

**Farmer-To-Farmer Extension in Kerala Agriculture: A  
Critical Analysis of LEADS (Lead farmer centred  
Extension Advisory and Delivery Service) Project in  
Kollam District**

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KERALA, INDIA  
2014**

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Critical Analysis of LEADS (Lead farmer centred  
Extension Advisory and Delivery Service) Project in  
Kollam District**

*by*

**PRIYA PETER**

**(2012-11-169)**

**THESIS**

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**DEPARTMENT OF AGRICULTURAL EXTENSION  
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**2014**

## **DECLARATION**

I, hereby declare that this thesis entitled “**Farmer-To-Farmer Extension in Kerala Agriculture: A Critical Analysis of LEADS (Lead farmer centered Extension Advisory and Delivery Service) Project in Kollam District**” 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, fellowship or other similar title, of any other University or Society.

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Proverbs 3:6 (Holy Bible)

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## LIST OF ABBREVIATIONS

LEADS	- Lead farmer centered Extension Advisory and Delivery Service
MTA	- Monthly Technology Advice
F	- Frequency
CUG	- Closed User Group
IPCB	- Interpersonal Communication Behaviour
IR	- Information Receipt
IC	- Information Communication
IF	- Information Feedback
<i>et al.</i>	- Co-workers/ Co-authors
<i>i.e.</i>	- that is
<i>viz.</i>	- Namely

## LIST OF SYMBOLS

%	- per cent
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# *INTRODUCTION*

## 1. INTRODUCTION

Approaches to agricultural extension were so many and continue to evolve in India as well as worldwide. Many agricultural development programmes are being planned and implemented in the country for the past sixty years and a tremendous growth can be seen in the agriculture sector. Since the Green Revolution in the 1970s and 1980s and the acknowledged unsustainability of the Training and Visit (T&V) programme (Anderson et al, 2006; Moore 1984), agricultural extension, with its focus on increasing production via technology transfer, has adopted decentralised, participatory, and demand-driven approaches in which accountability is geared toward the users (Birner, 2006; Anderson, 2007; Davis, 2009; Hall, 2000; Kokate et al., 2009; Sulaiman and Hall, 2002).

Intensive Agricultural District Programme (IADP) in 1961, Intensive Agricultural Area Programme (IAAP) in 1964, High Yielding Variety Programme (HYVP) in 1967, Training and Visit System, ATMA etc. are some of the agriculture development programmes implemented in India. Training and Visit program funded by World Bank has also contributed in Development. Despite the funding and promotion by the World Bank, the T & V model has been found to be ineffective, inefficient and unsustainable (Asiabaka and Mwangi, 2001). Then the ATMA came, as an agency for technology management. The missing link in ATMA model is a regular field visit to individual farmer households and fields which is the focus of LEADS (Lead farmer centered Extension Advisory and Delivery Service).

As there existed or exist many of these development interventions, links between research, extension and farmers are seen to be inadequate, and uncoordinated efforts abound (Planning Commission, 2008). So, the need of a demand driven, farmer oriented, and field visit oriented development programme was still there. In short, a programme which combines more than one approaches in extension was necessary. The present study is dealing with a pilot project implemented in four districts of Kerala, which is a demand driven,

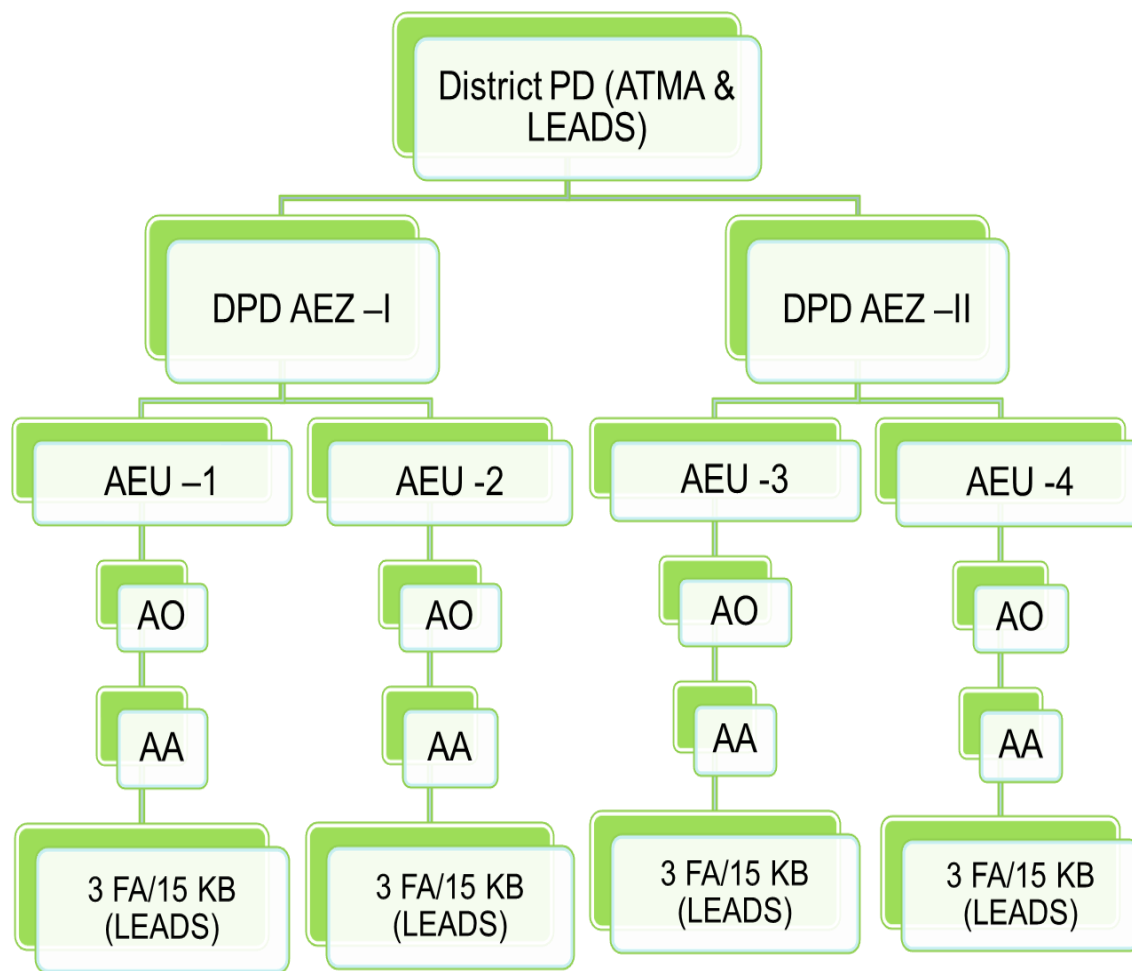
Farmer centered, field visit oriented extension system named LEADS (Lead farmer centered Extension Advisory and Delivery Service).

This pioneering project, LEADS was proposed by the Kerala State Planning Board and was approved for implementation through the Kerala State Department of Agriculture from 2010-11 vide G.O. (MS):198/10/AD of 6-8-2010. In 2010, it was proposed for pilot testing in Kollam and Palakkad districts, later by 2011 it has been implemented in Kannur district and now by the current year it has also been implemented in Wayanad district. Previously the scheme was proposed for a pilot testing in Kollam and Palakkad districts only, but by the current year it has spread over 4 districts of Kerala, and this makes to say LEADS is a very promising project.

As the farmer to farmer and farmer led extension is highlighted, there are three lead farmers from each panchayat and around each lead farmer a group of ten farmers called as satellite group is also selected. The members of a satellite group are called as satellite farmers and along with lead farmer, a satellite farmer group leader also is there for a group.

Regular visits to farmer fields by the extension personnel are also there in LEADS, and for this field assistants are appointed with a minimum qualification of VHSE agriculture. Regular visit schedules are given for them for each month. One field assistant will cover three Krishibhavan areas. The organisational structure of LEADS is given in the Figure 1.

The major objectives of the LEADS programme were, to utilize the potential of Lead Farmers (LFs) for transfer of technology, to address field level problems of selected farmers through the support of regular field visits by technical officers, to introduce a regular and systematic field visit oriented extension system in the state, to intervene and advice farmers through preparation of Monthly Technology Advice (MTA) with the support of KVK, Research stations and Development specialists, generation of location specific technologies through Participatory Technology Development (PTD), technology refinement



- PD- Project Director
- DPD- Deputy Project Director
- AEZ- Agro-Ecological Zone
- AEU- Agro-Ecological Unit
- AO- Agricultural Officer
- AA- Agricultural Assistants
- FA- Field Assistants
- KB- Krishi Bhavan

Figure 1. Diagrammatic representation of organisational structure of LEADS

through Front Line Demonstrations (FLDs) and On Farm Trials (OFTs), facilitating expert level consultation through audio conferencing, consultation of Multi-Disciplinary Team (MDT) in research institutions for field visit on demand, to enhance technical knowledge of field level technical officers and to develop a farm net- network of extension, research, LFs and other farmers in the district level.

### **Objectives of the study**

The study aims at analysing the farmer-to-farmer extension in the LEADS pilot project in Kollam district and to suggest measures to improve the functioning of the project. The present study specifically studies the following.

1. Analysing the process of extension in LEADS pilot project
2. To study the attitude of extension personnel and farmers towards LEADS
3. To study the effectiveness of monthly technology advice and the communication effectiveness in LEADS
4. To identify the constraints experienced by the stakeholders and to suggest suitable solutions to overcome the constraints in the working of LEADS

### **Scope and importance of the study**

The study focuses on the identification of interventions for the improvement of farmer to farmer extension system in LEADS by analysing the present extension system, and also to develop a sustainable extension system. It also gives equal importance to analyse the constraints and problems faced by farmers. The results of study will be much useful to the researchers, extension workers and policy makers to some extent as it analyses the LEADS programme in different dimension. Attitude of different stakeholders of LEADS,

communication effectiveness in LEADS etc. will also be explored. The results of the study pertaining to the suggestions would help to take appropriate measures to scale up the programme before implementing in other districts of Kerala.

**Limitations of the study:**

The study has inherent limitations of small sample size restricted time and other resources. However utmost care has been taken to make the study as perfect as possible. But since the work was carried out in only one district of Kerala (Kollam), generalization of results to other areas may not be appropriate. Also the respondents did not keep all the records, most of the responses were based on their recall memory. However, due care was taken to ensure high reliability of data through discussions, meetings and triangulation.

**Presentation of the study:**

The chapter scheme of the study report is as follows:

Chapter-1	Introduction	- Explains the importance of the topic, objectives, scope and limitation of the study.
Chapter-2	Review of Literature	- Deals with review of relevant literature in line with the objectives of the study.
Chapter-3	Materials and Methods	- Describes the sampling design, the study area, measurement of independent and dependent variables, method of data collection and statistical tools used.
Chapter -4	Results and Discussion	- Discusses the results of the study to draw specific inferences.
Chapter-5	Summary	- Briefly summarizes the work done and salient findings, explains the implications based on the results of the study.

*REVIEW OF  
LITERATURE*



## **2. REVIEW OF LITERATURE**

Review of literature is essential as it provides a strong foundation for scientific investigation. It paves way for the better understanding of the present study and spares ideas for the interpretations of the findings. An extensive survey of all available past studies relevant to the field of investigation is an essential condition for the formation of hypotheses. Knowledge of what others have found in the related area and how they have done shall motivate one to contribute something new to the existing body of knowledge. Past reviews help in assessing the earlier efforts completeness and validity and allow the researcher to begin the compilation of relevant bibliography.

The review of literature connected with the study on hand is organised on the following lines:

- 2.1. Concept of farmer to farmer extension
- 2.2. Lead farmer centered Extension Advisory and Delivery Service
- 2.3. Communication effectiveness
- 2.4. Attitude of farmers
- 2.5. Attitude of agricultural officers
- 2.6. Profile characteristics of the respondents.
- 2.7. Efficiency and effectiveness
- 2.8. Constraints perceived by the respondents

## 2.1. CONCEPT OF FARMER TO FARMER EXTENSION

In 1989, Kerala State initiated the group approach for extension in rice farming and this was subsequently extended to other crops (Sulaiman, 2000).

The knowledge gained from the farmer's group activities enables participants to make their own locally specific decisions about crop management practices (Kenmore, 2002).

Researchers and extension workers learn from and provide technical assistance to farmers on the technologies that farmers have already developed or helped them to develop monitoring and evaluation processes (Knox and Lilja, 2004).

The Farmer to Farmer extension is a cost-effective service delivery mechanism for extending basic and innovative technologies to rural farmers especially in remote areas (Shrestha 2005).

Most of the district programs and projects are executed through the groups (Sadak 2007).

Ordinary farmers can learn much from their more innovative neighbour (learning by seeing), and in the process, adopt a few promising technologies (Dhital, 2009).

A farmer led extension is capacity building (especially farmer extensionists), creating para-professional extension workers, creating or strengthening local institutions and it makes livelihood security including food, nutrition, employment to alleviate poverty, sustainability and conserving biodiversity. It is a participatory, bottom-up and demand driven extension. (Kokate *et al.*, 2009).

The Farmer Field School (FFS) is one of the most effective extension approaches ever developed (Dinpanah *et al.*, 2010). It is a group-based learning

process where farmers carry out experiential learning activities that help them to understand the ecology of their crop fields.

In the context of innovation systems, operationalized by integrated agricultural research for development, an innovation can emerge from many sources and through complex interactions and knowledge flows, with the farmer being at the centre of the process. (Glendenning *et al*, 2010)

## 2.2. LEAD FARMER CENTERED EXTENSION ADVISORY AND DELIVERY SERVICE

Kerala is a state with a tradition of many innovative social and agricultural development programs. Planning Commission in 2008 pointed out that the links between research, extension and farmers are seen to be inadequate, and uncoordinated efforts abound. In order to bridge this vital gap and strengthen the agricultural extension services, some of the programs like ATMA (Agricultural Technology Management Agency), LEADS (Lead farmer centered Extension Advisory and Delivery Service) etc. has been proposed and implemented in the state.

LEADS is a frontier extension system revolving around lead farmer-satellite farmer, which is organized on an Agro ecological zone- based strategy, a farmer centered, a farmer led, a farmer innovation approach, an advisory system and a participatory farmer group approach.

Literature review is not available on LEADS as such, as it is a new programme implemented in four districts of Kerala State.

### 2.3. COMMUNICATION EFFECTIVENESS

In 1953, Hoveland *et al.* studied communication effects or responsiveness to communication as attention to the verbal content of the communication, comprehension and acceptance.

Redfield (1958) put forth the following guidelines for effective communication in administrative situation: clarity, quantity, timing and timeliness, distribution, applicability, transmission, adaptability, interest and acceptance.

Salvi and Dudhani in 1967 found out that majority of the effective Gramsevaks had followed the essential steps in conducting result demonstration, method demonstrations and meetings while non-effective Gramsevaks had not.

Francois in 1977 stated that the goal that is realized in any successful communication is shared meaning and attainment of such an objective will be facilitated, if parties to the communication effort share in or participate in the communication act.

Hunt (1980) stated that effective communication is important in its own right and need not be justified by relating to organisational effectiveness.

### 2.4. ATTITUDE OF EXTENSION PERSONNEL

Tripathy *et al.* (1970) reported that only two percent of the Gramsevaks were having favourable attitude towards community development programme.

Uwakah in 1980 found out that, extension staff had a moderately favourable attitude towards their vocation with 90 per cent of the respondents indicating that extension was an interesting and challenging job, which offered them opportunity to use their knowledge and skills.

Hardhan and Reddy in 1986 from their study found out that, agricultural extension workers hold medium or less favourable attitude towards T&V system.

Perumal and Menon in 1986 found out that, village extension workers were satisfied with the introduction of T&V in Madurai district as they hold a favourable attitude to this extension approach.

Verma *et al.*, (2012) reported that out of total 160 extension personnel, 56.87 per cent had favourable attitude towards ICT application in agriculture.

## 2.5. ATTITUDE OF FARMERS

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

Thurstone (1946) defined attitude as the degree of positive or negative effect associated with some psychological object towards which people can differ in varying degrees.

Krech and Crutchfield (1948) defined attitude as an enduring organization of motivational, emotional, perceptual and cognitive process with respect to some aspect of the individual's world.

Katz and Cotland (1959) stated that attitude is a tendency or disposition to evaluate an object or the symbol of that object in a certain way.

According to Sharma (1972) attitude means a personal disposition, which impels an individual to react to some objects or situations.

Dahama (1976) opined that attitudes are learned responses and since they are always found in relation to object, ideas and persons, they play an important role in determining human behavior.

Blair (1978) defined attitude is a predisposition to respond to a certain set of facts.

Mohiuddin from his study in 1983 found out that, majority (64.4%) of the farmers had average attitude, while 25.60 per cent and 10.0 per cent of them had high and low levels of attitude, respectively towards dryland agricultural technologies.

Kuppuswamy (1984) stated that attitudes are learned in the course of life experience which make the individual behave in characteristic ways towards persons, objects or issues to which they get related.

Sinha *et al.* in their study conducted on attitude of farmers towards soil conservation programme in 1984 revealed that majority of the farmers (80%) had medium level of attitude and the rest were distributed under high (12%) and low (8%) attitude categories.

Bhakhri in 1985 observed that majority of the farmers were found to be favourably disposed in their attitude towards dryland agricultural technologies.

Siddaramaiah and Reddy in 1993 found out that, big farmers had exhibited more favourable attitude than small farmers on all three dimensions of watershed management viz., soil and water conservation, dry farming technology and non-arable land development. The programme had not succeeded in creating a favourable attitude towards watershed management, particularly among small farmers.

More than half of the total farmers had favourable attitude towards watershed development in all the four villages 37 to 45 per cent of the respondents had unfavourable attitude towards watershed development. (Surekha *et al.* 1997)

Suthan (2003) reported that 60 per cent of the farmers had low attitude towards scientific agricultural practices.

Jaganathan (2004) reported that majority of the vegetable growers (64 %) had a favourable attitude towards organic farming practices followed by less favourable (22 %) and most favourable (14 %) attitude and also reported that

mass media exposure, innovativeness, market perception, self-confidence, environmental orientation, awareness and knowledge showed a positive and significant relationship with attitude towards organic farming.

The view of the above studies revealed that the attitude of farmers towards an object, practice, programme etc. varied with situation. It can be concluded that favourable attitude towards a development activity, practice or innovation is a prime requirement for its increased participation and success.

## 2.6. PROFILE CHARACTERISTICS OF THE RESPONDENTS

### 2.6.1. Age

Madhavareddy (2001) equal percentage of respondents (38.30% each) belonged to the middle age category in both government organization and non-government organization watershed. Higher per cent of farmers (38.30%) of government organization watershed belong to young age category compared to 23.30 per cent of farmers belonging to old age group.

Geetha (2002) reported that age had negative and significant correlation with the functioning of *Thozhil Sena*.

Sridhar (2002) in his study on watershed programme found that 44.67 per cent of the respondents were middle aged, while, 28.00 per cent of them were young and remaining 27.33 per cent belong to old age.

Raghunandan (2004) in his study, 'A study on knowledge and adoption level of soil and water conservation practices by farmers in northern Karnataka' reported that 45.00 per cent of the respondents belonged to the middle age group, followed by old age (36.25%) and young age group (18.75%), respectively.

### 2.6.2. Education

Sridhar (2002) found that 26.67 per cent of the respondents were educated up to high school, 24.66 per cent upto middle school, 12.67 per cent up to primary

school, 12.00 per cent could read and write, and 11.33 per cent had collegiate education. The percentage of illiterates was 12.67.

Reddy (2005) reported that 30.00 per cent of the respondents had education upto high school, followed by middle school (28.00%) and primary school (27.33%). Nearly 12.00 per cent of them were illiterates, while a meagre 4 per cent of them had education up to college and degree programme.

### **2.6.3. Innovativeness**

De (1986) opined that innovative orientation, entrepreneurship and socio-economic status significantly contribute to farmer's progressiveness.

Suganya (2000) reported that 62 percent of the extension personnel had high level of innovativeness.

Fayas (2003) revealed that majority of the vegetable growers had medium level of innovativeness.

Priya (2003) stated that 97.50 per cent of the vegetable growers had high level of innovativeness.

Jaganathan (2004) observed that more than half of the respondents (55 %) had medium innovativeness and also found that innovativeness had a positive and significant relationship with respondent's extent of awareness, extent of knowledge and attitude.

Sasankan (2004) reported that 49 per cent of the farmers had medium level of innovativeness.



#### **2.6.4. Contact with Officials**

Nelson (1992) in his study reported that contact with extension agency had positive and significant relationship with attitude of farmers towards Krishibhavan.

Angadi (1999) found that majority (65.62%) of the respondents had contact with Agricultural Assistants (AAs) whenever there was a problem, while 62.50 per cent of respondents had no contact with Assistant Agricultural Officers (AAO), only 13.12 per cent of them had contact with scientists whenever they had problems.

Karpagam (2000) 93.33 per cent of the respondents were aware of Assistant Agricultural Officers (AAOs), followed by 90 per cent of them knowing Agriculture officer (AOs) or Horticulture officer (HO) and 68.33 per cent of respondents were aware of Assistant Director of Agriculture (ADA) or Assistant Director of Horticulture (ADH), about half of the respondents have contacted AAOs, followed by 30.83 per cent AO or HO.

Sridhar (2002) revealed that 35.33 per cent of the farmers regularly contacted Agricultural Assistants (AAs), while 32.00 and 32.67 per cent of them occasionally and never contacted AAs, respectively.

Reddy (2005) reported that 68.00 per cent of the respondents regularly contacted AAs followed by 60.00 per cent of them contacting AAOS regularly. Also 54.67 and 46.67 per cent of them regularly contacted NGO officials and Raita Samparka Kendra respectively.

Jaswal and Mistry (2007) observed that people had contact with sarpanch and they were main source of information. After the sarpanch, the NGOs became an important source of information.

### **2.6.5. Extension Participation**

Sakharkar (1995) found that, 36.00 per cent of the respondents had participated in one or more extension activities whereas; two-third (64.33%) of the respondents did not participate in any extension activity.

Angadi (1999) reported that majority of the respondents had not participated in various extension activities *viz.*, discussions with extension personnel (98.76%), group meeting (75.23%) and training programmes (72.50%). Only 43.75 per cent and 38.13 per cent of the respondents participated regularly in extension activities like method demonstrations and Krishimela, respectively.

Singh *et al.* (2003) reported that majority of the respondents had low to medium level of extension participation.

Anitha (2004) reported that 17.50 per cent of respondents had high extension participation, 44.20 per cent had medium and 38.30 per cent had low extension participation.

Wankhede and Khare (2005) have found that extension participation had significant relationship with effectiveness of farm telecast.

### **2.6.6. Mass Media Exposure**

Rose (1990) found out that 53 percent of the respondents had low mass media exposure.

Pradeepkumar (1993) found that mass media contact was positively and significantly related with the extent of participation in agricultural and allied fields.

Kamalakannan (2001) found out that 52 percent of the respondents were having medium level of medium level of mass media exposure followed by 29 with high level and 19 percent with low level.

Chavan *et al.*, (2010) has reported that mass media exposure had significant correlation with the perceived effectiveness of agricultural programmes.

Chhabra *et al.*, (2010) reported that open meeting of Gram Panchayat and information given through Radio, T.V, Newspaper, Notice board of Gram panchayat and local officials were the prominent sources of bringing awareness.

Dey and Bedi (2010) reported that, 99.4 per cent of surveyed households were aware of the existence of MGNREGP and it was by far the best known programme, whereas 60-65 per cent of surveyed households were aware of the social schemes such as IAY, SGSY which have been in operation since 1985-1999. In terms of information source 32 per cent of respondents mentioned that the most common sources of information on MGNREGP was the Gram panchayats and 25 per cent of respondents mentioned through affiliated political party.

Mehta (2010) found that the open meeting of Gram Panchayat and information given through Radio, T.V, Newspaper, Notice board of Gram panchayat and local officials were the prominent sources of bringing awareness among the villagers about prescribed wage rates and other matter of NREGA to the villagers.

Shah (2010) in his study on MGNREGS in Gujarat reported that the extent of awareness was found to be relatively higher.

### **2.6.7. Training**

Sivaprasad (1997) reported that majority of youth in sericulture and bee keeping had undergone training duration of training and stipend given acted as incentives.

Ashaletha (2000) reported that training was positively and significantly related to the awareness about the NARP.

Parthasarathi and Govind (2002) reported that the knowledge level of trained farmers was much higher on biological and physical methods of IPM, identification of pests and predators on economic threshold levels. This shows that the training on IPM had positive effect on farmers.

Priya (2003) stated that nearly 95 per cent of farmers were in the high category in the case of training.

Jaganathan (2004) reported that 57 per cent of the respondents had medium level of training followed by low level (33 per cent) and also reported that knowledge of vegetable growers about organic farming practices had significant and positive relationship with training attended.

#### **2.6.8. Effectiveness of Field Visit**

Bindlish and Evenson, (1997) showed that the Training and Visit management system has made extension more effective, led to agricultural growth and high rates of return.

Anderson *et al*, (2006) reported that, cases where linkages with research not quite enhanced; village agents not following the regular visit schedule, or contact farmers not attending visits, with some of them not being aware that they were designated as contact farmers; preference of agents to interact with larger scale and richer farmers; insufficient attention to the supply conditions of inputs hampered the relevance of the information conveyed to farmers, the supervisory staff did not have incentives to use the strict visit schedule as a device to enforce work delivery by village workers; and at a more senior level, the interest in the T&V programme was not genuine, reflecting merely the desire to obtain the enhanced resources (e.g., vehicles, offices) associated with the projects etc. were there in T and V system.

## 2.7. EFFICIENCY AND EFFECTIVENESS

Efficiency in extension is usually measured by the rates at which farmers adopt recommended practices. Adoption rates of varying degrees of complexity can be conceived. (Casley and Lury, 1982).

Hitt *et.al.* (1983) stated that effectiveness refers to how well an organization reaches its objectives over a period of time.

Effectiveness was explained by variables such as relevance and reliability, non-redundancy and exceptional reporting. (Hodge *et al.* 1984).

Reddin (1987) observed that effectiveness is multidimensional and it is the extent to which managers achieve the output requirements of their position. He further stated that it is output, not input.

Gosh *et al.* (1988) gave the measuring of effectiveness as the extent to which an action or activity achieves its stated purpose.

According to Arora (1993) the success of any developmental measures is determined by the effectiveness of the administration system.

Sangeetha (1999) defines effectiveness as obtaining the right information to promote decision making to achieve the objectives.

Technical Efficiency (TE) is the extent to which the maximum possible output is achieved from a given combination of available inputs. Any deviation from the maximal output is typically considered as technical inefficiency. (Coelli *et al.*, 2005).

Michailidis (2007) valued highest efficiency for timeliness and better information for decision making.

Chavan *et al.*, (2010) has reported that mass media exposure had significant correlation with the perceived effectiveness of agricultural programmes.

Ommani, (2011) ranked extension programs based on efficiency. This ranking respectively include: Farmer Filed School (FFS), Meeting in Farm (MF), Results Farm Demonstration (RFD), Method Farm Demonstration (MFD), Extension classes, Bulletin and Posters, Radio and TV program. Also ranking of educational needs respectively include: productivity indicators, sustainability, farm management, water management, pest and disease, west management.

The efficiency of extension services provided under contract dairy system was evaluated with respect to accessibility to extension service, timely delivery of extension service, follow-up action by extension worker, and usefulness of information for dairy farming. (Kolekar and Meena, 2013).

## 2.8. CONSTRAINTS PERCEIVED

Bonny and Prasad (1996) inferred that majority of the commercial vegetable growers had rated inadequate market facility as the most important constraint experienced by them in marketing of vegetables.

Rodolfo (1996) reported that very low per cent of the respondents (8%) had lack of awareness of emerging new technologies. Majority of the respondents (91.34%) expressed that they suffered out of non-availability of labours during peak season as their major constraints followed by high cost of labour (82.66%).

Alagirisamy (1997) reported that fluctuations in market price, inadequate supply of inputs, non-availability of labour during peak season, inadequate credit facilities, major incidence of pests and diseases, high cost of inputs, inadequate information about latest technologies and inadequate transport facilities were the major constraints faced by vegetable growers.

Resmy *et al.* (2001) revealed that the farmers were not adopting the sustainable practices in coconut and banana due to lack of knowledge, technical guidance and lack of information sources.

Ongunsumi *et al.* (2002) observed that non-availability of inputs, transportation and finance and lack of market information were expressed as major important constraints in cowpea cultivation.

Singh (2004) opined that the rainfall, drought, lack of knowledge on improved dry land practices, lack of finance and low price of produce as very severe constraints.

Thangaraja (2008) reported in his study unstabilised market price for their produce (91.11 per cent) and high wages demanded by agricultural labourers (40.00 per cent) as major constraints perceived by the respondents.

## 2.9. RELATIONSHIP BETWEEN INDEPENDENT AND DEPENDENT VARIABLES

### 2.9.1. Independent variables and attitude of farmers

Basran (1966) found that sociological, psychological and economic variables are important in explaining respondent's attitude towards new ideas and techniques.

Viju (1985) stated that the education level of farmers was seen influencing their knowledge level and their attitude towards farming which in turn influenced their adoption level.

Mary *et al.* (1994) found out a positive and significant relationship between educational status and attitude.

Sarker (2002) reported that education of the farmers had significant and positive relationship with their attitudes towards the activity of Bangladesh Agricultural University Extension Center (BAUEC).

### 2.9.2. Independent variables and attitude of officials

Mary *et al.* (1994) found out a positive and significant relationship between educational status and attitude.

Raghuprasad *et. al.* (2012) found that the variable, education, had positive and significant relationship with attitude of farmers at one per cent level of significance whereas, extension participation had positive and significant relationship with attitude of farmers at five per cent level of significance. Other variables such as age, innovativeness, and mass media exposure were found to have non-significant relationship with attitude of the farmers towards ICT tools.

### **2.9.3. Independent variables and communication effectiveness**

Sandhu and Darbarilal (1976) found that education and communication behavior were significantly connected.

Bhaskaran (1979) found that media participation of farmers was positively and significantly related to their interpersonal communication behavior.

Rao and Reddy (1980) reported education as one of the essential characteristics associated with interpersonal communication behavior of contact farmers.

Reddy and Reddy (1980) found extension contact as an essential variable associated with interpersonal communication of contact farmers.

The reviews of the previous studies related to the present research have led to the selection of variables for the study and the methods of measuring these variables which are presented in the subsequent chapters.



*MATERIALS AND  
METHODS*

### 3. MATERIALS AND METHODS

“Every purpose is established by counsel: and with good advice make war.”

- Proverbs 20:18 (Holy Bible)

The chapter materials and methods say about the methodology followed to accomplish the research work. Research methodology is a way to systematically solve the research problem. This section is to provide sufficient detail about the experiment to enable readers to evaluate its appropriateness or to replicate the study should they desire (Smith and Davis, 2007). This section helps readers to determine the validity of this research.

The methodology followed in the study is presented under the following heads.

- 3.1. Research design
- 3.2. Selection and description of the study area
- 3.3. Selection of the respondents
- 3.4. Selection of the variables and their measurement
- 3.5. Operational definition of independent variables
- 3.6. Operational definition of dependent variables
- 3.7. Efficiency and effectiveness of MTA
- 3.8. Constraints perceived by the respondents in LEADS
- 3.9. Statistical tools applied

#### 3.1. RESEARCH DESIGN

Research design is the plan, structure and strategy of investigation so as to obtain answers to research questions and to control variance. The plan is the overall scheme or programme of research. Research design is developed to enable the researcher to answer research questions with validity, objectivity and

accuracy. In the present study, where the main aim is analysing the farmer-to-farmer extension in the LEADS pilot project in Kollam district and to suggest measures to improve the functioning of the project, *Ex-post-facto research design* was employed for this. In *Expost – facto research* the investigator draws the inference regarding the relationship between variables on the basis of independent variable whose manifestation has already occurred. In this design, the investigator has no scope to manipulate the independent variables, as these have already occurred. Inferences on the relationships between independent and dependent variables are drawn on the basis of effects already manifested.

### 3.2. SELECTION AND DESCRIPTION OF THE STUDY AREA

The purpose of this research is to analyse the pilot project LEADS to arrive at an understanding about the farmer-to farmer extension in Kerala agriculture. The LEADS pilot project was first implemented in Kollam district in 2010. So, Kollam district was purposively selected for the study.

#### 3.2.1. Description of the Study Area

##### 3.2.1.1. Kollam District

Kollam District is situated on the South west coast of Kerala. The District is bound on the north by Alappuzha and north east by Pathanamthitta Districts on the east by Thirunelveli District of Tamilnadu, on the South by the Thiruvananthapuram District and on the west by Arabian Sea. Kollam district have an area of 2491 sq. km. and a population of 25,84,118.

Two rivers Kallada and Ithikkara flow through this District. The Sasthamcotta Lake, the only major fresh water lake in the state is in Kollam District. The Soil of the District may be classified as sandy loams, laterite and forest soil. The costal belt has sandy loams and the forest soil is found in the eastern forest belt. The rest of the district is laterite soil. The district has a tropical humid climate with an oppressive summer and plentiful seasonal rainfall. The hot season, lasting from March to May is followed by the South West Monsoon from June to September. The rest of the year is generally dry. Kollam 71 km away



Kerala State

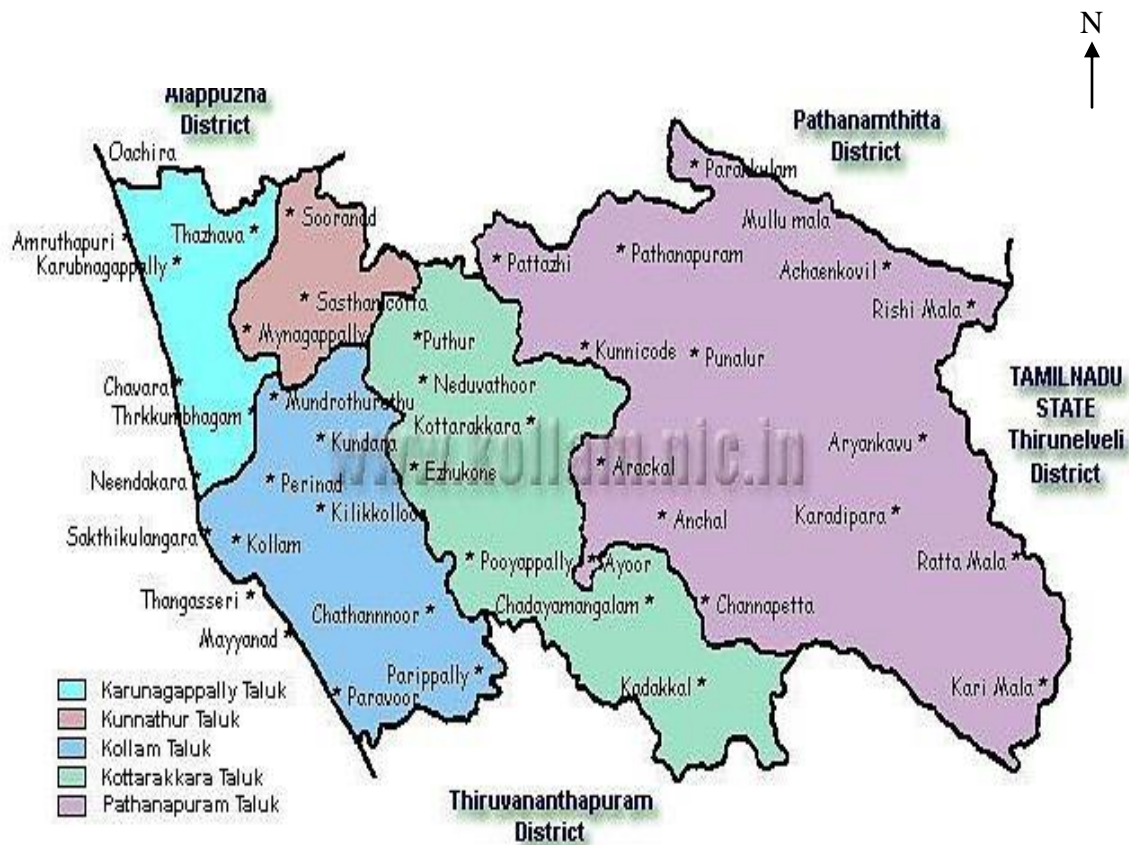


Figure 2. Map of Kollam district

from Thiruvananthapuram is fairly important for the State's trade and commerce and is the centre of the country's cashew trading and processing industry.

Moreover, Kollam is the first district of Kerala where LEADS was implemented in 2010. The 11 blocks of Kollam district are having sufficient number of satellite groups as suggested in LEADS and actively working in all the 70 Krishibhavans. There are 210 lead farmers and the same number of satellite farmer groups (SFGs) in the district. Map of Kollam district is given in Figure 2.

### 3.3. SELECTION OF THE RESPONDENTS

The study was conducted with three major groups of respondents such as Farmers, Field assistants in the project and the Officials involved in extension activities. A total of ninety nine farmers (three lead farmers and 6 satellite farmers from each block), 33 field assistants and 40 officials including the agricultural officers and technology managers were randomly selected for the study from eleven blocks of the district. In LEADS there are two categories of farmers, the lead farmers and the satellite farmers. Among the 99 farmers selected for the study, 33 were lead farmers and 66 were satellite farmers.

### 3.4. SELECTION OF VARIABLES AND THEIR MEASUREMENT

By reviewing various literatures, discussions with extension scientists and judges rating of the selected variables, eight variables namely, age, education, innovativeness, contact with officials, extension participation, mass media exposure, training and effectiveness of field visit were selected for satisfying the objectives of the study. Attitude of farmers towards LEADS, attitude of extension personnel towards LEADS, and the communication effectiveness in LEADS were the three dependent variables selected. Two other variables namely, efficiency and effectiveness of LEADS, and the effectiveness of MTA were also included in the analysis.

### 3.5. OPERATIONALISATION AND MEASUREMENT OF INDEPENDENT VARIABLES

Based on the objectives, review of literature, discussion with experts and observation made by the researcher, a list of personal and socio-psychological characteristics were identified along with their operational definitions and sent to 30 judges for eliciting their relevancy on a three point continuum ranging from most relevant to least relevant. The scores were assigned as follows:

**Table. 1. Scores assigned for judges rating**

Response	Score
Most relevant	3
Relevant	2
Least relevant	1

The total score obtained for each variable was worked out. The variables having a score value of 80 per cent and above were selected. The selected independent and dependent variables are defined below with description of the methodology used for measuring them.

#### 3.5.1. Age

Age was operationalised as the number of calendar years completed by the respondents at the time of interview. Based on the chronological age, the respondents were classified as followed by Sadam (2013).

**Table. 2. Scoring procedure for age of the respondents**

Sl. No.	Category	Score
1.	Young (Up to 35 years)	1
2.	Middle (36 to 55 years)	2
3.	Old (More than 55 years)	3

### 3.5.2. Education

Education can be operationalised as the extent of literacy obtained by the respondent at the time of study. It is measured with the help of scale developed by Trivedi (1963) with slight modification as given in the table 3.

**Table 3. Scoring procedure for education level of respondents**

Sl. No.	Level of education	Score
1.	Illiterate	1
2.	Can read and write	2
3.	Primary school level	3
4.	Middle school level	4
5.	High school level	5
6.	College	6
7.	Professional college	7

### 3.5.3. Mass Media Exposure

The variable mass media exposure refers to the degree to which the respondents were exposed to various mass media channels. It is measured by using the procedure followed by Prasadha (2006) with slight modifications. The mass media selected for the study are Television, Radio, Newspaper, Magazine, Bulletin, Information kiosks and Mobile phone and the scores were given for each items based on the regularity of exposure as shown in the table 4. The score of an individual respondent is the sum of scores overall of the items and the possible score ranged from 0-14.

**Table 4. Scoring procedure for mass media exposure of respondents**

Sl. No.	Regularity of exposure to mass media	score
1.	Regularly	2
2.	Occasionally	1
3.	Never	0

### 3.5.4. Innovativeness

This was defined as the degree to which the respondent's earliness in adopting new ideas. The procedure followed by Sadam (2013) was adopted for measuring innovativeness. A question will be asked as, when the farmer would like to adopt an improved practice in farming. The scoring procedure is given in the table 5.

**Table 5. Scoring procedure for innovativeness of respondents**

Sl. No.	Response	Score
1	As soon as it is brought to my knowledge	3
2	After I had seen other farmers tried successfully in their farms	2
3	I prefer to wait and take my own time	1
4	I am not interested in adopting new technologies or practices in agriculture	0

### 3.5.5. Extension Participation

Extension participation was referred to as the extent of involvement of farmer in different extension activities. The procedure followed by Sobha (2013) was used to measure this. The respondents will be asked to mention the oftenness in attending different extension programmes like campaigns, seminars, fairs/melas, group discussions and demonstrations. The scores will be given as shown in the table 6 and scores ranges from 0 to 10.

**Table 6. Scoring procedure for extension participation of respondents**

Sl. No.	Oftenness of extension participation	Score
1	Attended whenever conducted	2
2	Sometimes	1
3	Never attended	0



### 3.5.6. Trainings

It is operationally defined as the number of trainings undergone by the respondent in various agricultural activities after being a part of LEADS. The procedure followed by Meera (2001) is used to score this. The respondents will be asked to mention the number of trainings they have undergone after being a member in LEADS programme. The scoring procedure is given in the table 7.

**Table. 7. Scoring procedure for the number of trainings undergone by the respondents**

Sl. No.	Trainings undergone	Score
1	No training	0
2	One training	1
3	Two trainings	2
4	Three or more trainings	3

### 3.5.7. Contact with Officials

This refers to the degree to which the farmers are having contact with officers for obtaining information regarding LEADS. The procedure used by Lawrence (2011) is used with slight modifications. The respondents will be asked to mention their frequency of contact with officials such as Programme director (PD), Deputy PD, Agri. Officer, Agri. Assistants and Scientists in a three point continuum as given in the table 8. The possible scores range from 0 to 10.

**Table. 8. Scoring procedure for the contact of farmers with the officials**

Sl. No.	Frequency of contact	Scores
1	Often	2
2	Sometimes	1
3	Never	0

### 3.5.8. Officer's Contact with Farmers

This variable refers to the degree to which the officers are having contact with the two categories of farmers in LEADS. The procedure used by Lawrence (2011) for obtaining the farmer's contact with officials is used here with some modifications. The categories of farmers in LEADS are lead farmers and satellite farmers and the regularity of officer's contact with these two categories of farmers were scored as given in the table 9. The possible score ranged from 0 to 4.

**Table. 9. Scoring procedure for the contact of officers with the farmers**

Sl. No.	Contact with farmers	Score
1	Often	2
2	Sometimes	1
3	Never	0

### 3.5.9. Field Assistant's Contact with Farmers

This variable refers to the degree to which the field assistants are having contact with the two categories of farmers in LEADS. The procedure used by Lawrence (2011) for obtaining the farmer's contact with officials is used here with some modifications. The categories of farmers in LEADS are lead farmers and satellite farmers and the regularity of field assistant's contact with these two categories of farmers were scored as given in the table 10. The possible score ranges from 0 to 4.

**Table. 10. Scoring procedure for contact of field assistants with farmers**

Sl. No.	Ofteness of contact with farmers	Score
1	Often	2
2	Sometimes	1
3	Never	0

### 3.5.10. Perceived Effectiveness of Field Visit.

Sangeetha (1999) defines effectiveness as obtaining the right information to promote decision making to achieve the objectives. This was explained by variables such as relevance and reliability (Hodge *et al.* 1984), non-redundancy and exceptional reporting. The scoring procedure used by Varghese (2012) was selected with slight modifications for measuring the effectiveness of field visit.

Here the farmers were asked to indicate their perception about different attributes of effectiveness of field visit such as schedule of visit, timeliness of visit, regularity of visit, duration of visit, purpose of visit, knowledge dissemination during the visit, and maintaining work diary in a five point continuum of satisfaction ranging from most satisfied to unsatisfied as described in the table 11. The possible score range is 0 to 28.

**Table. 11. Procedure for obtaining scores for the perceived effectiveness of field visit**

Sl. No.	Perceived effectiveness of field visit	Score
1	Most satisfied	4
2	More satisfied	3
3	Satisfied	2
4	Least satisfied	1
5	Unsatisfied	0

## 3.6. OPERATIONALISATION AND MEASUREMENT OF DEPENDENT VARIABLES

### 3.6.1. Attitude of Farmers towards LEADS

The term attitude refers to the degree of positive or negative effect towards a psychological object. In the present study the focus was on the attitude towards LEADS and its activities. An arbitrary scale was used to measure the attitude. Modifications were made to suit the study.

The scale consisted of 10 statements, seven positive and three negative statements as given in the table 12. Each statement was noted on a five point continuum as strongly agree, agree, undecided, disagree and strongly disagree with scores of 5, 4, 3, 2, 1 respectively for positive statements. The scoring was reversed in case of negative statements. The score was obtained for each item and summed up to get the attitude score of a farmer. The maximum score was 50 and minimum was 10. The procedure for obtaining scores for the attitude of farmers towards LEADS is given in the table 15.

**Table. 12. Statements for attitude of farmers towards LEADS**

<b>Sl. No.</b>	<b>Attitude of farmers towards LEADS- Statements</b>
1	I like LEADS because it is a farmer oriented programme.
2	I like LEADS because of the regular and scheduled field visits by the field assistants.
3	Officials and scientists in LEADS will visit our fields on need basis.
4	I like LEADS because the information regarding agriculture is getting regularly through the field assistants.
5	I like LEADS because the MTA is receiving regularly.
6	I like LEADS because the information regarding agriculture is provided through mobile SMS.
7	I like LEADS because it is giving importance to the major crops which we are cultivating.
8	I don't like LEADS, because many of the eligible farmers are not getting opportunity to be a lead farmer in LEADS.
9	I don't like LEADS because the number of satellite farmers in a SFG is limited to 10.
10	I don't like LEADS because of the political interference in the programme.

**Table. 13. Scoring procedure for attitude of farmers towards LEADS**

Sl. No.	Attitude of farmers towards LEADS	Score
1	Strongly agree	4
2	Agree	3
3	Undecided	2
4	Disagree	1
5	Strongly disagree	0

**3.6.2. Attitude of Officers towards LEADS**

The same methodology used for measuring attitude of farmers towards LEADS was used in the study. Ten statements were selected with seven positive and three negative statements with necessary modifications as given in the table 14. Similar to the measurement of attitude of farmers towards LEADS, each statement was noted on a five point continuum as strongly agree, agree, undecided, disagree and strongly disagree with scores of 5, 4, 3, 2, 1 respectively for positive statements. The scoring was reversed in case of negative statements. The score was obtained for each item and summed up to get the attitude score of a farmer. The maximum score was 50 and minimum was 10. The procedure for obtaining scores for the attitude of officers towards LEADS is been given in the table 15.

**Table. 14. Statements for attitude of officers towards LEADS**

Sl. No.	Attitude of officers towards LEADS- Statements
1	I like LEADS because all the line departments are involved in it.
2	I like LEADS because of the use of IT initiatives (mobile SMS services)
3	I like LEADS because we can reach the farmers through LEADS effectively

4	I like LEADS because of it Agro Ecological Zone wise strategy
5	I like LEADS because enough funds are providing for innovative activities
6	I like LEADS because MTA is preparing by the involvement of all concerned departments and scientists
7	I do not like LEADS because of high political intervention
8	I do not like LEADS because many eligible farmers are not getting chance to become Lead farmer
9	I like LEADS because many innovative technologies are evolving through LEADS
10	I like LEADS because it reported an increased crop yield in the districts where LEADS has been implemented

**Table. 15. Scoring procedure for attitude of officers towards LEADS**

Sl. No.	Attitude of officers towards LEADS	Score
1	Strongly agree	4
2	Agree	3
3	Undecided	2
4	Disagree	1
5	Strongly disagree	0

### **3.6.3. Communication Effectiveness in LEADS**

Communication is considered effective when it succeeds in evoking a desired response from the other person. In LEADS, communication on agricultural aspects is being happened mainly in two ways, such as interpersonal communication and through a printed media MTA bulletin. Therefore to measure the communication effectiveness in LEADS, the study considered the farmer's interpersonal communication and the effectiveness of MTA perceived by the farmers. A combined effectiveness index was calculated and inferences were drawn. A combination of methodologies followed by Kareem (1984) and Hassan

(2008) was selected to measure the communication effectiveness in LEADS. Methodologies used to measure the interpersonal communication and effectiveness of MTA is explained below.

### ***3.6.3.1. Interpersonal Communication Behaviour***

Interpersonal communication can be operationally defined as the behaviour of communication between two or more individuals. In the present study, the measure used by Kareem (1984) is used with slight modifications to measure the interpersonal communication behaviour of farmers. The methodology is described below.

Three sub dimensions were identified to measure interpersonal communication behaviour.

- Information receipt
- Information communication
- Information feedback

#### ***3.6.3.1.1. Information Receipt (IR)***

Information receipt can be operationalised as the oftenness of receipt of information from various sources. As here it is interpersonal communication and as it is in LEADS, the different sources considered were the immediate extension personnel and officers such as Field assistants, Agriculture Assistants, Agriculture Officers and Scientists. The farmers were asked to indicate how often they used to get information regarding agriculture from the different interpersonal sources listed for the study.

The scores were given in a three point continuum 2, 1 and 0 for always, sometimes and never respectively as given in the table 16. Maximum and minimum possible scores are 0 and 8.

**Table. 16. Procedure for obtaining scores for information receipt**

Sl. No.	Ofteness of information receipt	Score
1	Always	2
2	Sometimes	1
3	Never	0

The scores obtained were added up to find a total score for each respondent on information receipt.

### **3.6.3.1.2. Information Communication (IC)**

In the study, the information output or communication was operationalised as the oftteness of utilisation of different interpersonal communication methods by the farmers for the dissemination of information regarding agriculture.

To measure this, the farmers were asked to indicate how frequently they used the different interpersonal communication methods for the purpose of disseminating information regarding agriculture. The information disseminating methods frequently use by the farmers is given in the table 17. The scores were taken in a three point continuum always, sometime and never with score 2, 1 and 0 respectively as given in the table 18. The maximum and minimum possible scores are 0 and 10.

**Table. 17. Information disseminating methods**

Sl. No.	Information Disseminating methods
1	Personal talks during casual every day meetings
2	Personal talks during field visits
3	Group discussions
4	Personal talks when farmers come for advice
5	Personal talks during informal meetings at contact points



**Table 18. Procedure for obtaining scores for information communication**

Sl. No.	Ofteness of utilisation of information disseminating methods	Score
1	Always	2
2	Sometimes	1
3	Never	0

A total score was obtained for each respondent on information output by adding the scores obtained for all information disseminating methods.

#### **3.6.3.1.3. Information Feedback (IF)**

The information feedback can be operationalised as the oftteness of receipt of opinion, feeling, doubts, ideas and thoughts from the fellow farmers as a result of information given by them related to agriculture.

To measure this, the farmers were asked to indicate how frequently they used to receive different types of information feedback from the fellow farmers. Three aspects were identified such as communication of information related to technical aspects, regarding sanction of loans and regarding supply of inputs. The responses were obtained on a three point continuum, always, sometimes and never with scores 2, 1, and 0 respectively as given in the table 19. The possible scores range from 0 to 6.

**Table 19. Procedure for obtaining scores for information feedback**

Sl. No.	Ofteness of receipt of information feedback	Score
1	Always	2
2	Sometimes	1
3	Never	0

The information feedback score for each respondent was obtained by adding the scores corresponding to the response pattern of the respondents.

#### **3.6.3.1.4. Computation of Scores for Interpersonal Communication Behaviour (IPCB)**

The scores for the interpersonal communication behaviour of the respondents were obtained by adding the scores of each respondent on all the components of interpersonal communication behaviour (IPCB) included in the study such as information receipt, information output and the information feedback.

#### **3.6.3.2. Effectiveness of MTA**

The scoring procedure used by Varghese (2012) was selected with slight modifications for measuring the effectiveness of MTA. Here the farmers were asked to indicate their perception about different attributes of effectiveness of MTA in a five point continuum of satisfaction ranging from most satisfied to unsatisfied.

The attributes selected were reliability, timeliness, accuracy of information, availability of messages for further reference, completeness of subject matter, readability of the messages, motivation to adopt the messages in farm, and the information provided. The scoring procedure is given in the table 20 and the possible score range for each respondent is 0 to 32.

**Table 20. Procedure for obtaining scores for the effectiveness of MTA**

<b>Sl. No.</b>	<b>Perceived effectiveness of MTA</b>	<b>Score</b>
1	Most satisfied	4
2	More satisfied	3
3	Satisfied	2
4	Least satisfied	1
5	Unsatisfied	0

### 3.6.3.3. Computation of Communication Effectiveness Index in LEADS

The major ways of communication among the farmers are the interpersonal communication and the monthly technology advises. Therefore in the present study, the communication effectiveness of each farmer in LEADS was measured by using an overall communication effectiveness index including interpersonal communication and the effectiveness of MTA.

A formula developed to calculate the communication effectiveness in LEADS is given below. Same weightages were given to the interpersonal communication behaviour and the effectiveness of MTA.

$$\text{Communication Effectiveness} = \frac{\left( \frac{\text{IPCB}}{\text{Maximum score}} + \frac{\text{Effectiveness of MTA}}{\text{Maximums core}} \right)}{2} \times 100$$

IPCB- Inter Personal Communication Behaviour

MTA- Monthly Technology Advice

### 3.7. EFFICIENCY AND EFFECTIVENESS OF MTA

The concept of MTA is a new intervention by LEADS and therefore, it was necessary to know about the respondent's perception about the efficiency and effectiveness of MTA. The same procedure used in communication effectiveness was used here in the case of effectiveness of MTA as in table 20. The effectiveness was measured by following the procedure used by Varghese (2012) with necessary modifications as in the table 21.

**Table 21. Procedure for obtaining sores for the efficiency of MTA**

Sl. No.	Statements	✓ Tick
1.	Gives agro ecological unit wise and timely information	
2.	Gives season wise information or monthly agricultural practices	
3.	Has all information the farmer wants	
4.	Includes all the queries asked by the farmers and its solutions	
5.	Supports marketing	

The possible score range is 1 to 5. A formula developed for calculating the combined efficiency and effectiveness index of MTA is given below.

Efficiency and effectiveness index of MTA

$$= \frac{\left( \frac{\text{Total score for efficiency}}{\text{Maximum score}} + \frac{\text{Total score for effectiveness}}{\text{Maximums core}} \right)}{2} \times 100$$

The respondents will be classified into low, medium and high category based on this index.

### 3.8. CONSTRAINTS PERCEIVED BY THE RESPONDENTS IN LEADS

A number of constraints were identified by considering the respondents and the working of LEADS. Ten among those constraint statements were selected as important for the study by the advisory committee. The respondents were asked to put a tick mark against the statements which they perceived as constraints. The statements were ranked based on the number of respondents marked them as constraints.

### 3.9. TOOLS FOR STATISTICAL ANALYSIS

The data collected from the respondents were scored, tabulated and analysed using suitable statistical methods. The statistical analysis was done using computer facilities available at the College of Agriculture, Vellayani.

Keeping in view the objectives of the study and amenability, the data were subjected to different statistical tools. These tests included mean, standard deviation, percentage which was used in comparison of different categories and frequencies. Correlation coefficient was also used in analysing the data. A brief description of the tools used is given below.

#### 3.9.1. Mean

The mean scores for all the variables were worked out to make suitable comparisons wherever necessary.

### **3.9.2. Percentage Analysis**

Percentage analysis was done to make simple comparison wherever necessary.

### **3.9.3. Correlation Analysis**

Correlation coefficient is a measure of the relationship between two variables. The correlation coefficient was worked out to measure the relationship between the dependent variables and the independent variables.

*RESULTS AND  
DISCUSSIONS*

## **4. RESULTS AND DISCUSSIONS**

The results of the study are presented and discussed in this chapter under the following heads.

- 4.1. Profile characteristics of the respondents
- 4.2. Attitude of farmers towards LEADS
- 4.3. Attitude of officials towards LEADS
- 4.4. Communication effectiveness in LEADS
- 4.5. Efficiency and effectiveness of MTA
- 4.6. Relationship between the independent and dependent variables
- 4.7. Procedural analysis of selection of lead farmers and satellite farmers
- 4.8. Existing system of extension delivery in LEADS
- 4.9. Gaps and constraints experienced by the stakeholders in LEADS
- 4.10. Suggestion for the further improvement of the programme

### **4.1. PROFILE CHARACTERISTICS OF THE RESPONDENTS**

A clear understanding of the socio-economic and psychological characteristics of the respondents would enable the investigator to interpret the data. For this purpose eight variables were selected through judges rating and included in the study.

#### 4.1.1. Age

Age was operationalised as the number of calendar years completed by the respondents at the time of interview. Table 22 shows the distribution of three categories of respondents based on their age.

**Table 22. Distribution of respondents based on age**

Sl. No.	Category	Farmers (n=99)		Agri. Officers (n=40)		Field Assistants (n=33)		Total (n=172)	
		F	%	F	%	F	%	F	%
1	Young (up to 35)	1	1.01	2	5	28	84.84	31	18.02
2	Middle (36-50)	30	30.30	36	90	5	15.15	71	41.28
3	Old (>50)	68	68.68	2	5	0	0	70	40.70

From the data presented in the table 22, it was observed that majority of the respondents (81.98%) belonged either to middle age group or old age group. Only 18.02 % of the total respondents belonged to young age group. However a careful perusal of the table again indicates a differential distribution of respondents based on age. When majority of the farmers (68.68%) belonged to old age group, vast majority of Agricultural officers and field assistants were belonging to middle age and young age category.

The finding that vast majority of farmers belonged to old age or middle age category corroborates with the general findings of Kerala farmers and is in line with the findings of Esakkimuthu (2012). Only one percentage of farmers fall under younger age category and it shows a lesser participation of youngsters in farming. However, majority of the field assistants belonging to young age category is attributed to the fact that the LEADS project was recently launched



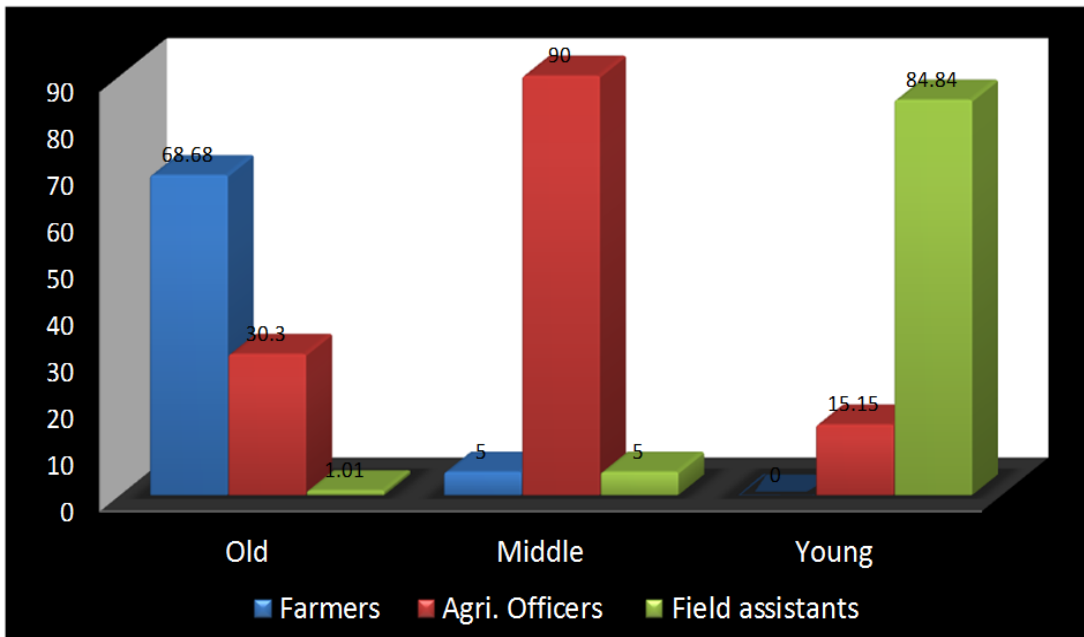


Figure 3. Percentage distribution of the respondents based on their age

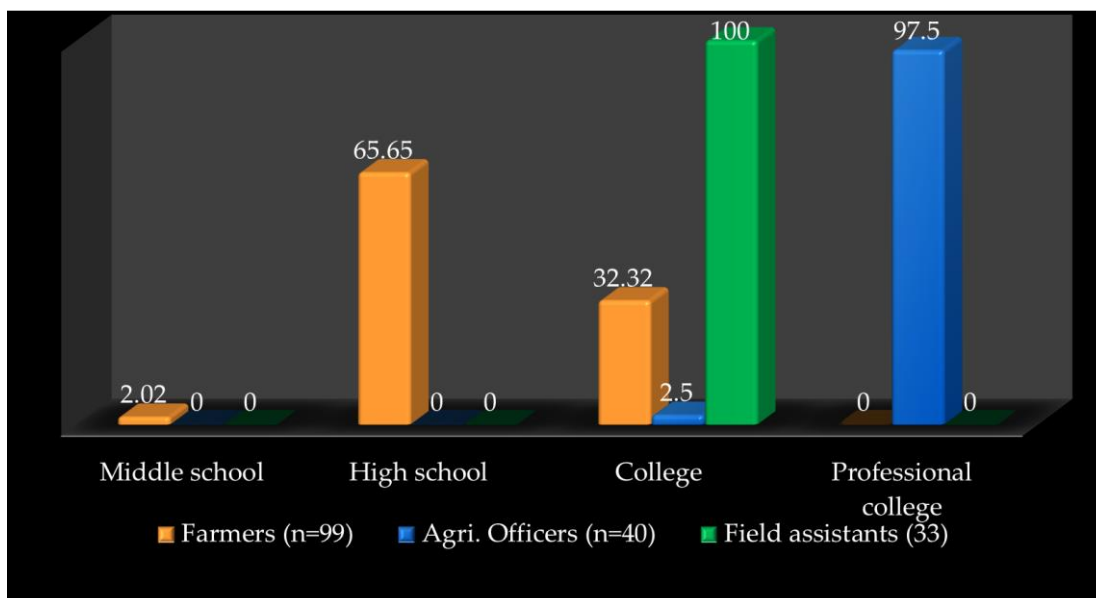


Figure 4. Percentage distribution of the respondents based on their education level

project and the field assistants were just recruited and their nature of job is temporary. The result that the majority of Agricultural officers belonged to middle age category could be because they are in service personals and process of recruitment to the Agriculture officer post may not be in tandem with the rate of retirement.

The findings are in line with the findings of Nachimuthu, 2002, Gadgil *et al.*, 2005 and Esakkimuthu, 2012. Figure 3 shows the graphical representation of the distribution of respondents based on age.

#### 4.1.2. Education

Education is the extent of literacy obtained by the respondent at the time of interview. The result obtained under the variable education is given below.

**Table 23. Distribution of respondents based on their education level**

Sl. No.	Category	Farmers (n=99)		Agricultural Officers (n=40)		Field Assistants (n=33)		Total (n=172)	
		F	%	F	%	F	%	F	%
1	Middle school level	2	2.02	0	0	0	0	2	1.16
2	High school level	65	65.65	0	0	0	0	65	37.37
3	College	32	32.32	1	2.5	33	100	66	38.37
4	Professional college	0	0	39	97.5	0	0	39	22.67

A perusal of the data in the table 23 shows that none of the respondents are illiterate and have a minimum of middle school level education. Majority of the respondents were having college and high school level education where in the percentages were 38.37 and 37.37 respectively. Also it could be observed that 22% of the total respondents were having professional education. Figure 4 shows the distribution of respondents based on education level.

A close observation of the data revealed that, majority of the famers (65 %) have undergone high school education, thirty two percentages of them was having college level education. This shows that the farmers in LEADS are fairly well educated. Ninety seven percentages of officers are professionals and cent per cent of the field assistants have college level education. This was because that the cited educational qualification was a prerequisite for getting into that job. A similar result was reported by Sriram (1997), Sherief (1998), Palanisamy (2011), and Sadam (2013). It is appreciable that about thirty two percentage of the farmers are with college level education and are interestingly involved in farming and being successful in farming.

#### 4.1.3. Mass Media Exposure

The variable mass media exposure refers to the degree to which the respondents were exposed to various mass media channels. The respondents were asked to mention their regularity in exposure to different mass media listed, in a three point continuum. The data on mass media exposure of three categories of respondents were collected, analysed and category wise distributed in the tables 24, 25 and 26. The graphical representation of the same is given in the figure 5.

**Table. 24. Distribution of farmers based on their mass media exposure**

**n= 99**

Sl. No.	Mass media	Regularly		Occasionally		Never	
		F	%	F	%	F	%
1	Television	86	86.87	12	12.12	1	1.01
2	Radio	19	19.19	55	55.56	25	25.25
3	Newspaper	97	97.98	2	2.02	0	0
4	Magazine	69	69.70	29	29.29	1	1.01
5	Bulletin	14	14.14	77	77.78	8	8.08
6	Information KIOSKs	1	1.01	5	5.05	93	93.94
7	Mobile phone	97	97.98	2	2.02	0	0

Table 24 revealed that the mass media exposure of the farmers was highest for newspaper and mobile phones, wherein 98% farmers used these information sources regularly for getting information on agriculture. 87% of the respondents viewed TV regularly. However, in the category of occasional mass media exposure, it was found that farmers rely on bulletin to seek information which was 78% followed by radio (55.56%), magazines (29%), and television (12%).

In the category of never, it was found that vast majority of the farmers (94%) never relied on information kiosk for information on agriculture followed by radio (25%) and bulletin (8.08%).

Therefore, it can be inferred that exposure to new technologies in mass media, like information kiosks is very rare and could be due to the lack of awareness among the farmers to use it as a source of information. The reason for the high exposure to mobile phone may be the use of CUG connection provided in LEADS for better communication.

**Table 25. Distribution of officials based on their mass media exposure**

**n=40**

Sl. No.	Mass media	Regularly		Occasionally		Never	
		F	%	F	%	F	%
1	Television	32	80	8	20	0	0
2	Radio	3	7.5	27	67.5	10	25
3	Newspaper	36	90	4	10	0	0
4	Magazine	23	57.5	17	42.5	0	0
5	Bulletin	27	67.5	13	32.5	0	0
6	Information kiosks	6	15	25	62.5	9	22.5
7	Mobile phone	38	95	2	5	0	0

Table 25 revealed that the mass media exposure was highest for mobile phones (95%) followed by newspaper (90%), television (80%), bulletin (67.5%) and magazine (57.5%). However, in the category of occasional mass media

exposure, it was found that officers rely on radio to seek information which was 67.5% followed by information kiosks (62.5%), magazines (47%), and television (20%).

Use of mass media by the officers even in their tight schedule of official duties is appreciable. Farm news are mostly communicated through radio, newspaper, magazines, bulletins etc., and they are effectively utilized by the officials in agriculture being a model for the farmers and subordinates. Exposure to newly introduced technologies like information kiosks is less and this part need to be improved.

**Table 26. Distribution of field assistants based on their mass media exposure**

**n=40**

Sl. No.	Mass media	Regularly		Occasionally		Never	
		F	%	F	%	F	%
1	Television	30	90.90	3	9.10	0	0
2	Radio	0	0	14	42.42	19	57.58
3	Newspaper	32	96.97	1	3.03	0	0
4	Magazine	10	30.30	17	51.52	6	18.18
5	Bulletin	9	27.28	18	54.54	6	18.18
6	Information kiosks	0	0	6	18.18	27	81.82
7	Mobile phone	31	93.94	2	6.06	0	0

The data presented in table 26 shows that majority of the field assistants have regular exposure to mass media like television, newspaper and mobiles with 97, 94, and 90 percentages respectively. While exposure to mobile phones is high (93.94%), a vast majority of them never had exposure to newly introduced technologies like information kiosks (81.82%). Majority of them have occasional exposures to bulletin and magazines viz., 54.54% and 51.52% respectively and at the same time 57.58% percent of them never had exposure to radio for agriculture related information.

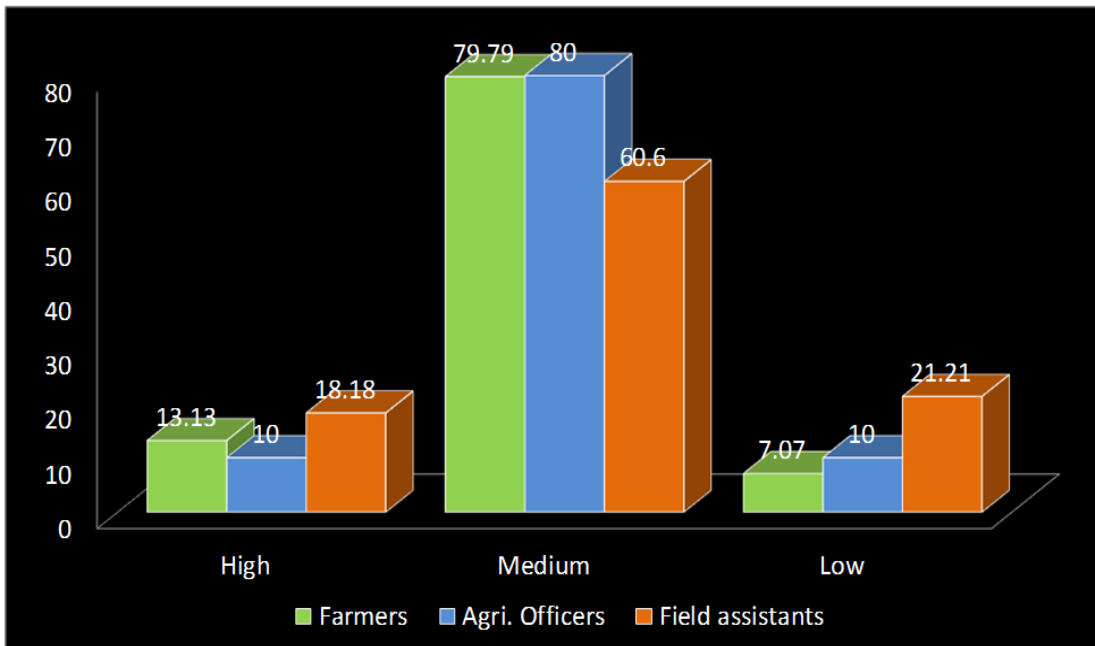


Figure 5. Percentage distribution of respondents based on their mass media exposure

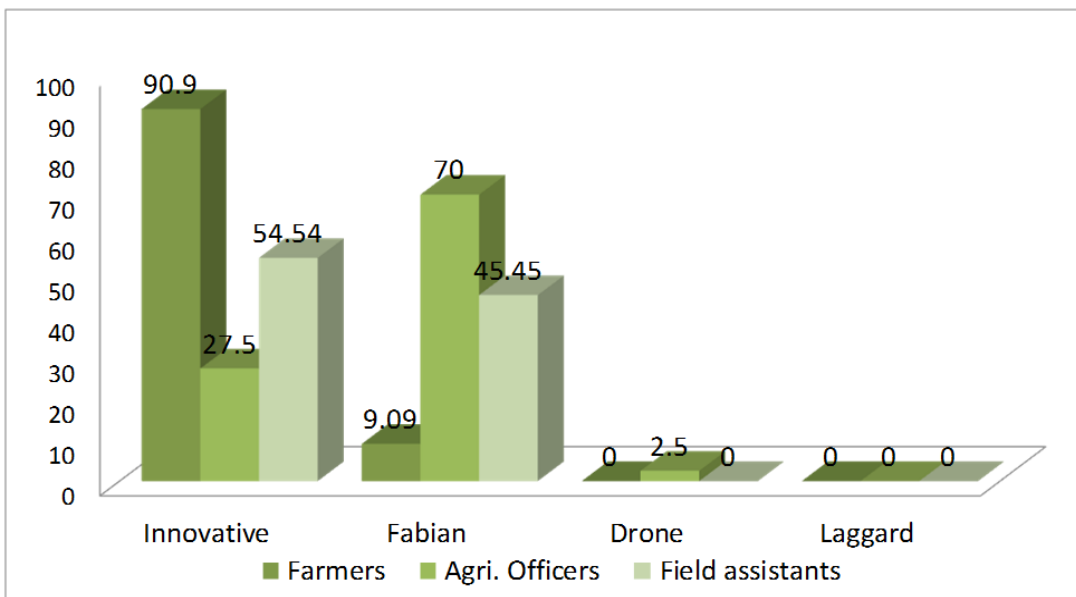


Figure 6. Percentage distribution of the respondents based on their innovativeness



The table 27 shows the data regarding the innovativeness of the respondents. It is evident from the table that, majority (67.44 %) of the respondents fell under the innovative category and none of them belonged to laggard category.

A close observation of the table reveals that, a vast majority of the farmers (90.9%) belonged to the innovative category, followed by a least percentage (9.09%) in fabian category. This result indicates that majority the farmers are ready to accept and adopt innovative technologies as soon as it brought to their knowledge. As LEADS is giving importance to farmer centered extension, innovative farmers are selected as lead and satellite farmers. This may be the reason for majority of the farmers fall under the innovative category.

Majority of the field assistants (54 %) were also found to be innovative, whereas majority of the officers (70%) came under the fabian category. Fabians will adopt a new technology only after watching the success of the previously adopted people (innovators). Similar results were reported by Geetha (2002) and Esakkimuthu (2012).

#### **4.1.5. Extension Participation**

Extension participation was referred to as the extent of involvement of farmers in different extension activities. The procedure followed by Sobha (2013) was used to measure this. Different extension methods were listed and the respondents were asked to mention the oftenness of their participation in those extension methods. The data collected and analysed on this regard is category wise distributed below in the tables 28, 29 and 30. Figure 7 shows the graphical representation of distribution of farmers based on their extension participation.



**Table. 28. Distribution of farmers based on their extension participation****n=99**

Sl. No.	Extension methods	Attended whenever conducted		Occasionally		Never attended	
		F	%	F	%	F	%
1	Campaigns	38	38.38	57	57.58	4	4.04
2	Seminars	86	86.87	13	13.13	0	0
3	Fairs/melas	83	83.84	16	16.16	0	0
4	Group discussions	91	91.92	8	8.08	0	0
5	Demonstrations	63	63.64	34	34.34	2	2.02

The farmer's participation in different extension programmes were analysed and the data presented in the table 28 reveals that majority of the farmers in LEADS used to participate in group discussions (91.92%), seminars (86.86%), melas (83.84%) and demonstrations (63.64%) whenever conducted. Majority of them occasionally participate in campaigns (57.58%) followed by agriculture related demonstrations (34.34%). Almost all the farmers have participated in all the listed extension methods and only a few percentages of them never had participation in campaigns (4.04%) and demonstrations (2.02%).

Hence, it can be inferred that the farmers in LEADS were very active and have a high interest to participate in all the extension programmes conducted mainly group discussions, seminars and fairs/melas. In LEADS satellite group discussions have to be conducted once or twice in a week which is being a reason for the found result. Next interested extension methods are seminars, melas and demonstrations. There are a number of seminars and demonstrations organising for farmers under LEADS itself and under other programmes also, in which the farmers used to participate whenever conducted. Fairs or melas are the extension methods conducted once or twice in a year by the Agriculture Department or other line departments or Agricultural University as a venture for giving exposure to

farmer's produces and their innovations interest to participate in these programmes may be the reason for the result.

**Table. 29. Distribution of officers based on their extension participation**

**n=40**

Sl. No.	Extension methods	Attended whenever conducted		Occasionally		Never attended	
		F	%	F	%	F	%
1	Campaigns	29	72.5	9	22.5	2	5
2	Seminars	26	65	14	35	0	0
3	Fairs/melas	19	47.5	19	47.5	2	5
4	Group discussions	27	67.5	12	30	1	2.5
5	demonstrations	26	65	13	32.5	1	2.5

A perusal of the table 29 reveals that majority of the officers used to participate in campaigns (72.5%), followed by group discussions (67.5%), seminars (65%) and demonstrations (65%) respectively whenever conducted. Only 47.5% of them are having interest to attend fairs/melas whenever conducted. Same percentage of the officers used to participate in fairs/melas (47.5%) occasionally, followed by participating in seminars (35%), demonstrations (32.5%), and group discussions (30%) occasionally. One or two percentage of officers never had exposure to the listed extension methods except seminars.

Therefore it can be inferred that majority of the officers also were interested to participate in different extension programmes conducted like the farmers. Unlike farmers, the officers are more interested in campaigns and the participation is more in the same. There are so many campaigns organised for officials like pest and disease surveillance and removal campaigns. Next interested methods were group discussions, seminars and demonstrations. Officials used to participate in the group discussions under LEADS itself in panchayat level, block level and at district level along with discussions under other programmes other than LEADS. Seminars and demonstrations also were

not less for officials. From the interview, informally the researcher came to know that the officers have a high interest to conduct extension programme like this frequently. Hence the result can be summarized that officers were more interested in conducting or participating in campaigns, group discussions and seminars.

**Table. 30. Distribution of field assistants based on their extension participation**

**n=33**

Sl. No.	Extension methods	Attended whenever conducted		Occasionally		Never attended	
		F	%	F	%	F	%
1	Campaigns	12	36.37	14	42.42	7	21.21
2	Seminars	30	90.90	3	9.10	0	0
3	Fairs/melas	16	48.48	8	24.24	9	27.28
4	Group discussions	30	90.90	2	6.07	1	3.03
5	Demonstrations	31	93.94	2	6.06	0	0

The data presented in the table 30 showed that the field assistants also had a high interest to participate in different extension programmes as majority of them used to attend the programmes like demonstrations (93.93%), seminars (90.9%), and group discussions (90.9%) whenever conducted. In the case of occasional participation, 42.42% and 24.24% of them attend campaigns and fairs/melas respectively. 27.28%, 21.21% and 3.03% of the field assistants have not participated in fairs/melas, campaigns and group discussions respectively.

When comparing, all the respondents have a high interest to participate in the different extension activities and among them, the most frequently used method are demonstrations and group discussions by the farmers and field assistants. The reason for this might be the regular and scheduled group meetings conducted by the satellite groups in LEADS.

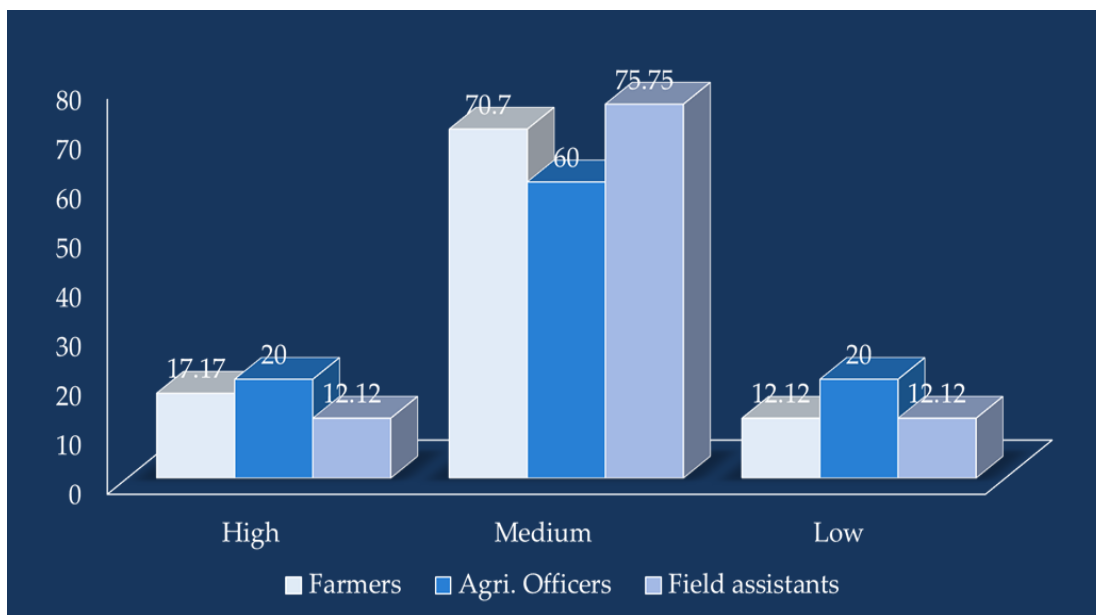


Figure 7. Percentage distribution of respondents based on their extension participation

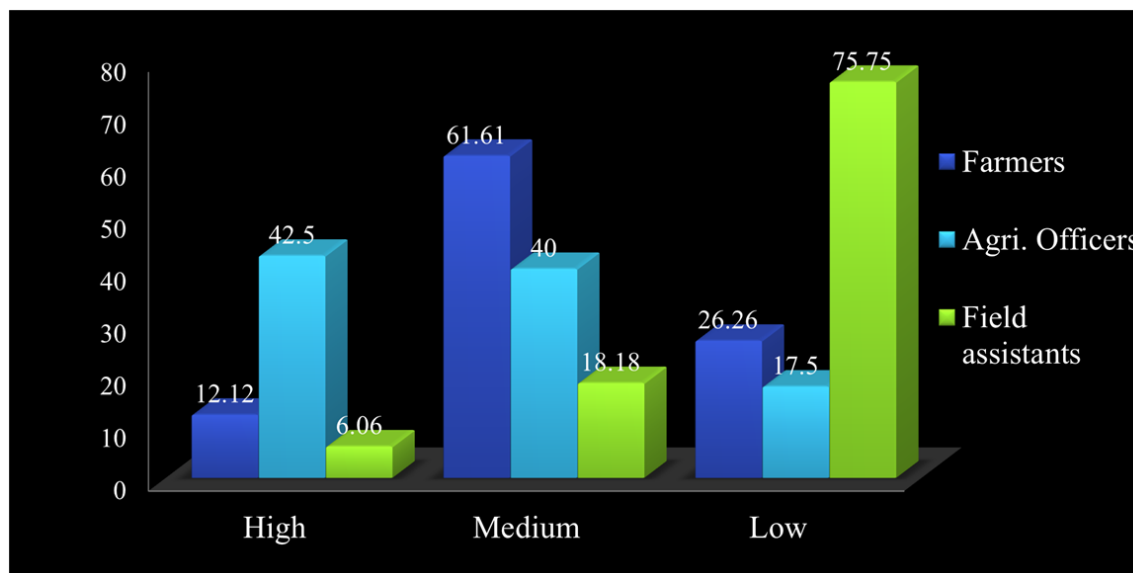


Figure 8. Percentage distribution of the respondents based on the number of trainings attended

#### 4.1.6. Trainings

This variable was defined as the number of trainings undergone by the respondent in various agricultural activities after being a part of LEADS. The procedure followed by Meera (2001) was used to score this. The respondents were asked to mention the number of trainings they have undergone after being a member in LEADS programme. The distribution of respondents based on this variable is given in table 31. The possible score range was 0 to 3. Figure 8 shows the graphical representations of distribution of the respondents based on the number of trainings attended.

**Table. 31. Distribution of the respondents based on the number of trainings attended**

Sl. No.	Category	Farmers (n=99)		Officers (n=40)		Field assistants (n=33)	
		F	%	F	%	F	%
1	Low (< 1.25)	26	26.26	5	17.5	2	6.06
2	Medium (1.25-2.46)	61	61.62	16	40	6	18.19
3	High (< 2.46)	12	12.12	17	42.5	25	75.75
	Mean	1.85		2.2		2.69	
	SD	0.60		0.85		0.58	

From the data presented in table 31 it was understood that majority of the farmers (61.62%) came under the medium category with respect to the number of trainings attended. Majority of the officers (42.5%) fall under the high category and so the field assistants (75.75%), whereas, it is only 12.12% of farmers who have got more number of trainings. 26.26 percentage of farmers have got less number of trainings i.e. one training or no trainings, and this is more than twice the percentage of farmers who fell under the high category.

Majority of the officers and field assistants fell under the high category and so it can be inferred that farmers have got less number of trainings when compared to the officers and field assistants. The number of trainings given for the farmers can be increased, as LEADS is a need oriented programme. Once a person attends a training, his knowledge and skills increases, and helps in creating a favourable attitude.

#### 4.1.7. Farmer's Contact with Officials

This variable refers to the degree to which the respondent is having contact with officers for obtaining information regarding agriculture. The procedure used by Lawrence (2011) is used with some modifications. Figure 9 represents the distribution of farmers based on their contact with officials.

**Table. 32. Distribution of farmers based on their contact with officials**

**n=99**

Sl. No.	Officials	Regular		Occasionally		Never	
		F	%	F	%	F	%
1	Project director	0	0	5	5.05	94	94.95
2	Deputy project director	1	1.01	4	4.04	94	94.95
3	Agricultural officer	97	97.98	2	2.02	0	0
4	Agricultural assistant	86	86.87	13	13.13	0	0
5	Scientists	4	4.04	78	78.79	17	17.17

The data on the farmer's contact with the officials of LEADS project is distributed in the table 32. Inference can be made from the table that, majority of the farmers regularly contact the agricultural officers (97.98%) and the agricultural assistants (86.87%) for getting information on agriculture. And have a rarely contact with the other officials of the project and the scientists.

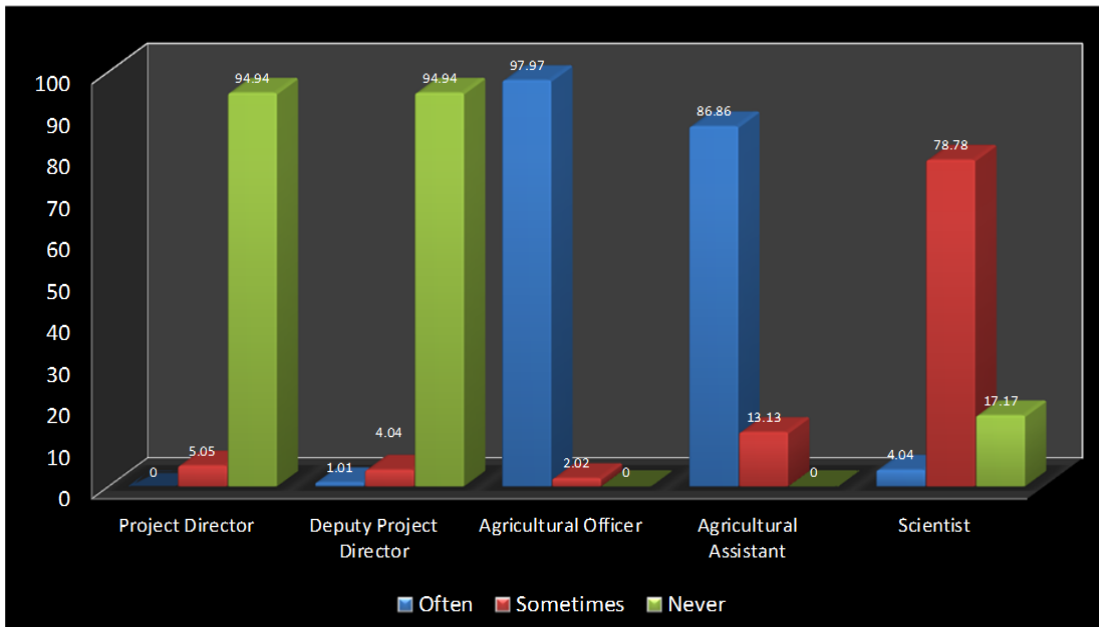


Figure 9. Percentage distribution of farmers based on their contact with officials

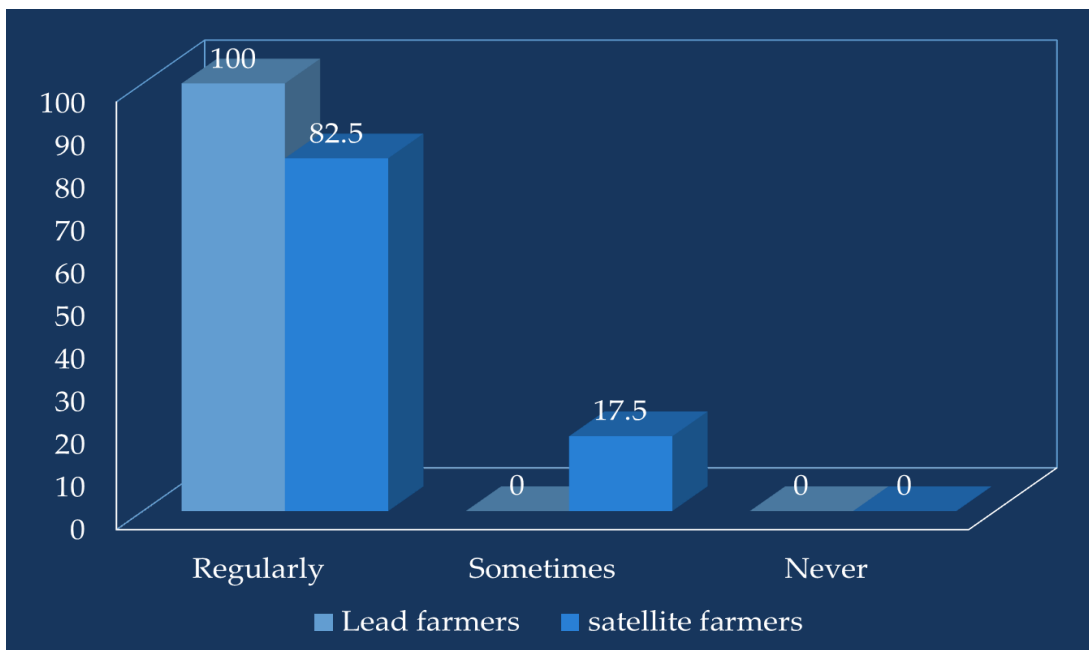


Figure 10. Percentage distribution of Agri. Officers based on their contact with farmers

The farmer's contact with higher officials is found less compared to the Agriculture officer and Agriculture assistants. In the organisational structure of the agriculture department, the programme implementing officer immediate near to the farmers is agricultural officer. The farmers can have direct and frequent contact with agricultural officers and agricultural assistants through Krishibhavans. This may be the reason for the result that a vast majority of the farmers have regular contact with agriculture officers and agriculture assistants. A similar result was reported by Lawrence (2010).

#### 4.1.8. Officer's Contact with Farmers

This variable refers to the degree to which the officers are having contact with the two categories of farmers in LEADS. The procedure used by Lawrence (2011) for obtaining the farmer's contact with officials is used here with some modifications.

**Table. 33. Distribution of officers based on their contact with farmers**

**n=40**

Sl. No.	Categories	Often		Occasionally		Never	
		F	%	F	%	F	%
1	Lead farmers	40	100	0	0	0	0
2	Satellite farmers	33	82.5	7	17.5	0	0

The table 33 shows the distribution of officers based on their contact with farmers. And the inference can be made is cent percentages of them were having often contact with the lead farmers and majority (82 %) of them with the satellite farmers. Figure 10 shows the percentage distribution of Agri. Officers based on their contact with farmers.

#### 4.1.9. Field Assistant's Contact with Farmers

This variable refers to the degree to which the officers are having contact with the two categories of farmers in LEADS. The procedure used by Lawrence



(2011) for obtaining the farmer's contact with officials is used here with some modifications.

**Table. 34. Distribution of field assistants based on their contact with farmers**  
**n=33**

Sl. No.	Categories	Regularly	
		Frequency	Percentage
1.	Lead farmers	33	100
2.	Satellite farmers	33	100

In the table it is clear that cent percentages of the field assistants were having often contact with both the lead and satellite farmers. In LEADS, the field assistants are appointed for the field visits and to identify and solve the field level problems. They have made a good rapport with the farmers and they visit farmers regularly based on the schedules of visit. The regular and scheduled field visits might be the reason for this.

#### **4.1.10. Perceived Effectiveness of Field Visit**

The scoring procedure used by Varghese (2012) was used with slight modifications for measuring the effectiveness of MTA. Here the farmers were asked to indicate their perception about different attributes of effectiveness of MTA in a five point continuum of satisfaction ranging from most satisfied to unsatisfied. The possible score range was 0 to 28 and the obtained score range is between 23 and 28, 23 and 28, 24 and 27 respectively for farmers, officers and field assistants. Figure 11 shows the percentage distribution of respondents based on their perception about the effectiveness of field visit.

**Table. 35. Distribution of the respondents based on their perception about the effectiveness of field visit**

Sl. No.	Category	Farmers (n=99)			Agri. Officers (n=40)			Field Assistants (n=33)		
		Score range	F	%	Score range	F	%	Score range	F	%
1	High	>27.1	3	3.03	>24.9	13	32.5	>26.2	2	6.06
2	Medium	27.1-25.1	71	71.7	24.9-23.0	12	30	26.2-24.9	30	90.9
3	Low	<25.1	25	25.2	<23.0	15	37.5	<24.9	1	3.03
	Mean	26.15			24.025			25.63		
	SD	0.96			0.97			0.65		

The data presented in the table 35 showed the respondent's perception about the effectiveness of field visits by the field assistants. A perusal of the table revealed that majority (71.71%) of the farmers came under the medium category, and it can be inferred that they have perceived the field visits as effective. Only three percentage of them perceived field visit as highly effective. About twenty five percentage of them perceived the field visit as less effective. The unavailability of sufficient and timely information to the farmers from the field assistants can be the reason for this. Many of the farmers gave a low score for the information dissemination among the different dimensions of effectiveness of field visit. The lack of availability of timely information for solving field problems for the farmers may be the reason for this.

In the case of agricultural officers, the distribution pattern for the high, medium and the low category of perceived effectiveness of field visit is similar. In the case of field assistants only 6 percentage perceived field visit as highly effective, and majority of them (90 %) came under the medium category. Majority

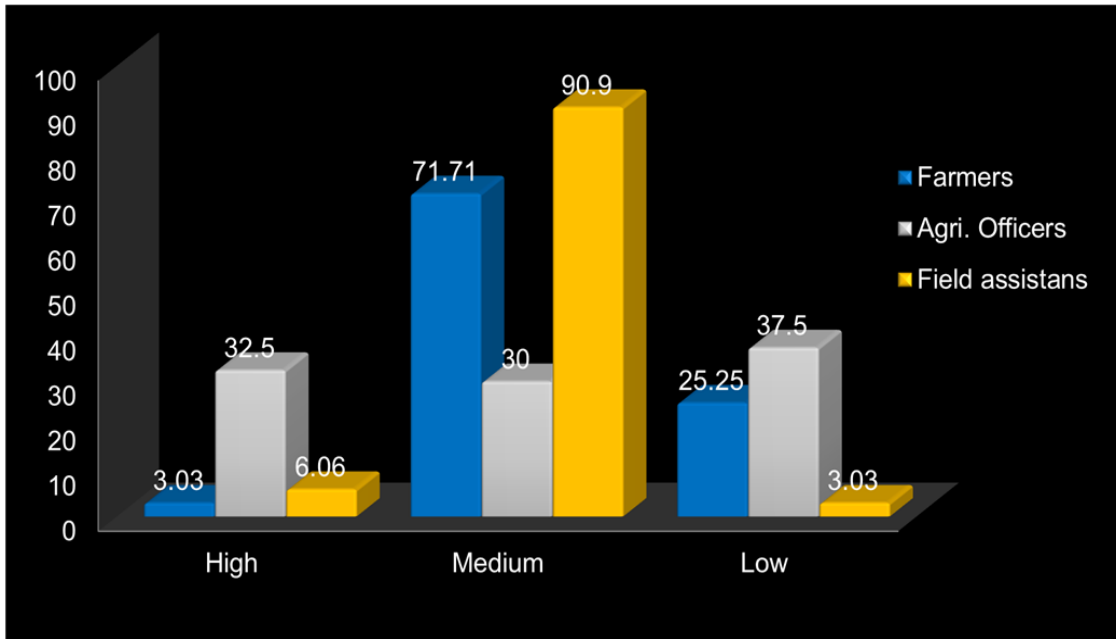


Figure 11. Percentage distribution of respondents based on their perception about the effectiveness of field visit

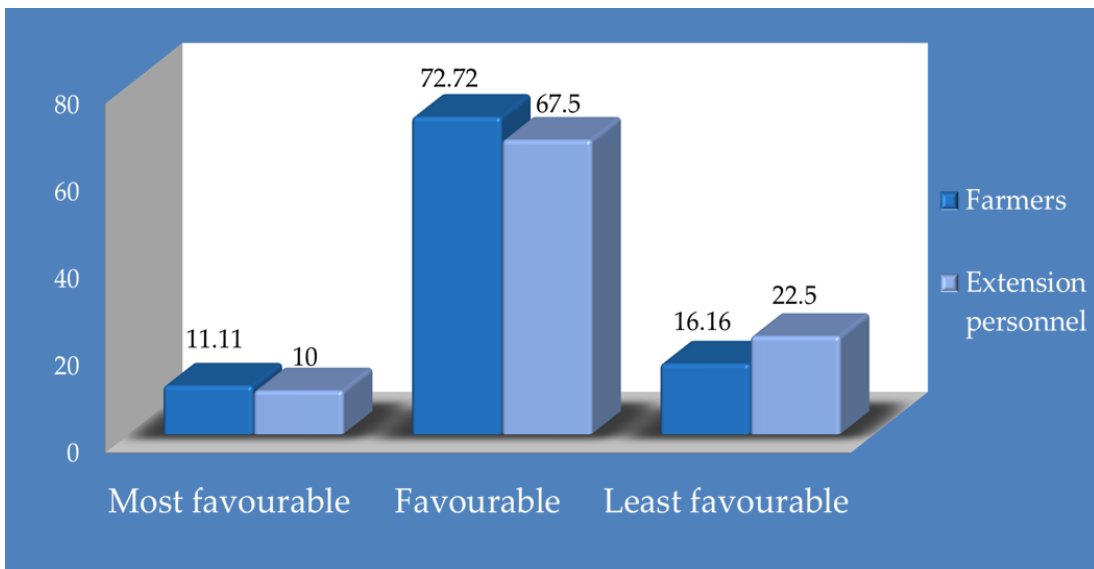


Figure 12. Percentage distribution of farmers and extension personnel based on their attitude towards LEADS

of them were not satisfied with the schedule and duration of field visit as they were assigned to visit a large number of farmers and fields.

#### 4.2. ATTITUDE OF FARMERS TOWARDS LEADS

The term attitude refers to the degree of positive or negative effect towards a psychological object. In the present study the focus was on the attitude towards LEADS and its activities. An arbitrary scale was used to measure the attitude. Modifications were made to suit the study. The possible score range was 0 to 50 and the obtained score range is 38 to 47.

**Table. 36. Distribution of farmers based on their attitude towards LEADS**

Sl. No.	Degree of attitude	Frequency	Percentage
1.	Most Favourable (>44.55)	11	11.12
2.	Favourable (41.11-44.55)	72	72.72
3.	Least Favourable (<41.11)	16	16.16
	Total	99	
	Mean	42.83	
	SD	1.71	

It is evident from the table that majority of the farmers (83.83%) were having a favourable attitude towards LEADS. Among them only 11.11 percentage have a most favourable attitude. Sixteen percentages of the farmers have a least favourable attitude. With the implementation of LEADS the farmers are getting timely advice directly from extension personnel in a regular manner. The interaction among the farmers has also increased.

The extension personnel and other experts are being there close at hand for the farmers in LEADS. Advises on a monthly basis, visits by the extension personnel are being very helpful and support to the farmers. The innovation fund and the revolving funds given are using in a progressive and innovative manner.

Co-operation of the fellow farmers, field assistants and other officers is providing a pleasing virtual working atmosphere both in LEADS and farming. The farmer's interpersonal communication is improving; the extension personnel and the other experts are at a distance of a mobile phone call.

The above mentioned facts might be the reason for a favourable attitude of farmers towards LEADS. Figure 12 shows the graphical representation of distribution of farmers based on their attitude towards LEADS.

#### 4.3. ATTITUDE OF EXTENSION PERSONNEL TOWARDS LEADS

An arbitrary scale was used to measure the attitude similar to the scale used for attitude of farmers towards LEADS. Modifications were made to suit the study. Possible score range was 0 to 50 and the obtained score range is 30 to 46.

**Table. 37. Distribution of extension personnel based on their attitude towards LEADS**

Sl. No.	Degree of attitude	Frequency	Percentage
1.	Most Favourable (>39.69)	4	10
2.	Favourable (32.05-39.69)	27	67.5
3.	Least Favourable (<32.05)	9	22.5
	Total	40	
	Mean	35.87	
	SD	3.81	

A perusal of the table 37 shows that majority of the extension personnel (77 %) have a favourable attitude towards LEADS. Among them, 10% have a most favourable attitude towards LEADS. The functioning of extension personnel in LEADS is in a planned and systematic manner. The routine field visits and MTA also add to the effectiveness of the LEADS programme, thus resulting in a favourable attitude.

The contact of farmers with the agricultural officers and agricultural assistants increased because of the implementation of LEADS. Farmers are regularly and systematically utilising the services providing by the officers.

The introduction of field assistants also made a change in the system extension delivery. This system brought a relief to the officers in their busy working schedules. The scheduled and regular field visits of field assistants are being helpful for the officers also. These can also be the reasons for a favourable attitude of the officers towards LEADS. Figure 12 shows the graphical representation of distribution of extension personals based on their attitude towards LEADS.

#### 4.4. COMMUNICATION EFFECTIVENESS IN LEADS

Communication is considered effective when it succeeds in evoking a desired response from the other person. In LEADS, communication on agricultural aspects is being happened mainly in two ways such as interpersonal communication and through a printed media MTA bulletin. Therefore to measure the communication effectiveness in LEADS, the study considered the farmer's interpersonal communication and the effectiveness of MTA perceived by the farmers. A combination of methodologies followed by Kareem (1984) and Hassan (2008) was selected to measure the communication effectiveness in LEADS.

A combined effectiveness index was calculated which is the communication effectiveness in LEADS including the interpersonal communication and effectiveness of MTA and inferences were drawn.

##### 4.4.1. Interpersonal Communication Behaviour of Farmers (IPCB)

Interpersonal communication was operationally defined in the study, as the behaviour of communication between two or more individuals. In the present study, the measure followed by Kareem (1984) is used with slight modifications to measure the interpersonal communication behaviour of farmers.

Three sub dimensions were identified to measure interpersonal communication behaviour.

- Information receipt (IR)
- Information communication (IC)
- Information feedback (IF)

#### ***4.4.1.1. Information Receipt (IR)***

Information receipt was operationalised as the oftenness of receipt of information from various sources. The farmers were asked to indicate how often they used to get information regarding agriculture from the different interpersonal sources listed for the study. Maximum and minimum possible scores are 0 and 8

**Table. 38. Distribution of farmers based on the information receipt**

**n=99**

Sl. No.	Categories of officials	Always		Sometimes		Never	
		F	%	F	%	F	%
1.	Field assistants	98	98.98	1	1.01	0	0
2.	Agri. Assistants	82	82.82	17	17.17	0	0
3.	Agri. Officers	92	92.92	7	7.07	0	0
4	Scientists	3	3.03	79	79.79	17	17.17

Data on information receipt distribution as illustrated in table 38 showed that the majority of the farmers were always receiving information from field assistants (98.9%), agricultural officers (92.9%) and agricultural assistants (82.8%).

It clearly depicts that the farmers have a frequent communication with all the extension personnel. The farmer-to-farmer and farmer-to-extension personal relationship are being strong by the implementation of LEADS. The interaction with scientists is found less compared to others. This may be because the scientist

form the university does not have direct interaction or communication with all the farmers, but their participation in MTA meetings and field visits is there. Among all the four categories of officials, field assistants have more interaction with farmers as they used to visit the farmers field everyday as per the given schedule.

#### 4.4.1.2. Information Communication (IC)

The information output or communication was operationalised as the oftenness of utilisation of different interpersonal communication methods by the farmers for the dissemination of information regarding agriculture. To measure this, the farmers were asked to indicate how frequently they used the different interpersonal communication methods for the purpose of disseminating information regarding agriculture. The maximum and minimum possible scores were 0 and 10.

**Table. 39. Distribution of farmers based on the extend of use of communication methods by the farmers**

**n=99**

Sl. No.	Communication methods	Always		Sometimes		Never	
		F	%	F	%	F	%
1	Personal talks during casual every day meetings	90	90.90	9	9.09	0	0
2	Personal talks during field visits	81	81.81	18	18.18	0	0
3	Group discussions	93	93.93	6	6.06	0	0
4	Personal talks when farmers come for advice	42	42.42	57	57.57	0	0
5	Personal talks during informal meetings at contact points	14	14	82	82.82	3	3.03

The table 39 shows the method of communication between the farmers. The communication method mainly used by the farmers is the group discussions. Majority of the farmers scored group discussion as their more frequently used



communication method. Next came the casual everyday meetings followed by the personal talks during field visits.

As LEADS is giving importance to the farmer to farmer extension, which is facilitated by group discussions, field visits etc. farmers rated group discussions as the mostly used communication method. Casual everyday meeting is the second most used communication method.

#### **4.4.1.3. Information Feedback (IF)**

The information feedback can be operationalised as the oftenness of receipt of opinion, feeling, doubts, ideas and thoughts from the fellow farmers as a result of information given by them related to agriculture.

To measure this, the farmers were asked to indicate how frequently they used to receive different types of information feedback from the fellow farmers. The possible scores range from 0 to 6.

**Table. 40. Distribution of farmers based on the types of information feedback received**

**n=99**

Sl. No.	Types of information feedback	Always		Sometimes		Never	
		F	%	F	%	F	%
1.	Communication of information related to technical aspects	89	89.89	10	10.10	0	0
2.	Communication of information regarding sanction of loans	17	17.17	80	80.80	2	2.02
3.	Communication of information regarding supply of inputs	81	81.81	18	18.18	0	0

The types of feedback received by the farmers from the fellow farmers were mainly on the information regarding technical aspects and supply of inputs as doubts, suggestions etc. as they are the immediate need of a farmer. Majority of

the farmers are receiving feedback from the fellow farmers on information related to technical aspects (89.89%) followed by information regarding the supply of inputs (81.81%). Information regarding the sanctioning of loans were communicated only occasionally by majority of the farmers (80.8%).

In LEADS the farmer-to-farmer communication is facilitated with group discussions, field visits etc. and thus the interpersonal communication also is improved. Here, the lead and satellite farmers are receiving feedback from the other farmers mainly on information related to technical aspects followed by information regarding supply of inputs. Use of technologies in agriculture is being increasing and this may be the reason for the increased communication among farmers about the technical aspects in agriculture. LEADS is giving importance to the use of technologies by the farmers in agriculture and is giving financial assistance for the purchase of equipment, for farmer innovations etc.

#### **4.4.2. Effectiveness of Monthly Technology Advice**

The scoring procedure used by Varghese (2012) was selected with slight modifications for measuring the effectiveness of MTA. Here the farmers were asked to indicate their perception about different attributes of effectiveness of MTA in a five point continuum of satisfaction ranging from most satisfied to unsatisfied.

The attributes selected were reliability, timeliness, accuracy of information, availability of messages for further reference, completeness of subject matter, readability of the messages, motivation to adopt the messages in farm, and the information provided. The result is presented in the table 41.

**Table. 41. Distribution of farmers based on their perceived effectiveness of MTA**

Sl. No.	Effectiveness of MTA	Score range	Frequency	Percentage
1.	High	Above 31.42	11	11.11
2.	Medium	31.42 – 27.87	75	75.75
3.	Low	Below 27.87	13	13.13
	Total		99	
	Mean		29.64	
	SD		1.77	

Seventy five percentages of farmers perceived MTA as medium effective and eleven percentages of them perceived as highly effective. MTA gives the monthly advises for the cultivation of crops along with the queries and their answers asked by the farmers. The lowest scored attribute of effectiveness is timely availability of information. Even if MTA gives the required accurate information, the farmers will receive MTA bulletin after a month. The suggestion by the farmers and field assistants was that the farmers should receive the solutions for their problem within one or two weeks. This may be the reason for majority of the farmers perceived MTA as only medium effective.

#### **4.4.3. Communication effectiveness in LEADS**

A combined communication effectiveness index was calculated by using the effectiveness of MTA and interpersonal communication behaviour, which can be the communication effectiveness in LEADS.

**Table. 42. Distribution of farmers based on communication effectiveness index in LEADS**

Sl. No.	Category	Score range	Frequency	Percent
1.	High	Above 91.47	18	18.18
2.	Medium	91.47 - 83.08	69	69.69
3.	Low	Below 83.08	12	12.12
	Total		99	
	Mean		87.27	
	SD		4.19	

From the table it was easy to discern that the communication effectiveness is moderate in LEADS as 69.7% of the farmers fall under the medium category of communication effectiveness index. It is appreciable that 18% of them came under the high category. Only 12% of them came under the low category of communication effectiveness.

The interpersonal communication is perceived to be improving as the technologies like mobile phones are provided as a part of the programme to all the stakeholders. The effectiveness of MTA is also being increased after each MTA meetings as more and more suggestions for improvement are put forward by the stakeholders. Graphical representation of distribution of farmers based on communication effectiveness index in LEADS is given in the figure 13.

#### 4.5. EFFICIENCY AND EFFECTIVENESS OF MTA

Efficiency and effectiveness of MTA was found out by calculating a combined efficiency and effectiveness index. Figure 12 shows the percentage distribution of respondents based on their perceived efficiency and effectiveness of MTA.

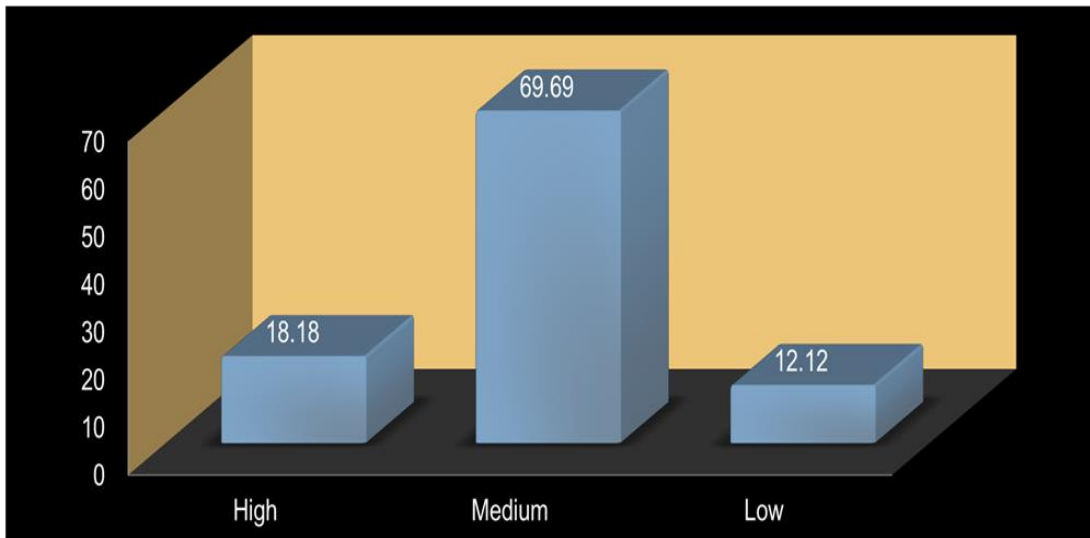


Figure 13. Percentage distribution of farmers based on communication effectiveness index

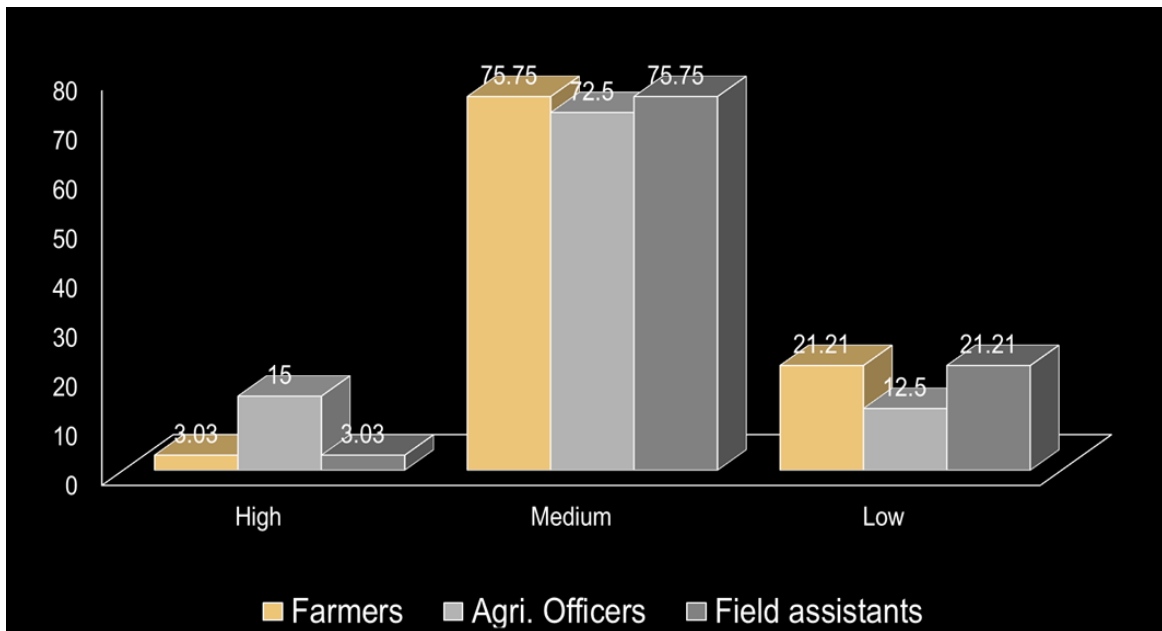


Figure 14. Percentage distribution of respondents based on their perceived efficiency and effectiveness of MTA

**Table 43. Distribution of respondents based on their perceived efficiency and effectiveness of MTA**

Sl. No.	Category	Farmers (n=99)			Agri. Officers (n=40)			Field Assistants (n=33)		
		Score range	F	%	Score range	F	%	Score range	F	%
1.	High	>98.96	3	3.03	>90.26	6	15	>99.01	1	3.03
2.	Medium	98.96-89.96	75	75.75	90.26-77.95	29	72.5	99.01-89.92	25	75.75
3.	Low	<89.96	21	21.21	<77.95	5	12.5	<89.92	7	21.21
	Mean	94.46			84.10			94.46		
	SD	4.49			6.15			4.54		

The table 43 shows the perception of the respondents about the efficiency and effectiveness of MTA. When compared, majority of all the three categories of respondents came under the medium category, 75.75, 75.5, and 75.75 percentage for farmers, agricultural officers and field assistants respectively. This indicates that, majority of the respondents perceived MTA as medium efficient and effective. While comparing the mean values obtained by the three categories of the respondents regarding efficiency and effectiveness index, similar mean values were obtained by the farmers and field assistants and are higher than that of officials. Figure 14 shows the graphical representation of distribution of respondents based on their perceived efficiency and effectiveness of MTA

#### 4.6. RELATIONSHIP BETWEEN THE DEPENDENT AND INDEPENDENT VARIABLES

The profile characteristics of the respondents played a vital role in determining their communication effectiveness and attitude towards LEADS. Correlation analysis was employed to assess the relationship between the respondents profile characteristics and the dependent variables. The correlation

coefficients were worked out and the significance was tested by comparing with the table values. The results are presented below in the table 44.

**Table 44. Correlation between the independent variables and the communication effectiveness in LEADS**

Sl. No.	Independent variables	Communication effectiveness
1.	Age	-0.024
2.	Education	0.008
3.	Mass media exposure	0.121
4.	Innovativeness	0.211*
5.	Extension participation	0.094
6.	Training attended	0.113
7.	Farmer's contact with officials	0.218*
8.	Perceived effectiveness of field visit by farmers	-0.037
* Significant at 0.05% level		

Among the eight independent variables elected for the study, with regard to the communication effectiveness, two variables had significant effect on communication effectiveness, namely, innovativeness and contact with officials.

From the data presented in the table 27, it was found that majority of the farmers (90.9%) have high innovativeness. While correlating it with the communication effectiveness in LEADS, a significant positive correlation at 0.05% level was observed. It depicts the positive effect of innovativeness upon the communication effectiveness. It says that, the farmers who are innovative are effective in communication.

In general, innovative people seek information they share information in a very active way. The facilities for this kind of people are provided In LEADS. For better communication among the stakeholders mobiles phone connections are provided, to share and discuss information and problems MTA and other group

meetings are conducted regularly as per the schedule. So can be said as a platform for the innovative farmers and majority of them are innovative with high communication efficiency.

Second variable which is having a positive significance with the communication effectiveness in LEADS is their contact with officials. It is obvious that the farmers who are having regular contact with the other stakeholders have high communication efficiency. The use of CUG connection, MTA meetings etc. could be the reasons for this. Another inference is that, the officers are close at hand for the farmers and the farmers can reach them in need over mobile phones provided.

**Table 45. Correlation between the independent variables and the farmer's attitude towards LEADS**

Sl. No.	Independent variables	Farmer's attitude
1.	Age	-0.099
2.	Education	-0.061
3.	Mass media exposure	0.067
4.	Innovativeness	0.093
5.	Extension participation	0.057
6.	Training attended	0.570*
7.	Farmer's contact with officials	-0.005
8.	Perceived effectiveness of field visit by farmers	0.046
* Significant at 0.05% level		

Among the eight variables selected for the study, only one variable, namely, the number of trainings attended was having a positive and significant effect on the attitude of farmers towards LEADS.

The number of trainings attended was less in the case of farmers, but those who attended the trainings more were having a positive attitude towards LEADS.



The number of trainings providing can be increased in LEADS and thus the attitude of the farmers towards LEADS also can be improved further. This findings is in agreement with the findings of Dubey *et al.* (2008), Satyanarayan *et al.* (1994) and Prabhukumar and Veerabhadraiah (1998).

**Table 46. Correlation between the independent variables and the officer's attitude towards LEADS**

Sl. No.	Independent variables	Officer's attitude
1	Age	-0.189
2	Education	0.193
3	Mass media exposure	0.333*
4	Innovativeness	0.415**
5	Extension participation	0.101
6	Training attended	0.372*
7	Officer's contact with farmers	-0.038
8	Perceived effectiveness of field visit by Agricultural Officers	0.072
* Significant at 0.05% level		
** Significant at 0.01% level		

Among the eight independent variables selected for the study, three were having a positive and significant relation with the attitude of officers towards LEADS. They were mass media exposure, innovativeness and the number of trainings attended.

It is evident from the correlation analysis that, the officers who had a high mass media exposure also had a positive attitude towards LEADS. The persons who are having regular exposure to mass media will be having more interest to new technologies and programmes. Likewise, the officers who are having regular exposure to mass media were having a positive attitude towards LEADS.

Innovativeness had a positive and significant relation with the attitude of officers towards LEADS at 0.01% level. The innovative officers have a positive attitude towards LEADS.

The number of trainings attended by the officers is the next variable which showed a positive and significant relation with the attitude of farmers towards LEADS.

#### 4.7. PROCEDURAL ANALYSIS OF SELECTION OF LEAD FARMERS AND SATELLITE FARMERS

There are particular criteria for the selection of lead and satellite farmers in LEADS. As they are the key extension personnel in LEADS, the criteria given were,

- They should be always ready to interact with other farmers
- They should be ready to take up innovative activities
- Should be award winners
- And their income should be mainly form agriculture

LEADS in Kollam district is strictly following these criteria for the selection of lead and satellite farmers. The responsibility for the selection of lead and satellite farmers is of the agricultural officers. There introduced a system of rotation of the post of lead farmer among the satellite group farmers once in a year by considering the interest of the group.

#### 4.8. EXISTING SYSTEM OF EXTENSION DELIVERY IN LEADS

In the present study, a comparison between the system of extension delivery in LEADS and the previous system of extension delivery was done. The extension personnel and the officers in charge of district, block and panchayat level were considered. A comparison of the two systems is given in figure 15.

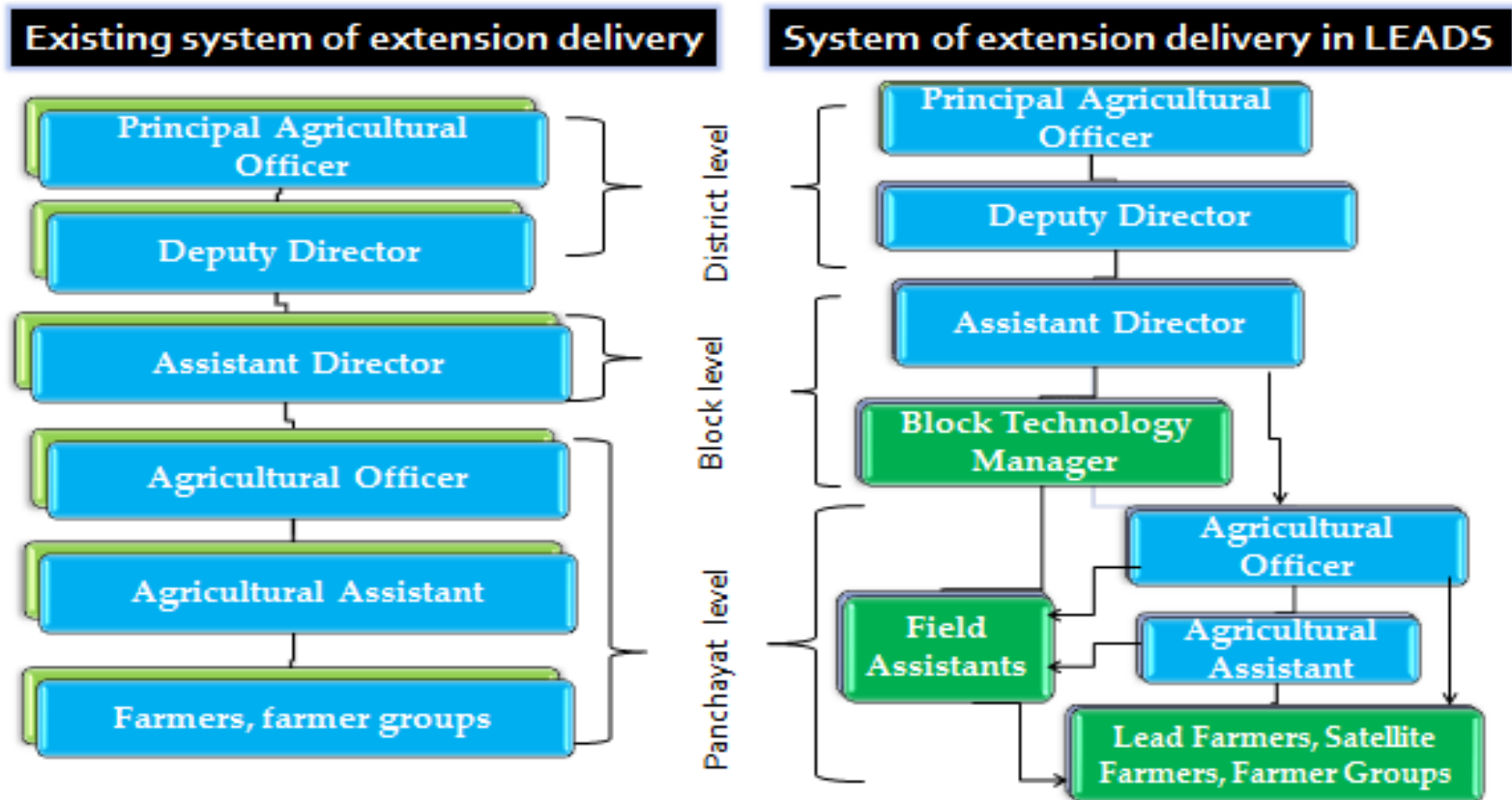


Figure 15. Comparison between the existing system of extension delivery in the state and the system in LEADS

While considering the previous system, in the district level, the Principal Agricultural Officer and the Deputy Director of Agriculture and in the block level assistant director are there. While coming to the panchayat level, there are Agricultural Officers, Agricultural Assistants, farmers and other farmer groups for extension activities.

Where as in the system of LEADS, there are some additions in the block level and panchayat level. Block Technology Managers are there in the block level for the technical assistance in the block level for extension delivery. Agricultural graduates are appointed to this post as it is the minimum qualification for the post. Field assistants are appointed in the panchayat level. VHSE in agriculture is the minimum qualification required for this post. The field assistants are meant for the field visits. There are schedules for the field visits, and according to this schedule they visit the farmer fields and responsibility for conducting regular satellite group meeting is also for the field assistants. Along with the visit they collect the field level problems and give solutions for the problems then and there itself if possible. Otherwise they will collect the symptoms or take photograph and bring it to the MTA meetings. They should keep a field diary in which the time and duration of visit, the purpose of visit, the details of farmers whom they visit etc. are noted. This is the job profile of a field assistant. Many of the Agricultural Officers had a general complaint regarding their work load. Therefore, the introduction of field assistants is benefitting the Agricultural Officers, as the frequency of their field visits can be reduced.

In the farmer level, addition of lead farmers, satellite farmers and satellite groups are there in LEADS. Three lead farmers are selected from each panchayat and there will be a group called as satellite farmer group having ten number of satellite farmers around each lead farmer. Along with lead farmer, a leader for the satellite group is also there, called as satellite farmer group leader. They will act as the key communicators for the fellow farmers and other farmers who are not there in the LEADS group. Thus a farmer to farmer extension has improved after

the introduction of LEADS, and it could be perceived that the introduction of LEADS resulted in creating a positive impact in the system of extension delivery.

#### 4.9. CONSTRAINTS EXPERIENCED BY THE RESPONDENTS IN LEADS

The major constraints experienced by the respondents in LEADS are listed in the table 47 along with their rank. Ten statements were provided for each categories of respondents. The constraints were ranked based on the number of respondents agreed with the constraint statements provided. Among the ten constraints, the constraint number 1 was ranked as first in the case of both the farmers and officers. The constraint number 3 was ranked as third by the farmers whereas it was ranked as first in the case of field assistants. Constraints 5 and 6 ranked as third and first by the officers were ranked as first by the field assistants. The discussions regarding the constraints perceived by the three categories of respondents are given below.

##### 4.9.1. Constraints experienced by the farmers in leads

The first three statements were ranked 1, 2 and 3 in the case of farmers, namely inadequate marketing facility, non-availability of planting material and other inputs on time and non-availability of quality planting materials and other inputs.

Farmers in Kollam district are producing enough agricultural produces, but the marketing facility is inadequate, and the farmers are not receiving a better off from their produce due to this problem. This is being a major constraint among the farmers. For buying planting materials and other inputs, the farmers are relying on the KVKs and Agricultural College, Thiruvananthapuram from the various parts of the districts. As the travelling distance is more, it was noted as a difficulty for the farmers. The quality of the available planting materials and the inputs are found less from the response of the farmers and they ranked it as the third constraint. This was one among the major constraints perceived by the field assistants.

**Table. 47. Constraints perceived by the respondents in LEADS**

Sl. No.	Constraints perceived by the respondents in LEADS	Farmers (n=99, MF=1)		Officers (n=40, MF=2.47)		Field Assistants (n=33, MF=3)		Average of the values obtained by multiplying with MF	Over all Rank
		No.	Rank	No.	Rank	No.	Rank		
1.	Inadequate marketing facility	<b>96</b>	<b>1</b>	<b>40</b>	<b>1</b>	29	7	93.93	<b>1</b>
2.	Non-availability of planting materials and other inputs for the farmers on time	<b>91</b>	<b>2</b>	30	8	27	9	82.03	5
3.	Non-availability of quality planting materials and other inputs	<b>86</b>	<b>3</b>	36	5	<b>33</b>	<b>1</b>	91.30	<b>2</b>
4.	Less number of satellite farmers in a satellite group	37	8	35	6	<b>33</b>	<b>1</b>	74.15	7
5.	All progressive farmers in a Panchayat do not have opportunity to become lead farmer	64	6	<b>38</b>	<b>3</b>	<b>33</b>	<b>1</b>	85.62	<b>3</b>
6.	Irregularity in conducting satellite group meetings	32	9	<b>40</b>	<b>1</b>	<b>33</b>	<b>1</b>	76.6	6
7.	Training programmes for farmers and extension personnel are less in number	14	10	<b>38</b>	<b>3</b>	31	6	66.95	9
8.	Non-availability of technologies or equipment on time	83	4	31	7	14	10	67.19	8
9.	Less number of Field visits by expert teams	58	7	21	10	29	7	65.62	10
10.	Non-availability of the solutions for the problems on time	82	5	29	9	<b>33</b>	<b>1</b>	84.21	<b>4</b>

#### **4.9.2. Constraints experienced by the officers in LEADS**

In the case of officers, two constraints each were ranked as first and second and they are, irregularity in conducting satellite group meetings, inadequate marketing facility for farm produces, all progressive farmers in a Panchayat do not have opportunity to become lead farmer, and training programmes for farmers and extension personnel are less in number.

The satellite group meetings should be conducted at least once in a week so that the farmers can have discussions related to farming more frequently and so that communication effectiveness can be improved as it was found to be moderate. Guidelines regarding changing the lead farmer were not given during the implementation of LEADS, but by the end of the current year this problem has solved effectively by changing lead farmers so as to give opportunity for other progressive farmers also. Regarding the number of training programmes conducted, the officer's opinion was that, the farmers should get enough trainings and awareness on the use of new technologies so as to improve their farming experience.

#### **4.9.3. Constraints experienced by the field assistants in LEADS**

In the case of field assistants, five constraints were perceived as important by all of them and ranked as first. They are, non-availability of quality planting materials and other inputs, less number of satellite farmers in a satellite group, all progressive farmers in a Panchayat do not have opportunity to become lead farmer, irregularity in conducting satellite group meetings, and non-availability of the solutions for the problems on time.

The field assistants have every day field visit and have more exposure to farmer field situations, which may be the reason for they perceived the poor quality of the planting materials and other inputs provided for farmers as more important. The satellite group includes 10 satellite farmers but there are other

interested farmers who are not included in LEADS satellite groups. Increasing the number of satellite farmers can improve the information communication among the farmers. The farmers are providing solution for the field level problems and to their queries through MTA bulletin. But it takes around 3 weeks for preparing MTA bulletin and causes a lag in the distribution of the bulletin. This may be the reason for the field assistants perceived it as a major constraint.

Considering the rank value as per the responses of farmers, officers and field assistants together using multiplication factor, inadequate marketing facility was deemed to be the most important constraint as perceived by all the respondent categories followed by non-availability of quality planting materials and other inputs, all progressive farmers in a Panchayat do not have opportunity to become lead farmer, non-availability of the solutions for the problems on time, non-availability of planting materials and other inputs for the farmers on time, irregularity in conducting satellite group meetings, less number of satellite farmers in a satellite group, non-availability of technologies or equipment on time, training programmes for farmers and extension personnel are less in number and less number of Field visits by expert teams.

#### 4.10. SUGGESTIONS FOR THE FURTHER IMPROVEMENT OF THE PROGRAMME

A number of suggestions were recorded during the data collection as suggested by the respondents for the further improvement of the LEADS programme. The suggestions put forward by the respondents were ranked and presented in the table 48.

Majority of the farmers and officers suggested to facilitate the marketing of farmer's produces. This was ranked first in the case of farmers and officers. In the case of field assistants, suggestions on changing the lead farmers at least once in two years and suggestions on the strict conduct of satellite group meetings were ranked first. The later one was ranked second in the case of officers. In the case of farmers, suggestion on ensuring the timely availability of quality planting



**Table. 48. Suggestions by the respondents**

Sl. No.	Suggestions	Farmers (n=99)			Officers (n=40)			Field assistants (n=33)		
		F	%	R	F	%	R	F	%	R
1.	Facilitate the marketing of farmer's produces	<b>96</b>	<b>96.97</b>	<b>1</b>	<b>40</b>	<b>100</b>	<b>1</b>	28	84.85	7
2.	Ensure the timely availability and quality of seed materials and other inputs	<b>90</b>	<b>90.91</b>	<b>2</b>	30	75	6	27	81.82	8
3.	Changing the lead farmers at least once in two years will create opportunity for other farmers to become the lead farmer	64	64.65	4	37	92.5	4	<b>33</b>	<b>100</b>	<b>1</b>
4.	The lag in the distribution of MTA bulletin should be reduced so as the solutions for the problem will be available for the farmers within one week	<b>85</b>	<b>85.86</b>	<b>3</b>	30	75	6	<b>32</b>	<b>96.97</b>	<b>3</b>
5.	Satellite group meetings should be strictly held once in a week so as to improve the effectiveness of the group activities.	34	34.34	7	<b>39</b>	<b>97.5</b>	<b>2</b>	<b>33</b>	<b>100</b>	<b>1</b>

6.	Increase the number of satellite farmers in a satellite group so as to give opportunity for other farmers to work in LEADS who are interested	39	39.39	6	35	87.5	5	<b>32</b>	<b>96.97</b>	<b>3</b>
7.	Training programmes for farmers and extension personnel should be increased	14	14.14	8	<b>38</b>	<b>95</b>	<b>3</b>	31	93.94	5
8.	Field visits by expert teams should be more frequent so that the farmers can have direct contact with the scientists and other experts	58	58.59	5	21	52.5	8	29	87.88	6

F- Frequency, R- Rank

was ranked second. Suggestion about reducing the lag in the distribution of MTA bulletin and increasing the number of satellite farmers were ranked third in the case of field assistants. The former one was also ranked third in the case of farmers. Suggestions on increasing the number of training programmes was ranked third in the case of officers.

Marketing of farmer's produces can be facilitated by establishing linkage with local markets or the outlets of State Horticulture Mission (SHM), Vegetable and Fruit Promotion Council Keralam (VFPCCK) etc. The timely availability of quality seed materials and other inputs for the farmers should be properly monitored by the agriculture officer and the agriculture assistants in the panchayat level. Changing the lead farmers at least once in two years will create opportunity for other farmers to become the lead farmer. This will facilitate the improvement of the leadership quality and management ability of each progressive farmers in a panchayat. Strict conduct of satellite group meetings once in a week can improve the effectiveness of the group activities. The lag in the distribution of MTA bulletin should be reduced so as the solutions for the problem will be available for the farmers within one week. Along with this, ensure the participation of line departments in LEADS. Because the farmers need information regarding other related aspects such as animal husbandry, marketing facilities etc.

Increasing the number of satellite farmers in a satellite group can give opportunity for other farmers to work in LEADS who are interested. This will facilitate the transfer of technology to all farmers in that area. It should be ensured that the information given are reaching to each and every farmers of the panchayat or a Krishibhavan area. A regular monitoring should be there in the Krishibhavan level in this regard. Training programmes for farmers and extension personnel should be increased as it determines the attitude of the stakeholders towards the programme.

# *SUMMARY*

## 5. SUMMARY

This chapter provides comprehensive information on the systematised efforts undertaken for the empirical study with a focus on the emerged findings. The details of the research carried out are presented briefly in the succeeding pages.

LEADS is a frontier extension System revolving around lead farmer-satellite farmer, which is organized on an Agro ecological zone- based strategy, a farmer centered, a farmer led, a farmer innovation approach, an advisory system and a participatory farmer group approach.

The study was aimed at the identification and implementation of interventions for the improvement of farmer-to-farmer extension system in LEADS by analysing the present extension system, and to develop a sustainable extension system. The results of the research study, it is hoped, will be of immense use in making the innovations which can improve the present extension system followed by LEADS.

Kollam District was selected for the study as it was one among the two districts where the LEADS pilot project was first implemented and also this project is ahead in the formal arrangements in this regard.

The salient findings of the study are presented below.

### 5.1. PROFILE CHARACTERISTICS OF THE RESPONDENTS.

1. Majority of the farmers (68 %) belonged to old age category, about 90 % of officers belonged to middle age category and majority (84.84%) of the field assistants belonged to younger age category. Only one percentage of farmers fall under younger age category and it shows a lesser participation of youngsters in farming.

2. Majority of the farmers (65 %) have gone for high school education, thirty two percentages of them was having college level education. Ninety seven percentages of officers are professionals and cent per cent of the field assistants have college level education.
3. Mass media exposure was highest for newspaper and mobile phones, wherein 98% farmers used these information sources regularly for getting information on agriculture. 87% of the respondents viewed TV regularly. Majority of the farmers (94%) never relied on information kiosk for information on agriculture followed by radio (25%) and bulletin (8.08%). Mass media exposure was highest for mobile phones (95%) followed by newspaper (90%), television (80%), bulletin (67.5%) and magazine (57.5%) in the case of agricultural officers. Majority of the field assistants have regular exposure to mass media like television, newspaper and mobiles with 97, 94, and 90 percentages respectively. Exposure to mobile phones is high in the case of all categories of respondents and that can be because the LEADS is providing CUG (Closed User Group) mobile connection for all the lead and satellite farmers and extension personnel for better communication.
4. Majority (67.44 %) of the respondents falls under the innovative category and none of them belonged to laggard category. It is appreciable in relation to an innovative programme like LEADS. Among them, vast majority of the farmers (90.9%) belonged to the innovative category, followed by a least percentage (9.09%) in fabian category. Majority of the field assistants (54 %) were also found to be innovative, whereas majority of the officers were coming under the fabian category. Majority of the field assistants (54 %) were also found to be innovative, whereas majority of the officers (70%) came under the fabian category.
5. Majority of the farmers in LEADS used to participate in group discussions (91.92%), seminars (86.86%), melas (83.84%) and demonstrations (63.64%)

whenever conducted. Majority of the officers used to participate in campaigns (72.5%), group discussions, (67.5%) seminars (65%) and demonstrations (65%) whenever conducted. The field assistants also had a high interest to participate in different extension programmes as majority of them used to attend the programmes like demonstrations (93.93%), seminars (90.9%), and group discussions (90.9%) whenever conducted.

6. Majority of the farmers came under the medium category with respect to the number of trainings attended. Majority of the officers and field assistants fall under the high category and so it is easy to infer that farmers have got less number of trainings when compared to the officers and field assistants.
7. Majority of the farmers regularly contact the agricultural officers (97.98%) and the agricultural assistants (86.87%) for getting information on agriculture. And have a rarely contact with the other officials of the project and the scientists. Cent percentage of the agricultural officers was having often contact with the lead farmers and majority (82 %) of them with the satellite farmers. Cent percentage of the field assistants were having often contact with both the lead and satellite farmers.
8. With regard to the perception about field visit, majority of the farmers (71.71%) came under the medium category. Only three percentages of them perceived field visit as highly effective. About twenty five percentages of them perceived the field visit as less effective. In the case of agricultural officers, the distribution pattern for the high, medium and the low category of perceived effectiveness of field visit is similar. Similar percentages of them have perceived the field visit as highly, moderately and less effective, i.e., 32, 35 and 37 percentages respectively. In the case of field assistants only 6 percentages were perceived field visit as highly effective, and majority of them (90 %) came under the medium category.

## 5.2. ATTITUDE OF FARMERS TOWARDS LEADS

Majority of the farmers (83.83%) were having a favourable attitude towards LEADS. Among them only 11.11 percentage have a most favourable attitude. Sixteen percentages of the farmers have a least favourable attitude.

## 5.3. ATTITUDE OF OFFICIALS TOWARDS LEADS

Majority of the extension personnel (77 %) have a favourable attitude towards LEADS. Among them, 10% have a most favourable attitude towards LEADS.

## 5.4. COMMUNICATION EFFECTIVENESS IN LEADS

The communication effectiveness is moderate in LEADS as 69.7% of the farmers fall under the medium category of communication effectiveness index. It is appreciable that 18% of them came under the high category. Only 12% of them came under the low category of communication effectiveness.

## 5.5. EFFICIENCY AND EFFECTIVENESS OF MTA

Majority of all the three categories of respondents came under the medium category, 75.75, 75.5, 75.75 percentages respectively for farmers, agricultural officers and field assistants with regard to the perceived efficiency and effectiveness of MTA.

## 5.6. RELATIONSHIP BETWEEN THE DEPENDENT AND INDEPENDENT VARIABLES

Majority of the farmers (90.9%) have high innovativeness. While correlating it with the communication effectiveness in LEADS, a significant positive correlation at 0.05% level can be observed. It depicts the positive effect of innovativeness upon the communication effectiveness.



The variable 'farmer's contact with officials' is having a positive significance with the communication effectiveness in LEADS. It is obvious that the farmers who are having regular contact with the other stakeholders have high communication efficiency.

The number of trainings attended is having a positive and significant effect on the attitude of farmers towards LEADS at 0.05% level.

The officers who had a high mass media exposure also had a positive attitude towards LEADS.

Innovativeness had a positive and significant relation with the attitude of officers towards LEADS at 0.01% level. The innovative officers have a positive attitude towards LEADS.

#### 5.7. PROCEDURAL ANALYSIS OF SELECTION OF LEAD FARMERS AND SATELLITE FARMERS

LEADS in Kollam district is strictly following the below mentioned criteria for the selection of lead and satellite farmers.

- They should be always ready to interact with other farmers
- They should be ready to take up innovative activities
- Should be award winners
- And their income should be mainly form agriculture

#### 5.8. EXISTING SYSTEM OF EXTENSION DELIVERY IN LEADS

A comparison between the system of extension delivery in LEADS and the previous system of extension delivery was done in the study. While considering the previous system, in the district level, the Principal Agricultural Officer and the Deputy Director of Agriculture and in the block level assistant director are there.

While coming to the panchayat level, there are Agricultural Officers, Agricultural Assistants, farmers and other farmer groups for extension activities.

Where as in the present system or in the system of LEADS, there are some additions in the block level and panchayat level. Block Technology Managers are there in the block level for the technical assistance in the block level for extension delivery. Agricultural graduates are appointed to this post as it is the minimum qualification for the post. Field assistants are appointed in the panchayat level. VHSE in agriculture is the minimum qualification required for this post. The field assistants are meant for the field visits. There are schedules for the field visits, and according to this schedule they visit the farmer fields and responsibility for conducting regular satellite group meeting is also for the field assistants.

#### 5.9. GAPS AND CONSTRAINTS EXPERIENCED BY THE RESPONDENTS

The major gaps and constraints experienced by the farmers were, Inadequate marketing facility, unavailability of quality planting material and other inputs on time and unavailability of technologies or equipment on time etc. Less number of satellite farmers in a group, unavailability of opportunity for other progressive farmers to become the lead farmer etc. were the constraints perceived as important by all of the respondents. Other constraints experienced by the field assistants and officers were irregularity in conducting satellite group meetings, unavailability of the solutions for the problems on time, training programmes for farmers and extension personnel are less in number etc.

#### 5.10. SUGGESTIONS FOR THE FURTHER IMPROVEMENT OF THE PROGRAMME

A bunch of suggestions were put forward as a result of the study for the further improvement of the programme. Among them, the major suggestions were to facilitate the marketing of farmer's produces by establishing linkage with local markets or the outlets of State Horticulture Mission (SHM), Vegetable and Fruit Promotion Council Keralam (VFPCCK) etc. Ensure the timely availability and

quality of seed materials and other inputs for the farmers. This should be properly monitored by the agriculture officer and the agriculture assistants in the panchayat level. Changing the lead farmers at least once in two years will create opportunity for other farmers to become the lead farmer. This will facilitate the improvement of the leadership quality and management ability of each progressive farmers in a panchayat. Increase the number of satellite farmers in a satellite group so as to give opportunity for other farmers to work in LEADS who are interested. This will facilitate the transfer of technology to all farmers in that area.

Satellite group meetings should be strictly held once in a week so as to improve the effectiveness of the group activities. The lag in the distribution of MTA bulletin should be reduced so as the solutions for the problem will be available for the farmers within one week. Training programmes for farmers and extension personnel should be increased as it determines the attitude of the stakeholders towards the programme.

It should be ensured that the information given are reaching to each and every farmers of the panchayat or a Krishibhavan area. A regular monitoring should be there in the Krishibhavan level in this regard. Ensure the participation of line departments in LEADS. Because the farmers need information regarding other related aspects such as animal husbandry, marketing facilities etc. Field visits by expert teams should be more frequent so that the farmers can have direct contact with the scientists and other experts by which the gap between the research and farmers can be reduced.

#### 5.11. SUGGESTIONS FOR THE FUTURE RESEARCH

- Similar studies can be carried out in other districts of Kerala where LEADS has implemented.
- Critical analysis of the programme can be done including further more aspects rather than the farmer-to-farmer extension as in the study.

- The successes and difficulties encountered by various stakeholders in the process of implementation have to be explored for the purpose of developing process plans to carry forward the successes and to overcome the difficulties in future.

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**Farmer-To-Farmer Extension in Kerala Agriculture: A  
Critical Analysis of LEADS (Lead farmer centred  
Extension Advisory and Delivery Service) Project in  
Kollam District**

*by*

**PRIYA PETER**

**(2012-11-169)**

**ABSTRACT**

**of the thesis Submitted in partial fulfilment of the  
requirement for the degree of**

**MASTER OF SCIENCE IN AGRICULTURE**

**Faculty of Agriculture  
Kerala Agricultural University**



**DEPARTMENT OF AGRICULTURAL EXTENSION  
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VELLAYANI, THIRUVANANTHAPURAM- 695 522  
KERALA, INDIA**

**2014**

## ABSTRACT

The study entitled “Farmer to farmer extension in Kerala agriculture: a critical analysis of LEADS (Lead Farmer Centered Extension Advisory and Delivery Service) project in Kollam district” is mainly dealing with the analysis of farmer centric extension. The respondents selected for the study were 99 farmers, 40 agricultural officers, and 33 field assistants from Kollam district. The main objective of the study was to analyse the farmer-to-farmer extension in the LEADS pilot project in Kollam district and to suggest measures to improve the functioning of the project.

It was found that communication effectiveness in LEADS was moderate. Among eight independent variables selected for the study, two variables namely ‘innovativeness’ and ‘farmer’s contact with officials’ were positively and significantly affecting the communication effectiveness. In the case of attitude of respondents towards LEADS, 72 per cent of farmers were having a favourable attitude; however it was only 52.5 per cent for officials. Correlation studies revealed that among eight independent variables, ‘number of trainings attended’ was positively and significantly affecting the attitude of farmers towards LEADS.

All agricultural officers and the field assistants used to participate in MTA (Monthly Technology Advice) meetings regularly. Considering the perception of the respondents about MTA, only 3 per cent of the farmers and officers perceived MTA as highly efficient and effective, whereas 75 per cent of both the categories perceived it as moderately efficient and effective. However, 15 per cent of the field assistants perceived MTA as highly efficient and effective. The desk study revealed that the procedure for the selection of lead farmers and satellite farmers were strictly being followed in the district. Comparison between the previous system of extension delivery and the system in LEADS has also been done in the study.

The major constraints experienced by the farmers were the unavailability of seeds and other inputs on time for farming activities in the nearest areas and the problems related to the marketing of their produces. Among a number of

suggestions put forward after the analysis of the LEADS programme, the major suggestions were to increase the number of agricultural outlets for improving the marketing facility and also creating facilities for the provision of timely input supply for agriculture.

## APENDIX I



### KERALA AGRICULTURAL UNIVERSITY

College of Agriculture, Vellayani, Thiruvananthapuram 695 522  
DEPARTMENT OF AGRICULTURAL EXTENSION

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**Dr. R Prakash**  
**Professor and Chairman**

Date: 23/01/2014

Sir,

**Greetings**

Sir/Madam,

**Miss. Priya Peter (Ad. No. 2012-11-169)**, one of the M.Sc. Scholar, Department of Agricultural Extension, College of Agriculture, Vellayani is undertaking a research study entitled “Farmer-to-Farmer Extension in Kerala Agriculture: A Critical Analysis of LEADS (Lead Farmer Centred Extension Advisory and Delivery Service)” as part of her PG research work.

After extensive review of the available literature and discussion with extension scientists and other experts, variables supposed to have close association with the study have been identified.

Considering your vast experience and professional expertise you have been selected as a judge to rate the relevancy of the variables. I request you to kindly spare some of your valuable time for examining the questionnaire critically. Kindly return the list duly filled at the earliest.

Thanking you.

Yours sincerely

(R Prakash)

## OPERATIONAL DEFINITION AND OBJECTIVES OF THE STUDY

LEADS is a regular field visit oriented, farmer to farmer extension system aiming at the objectives to utilize the potential of lead farmers for transfer of technology, to solve the field level problems through regular visit by technical officers, to introduce a regular and systematic field visit oriented extension system in the state, technology refinement through FLD's (Front Line Demonstration) and OFT's (On Farm Trials) and to develop a farm network of extension teams, lead farmers and farmer groups at district level.

The study will be aiming at the identification and implementation of interventions for the improvement of farmer to farmer extension system in LEADS by analysing the present extension system, and also to develop a sustainable extension system. The results of proposed research study, it is hoped, will be of immense use in making the innovations which can improve the present extension system followed by LEADS.

The respondents will be the Satellite Farmers, Lead Farmers, Agriculture Assistants and Agriculture Officers.

**Please rate the independent variables to be included in the study based on its relevancy from the most relevant to the least relevant by ticking against each variable under the respective rating scale.**

Sl. No.	Independent variables	Most Relevant	Relevant	Least Relevant
1	<b>Age-</b> number of calendar years completed by the respondent at the time of investigation			
2	<b>Education-</b> It refers to highest academic qualification possessed by the respondents			
3	<b>Annual income-</b> the income received by the respondent annually			
4	<b>Mass Media Exposure-</b> It is the extent of exposure of respondent to mass media such as Radio, Television, Newspapers, Farm magazines on agriculture and others.			
5	<b>Social Participation-</b> refers to the extent to which the respondent is socially active			
6	<b>Cosmo politeness-</b> It was operationalized as the frequency, purpose and duration of visit to nearby towns and villages by the respondent.			



7	<b>Experience-</b> It refers to the total years of experience in LEADS			
8	<b>Extension Agency Contact-</b> It is the degree to which the respondents meet the extension agents for agricultural information.			
9	<b>Area Under Crops-</b> It was operationalized as the number of standard acres possessed by the farmer at the time of enquiry which is under cultivation.			
10	<b>Scientific Orientation-</b> It is defined as the degree to which a farmer was oriented towards the use of scientific methods in farming.			
11	<b>Innovativeness-</b> It is the degree to which an individual is relatively earlier in adopting new ideas.			
12	<b>Extension participation-</b> the extent of farmers participation in extension process			
13	<b>Level of Aspiration-</b> It is operationalised as the future level of achievements in his job which he is expecting based on the knowledge about the level of past performance.			
14	<b>Mass media participation-</b> degree of exposure to different mass media sources by the extension professionals to get the information.			
15	<b>Timeliness of field visit-</b> it defines as the extension workers are visiting the fields on time			
16	<b>Accuracy of MTA -</b> any inaccurate information leads to faulty decisions, so accurate information is needed for successful decision making			
17	<b>Relevance of MTA-</b> any information disseminated should be related to the information needs of a specific recipient for a situation			
18	<b>Usefulness of MTA-</b> the information disseminated should be easy to use by the famers			
19	<b>Credibility of MTA-</b> can be defined as the quality of being believable or trustworthy			
20	<b>Information Seeking Behaviour-</b> It is referred to as the sources or channels from which the respondents get technological information regarding agriculture and the related areas.			
21	<b>Information Storing Behaviour-</b> The information storage refers to how the respondent received the message and how he stored the content in his local language			
22	<b>Information Dissemination Behaviour-</b> refers to information exchange the respondent has within his community and among other communities and how			

	he shared the message among the fellow members and or groups			
23	<b>Knowledge Requirement-</b> It meant the need of knowledge on improved practices and other information as realised by the respondent.			
24	<b>Training-</b> It refers to the training received by the respondents on LEADS			
25	<b>Management orientation-</b> degree to which a farmer is oriented towards scientific management comparing of planning, production and marketing function of his farm experience.			
26	<b>Information source utilization-</b> the sources through which information is obtained by an individual. The different sources are mass media, interpersonal local sources interpersonal cosmopolite sources.			
27	<b>Participation in decision making-</b> the degree to which members of a social system are involved in the decision making process or the farmer's participation in the meetings held in the nodal agencies for decision making process.			
28	<b>Regularity in field visits-</b> describes whether the extension workers are visiting the farmer fields regularly			
29	<b>Inter personal communication behaviour-</b> can be defined as the behaviour of communication between two or more individuals			
30	<b>Economic motivation-</b> defined as giving financial support so that the individuals involved will get motivated			

**FARMER TO FARMER EXTENSION IN KERALA AGRICULTURE: A  
CRITICAL ANALYSIS OF LEADS (LEAD FARMER CENTERED EXTENSION  
ADVISORY AND DELIVERY SERVICE) IN KOLLAM DISTRICT**

**കർഷകർക്കുള്ള ചോദ്യാവലി**

1. പേര് വിലാസം
2. ലീഡ് ഫാർമർ/ സാറ്റലൈറ്റ് ഫാർമർ
3. അഗ്രോ ഇക്കോളജിക്കൽ സോൺ
4. അഗ്രോ ഇക്കോളജിക്കൽ യൂണിറ്റ്
5. വയസ്സ്
6. വിദ്യാഭ്യാസം
7. ലീഡ്സിൽ വർക്ക് ചെയ്യാൻ തുടങ്ങിയിട്ട് എത്ര കാലം ആയി?
8. താഴെ പറയുന്ന ബഹുജന മാധ്യമങ്ങളുമായുള്ള സമ്പർക്കം

ഇനം	കൃത്യത		
	കൃത്യമായി	വല്ലപ്പോഴും	ഒരിക്കലും ഇല്ല
ടെലിവിഷൻ			
റേഡിയോ			
പത്രം			
മാസികകൾ			
മറ്റു പ്രസിദ്ധീകരണങ്ങൾ			
കിയോസ്കുകൾ			
മൊബയിൽ			
മറ്റുള്ളവ			

9. കൃഷിയുമായി ബന്ധപ്പെട്ട പുതിയ സാങ്കേതിക വിദ്യകളും മറ്റും സാധാരണ താങ്കൾ എപ്പോഴാണ് സ്വീകരിക്കാറുള്ളത്?

അതിനെക്കുറിച്ച് അറിഞ്ഞ ഉടനെ	
മറ്റു കർഷകർ അവരുടെ കൃഷിയിടങ്ങളിൽ വിജയകരമായി ചെയ്യുന്നത് ക തിനു ശേഷം	
കുറച്ചു നാൾ കാത്തിരുന്നു നിരീക്ഷിച്ചതിനു ശേഷം വേ സമയം എടുത്തു ചെയ്യും	
നൂതന വിദ്യകൾ സ്വീകരിക്കുന്നതിനോട് താൽപര്യം ഇല്ല	

10. താഴെ പറയുന്ന വിജ്ഞാന വ്യാപന പരിപാടികളിൽ താങ്കൾ പങ്കെടുക്കാറുണ്ടോ?

വിജ്ഞാന വ്യാപന പരിപാടികളിൽ	നടക്കുമ്പോഴെല്ലാം പങ്കെടുക്കാറു	വല്ലപ്പോഴും	ഒരിക്കലും പങ്കെടുത്തിട്ടില്ല
ക്യാമ്പനുകൾ			
സെമിനാർ			
മേളകൾ			
ഗ്രൂപ്പ് ചർച്ചകൾ			
ഡെമോൺസ്ട്രേഷനുകൾ			
മറ്റുള്ളവ			

11. ഫീൽഡ് അസിസ്റ്റന്റുമാരും മറ്റു അധികാരികളും കൃഷിയിടം കൃത്യമായി സന്ദർശിക്കാറുണ്ടോ?

12. മൻലി ടെക്നോളജി അഡ്വൈസ് ന്റെ കൃത്യമായതും ഉപയോഗപ്രദവും ആണോ?

Sl: No	MTA വിവരങ്ങൾ	കൃത്യത			ഉപയോഗപ്രദം		
		വളരെ കൃത്യമായതാണ്	കൃത്യമായത്	കൃത്യമായതല്ല	വളരെ ഉപയോഗപ്രദം ആണ്	ഉപയോഗപ്രദം ആണ്	ഉപയോഗപ്രദം അല്ല
1							
2							
3							
4							

13. MTA കൂടുതൽ മെച്ചപ്പെടുത്താൻ താങ്കളുടെ നിർദ്ദേശങ്ങൾ

14. പങ്കെടുത്ത പരിശീലന പരിപാടികൾ

നമ്പർ	പരിശീലന പരിപാടിയുടെ പേര്	സ്ഥലം / സ്ഥാപനം	തീയതി, പരിശീലന ദൈർഘ്യം	സംഘാടകർ	അഭിപ്രായം		
					നല്ലത്	തുപ്തികരം	മോശം
1							
2							
3							
4							

15. താഴെ പറയുന്ന അധികാരികളുമായി താങ്കൾക്ക് കൃത്യമായ ബന്ധമുണ്ടോ?

അധികാരികൾ	മിക്കവാറും ബന്ധപ്പെടാറുണ്ട്	വല്ലപ്പോഴും	ഒരിക്കലും ഇല്ല
പ്രോഗ്രാം ഡയറക്ടർ			
ഡെപ്യൂട്ടി പ്രോഗ്രാം ഡയറക്ടർ			
അഗ്രികൾച്ചറൽ ഓഫീസർ			
അഗ്രികൾച്ചറൽ അസിസ്റ്റന്റ്സ്			
മറ്റു ശാസ്ത്രജ്ഞർ			

16. താങ്കൾക്ക് സാധാരണയായി താഴെ പറയുന്ന അധികാരികളിൽ ആരിൽ നിന്നൊക്കെയാണ് വിവരങ്ങൾ കൂടുതലായും ലഭിക്കാറുള്ളത്?

അധികാരികൾ	എപ്പോഴും	വല്ലപ്പോഴും	ഒരിക്കലും ഇല്ല
ഫീൽഡ് അസിസ്റ്റന്റ്			
അഗ്രികൾച്ചറൽ അസിസ്റ്റന്റ്			
അഗ്രികൾച്ചറൽ ഓഫീസർ			
ശാസ്ത്രജ്ഞർ			

17. ലഭിക്കുന്ന വിവരങ്ങൾ താങ്കൾ എങ്ങനെ മറ്റു കർഷകരിലേക്ക് എത്തിക്കുന്നു?

	എപ്പോഴും	വല്ലപ്പോഴും	ഒരിക്കലും ഇല്ല
എല്ലാ ദിവസവും നടക്കുന്ന മീറ്റിംഗ് കളിൽ ഉള്ള വ്യക്തിപരമായ സംസാരങ്ങളിലൂടെ			
കൃഷിയിട സന്ദർശനങ്ങൾകിടയിലെ വ്യക്തിപരമായ സംസാരങ്ങളിലൂടെ			
ഗ്രൂപ്പ് ചർച്ചകളിലൂടെ			
കർഷകർ ഉപദേശത്തിനായി വരുമ്പോൾ			
അനൗപചാരികമായ കൂടിവരവുകളിൽ ഉള്ള വ്യക്തിപരമായ സംസാരങ്ങളിലൂടെ			

18. വിവരങ്ങൾ കൈമാറിയതിനു ശേഷം താങ്കൾക്ക് മറ്റു കർഷകരിൽ നിന്നു ലഭിക്കുന്ന പ്രതികരണം എന്തിനെക്കുറിച്ച് ആണ്?

	എപ്പോഴും	വല്ലപ്പോഴും	ഒരിക്കലും ഇല്ല
സാങ്കേതികപരമായ വിവരങ്ങളേപ്പറ്റി			
ലോണുകളേപ്പറ്റി			
കൃഷിക്ക് ആവശ്യമായ സാധനങ്ങളുടെ ലഭ്യതയേപ്പറ്റി			
മറ്റു പല വിവരങ്ങൾ			

19. പ്രതിമാസ സാങ്കേതിക ഉപദേശത്തിന്റെ പ്രയോജനക്ഷമത

	അധികം തുപ്തിക രം	കൂടുതൽ തുപ്തിക രം	തുപ്തിക രം	തുപ്തിക രം എന്ന പറയാം	തുപ്തികര മല്ല
വീശ്വാസ്യത					
സമയ നിഷ്ഠ					
കൃത്യത					
വിവരങ്ങളുടെ ലഭ്യത					
വിവരങ്ങളുടെ പൂർണ്ണത					
സന്ദേശങ്ങളുടെ വായനാക്ഷമത					
ലഭിക്കുന്ന സന്ദേശങ്ങൾ കൃഷിയിടങ്ങളിൽ പ്രാവർത്തികമാ ക്കാൻ പ്രേരിപ്പിക്കുന്നു					
സന്ദേശങ്ങളുടെ ഉള്ളടക്കം					

20. പ്രതിമാസ സാങ്കേതിക ഉപദേശത്തിന്റെ കാര്യക്ഷമത

നമ്പർ	പ്രസ്താവനകൾ	✓
1.	അഗ്രോ ഇകോളജി അടിസ്ഥാനത്തിൽ കൃത്യ സമയത്ത് ലഭിക്കുന്നു	
2.	സീസൺ അനുസരിച്ച് ഓരോ മാസവും വിവരങ്ങൾ കൃത്യമായി തരുന്നു	
3.	ഒരു കർഷകന് ആവശ്യമായ എല്ലാ വിവരങ്ങളും ഉൾക്കൊള്ളിക്കുന്നു	
4.	കർഷകരുടെ എല്ലാ ചോദ്യങ്ങളും സംശയങ്ങളും അവയ്ക്കുള്ള മറുപടികളും ഉൾക്കൊള്ളിക്കുന്നു	
5.	കാർഷിക ഉൽപ്പന്നങ്ങളുടെ വിപണനത്തിനു സഹായിക്കുന്നു	

21. ലീഡ്സ് നെ കൂടുതൽ മെച്ചപ്പെടുത്താൻ താങ്കളുടെ നിർദ്ദേശങ്ങൾ

SI No	നിർദ്ദേശങ്ങൾ	മറ്റു വിവരങ്ങൾ
1		
2		
3		
4		
5		



22. കർഷകരുടെ ലീഡ്സിനോടുള്ള മനോഭാവം

പ്രസ്താവനകൾ	ശക്തമായി യോജിക്കുന്നു	യോജിക്കുന്നു	അഭിപ്രായം ഇല്ല	വിയോജിക്കുന്നു	ശക്തമായി വിയോജിക്കുന്നു
കർഷകർക്ക് പ്രാധാന്യം കൊടുക്കുന്ന പദ്ധതി ആയതിനാൽ ലീഡ്സ് ഇഷ്യമാണ്					
ഫീൽഡ് അസിസ്റ്റന്റുമാരുടെ കൃത്യമായ കൃഷിയിട സന്ദർശനം ഉള്ളതു കൊണ്ട് ലീഡ്സ് ഇഷ്യമാണ്					
ഞങ്ങൾക്ക് ആവശ്യമെങ്കിൽ ലീഡ്സിൽ ഉൾപ്പെടുന്ന അധികാരികൾ കൃഷിയിടം സന്ദർശിക്കാറുണ്ട്. അതുകൊണ്ട് ലീഡ്സ് ഇഷ്യമാണ്					
കൃഷിയുമായി ബന്ധപ്പെട്ട വിവരങ്ങൾ ലീഡ് കർഷകരിലൂടെ കൃത്യമായി ലഭിക്കുന്നത് കൊണ്ട് ലീഡ്സ് ഇഷ്യമാണ്					
മന്ത്രി ടെക്നോളജി അഡ്വൈസ് കൃത്യമായി ലഭിക്കുന്നതുകൊണ്ട് ലീഡ്സ് ഇഷ്യമാണ്					
കൃഷിയുമായി ബന്ധപ്പെട്ട മൊബൈൽ എസ് എം എസ് കൃത്യമായി ലഭിക്കുന്നതുകൊണ്ട് ലീഡ്സ് ഇഷ്യമാണ്					
ഞങ്ങൾ കൃഷി ചെയ്യുന്ന എല്ലാ പ്രധാന വിളകൾക്കും പ്രാധാന്യം കൊടുക്കുന്നതുകൊണ്ട് ലീഡ്സ് ഇഷ്യമാണ്					
യോഗ്യരായ പല കർഷകർക്കും ലീഡ് ഫാർമർ ആകാൻ അവസരം ലഭിക്കാത്തതുകൊണ്ട് ലീഡ്സ് ഇഷ്യമല്ല					
എനിക്ക് ലീഡ്സ് ഇഷ്യമല്ല കാരണം, സാറ്റലൈറ്റ് ഫാർമർ ഗ്രൂപ്പിൽ വെറും 10 പേർക്ക് മാത്രമേ അംഗങ്ങൾ ആകാൻ അവസരം ഉള്ളൂ					
രാഷ്ട്രീയ ഇടപെടലുകൾ ഉള്ളതുകൊണ്ട് ലീഡ്സ് ഇഷ്യമല്ല					

### APENDIX III

## FARMER TO FARMER EXTENSION IN KERALA AGRICULTURE: A CRITICAL ANALYSIS OF LEADS (LEAD FARMER CENTERED EXTENSION ADVISORY AND DELIVERY SERVICE) IN KOLLAM DISTRICT

### INTERVIEW SCHEDULE FOR OFFICIALS

1. Name and address:
2. Designation:
3. Agro Ecological Zone:
4. Agro Ecological Unit:
5. Age:
6. Education:
7. Experience in LEADS (in months):
8. Mass media exposure: please put a tick mark against the appropriate.

ITEMS	Regularity		
	Regularly (2)	Occasionally (1)	Never (0)
Television			
Radio			
Newspaper			
Magazine			
Bulletin			
Information KIOSKS			
Mobiles,			
others			

9. Innovativeness

<b>Response</b>	
As soon as it brought to my knowledge	
After I had seen other farmers tried successfully in farm	
Prefer to wait and take my own time	
I am not interested in adopting improved practices	

10. Extension participation

<b>Extension activity</b>	<b>attended whenever conducted (2)</b>	<b>Sometimes (1)</b>	<b>never attended (0)</b>
Campaign			
Seminar			
Fair/melas			
Group discussion			
Demonstration			
Any other			

11. Are you visiting the farmers regularly as per the schedule? Yes/ No  
If Not, then why?

12. Perceived accuracy and usefulness of MTA

Sl: No.	Message details	Perceived accuracy			Perceived usefulness		
		Very accurate	Accurate	Not accurate	Very useful	useful	Not useful
1							
2							
3							
4							
5							

13. Your suggestions to improve MTA further

14. Training undergone

Sl. No.	Name of the training	Organisations/ Venue	Duration and Date	Organised by	Remarks		
					Good	Fair	poor
1							
2							
3							
4							

15. Contact with farmers

Category of farmers	Frequency of contact		
	Often (2)	Sometimes (1)	Never (0)
Lead farmers			
Satellite farmers			

16. Effectiveness of MTA

Items	Most satisfied	More satisfied	Satisfied	Least satisfied	Unsatisfied
Reliability					
Timeliness					
Accuracy of information					
Availability of messages for further reference					
Completeness of subjective matter					
Readability of the message					
Motivate to adopt the messages in farm					
Information provided					

17. Efficiency of MTA

<b>S. No.</b>	<b>Particulars</b>	<b>✓ Tick</b>
1.	Gives agro ecological unit wise and timely information	
2.	Gives season wise information or monthly agricultural practices	
3.	Has all information the farmer wants	
4.	Includes all the queries asked by the farmers and its solutions	
5.	Supports marketing	

18. Constraints perceived by the respondents in LEADS

<b>Sl. No.</b>	<b>Constraints perceived by the respondents in LEADS</b>	<b>✓ (Tick)</b>
1.	Inadequate marketing facility	
2.	Unavailability of planting materials and other inputs for the farmers on time	
3.	Unavailability of quality planting materials and other inputs	
4.	Less number of satellite farmers in a satellite group	
5.	All progressive farmers in a Panchayat do not have opportunity to become lead farmer	
6.	Irregularity in conducting satellite group meetings	
7.	Training programmes for farmers and extension personnel are less in number	
8.	Unavailability of technologies or equipment on time	
9.	Field visits by expert teams should be more frequent	
10.	Unavailability of the solutions for the problems on time	

19. What is your suggestion to improve LEADS project on the basis of your experience?

Sl No	Suggestions	Remarks
1		
2		
3		
4		
5		

20. Attitude towards LEADS

No	Statements	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	I like LEADS because all the line departments are involved in it.					
2	I like LEADS because of the use of IT initiatives (mobile SMS services)					
3	I like LEADS because we can reach the farmers through LEADS effectively					
4	I like LEADS because of it Agro Ecological Zone wise strategy					
5	I like LEADS because enough funds are providing for innovative activities					
6	I like LEADS because MTA is preparing by the involvement of all concerned departments and scientists					
7	I do not like LEADS because of high political intervention					
8	I do not like LEADS because many eligible farmers are not getting chance to become Lead farmer					
9	I like LEADS because many innovative technologies are evolving through LEADS					
10	I like LEADS because it reported an increased crop yield in the districts where LEADS has been implemented					



## APENDIX IV

### FARMER TO FARMER EXTENSION IN KERALA AGRICULTURE: A CRITICAL ANALYSIS OF LEADS (LEAD FARMER CENTERED EXTENSION ADVISORY AND DELIVERY SERVICE) IN KOLLAM DISTRICT

#### INTERVIEW SCHEDULE FOR FIELD ASSISTANTS

1. Name and address:
2. Agro Ecological Zone:
3. Agro Ecological Unit:
4. Age:
5. Education:
6. Experience in LEADS (in months):
7. Mass media exposure

ITEMS	Regularity		
	Regularly (2)	Occasionally (1)	Never (0)
Television			
Radio			
Newspaper			
Magazine			
Bulletin			
Information KIOSKS			
Mobiles, others			

8. Innovativeness  
When would you like to adopt an innovative or improved practice in agriculture?

Response	
As soon as it brought to my knowledge	
After I had seen other farmers tried successfully in farm	
Prefer to wait and take my own time	
I am not interested in adopting improved practices	



13. Your suggestions to improve MTA further

14. Trainings undergone

Sl:No	Name of the training	Organizations/Venue	Duration and Date	organized by	Remarks		
					Good	Fair	poor
1							
2							
3							
4							
5							
6							
7							

15. Contact with farmers

Category of farmers	Frequency of contact		
	Often (2)	Sometimes (1)	Never (0)
Lead farmers			
Satellite farmers			

16. Effectiveness index of MTA

Items	Most satisfied	More satisfied	Satisfied	Least satisfied	Unsatisfied
Reliability					
Timeliness					
Accuracy of information					

Availability of messages for further reference					
Completeness of subjective matter					
Readability of the message					
Motivate to adopt the messages in farm					
Information provided					

17. Efficiency of MTA. Please give your response by giving a tick

S. No	Particulars	✓ Tick
1.	Gives agro ecological unit wise and timely information	
2.	Gives season wise information or monthly agricultural practices	
3.	Has all information the farmer wants	
4.	Includes all the queries asked by the farmers and its solutions	
5.	Supports marketing	

18. Effectiveness of field visit

Items	Most satisfied	More satisfied	Satisfied	Least satisfied	Unsatisfied
Schedule of visit					
Timeliness of visit					
Regularity of visit					
Duration of visit					
Purpose of visit					
Knowledge					

dissemination during the visit					
Maintaining work diary					

19. Constraints perceived by the respondents in LEADS

Sl. No.	Constraints perceived by the respondents in LEADS	✓ (Tick)
1.	Inadequate marketing facility	
2.	Unavailability of planting materials and other inputs for the farmers on time	
3.	Unavailability of quality planting materials and other inputs	
4.	Less number of satellite farmers in a satellite group	
5.	All progressive farmers in a Panchayat do not have opportunity to become lead farmer	
6.	Irregularity in conducting satellite group meetings	
7.	Training programmes for farmers and extension personnel are less in number	
8.	Unavailability of technologies or equipment on time	
9.	Field visits by expert teams should be more frequent	
10.	Unavailability of the solutions for the problems on time	

20. What is your suggestion to improve LEADS project on the basis of your experience?

Sl No	Suggestions	Remarks
1		
2		
3		
4		
5		