 'income', 'farming experience', 'mass media utilisation', 'contact with extension agencies', 'personal localite information sources' and 'cosmopoliteness' were significantly associated.

The step-wise regression analysis pointed out that 'contact with extension agencies', 'mass media utilisation', 'risk orientation', 'income and economic motivation' had contributed significantly in the prediction of awareness about the developmental schemes by the cardamom growers. 'Income', 'risk orientation', 'personal localite information sources' had contributed significantly in the prediction of attitude of the farmers towards the developmental schemes.

'Contact with extension agencies', 'farm size', 'mass media utilization' and 'age' had contributed significantly in the prediction of extent of utilisation of developmental schemes by the cardamom growers of Kerala.