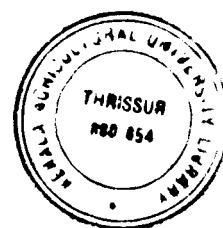


ROLE AND ACCOUNTABILITY OF WOMEN IN THE FARMING SYSTEMS OF MADAKKATHARA PANCHAYATH IN THRISSUR DISTRICT

**By
BINDU, V. S.**



THESIS

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

Master of Science in Agriculture (AGRICULTURAL EXTENSION)

**Faculty of Agriculture
Kerala Agricultural University**

**Department of Agricultural Extension
COLLEGE OF HORTICULTURE
VELLANIKKARA, THRISSUR-680 656**

KERALA, INDIA

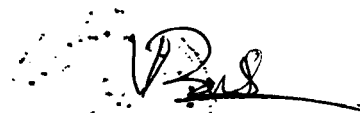
2001

DECLARATION

I hereby declare that this thesis entitled **“Role and accountability of women in the farming systems of Madakkathara panchayath in Thrissur 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, fellowship or other similar title, of any other University or Society.

Vellanikkara

27-11-2000



BINDU, V.S.

CERTIFICATE

Certified that this thesis, entitled “**Role and accountability of women in the farming systems of Madakkathara panchayath in Thrissur district**” is a record of research work done independently by **Miss.Bindu, V.S.**, under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma, fellowship or associateship to her.



Dr.P.S.Geethakutty
Chairperson, Advisory Committee
Associate Professor
Department of Agricultural Extension
College of Horticulture
Vellanikkara

Vellanikkara

27-11-2000

CERTIFICATE

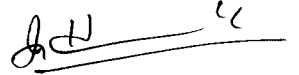
We, the undersigned members of the Advisory Committee of **Miss. Bindu, V.S.**, a candidate for the degree of **Master of Science in Agriculture** with major in **Agricultural Extension**, agree that the thesis entitled **“Role and accountability of women in the farming systems of Madakkathara panchayath in Thrissur district”** may be submitted by Miss. Bindu, V.S., in partial fulfilment of the requirements for the degree.



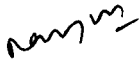
Dr.P.S. Geethakutty
(Chairperson, Advisory Committee)
Associate Professor
Department of Agricultural Extension
College of Horticulture
Vellanikkara



Dr. R.M. Prasad
(Member, Advisory Committee)
Professor & Head i/c
Communication Centre
Mannuthy



Dr. Jessy Thomas
(Member, Advisory Committee)
Assistant Professor
Department of Agricultural Economics
College of Horticulture
Vellanikkara



Dr. Ranjan S. Karippai
(Member, Advisory Committee)
Associate Professor & Head (on deputation),
Department of Agricultural Extension
College of Horticulture
Vellanikkara



EXTERNAL EXAMINER
(**J. VASANTHAKUMAR**)

ACKNOWLEDGEMENT

With Immense pleasure I am to place on record my thanks to **Dr.P.S.Geethakutty**, Associate Professor, Department of Agricultural Extension, chairperson of my advisory committee for having sincerely and dedicatedly chiselled this work with her rich resources.

I am also to express my deep sense of gratitude to **Dr.R.M.Prasad**, Associate Professor and Head i/c Communication Centre, Mannuthy, for his valuable suggestions and criticisms given during the preparation of the thesis.

Dr.Ranjan S. Karippai, Registrar, Sri Sankaracharya University of Sanskrit, Kalady; **Dr.Jessy Thomas**, Assistant Professor, Department of Agricultural Economics, the members of my advisory committee for their constructive and pragmatic suggestions rendered throughout the different stages of this work.

I am deeply obliged to **Smt.Gracemma Kurien**, Associate Professor, Department of Agricultural Statistics and **Dr.F.M.H. Kaleel**, Associate Professor and Head Department of Agricultural Extension for have always been a source of unfailing held during the conduct of my postgraduate study.

I thank profusely the staff and farmers of **Madakkathara Panchayath** for their co-operation and wholehearted help during the conduct of my field survey in relation to this study.

I deeply indebted to **Beena** and **Divya** for the help and support extended to me during the period of my stay in this campus.

Words cannot express the true friendship affection and moral support experienced from, Subhashini and Harish which helped me to overcome many tedious circumstances.

I also express my thanks to all my friends, Sulaja, Anju, Sherin, Veena, Parvathy, Shiji, Smitha, Jayasree, Sindhu, Boban and Jinesh.

A word of thanks to my class mates Anjana and Radhakrishnan for their sincere help during the conduct of my study.

I dedicate this success to my Achan, Amma, Beena chechi, Kochukunju, Ajichetan and Perappan.

My sincere thanks to Mr.Joy, J.M.J. Computers, Thottapady for the neat typing of the manuscript with care.

Finally I thank Kerala Agricultural University for awarding me Junior Fellowship.

Above all I bow my head before almighty whose blessings are always with me.

Bindu, V.S.

Affectionately dedicated
to my
Achan & Amma

CONTENTS

Chapter	Title	Page No.
1	INTRODUCTION	1-3
2	THEORETICAL ORIENTATION	4-20
3	METHODOLOGY	21-35
4	RESULTS	35-76
5	DISCUSSION	77-91
6	SUMMARY	92-98
	REFERENCES	i-ix
	APPENDICES	
	ABSTRACT	

LIST OF TABLES

Table No.	Title	Page No.
1	Major farming systems of Madakkathara panchayath	22
2	Sample units of the study	25
3	Profile of farming system Type-I	37
4	Profile of farming system Type-II	38
5	Profile of farming system Type-III	39
6	Profile of farming system Type-IV	41
7	Profile of farming system Type-V	42
8	Profile of farming system general	43
9	Extent of involvement of men and women in farming system Type-I (homestead with crop components alone)	46
10	Categorisation of farm activities based on extent of involvement of men and women in farming system Type-I (homestead with crop components)	47
11	Extent of involvement of men and women in farming system Type –II (homestead with crop components and extended garden)	48
12	Categorisation of farm activities based on extent of involvement of men and women in farming system Type-II (homestead with crop components and extended garden)	49
13	Extent of involvement of men and women in farming system Type-III (homestead with crop components and livestock components)	51
14	Categorisation of farm activities based on extent of involvement of men and women in farming system Type-III (homestead with crop components and livestock components)	52

15	Extent of involvement of men and women in farming system Type-IV (homestead with crop components, extended garden and livestock components)	53
16	Categorisation of farm activities based on extent of involvement of men and women in farming system Type-IV (homestead with crop components, extended garden and livestock components)	54
17	Extent of involvement of men and women in farming system Type-V agribusiness component (nursery)	55
18	Categorisation of farm activities based on extent of involvement of men and women in farming system Type-V agribusiness component (nursery)	56
19	Extent of involvement of men and women in farming system Type V (rabbitry and piggery)	56
20	Categorisation of farm activities based on extent of involvement of men and women in farming system Type V (rabbitry and piggery)	57
21	Extent of involvement of men and women in different farming systems of the study area	58
22	Categorisation of farm activities based on extent of involvement of men and women in different types of farming systems of the study area	59
23	Comparison of farm activities of farming systems based on extent of involvement of men and women in different farming systems	60
24	Roles of farm family as perceived by the agricultural development functionaries	61
25	Role of men and women in farming systems as perceived by agricultural development functionaries	62
26	Categorisation of farm activities based on the role perception by agricultural development functionaries	63
27	Comparison of actual roles of the farmers and perceived role performance (by development functionaries)	64

28	Annual women labour utilisation in different farming systems	65
29	Farm income contribution of family women labour in different farming systems	66
30	Time utilization pattern of farm women in different farming systems	67
31	Problems and constraints of farm participation as perceived by farm women	68
32	Problems and constraints of farm women as perceived by development functionaries (scores)	69
33	Problems and constraints of farm women as perceived by development functionaries (comparison)	70
34	Content and beneficiary analysis of development programmes in Madakkathara panchayath (1997-2000)	71-75

LIST OF ILLUSTRATIONS

Fig.No	Title
1	Conceptual model of the study
2	Map of Thrissur district showing the study area
3	Farm income contribution of women family labour in different farming systems
4	Time utilization pattern of farm women in different farming systems
5	Empirical model of the study

Introduction

INTRODUCTION

History reveals that it was a woman who first domesticated plants and thereby initiated the art and science of farming. Actually this was initiated as an extension of the first division of labour of its kind among the primitive society where men went out for hunting and women stayed back and nurtured young ones. Women started gathering seeds of plants and growing those of their interest in surrounding land either for food, fibre, or fuel. Eventhough through the various periods of evolution of human society, women – the first farmers, were outthrown from their power and ownership of cultivation and land, they are still a major force in farming. In fact it is the major productive area of work wherein majority of the women in Kerala find their employment. The Census of India, 1991 indicates that 36 per cent of the total female work participation of Kerala is in the agricultural sector. The rural women participate in a broad range of agricultural activities such as production, processing, preservation and utilization of food. In addition to their responsibilities of home management and nurturing, the women also contribute to the family income through their services in the farm. The poorer the farm household, the greater is its contribution to the family's food security. In spite of all these, the society is yet to recognise the multiple roles and contributions of women to the family and the society at large.

Whether women are also considered as farmers with respect to technology, skill and development programmes is a question now often being raised in various platforms. The non recognition and unaccounted state of the roles and contributions of women towards family income is another serious issue which should be together with the issue of 'invisibility' of women in agriculture.

The gender roles of any society at any time are largely decided and driven by the socio-economic and cultural factors which may change over time and place (together with the socio-economic changes in the society). The changes occurred consequent to the modernisation of agriculture have lead to many issues

of gender impact in the State. The major shift that has occurred from the subsistent agriculture to commercial agriculture, introduction of exotic technologies, mechanization, and related other interventions have brought considerable changes in the gender role of men and women in the farming sector. It was therefore thought necessary to conduct a microlevel study, in order to analyse and gain a real picture of the farming system of which the men and women form the integral part. Hence the present study on role and accountability of women in farming systems of Madakkathara panchayath in Thrissur district was taken up.

The following were the specific objectives of the study.

1. To identify the practices and enterprises which are women friendly and women operated in the farming system.
2. To analyse the role performance and extent of contribution of women labour to the income generation of farm units.
3. To analyse the problems and constraints faced by the farm women in different farming systems.
4. To study the differential perception among political functionaries, agricultural scientists, and development personnel about the role performance and problems of women in the farming systems.

1.1 Scope of the study

Gender issues assume greater importance in the scenario of Indian agriculture, keeping in view that large diversity exists in the status of women in crop and animal husbandry. These are inturn influenced by those formulating the package of technologies, services and public policies of rural areas who tend mostly to neglect the productive role of women. This is true in the case of Kerala also since women's work do not get reflected in the planning statistics and majority of the policies and programmes. This invisibility of women's contribution and gender insensitivity among the different functionaries of development have to be reoriented. This is possible only by developing gender sensitivity among those

concerned and responsible for the development of the sector. The realistic perception about roles, problems, constraints and needs on the part of the personnel who are directly involved in planned development can result in bringing desired gender friendliness in the sector. Thus it is anticipated that the findings of the present study can contribute towards realistic understanding of the field situation, recognition of the problems and to bring about needed policy and strategic measures.

1.2 Limitations of the study

As the study was taken up as a student research project, the study had the inherent limitations of resources such as time, finance and experience. As the study was designed as an exploratory one, the study area and sample size also were limited. However, the study was so designed and conducted that these limitations will not affect the quality of results.

1.3 Presentation of the report

The presentation of the remaining chapters of this report and the content of each chapter are as follows.

In chapter II, definition of the concepts, review of past studies and the theoretical orientation of the study are presented.

Chapter III deals with the methodology adopted for the study in which details regarding sampling, data collection, statistical tools used etc. are given.

In chapter IV, the results of the study are presented.

Chapter V presents the interpretations of the findings and the discussion thereon.

Chapter VI gives a summary of the entire study highlighting salient findings.

Theoretical Orientation

THEORETICAL ORIENTATION

This chapter is aimed at developing a research background on women's involvement in farming based on review of past research studies related to role and accountability of women in farming systems. The review of existing literature is of paramount importance to any research endeavour, which helps to acquire broad and general background in the given field of discipline. An attempt is made here to present the available literature, directly or indirectly related to the topic. They are given under the following main heads.

- 2.1 Concept of role and participation
- 2.2 Farming systems
- 2.3 Contribution, recognition and accountability
- 2.4 Gender Orientation in development programmes
- 2.5 Time utilization pattern of farm women
- 2.6 Problems and constraints experienced by farm women
- 2.7 Conceptual model of the study

2.1 Concept of role and participation of women in farming system

The terms 'role' and 'participation' are often confused, which made it necessary to make the terms clear.

Newcomb (1951) opined that the ways of behaviour that are expected of any individual who occupies a certain position constitute the role associated with that position.

Role is a set of socially expected and approved behavioural pattern consisting of both duties and privileges associated with a particular position in a group (Ogburn and Niskoff, 1964).

In the opinion of Mitra (1974) the term participation means co-operating, taking part in something, the mere presence, even the silent presence of an individual or representative of an organisation at different levels. According to him, participation can be direct, or indirect, passive/active and it is one of the important techniques to achieve the desired goal. Participation is a commitment on the part of the individual towards all forms of action through which he can take part or play a role in the operation without being conscious of any socio-economic barriers, to achieve certain common goals in a group situation.

According to Bhaduri and Rahman (1982) participation is a social activity shared by individuals and groups who live in definite economic and social relation to each other in a society.

Mies (1988) stated that women not only continued to be the main labour force in agricultural production, but any modernization of agriculture did displace men to a greater extent than women.

Mishra and Ashwathi (1988) had observed difference in wage rates of female labour in all groups based on farm size. On an average, family labour spent more than 50 per cent of their time in subsidiary activities.

Reddy and Prasad (1988) reported that in Meghalaya, women carried out various operations from farm jobs to marketing of produce. They monopolised transplanting, weeding, harvesting, storage of seed and grain, harvesting vegetables and home gardening. They also played supportive role in land preparation, seed sowing, plant protection and threshing. In the work related to animal husbandry the operations like feeding and watering of animals, cleaning of sheds, fodder collection and cooking grain for cattle were performed exclusively by women.

Sharma (1988) observed that only 50 per cent women were found involved in agriculture and allied operations. The involvement of women in

manual work was to the extent of 72 per cent whereas their involvement in decision making was only 28 per cent.

Bajaj and Shaekh (1989) in their study on role of women in decision making regarding agriculture revealed that nearly 75 per cent of the farm women were engaged in farm activities such as application of fertilizer, planting of seedlings while only 25 per cent of farm women supervised the work on the farm.

Shylaja (1990) conducted a study to identify the roles performed by farm women in mixed farming in Kerala. It was observed that the roles performed by large and small farm women were in post-harvest operations, processing, supervision of hired labour and preparing and carrying food for hired labourers to the field. The roles performed by marginal farm women were harvesting, weeding, thinning and gap filling, transplanting, application of manures and fertilizers.

Goyal and Mahepal (1991) conducted a study regarding the agricultural economy of Meerut region and found that womens role was quite low as compared to their male counterparts because women were mainly engaged in house hold activities and they worked in the farms only during the busy farm season.

Tantray (1991) in his study in Kashmir has concluded that women participated in all farm activities except ploughing and marketing of produce.

Andrews (1994) has reported that majority of the physical operations in mulberry are carried out by men farmers.

Mohamed (1994) reported that Nigerian women play an important role in production and processing activities. Alone or with the help of men, they work in the farms. Livestock were invariably tended by the women. They also transport produce to market.

Maundy (1994) observed that women performed the tasks like breaking the clods of earth, preparation of land, carrying manure, sowing seeds, pulling out weeds, attending to hoeing, harvesting crops and drying hay.

Nagpoli (1995) reported that women worked with the male members of the household in various sowing operations. They carry inputs such as seeds, manures and fertilizers in the fields, made farm yard manure and packed fruits and vegetables.

Revu *et al.* (1995) opined that in operations like preparatory cultivation, purchase of seed, purchase of insecticide and frequency of spray, women showed a passive pattern of responsibility, and male dominated in these aspects.

Kumar (1996) in the case of marginal homesteads of Thrissur district reported that apart from the crop combination, most families have a variety of other enterprises of which dairying occupied the first place followed by poultry. He has identified that participation of family women in the marginal homesteads as solely as well as jointly.

Premavathi (1997) reported that involvement of women was found to be high in drying/cleaning, storing, wage distribution, purchase of household articles, poultry, dairy, food management and house keeping.

In general, role is regarded as a set of behavioural pattern expected of from an individual occupying a given social position or status in a social group. The term participation refers to partaking in the role performance.

Participation of farm women in farming system in the present study is operationally defined as their extent of involvement in various activities related to agriculture and allied activities.

2.2 Farming systems

Farming system is defined as the entire complex of development, management and allocation of resources as well as decisions and activities which within an operational farm or combination of units results in agricultural production, processing and marketing and consumption of produce (KAU, 1985).

Homestead farming system

Homestead is a subsystem which aims at the production of household consumption items either not obtained, not readily available or not affordable through field agriculture.

Homestead farming system is a unique production system practiced throughout the state which falls under the broad umbrella of agroforestry farming system. Homestead refers to the home and adjoining land, owned and occupied by farmer/farm family. The space is utilized for the cultivation of trees, vegetables, fodder etc.

Hanman (1986) reported that this homestead land use system serves the marginalised masses by sustainable food production, providing bio energy, timber and other raw materials, protection and service of the resources base.

It has been referred to in many terms such as homestead, homegarden, house compound land, mixed garden, forest garden and so on. Mixed farming is a characteristic feature of the homestead agriculture, wherein livestock is reared as a subsidiary enterprise to crop husbandry. Milch cow, buffalo, goat, poultry, piggery etc. are the common livestock components of the homesteads. The choice of the livestock components depends mainly on the home and farm requirements.

Nair and Sreedharan (1986) defined homestead as an operational farm unit in which a number of crops are grown with livestock, poultry production being mainly for the purpose of satisfying the farmer's basic needs.

Renola (1990) found that returns from livestock were 59 percent of total and its cost was 51 per cent of total cost. This was indicative of the significant contribution of the livestock enterprises to total returns.

Salam and Sreekumar (1990) highlighted the significance of crop livestock integration in homestead agriculture to sustain productivity under coconut based mixed farming system. They observed that homestead agricultural systems of South Kerala are economically efficient, ecologically sound and biologically sustainable. Based on the biophysical and ecophysical conservations they classified the homesteads into five groups. (1) Homestead involving uplands with crop components, (2) uplands with crop and livestock components, (3) uplands and adjoining lowlands with crop components, (4) uplands and adjoining lowlands with crop and livestock components, (5) uplands and adjoining backwaters with crops, livestock and agro based industries.

Jose (1991) opined that wet lands adjoining to the homesteads could be considered as part of homesteads. The term extended garden was employed to refer to such additional crop land operated by the homestead farmer. The extended garden, either wet land or crop land, influences the activities of the homestead farm in terms of planning, resource allocation, implementation strategy etc. Extended gardens act as satellite to the main homestead which play an important role in the performance of the homestead farming even if the extended garden is at a far away place.

Jose (1992) reported that homegardens with mixed crop and livestock components recorded the highest productivity followed by those with mixed crop alone.

Babu (1995) in his study in Thrissur district had identified the major farming systems as – (1) homestead with crop components alone (12.2%), (2) Homestead with crop components and extended garden (16.1%), (3) Homestead with crop components and livestock (13.9%), (4) Homestead with crop components, livestock and extended garden (47.8%) and (5) Homestead with crop components, livestock, extended garden and agrobased industries (10.0%).

In view of the above observations, in the present study, the farming systems were identified as Type I - Homestead with crop components alone; Type II - Homestead with crop components and extended garden; Type III - Homestead with crop components and livestock components; Type IV - Homestead with crop components, extended garden and livestock components and Type V - Agro based enterprise with any one of the above farming system.

2.3 Contribution, recognition and accountability of women in farming system

Women in India are integral component of agriculture, both as owners of assets and users of technology.

Anandalakshmy and Kelkar (1980) revealed that during the harvesting season the contribution by women was maximum carrying bundles of harvested crop to the spot where threshing was performed mostly by women.

Rahi and Bhave (1982) opined that majority of farm women were participating passively in different areas of decision making with regard to production oriented expenditure. A fair majority of respondents played a major role in the decisions regarding the amount to be spent on labour charges.

According to Savarimuthu (1982) the farm women participated and supervised to the extent of 75 per cent in activities related to seeds and sowing

followed by other cultural practices (44.1%), on irrigation (23.3%), on plant protection (17.5%) and manuring (16.67%) in that ordered sequence.

Govind (1984) reported that characteristics like the extent of land and social participation of farm women gave significantly negative association with the extent of participation in farm activities.

Singh *et al.* (1988) in their study in Almora district of Uttar Pradesh, they observed that share of women workers to the total work in agriculture was 82.30 per cent for crop activities, 69.20 per cent for livestock activities and 74.20 per cent for both crop and livestock activities. It implied that three fourth of the total work in agriculture was performed by female workers of the family alone.

Nimje *et al.* (1989) in their study conducted in Wardha district of Maharashtra reported that there was high involvement of farm women in agricultural operation. About 10 per cent involved in harvesting, marketing and deciding cropping pattern on farm, whereas, 33 per cent perceived seed treatment and storage of grains as other main areas where farm women were involved and very few participated in the areas like spraying or dusting, use of fertilizers, seeking crop loans.

Uma (1989) reported that women's contribution was high in various tasks like fish, trade, collection and selling of grass, cowdung cakes, firewood, selling of dairy products, ghee, milk etc. was significant.

Gurusamy *et al.* (1990) indicated that women helped in decision making with regard to farm operations in addition to participation in farm activities and physical work. Seventy two to 88 per cent of small farm women and 72.96 per cent of big farm women actually participated in making decisions on farm practices.

Ponnusamy *et al.* (1990) indicated that farm women were found to take majority of decisions either independently or jointly in various areas of farming.

Sethu (1991) revealed that on the whole more than 90 per cent of the work related to animal care was performed by feminine gender.

Bhople and Patki (1992) stated that women were involved in all types of farm activities but their contribution was maximum in pre-sowing, sowing, manuring, harvesting, grain storage and marketing operations.

Rangnekar *et al.* (1994) reported that generally decisions regarding the produce (milk) was with women while purchase or sale of animals was decided by men.

Lovely (1993) stated that large percentage of farm women participated in sowing (90 per cent) followed by storage (88.3%), weeding (80%) and harvesting (76.6%) practices while the lower percentage of rural women were involved in watching birds (41.5%).

Belgome (1994) reported that in cultivation, except ploughing, levelling and irrigating the field, all the other works such as sowing, weeding, transplanting, harvesting, stocking were female dominated tasks.

Setheni (1995) revealed that on the whole more than 95 per cent of the work related to animal care was performed by feminine gender.

Hemalatha (1998) identified 38 roles in rice farming where more than 50 per cent of the women perform the roles like, pulling out seedlings from nursery, weeding, winnowing, dehusking, storage of dried seeds, supervision of labourers, maintenance of cattleshed, management of milch animal, taking care of sick animal, transplanting, harvesting etc.

The women in farming are involved in operations like feeding, breeding, marketing of products and various income generating activities like collecting cowdung, firewood, honey etc. But the recognition of the actual farm

operations and participation of women vary with place and socio-economic status (Taneja, 1998).

2.4 Gender orientation in development programmes

Sawney and Daevani (1976) pointed out that through development programmes the hired labour input increased by 38 per cent whereas the family labour input decreased by 50 per cent consequent to the subsidiary enterprise.

Pratibha (1981) found that technology advancement through development programmes did not result in much change in patterns of employment of hired women labour except that work in land preparation and weeding was reduced. Threshing and winnowing were handled by men because of the use of mechanical equipments, which reduced the level of employment of women.

Kaur (1986) reported that improved agricultural development programme for women based tasks has negatively affected the women from lower castes and lower income groups who were either landless or had small land holding by reducing the demand for employment in peak season.

Sunetha (1986) concluded that the task performed by males are getting mechanised. Yet the women continue to toil in the labour intensive tasks. The engagement of hired labour was highest in transplanting followed by loading and unloading, harvesting, threshing, winnowing, uprooting and weed control which are not mechanised fully. This has not made much of dent in hired women labour replacement.

Asuri (1987) had reported that the general assumption seems to be that whatever information women need about agricultural technologies will reach them through their male relatives.

World Bank (1991) pointed out that the extension systems in India fail to reach women farmers. Despite genuine attempts to make the contact farmers of T and V system representative of the different socio-economic groups, in most states this had not resulted in the inclusion of women farmers as contact farmers.

A study conducted in the Ranchi district in Bihar revealed that gender issues have not been given due importance while developing technologies and extension strategies. It was observed that most of the training programmes were designed for men. Therefore, it is recommended that agricultural training and extension programmes should be broadened to support women's immense roles in agricultural production systems (Bara *et al.*, 1998).

A study conducted in Punjab has shown that the farm women had lack of knowledge and skills for about 60-70 per cent of the technologies of crop production, grain storage and cattle management relating to the operation in which they were participating. Hence in order to fulfil their technological needs, farm-women must be given training on the latest technological advances through development programmes (Ghaman *et al.*, 1999).

Women development received priority for the first time during the sixth plan period. The emphasis however continued to be on the economic front, through programmes such as IRDP, DWCRA, TRYSEM and others. It was conceded that none of these projects had delivered the expected result in the form of overall betterment of women's status. The reasons are lack of identification with the spirit of projects among the officials entrusted with the implementation, procedural hassles and most important, failure to involve the beneficiary population as participants (Narasimham, 1999).

Over the decades of planned development the changed emphasis of women programme from the purely welfare and consumption oriented approach to a more pragmatic and development oriented one, has recognised the women as

productive workers and contributors to the country's economy to some extent in the social and economic strata of society (Singh, 1999).

A study among farm women in Ranga district of Andhra Pradesh found that the low cost cultural practices were emphasized by farm women while trainers stressed only on plant protection and fertilizers management due to their excessive usage (Sailaja and Reddy, 1999).

2.5 Time utilization pattern of farm women

Bhatnagar (1982) opined that participation of women in agriculture was seasonal. During the peak season of sowing and harvesting, the rural women spent 8-9 hours in the field, which was almost a full day. During ordinary days, the rural women spent an average of 2-3 hours on the farm daily which included intercultural operations.

Sheela (1989) conducted a study in Coimbatore, Tamil Nadu and found that farm women spent 8 hrs per day in agricultural activities during peak season and 3 hrs during slack season. They spent two hours per day on dairy management but it was only half an hour in case of poultry keeping.

Shashimajna *et al.* (1990) noticed that a farm woman on an average worked for 13.62 and 12.10 hours daily during peak and slack agricultural season respectively.

Suryawanshi and Kapore (1990) estimated that during the peak period a woman works for about 8-9 hours in agriculture and during ordinary days about 5 hours.

Jain and Chand (1991) indicated that the women of poor households put in long hours of work often much longer than that of men when domestic work is also included.

Chakravarthy (1992) observed that active farm women spent 5-9 hours per day in the farm during peak agricultural season, 3-4 hours in cattle rearing and 3-4 hours in their household chores.

Kaur (1992) reported that rural women devoted on an average 8.70 hours daily in home, 1.70 hours in dairy/livestock/animal husbandry and 1.73 hours in the farm sector.

Beevi (1993) opined that women's work in agriculture was seasonal. During the peak season of sowing and harvesting the rural women spent 8-9 hours in the field, which was almost a full day. During ordinary days, the rural women spent an average of 2-3 hours on the farm, daily. This included intercultivation operations, weeding, hoeing and application of manure and fertilisers. About 8 hours were spent in irrigation and this was done 4-5 times in a season.

Aviskar (1994) reported that women were found to work for 12-16 hours per day in agriculture, animal husbandry, fetching of fuel and fodder and in household activities, wherein men were found to work for 10-12 hours per day in agriculture, animal husbandry and in sericulture.

Jyotsna (1994) observed that women spent 10-12 hours in household activities and also for agricultural production.

Nagpal (1994) reported that rural farmers spent 8 hours per day in farming activities, animal husbandry and in sericulture, wherein the farm women spent several hours a day on post harvest operations like peeling of fruits, removal of stones, dust and dirt, drying of vegetables, fruits and seed crops that easily attracted, birds and insects which need a careful attention.

Prasad *et al.* (1994) reported that 62.0 per cent of farm women devoted more than 8 hours per day for farm work during the peak period and 16.0 per cent of them devoted 4-6 hours per day during the slack season.

Ajit (1994) reported that women were found to work for 12-16 hours per day in agriculture, animal husbandry, fetching of fuel and fodder and in household activities. In the case of men they were found to work only for 10-12 hours per day in agriculture, animal husbandry and in sericulture.

Vairavi *et al.* (1994) observed that rural women spent in all about 12.2 hours per day in home, dairy and farm related activities. In peak season, average time spent by them increased to about 14 hours per day. There was an inverse relationship between the time spent on farm activities and land holding. However the relationship between time spent in home activities and size of land holding was positive and linear. Women belonging to marginal and small farm holdings devoted more time on farm activities due to economic factor.

2.6 Problems and constraints of women in agriculture

Dantwala (1975) reported that heavy domestic work including rearing of small children was the reason for low participation of female in farm activities.

Khan and Aysha (1982) observed that the problems of farm women in the rural areas were (i) heavy work load, (ii) irregular payment, (iii) lack of guarantee of work, (iv) health problem and (v) absence from home.

Mamba (1984) pointed out the constraints in farm women's effective performance as (1) insufficient data on women farmers for use by planners, (ii) female headed households, which had increased to 28 per cent suffered from capital and labour shortages, (iii) many women farmers were neglected by extension staff who concentrate on men who were often unwilling to allow their wives to work with male extensionists.

Sherwane (1984) opined that one of the most common problems faced by a woman was the dual role she had to play on the domestic front and the field

floor. Particularly, the married women with small children found this dual responsibility as a source of great mental and physical strain.

Rao (1985) reported that illiteracy was the greatest hurdle in the improvement of status of women. In rural areas as a consequence of illiteracy, women were forced to work in agriculture as unskilled labourers.

Traoro (1985) reported that poor wages, bad working condition and rejection in their social activities were the constraints faced by women while performing the tasks.

Bilgrami (1988) reported that mechanisation tends to replace work traditionally done by women and due to ignorance, illiteracy, over-burden, they were misfit for handling machines for longer hours and it would be cheaper to hire the right skilled labour than to engage unskilled labourers.

Dubey (1988) reported that women faced problems due to small, fragmented and scattered land.

Kashyap and Sharma (1988) opined that lack of credit facilities, marketing and post training follow up were the main constraints of landless and marginal farm women. Irregular supply of raw material lack of incentives and market intelligence were cited as important constraints by women with medium sized holdings. Pre-occupation with child care and social and political views of elders were cited as reasons by the women from farm families with large holdings.

Patel and Mehta (1988) stated that livestock enterprises with appropriate production technologies offer immense potential for socio-economic transformation of rural women. However death of improved breeds, poor genetic potential of existing stock, high cost of investment and production inputs, improperly organized marketing and livestock products, inadequate credit facilities

and lack of institutional support are exercising a constraining influence in performing the tasks regarding livestock.

Nair (1989) stated that the socio-economic problems which acted as a barrier in the adoption of farming technology were scattered land holding, limited resources, non-availability of labour, small size of holdings, insufficient irrigation, non-availability of loan at the proper time and lack of technical knowledge. They also faced social problems arising out of caste, religion, customs and traditions that prevented them from taking up new technology.

Sharma (1989) reported that female work contribution as a complex phenomenon was influenced by a variety of factors like family cycle, structural changes in economy, cultural biases in the society and the economic status of the household concerned.

Sudhakumari (1989) classified the problems in women based tasks as :

- (a) On supply side - immobility of labour, illiteracy and low skills.
- (b) Natural factors - the age factor of 13-41 years which also included the reproductive age of Indian women.
- (c) Low payment due to their low mobility.
- (d) Occupational discrimination.

Subashini (1990) had reported that more than 50 per cent of farm women faced the problem of fluctuation in prices of the produce. She pointed out that high cost of inputs, unfavourable weather condition, high cost, non-availability of labour, low profit, fragmented land holding, soil erosion, lack of cold storage facilities, inadequate input supply were the other constraints faced by the feminine gender while performing various tasks in agriculture.

Ayyadurai (1993) found that lack of finance was the main constraint reported by majority of the farm women, lack of knowledge about the institutional help and poultry enterprises, dislike among the family members, disinterest towards poultry risk and uncertainty were the other constraints.

Andrews (1994) reported that major constraints experienced by the farm family women in sericulture operations are low price of cocoon, price fluctuation in market, lack of leisure time availability, lack of knowledge about the practice and death of worms due to disease.

Bantsingh *et al.* (1995) identified imperfect market for milk, low price of milk, high cost of concentrate, perishable and seasonal nature of milk, high price of milch animals, high risk to the milch animals and shortage and adequate space and capital on many farms as major constraints of women engaged in cattle management.

Hemalatha (1998) had reported high cost of cultivation as the major problem experienced by more than 80 per cent of rice farmers.

The above studies have noted the heavy work load in agriculture, lack of proper technology and guidance, physical and mental strain as a result of dual responsibility, poor wages, lack of skill and knowledge were faced by farm women in farming and allied activities. None of the studies have pointed out the physical problems and strain that are existing in performing many of the tasks that are carried out by women in agriculture.

2.7 Conceptual model of the study

The conceptual model (Fig.1) is based on the concepts and observations on the invisible and unrecognised roles and contributions of farm women in the farming systems, the gender insensitive factors affecting the women's participation in agriculture, and the limited potential for development of the farming systems in the context of present agricultural development scenario.

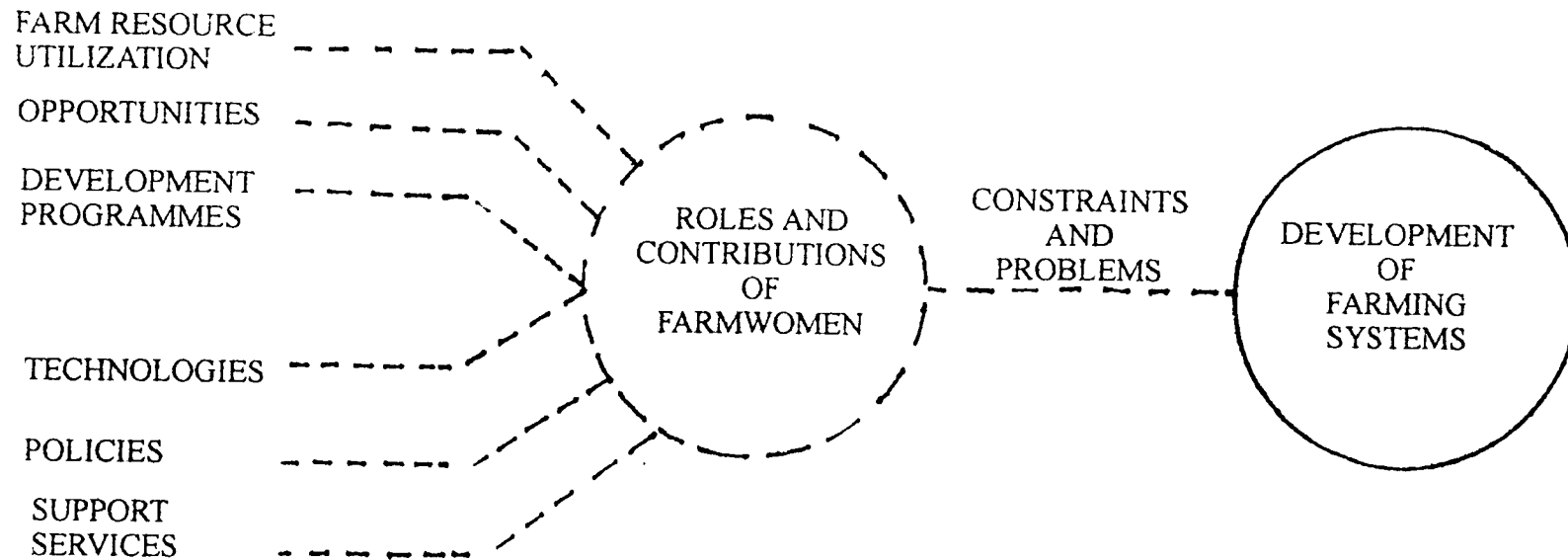


Fig. 1. Conceptual model of the study

Methodology

METHODOLOGY

The methodology followed in the study is presented under the following main headings.

- 3.1 Locale of study
- 3.2 Selection of sample
- 3.3 Operationalisation and measurement of concepts and variables
- 3.4 Perceived roles of farm women by development functionaries
- 3.5 Problems and constraints of farm women
- 3.6 Analysis of agricultural development programmes content and identification
- 3.7 Methods and instruments of data collection
- 3.8 Statistical tools employed in the study
- 3.9 Hypothesis of the study

3.1 Locale of the study

The study was conducted in Madakkathara panchayath of Thrissur district, which has enough representation of the different types of farming systems and major crops of Kerala.

The panchayath has a total geographical area of 25.04 sq. km with a total population of 20904 with 101176 male and 10788 female members. The major crops of the area are coconut, arecanut, banana, rubber, tapioca, cashewnut, rice etc. There are ten wards in the panchayath - Vellanikkara, Therambu, Kurichikara, Chirakakode, Pandiparambu, Thanikkudam, Kattilappovam, Ponganamkadu, Mattampuram and Varikulam (Fig.2). The study covered all the ten wards of the panchayath. The panchayath had conducted a socio-economic survey of the whole panchayath in 1998, the data of which could help the researcher in identification and selection of farming systems for the study.

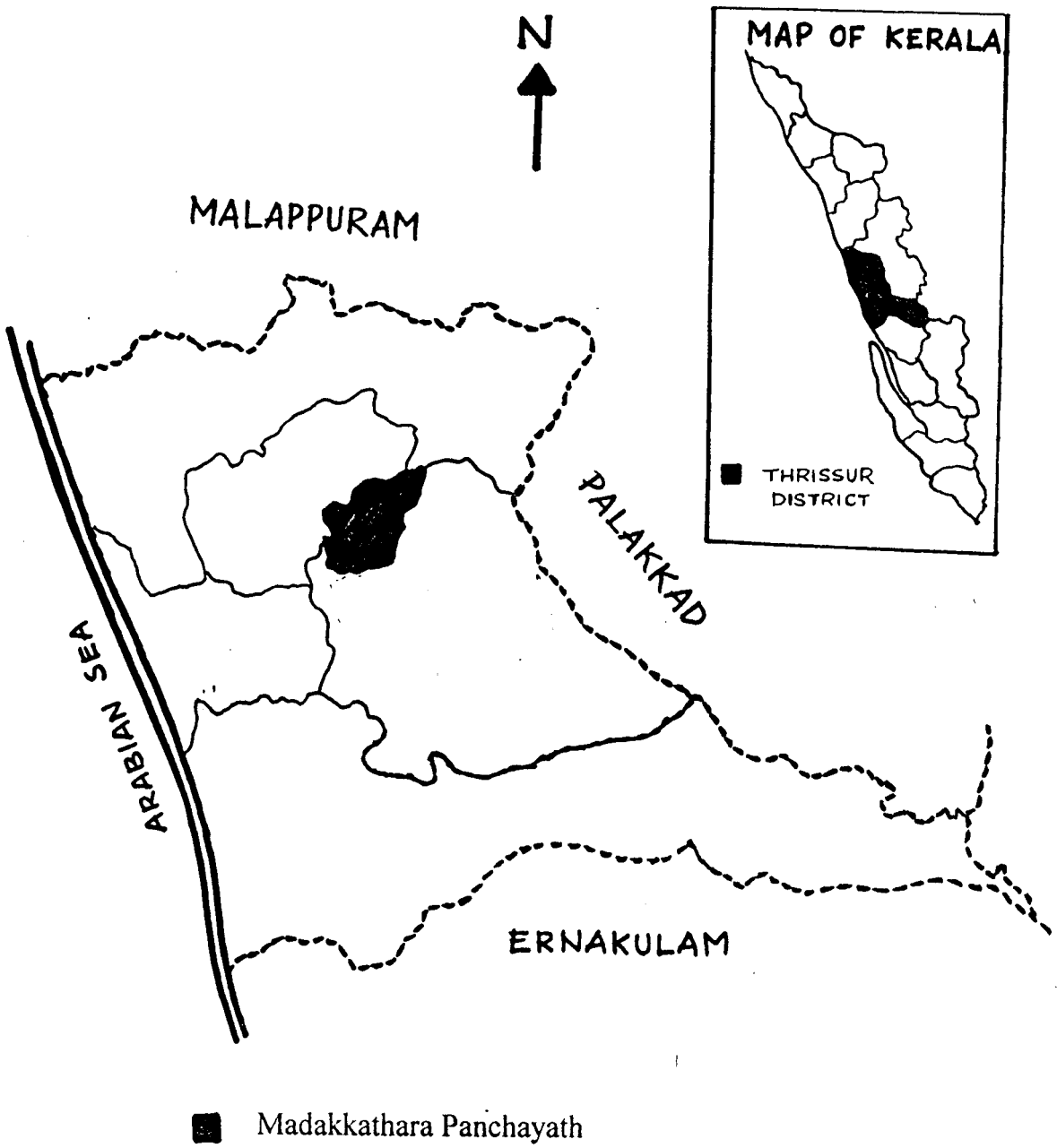


Fig. 2. Map of Thrissur district showing the study area

Following the method of classification of farming systems (Babu, 1995) and based on the enterprises, crop components and related farm practices of the homesteads, five major types of the farming systems were identified in the panchayath.

Homestead with crop components alone – I Type

Homestead with crop components and extended garden – II Type

Homestead with crop components and livestock components – III Type

Homestead with crop and extended garden and livestock components – IV Type

The major farming system are presented in Table 1.

Table 1. Major farming systems of the Madakkathara panchayath

Sl. No.	Farming system	Total no. of homesteads	Percentage
1	Homestead with crop components alone	1280	31.0
2	Homestead with crop components and extended garden	1174	28.0
3	Homestead with crop components and livestock	940	22.5
4	Homestead with crop components and livestock and extended garden	780	18.5

In addition to above, considering the high involvement of women in agribusiness avenues in the panchayath a special group of farming system with agribusiness components was also identified (V Type).

Based on the secondary data available in the office of the Madakkathara grama panchayath, a preliminary analysis for the identification of major farming systems of the locality was carried out.

1. Homestead with crop components alone – I Type

This type of farming system was found to be common in low lands and mid lands of the panchayath where in the common crops grown in the system are coconut, arecanut, banana, tapioca and certain vegetables. The household and surrounding piece of land wherein different crops grown as intercrops in the main feature.

2. Homestead with crop components and extended garden – II Type

This type of farming system which possess household its surrounding cultivated piece of land and other pieces of land with rice, rubber, coconut garden, banana field, vegetable field etc. The major crop components that could be identified in the system were coconut, arecanut, banana, rubber and rice.

3. Homestead with crop components and livestock components – III Type

Here in together with the crops and farm as in the first type livestock component also was found to be a complimentary farm activity. The animals and birds reared in the system were observed to be cow, buffalo, goat, poultry, duck, pig and rabbit. The major crop components grown in this system are coconut, arecanut, banana and tapioca.

4. Homestead with crop components, livestock components and extended garden – IV Type

The type of farming system together with homesteads and surrounding farm and extended garden with crops like coconut, arecanut, rubber, rice, vegetables etc. has in different plots and the livestock component also like cow, goat, bullock, poultry, pig and rabbit etc.

5. Farming system with agribusiness component (Type 5)

Agribusiness is operationally defined as those avenues/enterprises based on farm activities and being run with commercial perspectives and motives. The main agribusiness avenues in the panchayath were agrinursery management, rabbitry units and piggery units.

3.2 Selection of sample

The respondents of the study consisted of two major categories

1. Female heads of the identified farming system
2. Development functionaries of Thrissur district

From the different types of farming systems of the panchayath 145 female heads were selected as the first category of respondents.

From the list of each type of the farming system (I to IV), 30 units each were randomly selected based on their farm size (small, medium and big farmer) following proportionate allocation. In addition to above 4 types of farming system, a separate sample of respondents were identified considering the presence of agribusiness avenue in the farming system. Such units were identified following the techniques of key informant and snow ball sampling procedure. However, 25 such units only could be identified. Thus there were totally 145 units of farming system and the 145 women heads of those units formed the first category of the respondents of the study.

The second category of respondents constituted 90 randomly selected members of the development functionaries in the district (Extension personnel, Agricultural Scientists and Political functionaries).

a) Development/extension personnel

The lists of extension personnel working in the Block (under which Madakkathara panchayath comes) from the Department of Agriculture,

Department of Animal husbandry and Department of Dairy Development were prepared. From the prepared list, 30 development personnel were selected randomly.

b) Agricultural Scientists

From the list of subject matter specialist of Kerala Agricultural University (Faculty of Agriculture, Veterinary and Animal Sciences including Dairy Science and Fisheries) with field experience were prepared. From the prepared list, 30 scientists were selected randomly.

c) Political functionaries

A list of political functionaries including the elected members of Legislative Assembly, Block panchayath, Jilla panchayath and Grama panchayath was prepared. From the prepared list, 30 members were selected randomly.

Thus a total of 90 members were selected as second category of respondents to study the differential perception analysis of the role and constraints of farm women in agriculture. The sample units of the study are presented in Table 2.

Table 2. Sample units of the study

Sl. No.	Category of respondents	No. of units selected
A.	Farming systems	
1	Homestead with crop components alone	30
2	Homestead with crop components and extended garden	30
3	Homestead with crop components and livestock	30
4	Homestead with crop components and livestock and extended garden	30
5	Agribusiness	25
	Total	145
B.	Development agencies	
	Extension personnel	30
	Agricultural Scientists	30
	Political functionaries	30
	Total	90

3.3.6 Farm family income

The farm family income was defined as the total income realised from different crops and components in the farm in a year.

Data on quantity of produce from each component was collected and multiplied with the average market prize as realised by each farmer to get the farm income.

3.3.7 Farm expense

Farm expense is operationally defined as the total expenses incurred in various farm operations excluding the imputed value of family labour.

3.3.8 Net farm income

Net farm income is the difference between gross farm income and farm expenses.

3.3.9 Farm family women's contribution to farm income

Farm family women's contribution to farm income is defined as the percentage of contribution made by family women by their labour in the farming system.

B. Measurement of study variables

1 Gender role

Gender role in the farming systems were identified and analyses were carried out using the following procedure.

The major farm activities of each farming system in relation to the components involved were prepared. The respondents of each system were asked during the time of interview to point out who perform each one of the activities in the farm. The list of specific practices included for eliciting the response from the

participants for each farming system was prepared in consultation with subject matter specialist, extension personnel and based on the package of practices recommendations, KAU (given in Appendix-I).

The details of the categorization of the data are given below in the following format.

Sl. No.	Practice of activity	Male specific			Female specific			Combined			
		a	b	c	d	e	f	g	h	i	j
1	Selection of variety										
2	Land preparation										
3	Planting										
4	Irrigating										
5	Weeding										
6	Manuring										
7	Plant protection										
8	Harvesting										
9	Post harvest operations										
10	Marketing										
11	Cattle management practices										
12	Agribusiness management practices										

a - Family male

b - Hired male

c - Hired male + family male

d - Family female

e - Hired female

f - Family female + hired female

g - Family male + family female

h - Family male + hired female

i - Hired male + hired female

j - Family female + hired male

Based on the response of extent of involvement of men and women in the farming systems in the various farm activities the following procedure was developed to categorise the farm activities in terms of gender involvement as male

specific, female specific, male dominant, female dominant and gender neutral (performed either by men or women).

The format for categorisation of farm activities based on extent of involvement of men and women in the farming systems is given.

Practice	Extent of involvement	Category
1	90 to 100% male alone	Male specific (MS)
2	90 to 100% female alone	Female specific (FS)
3	50 to 89% male alone	Male dominant (MD)
4	50 to 89% female alone	Female dominant (FD)
5	less than 50% male alone/ female alone or more than 50% male/ female combined	Gender neutral (GN)

The practices observed as female specific, female dominant and gender neutral were grouped as women friendly farm practices of the locality.

2. Family women labour contribution to the net farm income

The contribution of family female labour towards the total net income of the different farming system are analysed. For this the operation-wise farm expenses (explicit costs) of the various crops and monocrop activities of all the farming systems were collected along with the women labour utilization in these activities. The total farm expenses were subtracted from the gross farm income to arrive at the total net farm income. The format is furnished below:

Farming systems	Labour days		Total women labour days	Labour cost @ Rs.120 per day		Total women labour cost (Rs.)
	Family women	Hired women		Unpaid family women labour (Rs.)	Paid hired women labour (Rs.)	
Type-I						
Type-II						
Type-III						
Type-IV						
Type-V						

The labour days contributed by women family members were converted to family labour wages at the prevailing wage rates. The contribution of women family labour towards the net farm income was worked out using the formula.

$$\text{FFWCNI} = \frac{\text{IWFL}}{\text{TNFI}} \times 100$$

whereas

FFWCNI = Farm family women contribution to total net income

IWFL = Imputed wages of women family labour

TNFI = Total net farm +income

The proforma for working out cost of production of the farming system is furnished below:

Sl. No.	Operations	Labour		Material cost	Rs.
		Family	Hired		
1	Land preparation			Seed	
2	Swing			FYM	
3	Weeding			Fertilizer	
4	Irrigating			Herbicides	
5	Manuring			PP chemicals	
6	Spraying			Cattle management	
7	Harvesting			Nursery materials	
8	Post harvesting			etc.	
9	Marketing			Feed/fodder	
10	Cattle management activities				

3. Time utilization pattern

Time utilization pattern in this study was measured as number of hours a woman spent on a day for her home management activity, farm management, social activities and personal activities. Home management activities include cooking, childcare, parental care, etc. Farm activities include planting, irrigating, weeding, harvesting, marketing, processing etc. The activities included under livestock management are cattle shed cleaning, fodder collection, milking, milk marketing, care of sick animal, breeding treatment etc. Leisure time activities include, watching TV, reading newspaper etc. Social activities include attending meetings, interaction with neighbourhood, special visits, religious activities etc. Personal activities include daily personal affairs, bathing, sleeping etc.

The information was collected in the proforma in the following format.

Sl. No.	Farming system	Farm/ Livestock activities	Leisure time activities	Social participation activities	Personal activities
1	1 st type				
2	2 nd type				
3	3 rd type				
4	4 th type				
5	Agri-business component				

3.4 Perceived roles of farm women by development functionaries

A questionnaire was developed and used to analyse the responses of the three categories (development/extension personnel, scientists and political functionaries). The responses on the role of farm women were collected and analysed.

For this purpose, the three categories were asked to disaggregate gender-wise the major farm activities of a middle class farm farming system – as answers to the question of the following categories who is responsible for each farm activities such as family male, family female, family male and family female, hired male, hired female, hired male and hired female. The specifications into different combinations of male and female members were grouped into six combinations here as the development functionaries cannot be expected to give minute details as they are responding only from their understanding and not from real experience. The different specific practices included for getting specific perception were later changed into headings similar to the farm operations included the gender role identification and also for sake of comparison. The activity wise frequency of responses were worked out with percentage for each category. Then the roles perceived by the group and the real role performance in the field as recorded by the women heads were compared.

3.5 Farm women's constraints and problems

3.5.1 Perceived constraints and problems of farm women

A list of the major problems and constraints of farm women in their farm participation was prepared based on the experience from the pilot study, review of literature, and discussion with subject matter specialists. During the interview the women respondents were asked to express their agreement or disagreement with the items. The frequency of agreeing responses were counted and sorted to analysed their gravity.

3.5.2 Problems and constraints of farm women as perceived by development functionaries

The development functionaries – extension personnel, agricultural scientists and political functionaries were asked to rate the listed out problems and

constraints of farm women on a four point continuum viz., strongly agree, agree, disagree and strongly disagree.

Based on this, the respondents were assigned the scores. The scores obtained for each problem or constraint were then summed up and were then sorted according to their ranks.

The following formula was used to develop the perception index of the problems.

$$\text{Perception index} = \frac{\text{Scores on problems of farm women obtained by the development functionary}}{\text{Maximum possible score of the problem obtainable by the development functionary}}$$

Separate perception index of problems for the three categories were worked out i.e. agricultural scientists, extension personnel and political functionaries with respect to the problems of farm women.

The score obtained by the three categories were then compared by using Friedmann's two way Anova. The mean perception index for the above three categories was also compared.

3.6 Content analysis of agricultural development programmes and identification of women friendly programmes in the panchayath

The list of the development programmes and projects of agriculture and allied sectors implemented in the panchayath for the past three years were collected from Krishi Bhavans (Panchayath level office of Agricultural Officer), Dairy Development Office and Veterinary Hospitals in the area. The programmes were analysed with focus on their objectives, nature, components, benefits and the categories of beneficiaries (male and female separately) etc. as given in the following format.

Sl. No.	Name of the programme	Year of implementation	Objective	Components	Number of beneficiaries	
					Total number	Number of female

With the help of the development personnel of the above offices, relevant data were collected from office files and analysed.

3.7 Methods and instruments of data collection

Interview schedule and questionnaires for the collection of data with appropriate questions to obtain the relevant data were prepared, based on review of literature and preliminary discussion with selected personnel in the area. A pilot study was conducted in a non sampling area (Pananchery panchayath) based on which appropriate changes and modifications were brought up in the items. Relevant data were collected through personal interview and discussion with the farm women respondents. The relevant data were elicited from the selected development functionaries using standardised questionnaire.

3.8 Statistical tools employed in the study

The data collected from the different categories of the respondents were coded, compiled and analysed using the following statistical techniques.

3.8.1 Percentage analysis

The percentage analysis was employed to categorise gender roles in the farming systems.

3.8.2 Friedmann's two way Anova by ranks

This test was used to analyse the difference in perception of the needs and constraints of farm women by development personnel, scientist and policy makers.

$$x^2 = \frac{12}{NK(k+1)} \sum_{j=1}^k (R_j)^2 - 3N(k+1)$$

where

k = Number of columns

N = number of rows

R_j = sum of ranks in jth column

3.9 Hypothesis of the study

Keeping in view the objectives of the study, review of literature and conceptual orientation developed, the following null hypothesis were formed for the study.

1. Farm women in the farming systems do not have any roles.
2. There is no difference between and among the farming systems with regard to the role of farm women in the farming systems.
3. There are no agricultural practices, development programmes and enterprises which are women friendly and women operated in the different farming systems.
4. The contribution of family women labour is not significant to the farm income.
5. There is no difference between actual role of farm women and their perception by development functionaries.
6. There is no difference in perception between and among the different development functionaries of agriculture with regard to the constraints and problems of farm women.

Results

RESULTS

Keeping the objectives of the study in view, the results of the present study are presented in this chapter under the following headings.

- 4.1 Profile of the farming systems
- 4.2 Extent of involvement and categorization of farm activities based on men and women in farming systems
- 4.3 Perceived role of men and women in farm family by the agricultural development functionaries
- 4.4 Comparison of the actual role performance of the farmers and their perceived role performance
- 4.5 Women labour utilization in different farming systems
- 4.6 Farm income contribution of women family labour in different farming systems
- 4.7 Time utilization pattern of farm women
- 4.8 Perceived problems and constraints of farm women
- 4.9 Problems and constraints of farm women as perceived by development functionaries
- 4.10 Content and beneficiary analysis of development programmes in Madakkathara panchayath (1997-2000)
- 4.11 Empirical model of the study

4.1 Profile of the farming systems

The profile of farmers under the different farming systems is presented here.

4.1.1 Farming system Type-I

A glance through the Table 3 could help one to get a picture of the farm families studied under farming system with crop components alone.

Table 3. Profile of the farming system Type – I (Homestead with crop components alone)

n = 30

Sl. No.	Characteristics	F	%
1.	Age Low age group Medium age group High age group	7 18 5	23.0 60.0 17.0
2.	Education Low level Medium level High level	2 26 2	6.5 87.0 6.5
3.	Main occupation Farming Private employment Govt. Employment	18 4 8	60.0 13.0 27.0
4.	Monthly income Very low (below Rs. 1000) Low (Rs. 1000-5000) Medium (Rs. 5000-10000) High (above Rs. 10000)	3 15 10 2	9.5 50.0 33.0 6.5
5.	Farm size Marginal homestead (< 0.5 acre) Small (0.5 – 2.0 acre) Medium (2.0 – 5.0 acre) Big (>5.0 acre)	8 16 6	27 53 20
6.	Major crops	Coconut, Banana, Arecanut, Tapioca, Vegetables	
7.	Average no. of adult members/ family Male Female	1.4 2	

Table 4. Profile of the farming system Type – II (Homestead with crop components and extended garden)

n = 30

Sl. No.	Characteristics	F	%
1.	Age		
	Low age group	6	20.0
	Medium age group	19	63.0
	High age group	5	17.0
2.	Education		
	Low level	1	3.0
	Medium level	24	80.0
	High level	5	17.0
3.	Main occupation		
	Farming	19	63.0
	Private employment	5	17.0
	Govt. Employment	6	20.0
4.	Monthly income		
	Very low (below Rs. 1000)		
	Low (Rs. 1000-5000)	18	60.0
	Medium (Rs. 5000-10000)	9	30.0
	High (above Rs. 10000)	3	10.0
5.	Farm size		
	Marginal homestead (< 0.5 acre)		
	Small (0.5 – 2.0 acre)	18	60.0
	Medium (2.0 – 5.0 acre)	9	30.0
	Big (>5.0 acre)	3	10.0
6.	Major crops	Rice, Coconut, Rubber, Arecanut, Tapioca, Banana, Vegetables	
7.	Average no. of adult members/ family		
	Male	2	
	Female	2	

Table 5. Profile of the farming system type – III (Homestead with crop components and livestock components)

n = 30

Sl. No.	Characteristics	F	%
1.	Age Low age group Medium age group High age group	4 21 5	13.0 70.0 17.0
2.	Education Low level Medium level High level.	- 28 2	- 93.0 7.0
3.	Main occupation Farming Private employment Govt. Employment	22 4 4	74.0 13.0 13.0
4.	Monthly income Very low (below Rs. 1000) Low (Rs. 1000-5000) Medium (Rs. 5000-10000) High (above Rs. 10000)	3 18 7 2	10.0 60.0 23.0 7.0
5.	Farm size Marginal homestead (< 0.5 acre) Small (0.5 – 2.0 acre) Medium (2.0 – 5.0 acre) Big (>5.0 acre)	10 16 4	33.5 53.5 13.0
6.	Major crops	Coconut, Arecanut, Banana, Tapioca, Vegetables	
7.	Average no. of adult members/ family Male Female	2 1.1	
8.	Average no. of animals (Herd size) Cow	1	

In the system, 60 per cent of the farm women respondents were medium aged and 87 per cent of them had medium level of education, i.e. high school education.

It could be noticed from the Table 3 that 60 per cent of farm women had the main occupation as farming and with respect to monthly income 83 per cent of them were in the range of low to medium level of monthly income (Rs. 1000 to 10000). Average size of the farm holding in the system was 1.25 acre.

The major crops noticed in this system were coconut, banana, arecanut, tapioca and vegetables.

4.1.2 Farming system Type-II

Table 4 highlights the profile of the farming system type-II (Farming system with crop components and extended garden).

Sixty three per cent of the respondents were in medium age. 80 percentage of the respondents had medium level of education.

Majority of them had farming as main occupation. About 90 percent of the units were with medium to low level of monthly income (Rs. 1000 to 10000). The average size of the farm holding in the system was observed to be 1.8 acre.

Major additional crops noticed in addition to those observed in the first type are rice and rubber.

4.1.3 Farming system Type-III

The profile of the third type of farming system presented in the Table 5 shows that 70 per cent of the respondents were in middle age and all of them had medium to high education. 73 per cent had main occupation as farming with 70 per cent of them falling in the income group of low to very low monthly income

Table 6. Profile of the farming system type – IV (Homestead with crop components and livestock components and extended garden)

n = 30

Sl. No.	Characteristics	F	%
1.	Age Low age group Medium age group High age group	5 18 7	17.0 60.0 23.0
2.	Education Low level Medium level High level	- 28 2	- 93.0 7.0
3.	Main occupation Farming Private employment Govt. Employment	19 6 5	63.0 20.0 17.0
4.	Monthly income Very low (below Rs. 1000) Low (Rs. 1000-5000) Medium (Rs. 5000-10000) High (above Rs. 10000)	5 15 10	17.0 50.0 33.0
5.	Farm size Marginal homestead (< 0.5 acre) Small (0.5 – 2.0 acre) Medium (2.0 – 5.0 acre) Big (>5.0 acre)	11 12 7	36.0 40.0 24.0
6.	Major crops	Rice, Coconut, Arecanut, Banana, Tapioca, Vegetables	
7.	Average no. of adult members/ family Male Female	1.5 1.5	
8.	Average no. of animals (Herd size) Cow	1.3	

Table 7. Profile of the farming system type – V (Farming system with agri business enterprise)

n = 25

Sl. No.	Characteristics	F	%
1.	Age	-	-
	Low age group	2	8.0
	Medium age group	20	80.0
	High age group	3	12.0
2.	Education	-	-
	Low level	1	4.0
	Medium level	16	64.0
	High level	8	32.0
3.	Main occupation	-	-
	Farming	8	32.0
	Private employment	15	60.0
	Govt. Employment	2	8.0
4.	Monthly income	-	-
	Very low (below Rs. 1000)	-	-
	Low (Rs. 1000-5000)	8	32.0
	Medium (Rs. 5000-10000)	14	56.0
	High (above Rs. 10000)	3	12.0
5.	Farm size	-	-
	Marginal homestead (< 0.5 acre)	4	16.0
	Small (0.5 – 2.0 acre)	16	64.0
	Medium (2.0 – 5.0 acre)	5	20.0
	Big (>5.0 acre)	-	-
6.	No. of enterprises	-	-
	Nursery	17	68.0
	Rabbitry	4	16.0
	Piggery	4	16.0
7.	Average no. of adult members/ family	-	-
	Male	1.2	-
	Female	1.3	-

Table 8. Profile of the farming systems general

n = 145

Sl. No.	Characteristics	F	%
1.	Age		
	Low age group	20	14.0
	Medium age group	103	71.0
	High age group	22	15.0
2.	Education		
	Low level	3	2.0
	Medium level	125	87.0
	High level	17	11.0
3.	Main occupation		
	Farming	86	60.0
	Private employment	34	23.0
	Govt. Employment	25	17.0
4.	Monthly income		
	Very low (below Rs. 1000)	6	4.0
	Low (Rs. 1000-5000)	58	40.0
	Medium (Rs. 5000-10000)	61	42.0
	High (above Rs. 10000)	20	14.0
5.	Farm size		
	Marginal homestead (< 0.5 acre)	30	21.0
	Small (0.5 – 2.0 acre)	69	48.0
	Medium (2.0 – 5.0 acre)	36	25.0
	Big (>5.0 acre)	10	6.0
6.	Major crops	Rice, Coconut, Rubber, Arecanut, Banana, Tapioca, Vegetables	
7.	Average no. of adult members/ family		
	Male	1.5	
	Female	2	
8.	Average no. of animals (Herd size)		
	Cow	1.2	
9.	No. of enterprises		
	Nursery	17	11
	Rabbitry	4	44.5
	Piggery	4	44.5

(Rs.1000 to 5000). Average size of farm holding in this type was observed to be 1 acre.

Major crops grown are coconut, arecanut, banana, tapioca and vegetables. The herd size per family was observed to be one cow.

4.1.4 Farming system Type-IV

A glance at the Table 6 reveals that the IV Type of farming system also had majority of its respondents in the medium age group. In this group also there was no one with low education. Seventy three per cent of the farmers had farming as main occupation. Eighty three per cent of the units had medium to high level of monthly income (Rs.5000-10000).

The average size of farm holding in this type was observed to be 2.7 acre.

4.1.5 Farming system Type-V

The profile of the V type farming system is presented in Table 7. The farming system with agribusiness component only had 32 per cent with main occupation as farming and majority of them (64%) had small size of land holding (0.5-1 acre). Average size of farm holding in this type was observed to be 0.66 acre.

Twenty four per cent of the families were women headed with average number of adults per family as one male and one female. Of the 25 units studied, 68 per cent were running agrinursery. Eighty eight per cent of the units were in the income group of medium to low level monthly income (Rs.1000-10000).

4.1.6 Farming systems in general

The Table 8 helps one to obtain an idea about the average farming units of the study area.

Majority (87%) women heads are with medium education and (71%) of them are in medium age group. Majority (50%) had farming as the main occupation with (82%) medium to low monthly income (Rs.1000-10000).

Major crops in the area are rice, coconut, rubber, arecanut, banana, tapioca and vegetables. The average farm holding size was 1.5 acre.

4.2 Extent of involvement and categorization of farm activities based on men and women in farming system

4.2.1 Type-I (Homestead with crop components alone)

A glance of the Tables 9 and 10 reveal the roles of men and women in the farming systems (with crop components alone). The tables illustrate the gender roles in which men and women participate either together or one of them dominate.

It could also be noticed that based on the extent of involvement of male or female, the activities like, selection of variety (57%), land preparation (57%) and marketing (66%) were found to be male dominant. Weeding was found to be female dominant (50%). The more or less equal and combined involvement of men and women in activities like planting, irrigation, manuring, plant protection and harvesting, highlight the gender neutral nature of the operations.

The post harvest operations like dehusking, copra making (for oil extraction from coconut), arecanut processing etc. were observed in a few homesteads, wherein they were noticed to be performed by women alone indicating the possibility of identifying them as female specific operations.

4.2.2 Type-II (Homestead with crop components and extended garden)

Tables 11 and 12 revealed the utilization of both family labour and hired labour in the system. In this system activities like, selection of variety (57%), land preparation (73%), plant protection (60%), post harvesting (60%) and marketing (57%) were found to be male dominant. The only female dominant farm activity

Table 9. Extent of involvement of men and women in farming system Type I (homestead with crop components alone)

n = 30

Category	Selection of variety	Land preparation	Planting	Irrigation	Weeding	Manuring	Plant protection	Harvesting	Post harvest practices n = 10	Marketing
Family male	20 (67.00)	8 (27.00)	5 (17.00)	6 (20.00)	2 (6.50)	8 (27.00)	6 (20.00)	4 (13.00)	-	16 (53.00)
Hired male	-	6 (20.00)	4 (13.00)	7 (23.00)	3 (10.00)	3 (10.00)	5 (17.00)	5 (17.00)	-	4 (13.00)
Hired male and family male	-	3 (10.00)	5 (17.00)	1 (3.00)	3 (10.00)	2 (6.50)	2 (6.50)	4 (13.00)	-	-
Family female	4 (13.00)	4 (13.00)	2 (6.50)	-	2 (6.50)	3 (10.00)	3 (10.00)	3 (10.00)	6 (60.00)	3 (10.00)
Hired female	-	-	-	2 (6.50)	8 (27.00)	1 (3.00)	3 (10.00)	3 (10.00)	-	2 (6.50)
Hired female and family female	-	3 (10.00)	7 (23.00)	2 (6.50)	4 (13.00)	1 (3.00)	3 (10.00)	4 (13.00)	-	-
Family male and family female	4 (13.00)	1 (3.00)	1 (3.00)	5 (17.00)	4 (13.00)	8 (27.00)	3 (10.00)	3 (10.00)	4 (40.00)	-
Hired female and family male	2 (6.50)	-	-	-	2 (6.50)	4 (13.00)	2 (6.50)	2 (6.50)	-	3 (10.00)
Hired male and hired female	-	5 (7.00)	6 (20.00)	7 (23.00)	2 (6.50)	-	3 (10.00)	2 (6.50)	-	2 (6.50)
Family female and hired male	-	-	-	-	-	-	-	-	-	-

Figures given in parenthesis indicates frequency

Table 10. Categorisation of farm activities based on extent of involvement of men and women - farming system Type I
(Homestead with crop components alone)

n=30

Category	Selection of variety (%)	Land preparation (%)	Planting (%)	Irrigation (%)	Weeding (%)	Manuring (%)	Plant protection (%)	Harvesting (%)	Post-harvest practices (%)	Marketing (%)
Men alone	67.00	57.00	47.00	46.00	27.00	43.00	43.00	43.00	-	66.00
Women alone	13.00	23.00	30.00	14.00	50.00	17.00	30.00	30.00	60.00	17.00
Men and women together	20.00	20.00	23.00	40.00	23.00	40.00	27.00	27.00	40.00	17.00
Description of the practice	Male dominant	Male dominant	Gender neutral	Gender neutral	Female dominant	Gender neutral	Gender neutral	Gender neutral	Female dominant	Male dominant

Table 11. Extent of involvement of men and women in farming system type II (Homestead with crop components and extended garden)

n=30

Category	Selection of variety	Land preparation	Planting	Irrigation	Weed-ing	Manur-ing	Plant protection	Harvest-ing	Post harvest practices n=21	Market-ing
Family male	15 (50.00)	5 (17.00)	6 (20.00)	3 (10.00)	3 (10.00)	4 (13.00)	4 (13.00)	5 (17.00)	3 (14.00)	8 (26.50)
Hired male	2 (6.50)	11 (36.00)	5 (17.00)	1 (3.00)	3 (10.00)	7 (23.00)	9 (30.00)	4 (13.00)	4 (19.00)	4 (13.00)
Hired male and family male	-	6 (20.00)	1 (3.00)	2 (6.50)	2 (6.50)	-	5 (17.00)	2 (6.50)	5 (24.00)	5 (17.00)
Family female	5 (17.00)	-	4 (13.00)	4 (13.00)	4 (13.00)	3 (10.00)	2 (6.50)	3 (10.00)	2 (10.00)	4 (13.00)
Hired female	-	-	6 (20.00)	6 (20.00)	5 (17.00)	2 (6.50)	-	5 (17.00)	-	2 (6.50)
Family female and hired female	-	1 (3.00)	4 (13.00)	1 (3.00)	6 (20.00)	1 (3.00)	2 (6.50)	2 (6.50)	-	-
Family male and family female	8 (26.50)	2 (6.50)	4 (13.00)	8 (26.50)	2 (6.50)	3 (10.00)	4 (13.00)	3 (10.00)	4 (19.00)	-
Family male and hired female	-	-	-	-	-	7 (23.00)	-	-	-	4 (13.00)
Hired male and hired female	-	5 (17.00)	-	5 (17.00)	5 (17.00)	3 (10.00)	4 (13.00)	6 (20.00)	3 (14.00)	-
Family female and hired male	-	-	-	-	-	-	-	-	-	3 (10.00)

Figures given in parenthesis indicates frequency

Table 12. Categorization of farm activities based on extent of involvement of men and women in the farming system type II
(Homestead with crop components and extended garden)

n=30

Category	Selection of variety (%)	Land preparation (%)	Planting (%)	Irrigation (%)	Weeding (%)	Manuring (%)	Plant protection (%)	Harvesting (%)	Post-harvest practices (%)	Marketing (%)
Men alone	57.00	73.00	40.00	20.00	27.00	36.00	60.00	37.00	57.00	57.00
Women alone	17.00	3.00	47.00	36.00	50.00	17.00	13.00	33.00	29.00	20.00
Men and women together	26.00	23.00	13.00	43.00	23.00	47.00	27.00	30.00	14.00	23.00
Description of the practice	Male dominant	Male dominant	Gender neutral	Gender neutral	Female dominant	Gender neutral	Male dominant	Gender neutral	Male dominant	Male dominant

was weeding (50%). Post harvest operations like threshing, sheet rolling and smoking of rubber sheets were observed in 21 units wherein they were found to be a male dominant activity (57%). Few activities like planting, irrigation and manuring were observed to be gender neutral.

4.2.3 Type-III (Homestead with crop components and livestock components)

Tables 13 and 14 revealed that in this farming system, the activities like, land preparation (60%), irrigation (80%), manuring (77%), harvesting (50%), milking (63%) and marketing (83%) were male dominant. The activities like weeding (63%), shed cleaning (57%), fodder collection (63%) and post harvest practices (65%) were found to be female dominant. In this system no farm practice was observed as male specific or female specific.

4.2.4 Type-IV (Homestead with crop components, livestock components and extended garden)

The Tables 15 and 16 depict the gender role in farming system with crops and livestock. A better utilisation of family labour in this system is visible from the data. The activities like post harvest processing (50%), shed cleaning (50%) and fodder/grazing (63%) were found to be female dominant in this system. Similar to other systems, here again, activities like selection of variety (70%), land preparation (77%), irrigation (53%), plant protection (60%), marketing (67%) and milking (60%) were found to male dominant. The gender neutral practices in this system were weeding, harvesting and planting. None of the practices were identified as male specific or female specific.

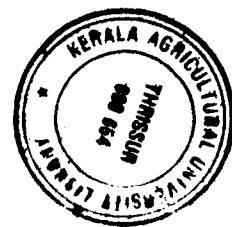
4.2.5 Type-V (Agri-business enterprise)

From the Tables 17 and 18, it could be noticed that farming systems with agri-business components were selected with enterprises comprising agri-nursery (17 units) and piggery and rabbitry (4 units) each.

Table 13. Extent of involvement of men and women in the farming system type III (Homestead with crop components and Livestock components) – frequency and (%) n=30

Category	Selection of variety	Land preparation	Planting	Irrigation	Weeding	Manuring	Plant protection	Harvesting	Post harvest practices n=20	Shed cleaning	Fodder collection/ grazing	Milking	Marketing
Family male	13 (43.00)	16 (53.00)	8 (26.50)	10 (33.00)	3 (10.00)	15 (50.00)	11 (36.00)	5 (17.00)	2 (10.00)	7 (23.00)	5 (17.00)	13 (43.00)	15 (50.00)
Hired male	-	2 (6.50)	-	8 (26.50)	-	5 (17.00)	5 (17.00)	10 (33.00)	5 (25.00)	3 (10.00)	-	4 (13.00)	5 (16.50)
Hired male and family male	-	-	5 (16.50)	6 (20.00)	-	3 (10.00)	-	-	-	-	-	2 (7.00)	5 (16.50)
Family female	6 (20.00)	4 (13.00)	4 (13.00)	2 (6.50)	8 (26.50)	-	4 (13.00)	4 (13.00)	4 (20.00)	15 (50.00)	15 (50.00)	2 (7.00)	3 (10.00)
Hired female	-	-	2 (7.00)	-	6 (20.00)	-	-	5 (17.00)	5 (25.00)	2 (6.50)	4 (13.00)	7 (23.00)	-
Family female and hired female	8 (27.00)	-	-	4 (13.00)	5 (17.00)	3 (10.00)	-	-	4 (20.00)	-	-	-	-
Family male and family female	3 (10.00)	8 (26.50)	8 (26.50)	-	3 (10.00)	4 (13.00)	10 (33.00)	6 (20.00)	-	3 (10.00)	6 (20.00)	2 (6.50)	2 (6.50)
Family male and hired female	-	-	-	-	-	-	-	-	-	-	-	-	-
Hired male and hired female	-	-	3 (10.00)	-	3 (10.00)	-	-	-	-	-	-	-	-
Family female and hired male	-	-	-	-	2 (6.50)	-	-	-	-	-	-	-	-

Figures given in parenthesis indicates frequency



171795

Table 14. Categorisation of farm activities based on extent of involvement of men and women in farming system type III (Homestead with crop components and livestock components) n=30

Category	Selection of variety (%)	Land preparation (%)	Planting (%)	Irrigation (%)	Weeding (%)	Manuring (%)	Plant protection (%)	Harvesting (%)	Post harvest practices (%)	Shed cleaning/cleaning premises (%)	Fodder/feed collection/ grazing (%)	Milking (%)	Marketing (%)
Men alone	43.00	60.00	44.00	80.00	10.00	77.00	53.00	50.00	35.00	33.00	17.00	63.00	83.00
Women alone	47.00	13.00	46.00	20.00	63.00	10.00	13.00	30.00	65.00	57.00	63.00	30.00	10.00
Men and women together	10.00	27.00	10.00	-	27.00	13.00	34.00	20.00	-	10.00	20.00	7.00	7.00
Description of practice	Gender neutral	Male dominant	Gender neutral	Male dominant	Female dominant	Male dominant	Male dominant	Male dominant	Female dominant	Female dominant	Female dominant	Male dominant	Male dominant

Table 15. Extent of involvement of men and women in farming system type IV (Homestead with crop components, livestock components and extended garden) n=30

Practice	Selection of variety	Land preparation	Planting	Irrigating	Weeding	Manuring	Plant protection	Harvesting	Post-harvest practices	Shed cleaning	Fodder/Feed collection	Milking	Marketing
Family male	21 (70.00)	6 (20.00)	3 (10.00)	6 (20.00)	3 (10.00)	8 (27.00)	5 (17.00)	4 (13.00)	4 (13.00)	4 (17.00)	5 (17.00)	10 (33.00)	10 (33.00)
Hired male	-	9 (30.00)	5 (17.00)	8 (27.00)	4 (13.00)	5 (17.00)	7 (23.00)	3 (10.00)	6 (20.00)	3 (10.00)	-	8 (27.00)	6 (20.00)
Hired male and family male	-	8 (27.00)	2 (7.00)	2 (7.00)	3 (10.00)	6 (20.00)	6 (20.00)	3 (10.00)	3 (10.00)	-	-	-	4 (13.00)
Family female	-	-	4 (13.00)	-	4 (13.00)	-	2 (7.00)	5 (17.00)	2 (7.00)	10 (33.00)	15 (30.00)	4 (13.00)	5 (17.00)
Hired female	3 (10.00)	-	3 (10.00)	2 (7.00)	7 (23.00)	4 (13.00)	-	6 (20.00)	8 (27.00)	5 (17.00)	4 (13.00)	3 (10.00)	-
Family female and hired female	-	-	6 (20.00)	-	2 (7.00)	-	-	-	5 (17.00)	-	-	-	2 (7.00)
Family male and family female	6 (20.00)	3 (10.00)	4 (13.00)	5 (17.00)	2 (7.00)	4 (13.00)	5 (17.00)	4 (13.00)	-	6 (20.00)	5 (17.00)	2 (7.00)	3 (10.00)
Family male and hired female	-	4 (13.00)	-	3 (10.00)	1 (1.00)	-	-	-	-	-	-	-	-
Hired male and hired female	-	-	3 (10.00)	4 (12.00)	4 (13.00)	3 (10.00)	5 (17.00)	5 (17.00)	-	2 (7.00)	1 (3.00)	3 (10.00)	-
Family female and hired male	-	-	-	-	-	-	-	-	2 (7.00)	-	-	-	-

Figures given in parenthesis indicates frequency

Table 16. Categorization of farm activities based on extent of involvement of men and women in farming system type IV
(Homestead with crop components, livestock components and extended garden)

n=30

Category (%)	Selection of variety (%)	Land preparation (%)	Planting (%)	Irrigation (%)	Weeding (%)	Manuring (%)	Plant protection (%)	Harvesting (%)	Post harvest practices (%)	Shed cleaning/cleaning premises (%)	Fodder/feed collection/grazing (%)	Milking (%)	Marketing (%)
Men alone	70.00	77.00	33.00	53.00	33.00	57.00	60.00	33.00	43.00	23.00	17.00	60.00	67.00
Women alone	10.00	-	43.00	7.00	43.00	63.00	7.00	37.00	50.00	50.00	63.00	23.00	23.00
Men and women together	20.00	23.00	24.00	40.00	24.00	23.00	33.00	30.00	7.00	27.00	20.00	17.00	10.00
Description of the practice	Male dominant	Male dominant	Gender neutral	Male dominant	Gender neutral	Male dominant	Male dominant	Gender neutral	Female dominant	Female dominant	Female dominant	Male dominant	Male dominant

Table 17. Extent of involvement of men and women in the farming system type V (agri nursery)

n=17

Category	Selection of variety	Land preparation	Planting	Irrigation	Weeding	Manuring	Plant protection	Marketing
Family male	10 (59.00)	4 (23.50)	4 (23.50)	6 (35.00)	4 (23.50)	7 (41.00)	7 (41.00)	10 (59.00)
Hired male	-	4 (23.50)	-	-	-	2 (12.00)	2 (12.00)	2 (12.00)
Hired male and family male	-	2 (12.00)	-	-	-	-	-	-
Family female	5 (29.00)	2 (12.00)	7 (41.00)	7 (41.00)	8 (46.00)	4 (23.50)	2 (12.00)	-
Hired female	-	3 (17.00)	2 (12.00)	-	2 (12.00)	-	2 (12.00)	4 (23.50)
Family female and hired female	-	2 (12.00)	-	-	3 (18.00)	-	-	-
Family male and family female	2 (12.00)	-	4 (23.50)	4 (24.00)	-	4 (23.50)	4 (23.50)	1 (5.00)
Family male and hired female	-	-	-	-	-	-	-	-
Hired male and hired female	-	-	-	-	-	-	-	-
Family female and hired male	-	-	-	-	-	-	-	-

Figures given in parenthesis indicates frequency

Table 18. Categorization of farm activities based on extent of involvement of men and women in farming system type V (agri nursery)

n=17

Category	Selection of variety (%)	Land preparation (%)	Planting	Irrigation (%)	Weeding (%)	Manuring (%)	Plant protection (%)	Marketing (%)
Men alone	59.00	59.00	23.50	35.00	24.00	52.00	52.00	71.00
Women alone	29.00	41.00	53.00	41.00	59.00	24.00	24.00	24.00
Men and women together	12.00	-	23.50	24.00	17.00	24.00	24.00	5.00
Description of the practice	Male dominant	Male dominant	Female dominant	Gender neutral	Female dominant	Male dominant	Male dominant	Male dominant

Among the 17 agri-nursery units, it was found that the various operations such as selection of variety (59%), land preparation (59%), manuring (52%), plant protection (52%) and marketing (71%) were mainly carried by men (male dominant) and the activities like weeding (59%), planting (53%) were found to be female dominant.

Table 19. Extent of involvement of farm activities based on men and women in the farming system type V (rabbity and piggery).

n = 8

Category	Selection of breed (%)	Cleaning premises (%)	Feed collection (%)	Marketing (%)
Family male	4 (50.00)	1 (12.00)	3 (37.00)	5 (63.00)
Hired male	-	-	-	-
Hired male and family male	-	-	-	-
Family female	-	5 (63.00)	4 (50.00)	2 (25.00)
Hired female	2 (25.00)	-	-	-
Family female and hired female	-	-	-	-
Family male and family female	2 (25.00)	2 (24.00)	1 (12.00)	1 (12.00)
Family male and hired female	-	-	-	-
Hired male and hired female	-	-	-	-
Family female and hired male	-	-	-	-

Figures given in parenthesis indicates frequency

Table 20. Categorization of farm activities based on extent of involvement of men and women in farming system with type V (rabbitry and piggery) n=8

Category	Selection of breed (%)	Cleaning premises (%)	Feed collection (%)	Marketing (%)
Men alone	50.00	13.00	38.00	63.00
Women alone	25.00	63.00	50.00	25.00
Men and women together	25.00	24.00	12.00	12.00
Description of the practice	Male dominant	Female dominant	Female dominant	Male dominant

Tables 19 and 20 highlight that in piggery and rabbitry, the activities like cleaning of shed premises (63%) and feed collection (50%) were found to be female dominant activities.

4.2.6 Farming systems in general

Tables 21, 22 and 23 present the roles of men and women in the farming systems of Madakkathara Panchayath in general. The activities like selection of variety (59%), land preparation (66%), manuring (55%), plant protection (54%), marketing (68%) and milking (62%) were found to be male dominant. The female dominant farm activities were weeding (52%), cattle shed cleaning (54%) and fodder collection (63%). Gender neutral farm operations which men and women perform more or less equally are planting, irrigation, harvesting and post harvest processing. No farm operations were identified as male specific or female specific which highlight the role and participation of both men and women in the different farming systems in the study area.

4.3 Perceived roles of farm family as perceived by agricultural development functionaries

The Tables 24 to 26 depict the roles of men and women in the farming as perceived by the agricultural development functionaries (extension personnel, scientist, political functionaries). The agencies have indicated that the activities like planting, irrigation, weeding, post harvest processing, marketing, cattle management etc. are gender neutral.

Table 21. Extent of involvement of men and women in different types of farming systems of the study area

Category	n = 145	n = 137	n = 137	n = 137	n = 137	n = 137	n = 137	n = 120	n = 81	n = 68	n = 68	n = 60	n = 145
	Selection of variety	Land preparation	Planting	Irrigation	Weeding	Manuring	Plant protection	Harvesting	Post-harvest practices	Shed cleaning/cleaning premises	Feed/fodder collection/grazing	Milking	Marketing
Family male	83 (51.00)	39 (28.00)	26 (19.00)	31 (23.00)	15 (11.00)	42 (31.00)	33 (24.00)	18 (15.00)	9 (11.00)	11 (16.00)	12 (8.00)	23 (38.00)	64 (44.00)
Hired male	2 (1.00)	32 (23.00)	14 (10.00)	24 (18.00)	10 (7.00)	22 (16.00)	28 (20.00)	22 (18.00)	15 (19.00)	6 (9.00)	-	12 (20.00)	21 (14.00)
Hired male and family male	-	19 (14.00)	13 (9.00)	11 (8.00)	8 (6.00)	11 (8.00)	13 (9.00)	9 (7.00)	8 (10.00)	-	-	2 (3.00)	14 (10.00)
Family female	15 (10.00)	10 (7.00)	21 (15.00)	13 (9.00)	26 (19.00)	10 (7.00)	13 (9.00)	15 (13.00)	14 (17.00)	28 (41.00)	35 (51.00)	6 (10.00)	17 (12.00)
Hired female	10 (7.00)	3 (2.00)	13 (9.00)	10 (7.00)	28 (20.00)	7 (5.00)	5 (4.00)	19 (16.00)	13 (16.00)	9 (13.00)	8 (12.00)	10 (16.00)	8 (6.00)
Family female and hired female	8 (6.00)	6 (4.00)	17 (12.00)	7 (5.00)	17 (12.00)	5 (4.00)	5 (4.00)	6 (5.00)	9 (11.00)	-	-	-	2 (1.00)
Family male and family female	25 (17.00)	14 (10.00)	21 (15.00)	22 (16.00)	14 (10.00)	23 (17.00)	26 (19.00)	16 (13.00)	8 (10.00)	9 (13.00)	11 (16.00)	4 (7.00)	7 (4.00)
Family male and hired female	2 (1.00)	4 (3.00)	-	3 (2.00)	3 (2.00)	11 (8.00)	2 (1.00)	2 (2.00)	-	3 (5.00)	-	-	7 (4.00)
Hired male and hired female	-	10 (7.00)	12 (9.00)	16 (12.00)	14 (10)	6 (4.00)	12 (9.00)	13 (11.00)	3 (4.00)	2 (3.00)	-	3 (5.00)	2 (1.00)
Family female and hired male	-	-	-	-	2 (1.00)	-	-	-	2 (2.00)	-	2 (2.00)	-	3 (2.00)

Figures given in parenthesis indicates frequency

Table 22. Categorization of farm activities based on extent of involvement of men and women in different types of farming systems of the study area

n = 145

Category	Selection of Variety (%)	Land preparation (%)	Planting (%)	Irrigation (%)	Weeding (%)	Manuring (%)	Plant protection (%)	Harvesting (%)	Post harvest practices (%)	Shed/cleaning premises (%)	Fodder/feed collection (%)	Milking (%)	Marketing (%)
Men alone	59.00	66.00	39.00	48.00	24.00	55.00	54.00	40.00	40.00	25.00	18.00	62.00	68.00
Women alone	23.00	14.00	32.00	22.00	52.00	16.00	17.00	33.00	44.00	54.00	63.00	27.00	19.00
Men and women together	18.00	20.00	29.00	30.00	24.00	29.00	29.00	27.00	16.00	21.00	19.00	11.00	13.00
Description of the practice	Male dominant	Male dominant	Gender neutral	Gender neutral	Female dominant	Male dominant	Male dominant	Gender neutral	Gender neutral	Female dominant	Female dominant	Male dominant	Male dominant

Table 23. Comparison of farm activities of farming system based on extent of involvement of men and women in different farming systems

Farming systems	Selection of variety	Land preparation	Planting	Irrigation	Weeding	Manuring	Plant protection	Harvesting	Post harvest operation	Marketing	Shed/cleaning	Fodder collection	Milking
Type-I	Male dominant	Male dominant	Gender neutral	Gender neutral	Female dominant	Gender neutral	Gender neutral	Gender neutral	Female dominant	Male dominant	-	-	-
Type-II	Male dominant	Male dominant	Gender neutral	Gender neutral	Female dominant	Gender neutral	Male dominant	Gender neutral	Male dominant	Male dominant	-	-	-
Type-III	Gender neutral	Male dominant	Gender neutral	Male dominant	Female dominant	Male dominant	Male dominant	Male dominant	Female dominant	Male dominant	Female dominant	Female dominant	Male dominant
Type-IV	Male dominant	Male dominant	Gender neutral	Male dominant	Gender neutral	Male dominant	Male dominant	Gender neutral	Female dominant	Male dominant	Female dominant	Female dominant	Male dominant
Type-V	Male dominant	Male dominant	Female dominant	Gender neutral	Female dominant	Male dominant	Male dominant	-	-	Male dominant	Female dominant	Female dominant	-

Table 24. Roles of farm family as perceived by the agricultural development functionaries

n = 90

Sl. No.	Activity	Family female		Family male		Family male + Family female		Hired male		Hired female		Hired male + Hired female	
		F	P	F	P	F	P	F	P	F	P	F	P
1	Ploughing			38	12	-	-	52	58	-	-	-	-
2	Planting	17	19	3	3	10	11	22	24	18	20	20	22
3	Irrigation	9	10	20	22	23	26	15	17	5	6	18	20
4	Weeding	9	60	10	11	15	17	16	18	22	24	18	20
5	Bund forming	2	2	16	18	15	17	40	44	5	6	12	13
6	Chemical fertilizer application	5	6	22	24	20	22	30	33	6	7	7	8
7	Paddy harvesting	14	16	10	11	10	11	15	17	25	28	10	18
8	Threshing	9	10	20	22	14	15	17	19	15	17	25	28
9	Marketing	2	2	20	22	3	31	10	11	25	28	20	22
10	Coconut basin forming	31	3	25	28	8	9	34	37	10	11	10	11
11	Coconut harvesting		2	-	-	-	-	87	96	-	-	1	(1)
12	Coconut selling	10	11	28	31	5	6	30	39	7	8	10	11
13	Rubber tapping	10	17	10	11	20	22	18	20	10	11	22	24
14	Sheet rolling	11	12	18	20	16	18	20	22	5	6	20	22
15	Banana basin forming	13	14	5	6	11	12	36	40	4	4	21	23
16	Irrigating Banana	20	22	14	16	15	17	18	20	11	12	12	13
17	Vegetable cultivation	18	20	20	22	19	21	3	3	15	17	15	17
18	Arecanut processing	14	16	15	17	12	13	10	11	18	20	12	13
19	Tapioca basin forming	10	11	8	8	10	11	25	28	10	11	22	24
20	Marketing the produce	22	24	18	20	10	11	20	22	18	20	12	13
21	Milking	15	17	7	8	5	6	32	36	10	11	11	12
22	Milk selling	14	16	25	28	16	18	20	22	5	6	10	11
23	Cattle management	20	22	23	26	17	19	13	14	10	11	7	8

F - frequency

P - percentage

4.4 Comparison of the actual role of the farmers and perceived roles (by the development functionaries)

A comparison of the actual roles of the farm families and their perceived roles by the development agencies is presented in the Table 27. It could be noticed from the table that only with respect to ten major areas of farm operations, comparison was made. There was agreement with regard to actual role

Table 25. Role of men and women farming systems as perceived by agricultural development functionaries

n = 90

Sl. No.	Practice	Family female		Family male		Family male + Family female		Hired male		Hired female		Hired male + Hired female	
		F	P	F	P	F	P	F	P	F	P	F	P
1	Land preparation	15	17	31	33	8	11	7	8	15	16	14	15
2	Planting	3	3	22	24	17	18	18	20	10	11	20	22
3	Irrigation	17	18	16	17	15	16	8	8	19	21	15	16
4	Weeding	10	11	16	17	9	10	22	24	15	16	18	20
5	Manuring	22	24	30	33	5	6	6	7	20	22	7	8
6	Harvesting	7	8	50	55	7	8	13	14	5	6	8	9
7	Post harvest operations	14	15	16	17	11	12	15	17	14	16	20	22
8	Marketing	21	23	18	20	12	13	14	15	12	13	15	16
9	Milking	15	16	32	36	17	19	10	11	5	6	11	12
10	Cattle management	23	26	13	14	20	22	10	11	17	19	7	8

F - frequency

P - percentage

Table 26. Categorization of farm activities based on the role perception by agricultural development functionaries

n = 90

Category	Land preparation (%)	Planting (%)	Irrigation (%)	Weeding (%)	Manuring (%)	Harvesting (%)	Post harvest (%)	Marketing (%)	Milking (%)	Cattle management (%)
Men alone	51.00	28.00	27.00	28.00	58.00	63.00	33.00	42.00	52.00	40.00
Women alone	17.00	39.00	40.00	35.00	12.00	22.00	29.00	28.00	30.00	33.00
Men and women together	32.00	33.00	33.00	37.00	30.00	14.00	38.00	30.00	18.00	27.00
Description of the practice	Male dominant	Gender neutral	Gender neutral	Gender neutral	Male dominant	Male dominant	Gender neutral	Gender neutral	Male dominant	Gender neutral

and perceived role in the case of six areas viz, land preparation, planting, irrigation, manuring, post harvest operations and milking. The development functionaries had failed to make correct perception with regard to farm operations like weeding, harvesting, marketing and cattle management. This is an observation which has got much relevance in the field.

Table 27. Comparison of actual roles of the farmers and perceived role performance (by development functionaries)

n = 90

Sl. No.	Practice	Actual role	Perceived role	Agree with the field situation	Disagree with the field situation
1	Land preparation	Male dominant	Male dominant	√	
2	Planting	Gender neutral	Gender neutral	√	
3	Irrigation	Gender neutral	Gender neutral	√	
4	Weeding	Female dominant	Gender neutral		√
5	Manuring	Male dominant	Male dominant	√	
6	Harvesting	Gender neutral	Male dominant		√
7	Post harvest operation	Gender neutral	Gender neutral	√	
8	Marketing	Male dominant	Gender neutral		√
9	Milking	Male dominant	Male dominant	√	
10	Cattle management	Female dominant	Gender neutral		√

4.5 Women labour utilization in different farming systems

The women labour utilization in the different farming systems are presented in Table 28 revealed that maximum number of female labour days was utilised in Type-IV followed by Type-V and Type-3 and the lowest was for Type-I. It was also found that the distribution of female labour days between hired and

family labour was not uniform among the different farming systems. It may be noted that family labour utilization was higher in Type-III followed by Type-IV and Type-V. These variation in female labour utilisation among the different farming systems were in accordance with the nature of activities as already explained in the previous section. The percentage contribution of family labour to the total female labour cost was highest in Type III (84%) followed by Type-I (77%) and Type-V (53%). The system with homestead and crop components alone mainly depend on family labour while its extended types (II and IV) are mainly dependent on paid female labour.

Table 28. Annual women labour utilization in the different farming systems

Farming systems	Labour days		Total women labour days	Labour cost @ Rs.120 per day				Total women labour cost (Rs.)
	Family women	Hired women		Unpaid family women labour (Rs.)	Percent-age	Paid hired women labour (Rs.)	Percent-age	
Type-I	70	21	91	8400	77.00	2520	23.00	10920
Type-II	44	70	114	5250	37.00	8400	63.00	13680
Type-III	120	24	144	14440	84.00	2800	16.00	17280
Type-IV	95	130	225	11400	42.00	15600	58.00	27000
Type-V	85	74	159	10200	53.00	8880	47.00	19080

4.6 Farm income contribution of family female labour in different farming systems

The contribution of family female labour towards the net farm income was worked out and is presented in Table 29 and Fig. 3. The net farm income was arrived at after deducting the farm expenses (given in Appendix-II) from the gross income. The results revealed that in general women are contributing 20 per cent of the net farm income by their unpaid labour and the contribution varied from 37 per cent to 11 per cent in the different farming systems. It was found to be highest in farming system with crop components and live stock components (37%) followed by agri-business components (30%) the lowest being in farming system with crop

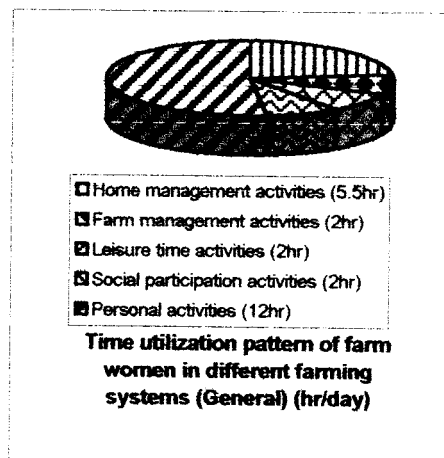
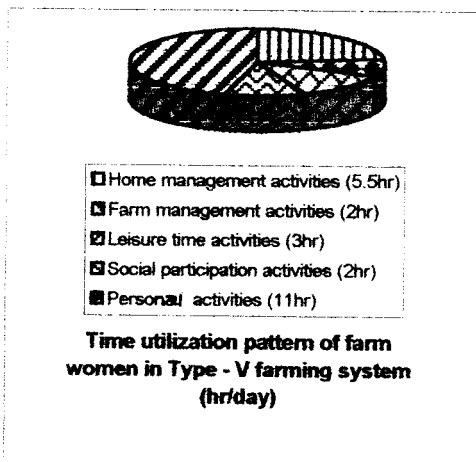
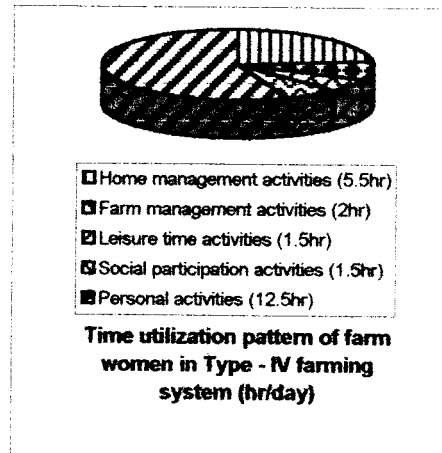
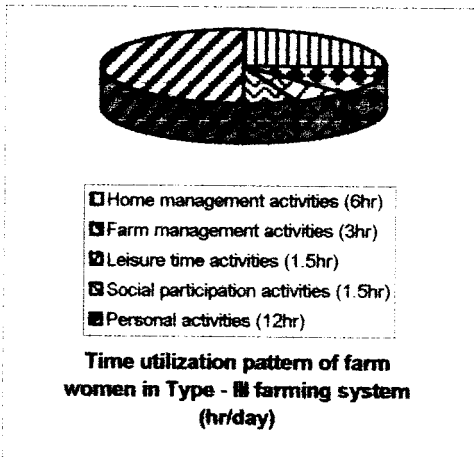
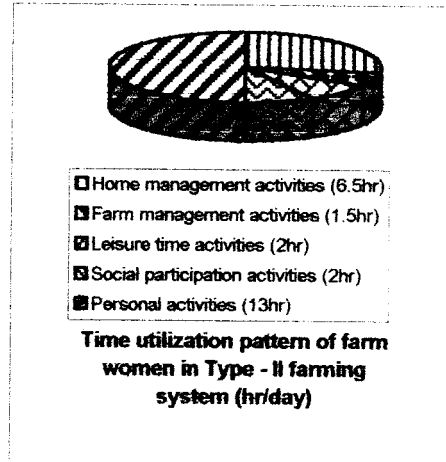
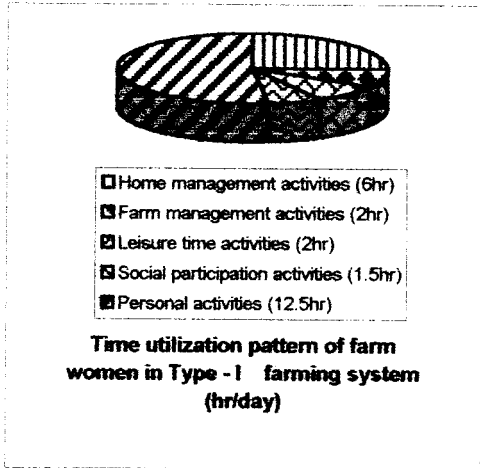


Fig. 4. Time utilization pattern of farm women in the different farming systems

components extended garden and live stock components (11%). This indicates the potential of the III and V farming systems (crop/live stock based and agri-business based) to utilise the family labour by women to obtain higher farm income.

Table 29. Farm income contribution of women family labour in different farming systems

Sl. No.	Farming systems	Average family women labour contribution (Rs.)	Net farm income (Rs.)	Contribution to the net farm income (%)
1	Farm system with crop components alone	8400.00	33683.36	25.00
2	Farming system with crop components and extended garden	5250.00	39912.56	13.00
3	Farming system with crop components and live stock components	14440.00	38917.2	37.00
4	Farming system with crop components and livestock components and extended garden	11400.00	103355.3	11.00
5	Farming system with agribusiness enterprise	10200.00	34226.4	30.00
6	General farm women's contribution of the farming system	9938.00	50009.96	20.00

4.7 Time utilization pattern of farm women

The Table 30 and Fig. 4 could highlight the productive use of women in the farming system with additional component of livestock. In this systems the family women take part in farm activities even up to 3 hours a day.

It was also noticed that on an average, the family women spend 2 hours of labour a day in relation to the various farm activities, in the study area.

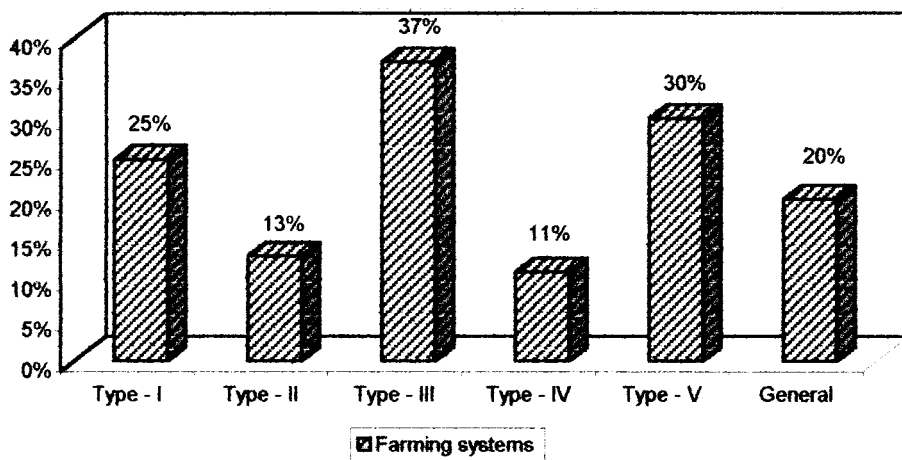


Fig. 3. Farm income contribution of women family labour in different farming systems

Table 30. Time utilization pattern of farm women

Farming systems	Home management activities hr/day	Farm management activities/ hr/day	Leisure time activities hr/day	Social participation activities hr/day	Personal activities hr/day
Farming system with crop components alone	6	2.0	2	1.5	12.5
Farming system with crop component and extended garden	5.5	1.5	2	2	13
Farming system with crop and livestock components	6	3	1.5	1.5	12
Farming system with crop, livestock component and extended garden	5.5	2	1.5	1.5	13.5
Farming system with agribusiness component	5.5	2	3	2.5	11
General time utilization pattern among farm women	5.5	2	2	2	12

4.8 Perceived problems and constraints of farm women

Table 31 revealed that the highest problem as perceived by the farm women was lack of economic freedom, followed by problems due to high labour and input cost. The other popular problems/constraints experienced by farm women were lack of freedom in marketing of produce, lower price for farm produce, inadequacy of capital etc. Majority of the livestock farmers also pointed out the problems of low price for milk. The non response on the part of the farm women with respect to the problem of loss in their employment opportunity on mechanization may be noted.

4.9 Problems and constraints of farm women as perceived by development functionaries

Tables 32 and 33 revealed that there is significant difference in perception of the problems and constraints of farm women between the three groups viz. extension personnel, agricultural scientists and political functionaries.

Table 31. Problems and constraints of farm participation as perceived by farm women
n = 145

Sl. No.	Problems and constraints	Farming systems	
		F	%
1	Women lack economic freedom though they contribute a major part to total income	57	(39)
2	High labour cost and input cost	51	(35)
3	Low price for milk	45	(31)
4	Lack of involvement in marketing	44	(30)
5	Low price for farm produce	32	(22)
6	Inadequacy of capital	31	(21)
7	Non-availability of credit	27	(19)
8	Women are forced to do back breaking farm activities like transplanting, weeding, harvesting etc.	22	(15)
9	Poor transport facilities/mobility	21	(14)
10	Non-availability of labour	21	(14)
11	Lack of knowledge and technology guidance	19	(13)
12	Scarcity of grass and lack of fodder cultivation facility	15	(10)
13	Physical problems and diseases due to heavy work	14	(10)
14	Due to mechanisation women have lost their farm activity opportunities	No response	

Table 32. Problems and constraints of farm women as perceived by development functionaries

Sl. No.	Problems and constraints	Extension personnel	Scientists	Political functionaries
1	Women are forced to do back breaking activities like transplanting, weeding etc.	82	92	97
2	There is inequality in wage rate for women farmers though they are performing similar task	84	91	92
3	There is no recognition for their field work in addition to home management among them itself	94	76	84
4	Home activities and farm activities i.e., the dual work women are performing though there is no recognition	103	99	79
5	There is no economic freedom for women even then their contribution to total income is a major part	106	87	74
6	Skill and practice needed for farm activities are not provided to women farmers	84	76	78
7	Subsidies and credits are not directly getting to women farmers because they have no land ownership	73	77	84
8	Though they are participating in women development programmes there is no recognition for their involvement	81	76	82
9	Due to mechanisation women had loss their job opportunities	94	85	78
10	Due to existing traditional belief that mechanisation is men's monopoly ladies are not coming forward	93	84	75
11	All machines are suited to men	67	70	60
12	Physical problems due to involvement in heavy activities	73	82	57
13	Women are deprived of much representation in committees formed for their well being	77	81	67
	Mean score	85	82	77

Development personnel have the highest score (85) followed by scientists and policy makers 82 and 77 respectively. The χ^2 value obtained in Friedmann's two way Anova applied on the perceived ranks of problems and constraints of farm women by the scientists, extension personnel and political functionaries, table indicate that high degree of differential perception exist among the three groups at five per cent level and one per cent level. The differential perception among these three groups of development functionaries who are very much related to the development of the agricultural sector warrants attention.

Table 33. Problems and constraints of farm women as perceived by development functionaries (scores)

Problems and constraints	Scientists	Rank	Politicians	Rank	Development personnel	Rank	χ^2 value
1	0.68	2	0.7	3	0.53	1	10.04
2	0.76	1.5	0.9	3	0.76	1.5	
3	0.64	2	0.58	1	0.71	3	
4	0.74	2	0.65	1	0.77	3	
5	0.73	2	0.60	1	0.76	3	
6	0.64	1	0.68	2	0.78	3	
7	0.64	2	0.66	3	0.57	1	
8	0.63	1	0.65	2	0.68	3	
9	0.71	2	0.65	1	0.78	3	
10	0.75	2	0.65	1	0.79	3	
11	0.58	3	0.51	1	0.56	2	
12	0.61	1.5	0.51	3	0.61	1.5	
13	0.63	1.5	0.65	3	0.63	1.5	

** - Significant at 5% level

* - Significant at 1% level

4.10 Content and beneficiary analysis of development programmes

A perusal Table 34 would help to analyse to what extent the development programmes of agriculture and allied sectors in Madakkathara Panchayath are gender sensitive and consider women also as farmers. It could be noticed that almost all programmes in the animal husbandry sector were well targeted towards the farm women and gave due recognition of their participation in the sector. Out of the nine programmes implemented during the previous three years, more than 90 per cent of beneficiaries were women.

Table 34. Content and beneficiary analysis of the development programmes in Madakkathara panchayath (1997-2000)

Animal husbandry

Name of the programme	Year of implementation	Objectives	Components	Total no. of beneficiaries	No. of female beneficiaries
1) Backyard chicken rearing	1997-98 1998-99 1999-2000	I. To distribute 2500 chicken within 5 years II. To make the panchayath self sufficient in egg production III. Grew hens in backyard	1. Distribution of chicken 2. Training component	300	300
2) Vaccination for chicken in homestead	1997-98 1998-99 1999-2000	I. To eradicate the diseases II. To increase the egg production within 5 year	1. Skill training in vaccination 2. Vaccination for all the poultry birds in the panchayath	500	500
3) Mini-Dairy General	1997-98 1998-99 1999-2000	I. To distribute cows for 20 members with an aim of increasing milk production II. To increase the employment opportunities III. To increase the use of milk IV. To increase the use of farm yard manure	1. Training for beneficiaries 2. Assistance for building concrete cattleshed 3. Insurance component	48	48
4) Mini-Dairy SC	1998-99 1999-2000	I. To distribute cows for 20 members with an aim of increasing milk production II. To increase the employment opportunities III. To increase the use of milk IV. To increase the use of farm yard manure	1. Training for beneficiaries 2. Assistance for building concrete cattleshed 3. Insurance component	6	6

Table 34. Continued

Name of the programme	Year of implementation	Objectives	Components	Total no. of beneficiaries	No. of female beneficiaries
5) Kamadhenu project SC & general	1998-99 1999-2000	To create employment opportunities for widows and scheduled caste persons with cattle management as their livelihood.	Insurance for cow and owner	60	60
6) Rabbit rearing general	1998-99 1999-2000	To popularize hide processing to increase the income To increase the production and use of meat	1. Training 2. Supply of rabbits 3. Supply of feed	21	21
7) Rabbit rearing SC	1998-99 1999-2000	To popularize hide processing to increase the income To increase the production and use of meat	1. Training 2. supply of rabbits 3. Supply of feed	9	9

Table 34. Continued

Name of the programme	Year of implementation	Objectives	Components	Total no. of beneficiaries	No. of female beneficiaries
In addition to this under development samithy					
8) Group rabbit rearing unit	1998	To give employment opportunities for women on group basis	Free distribution of rabbits and feed	2	2
9) Piggery	1998	To increase the income and make women economically self sufficient.	1. Free distribution of piglets. 2. Assistance for building pigstye	3	3

Dairy

Name of the programme	Year of implementation	Objectives	Components	Total no. of beneficiaries	No. of female beneficiaries
1) Panchaka programme	1997-98 1998-99 1999-2000	Renovation of cattle shed	Assistance for cattleshed construction	100	60
2) Watershed programme	1997-98	To increase cattle management in watershed areas	60 fodder gardens and 60 cattle shed constructed	120	60
3) Fodder development scheme	1997-98 1998-99 1999-2000	To decrease the cost of production of cattle feed and increase the milk production	Distribution of fodder cowpea, maize and sorghum	Implemented in 10 ha area	
4) Construction of cattle shed General & SC	1997-98	To popularise scientific cattle shed construction	Subsidy for cattle shed construction	100	50
5) Incentive to milk producers	1997-98 1998-99	To increase milk production	Cattle feed distribution	320	120
6) Pregnancy ration for animals	1998-99 1999-2000	To provide better nutrition for pregnant cows	Free rations was provided to farmers	150 150	100 100
7) Cattle feed subsidy	1998-99	To increase the milk production and reduce the cost of feed	Subsidy as cattle feed	300	150

Agriculture

Name of the programme	Year of implementation	Objectives	Components	No. of beneficiaries utilized	
				Total no. of beneficiaries	No. of female beneficiaries
1) Women agricultural nursery	1999-2000	To provide employment for 10 women labourers	Training in management of nursery activities like grafting, layering, pot mixture making etc.	10	10
2) Leafy vegetable cultivation	1998-99	To make the farm houses self sufficient in leafy vegetable production. To control the nutritional disorders among farmers. To include the leafy vegetable in the villagers food routine.	1. Vegetable seeds were distributed among selected 92 farmers. 2. Training	92	53
3) Comprehensive rice development project	1998-99 1999-2000	The application of machine power in rice cultivation. Experimental trial of mat nursery	1. Preparation of mat nursery for an area of 10 ha 2. Trial of machine transplanting in rice cultivation	40 ha of rice field in the panchayath	
4) Comprehensive coconut care project	1998-99	To increase the yield/palm of coconut Application of inorganic manures instead of chemical fertilizers	Training and inputs for better management practices like use of inorganic manures, magnesium sulphate, lime etc.	Better management practices for 5000 coconut palms	

Name of the programme	Year of implementation	Objectives	Components	No. of beneficiaries utilized	
				Total no. of beneficiaries	No. of female beneficiaries
5) Solid waste recycling	1997-98 1998-99 1999-2000	To convert solid waste of the panchayath into composte	Solid waste is collected and converted into compost and the compost is distributed to farmers	General programme	
6) Vermi composting	1997-98 1998-99 1999-2000	Preparation of vermi composte and distribution in the panchayath	1. Two vermi compost pits are formed 2. Vermi compost is distributed as trial basis to farmers on small scale.	General programme	
7) Honey bee rearing	1999-2000	To make the honey bee rearing more profitable. To increase the production and use of honey.	1. Honey bee with comb is distributed to 10 farmers. 2. Honey bees from the first 10 farmers were collected and distributed to next 10 members in the next year.	30	Nil
8) Rain pit digging	1997-98	To increase the water availability in the panchayath. To conserve water.	Rain pits were dug in the watershed areas of 9 th and 10 th wards of the panchayaths.	15	Nil

In addition to this the agricultural development activities of the panchayath in the study period in general were

- 1) Cattle show and seminar
- 2) Farmers contact programme –10
- 3) Quality awareness programme – 2
- 4) Inspection activities
- 5) Need based assistance to co-operative societies
- 6) Creation of milk marketing societies
- 7) Farmers orientation programme trip to Anad

Almost a similar trend was noticed in the case of dairy development programmes which were implemented during 1997-2000. The fact that more than 52 per cent of the beneficiaries were women farmers needs particular attention.

The tragic approaches followed in the case of development programmes in the agricultural sector demands concern of all. Out of the eight programmes implemented only one was meant for women and the other programmes and approaches were totally gender blind. The programmes on vermicomposting, honey bee culture and compost preparation which can well be targeted to women are found to be treated as general without any recognition of the roles of women in these activities.

4.11 Empirical model of the study

The empirical diagram (Fig.5) highlights the potential of gender friendly approaches of agricultural development. The connected and expanding circles (given in broken lines) indicate the potential for increased roles and contribution of women towards sustainable development of the farming systems in a gender friendly environment. The possibility and need for increased access and control of the gender friendly resource utilization, opportunities, technologies, policies, services, recognition and benefit sharing among the men and women members of the farming systems, to create an environmental of balanced development in the farming systems is also illustrated.

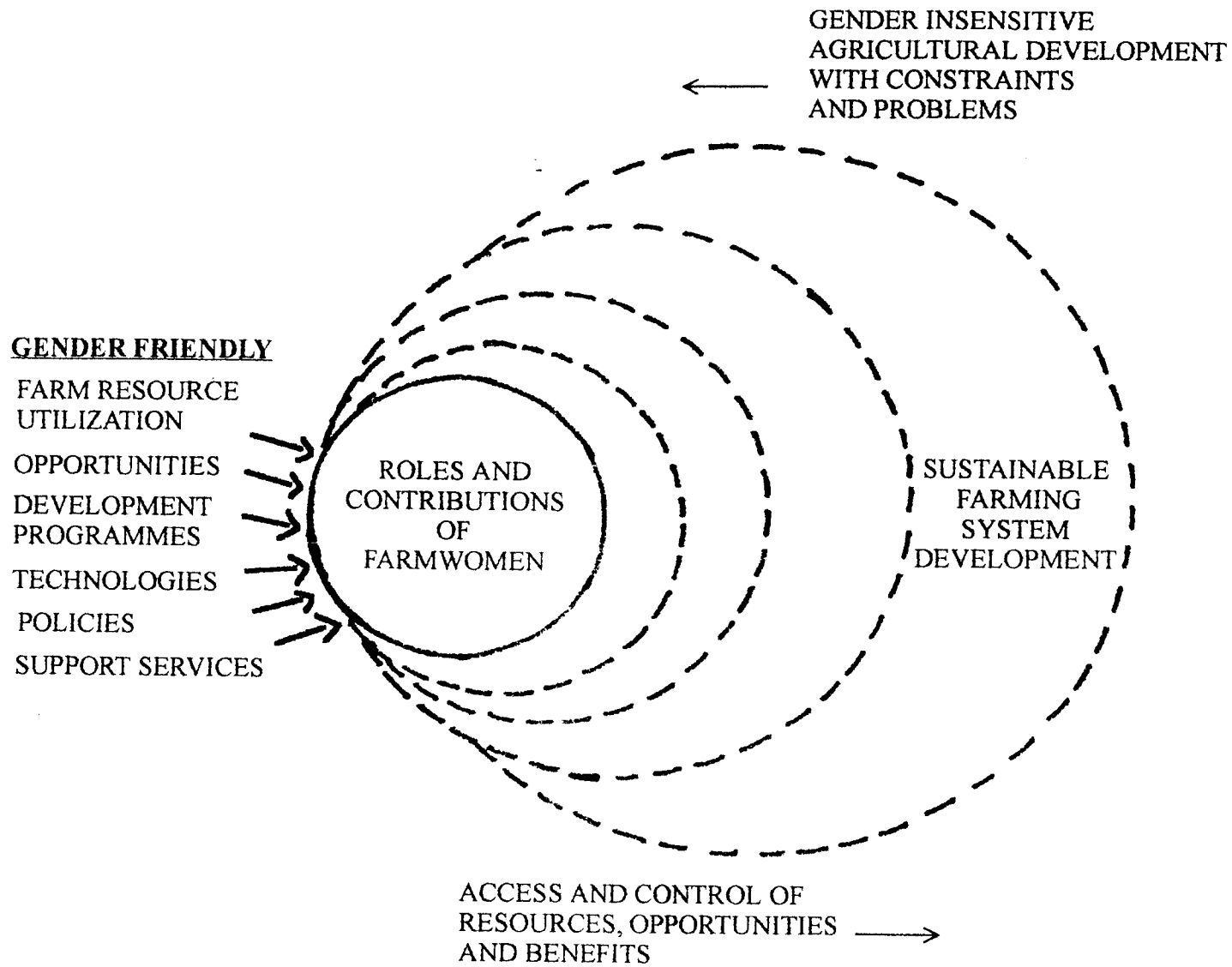


Fig. 5. Empirical model of the study

Discussion

DISCUSSION

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

- 5.1 Extent of involvement and categorization of farm activities based on the participation of men and women in the farming systems.
- 5.2 Roles of men and women in the farm family as perceived by the development functionaries
- 5.3 Farm income contribution of women labour in different farming systems.
- 5.4 Time utilization pattern of farm women
- 5.5 Problems and constraints of farm women
- 5.6 Perceived problems and constraints of farm women by the development functionaries
- 5.7 Content and beneficiary analysis of development programmes

5.1 Extent of involvement and categorization of farm activities based on the participation of men and women in the farming systems.

A comparative analysis of the data in the Tables 3 to 23 presented can help one to get a vivid picture of the gender roles of men and women in the farming systems of the study area.

Table 22 summarises in general the categorization of the major farming operations in the agriculture and allied sectors with respect to the gender roles of the farm operations in the study area. It is observable that practices like land preparation, selection of varieties / breeds, manuring plant protection, milking and marketing were identified as male dominant farm operations in the area while operations like weeding, shed cleaning and feeding of the cattle were identified as female dominant activities. A comparison of the nature of these two groups of

activities (male dominant and female dominant) brings out the basic gender discrimination women face in farm life.

The back breaking postures and drudgery involved in cattle shed cleaning and weeding operations may be noticed in the farming system. It could be observed that the roles men perform are less strenuous and mostly machine operated. Similar observation by Belgome (1994) pointed out that in cultivation except ploughing, levelling and irrigating the field, all the other works such as sowing, weeding, transplanting, harvesting and stocking were female dominated tasks. The marketing operations of both inputs and products are also dominated by men. This highlights the fact that cash flow is controlled mainly by the men in the systems, which reveals the fact that direct access and control on real money is denied to the women in the farming systems. Similar observation was made by Ahamed (1999) in a study conducted in Gujarat in the case of irrigated farming.

The changes in the gender roles in comparison to traditional situation could also be noticed from the Table 22. Milking and marketing of milk and milk products which were traditionally female dominant is changed with the modernization of cattle management and institutional changes. The small indigenous cattle which were managed in the past by house wives without much cattle feed and medicines are replaced by exotic or cross breed, which require special environment, feed ratio, modern medical treatment and involvement of males to milk them. The introduction of milk marketing societies has taken away the control and access on the selling of milk and cash flow from the hands of women in livestock management. It was also noted that women are rarely members of these societies and seldom take part in decision making.

The planting operation, harvesting and threshing originally used to be female specific were found to be different in the study area. The gender neutral nature of operations observed in the case of planting, irrigation, harvesting, postharvest practices, etc. need special attention and thought on the side of the

researches, extension personnel, planners, policy makers and administrators. If mechanisation is promoted, special machines ergonomically suited for each category of male and female should be developed or the existing machines should be appropriated as women friendly. It may also be noted that almost all machines available for farm operations are men operated (Geethakutty *et al.*, 2000). Similarly the development programmes should also be planned, targeted and implemented considering the coexistence of male and female farmers in the farming sector. The extension programmes of transfer of technology and training should not be gender blind, but should target the women farmers also. Asuri (1987) had observed that “general assumptions seem to be that whatever information women need about agricultural technologies will reach them through their male relatives” needs a special mention here, as farm women are seldom considered as the audience for farm messages and programmes. World Bank (1991) has also pointed out that the extension systems in India fail to reach women farmers.

Ahamed (1999) also had pointed out the gender blind nature of irrigation policies and programmes in Gujarat. The male and female labour utilization patterns also can be identified from Table 21.

The variation and trend of gender roles in the study area in the different farming systems could be observed from Tables 3-20. It is evident from the table that family male are mainly involved in selection of variety/breeds, milking of cow and marketing of produce in addition to land preparation, planting, irrigation, weeding, manuring, plant protection, etc. Hired male labour utilization can be mainly observed on operations like land preparation, plant protection, milking, harvesting and post harvest operations. Two activities for which family female labour is utilized mainly are fodder collection/feeding of cow and cattle shed cleaning. The utilization of hired female labour is comparatively less and whatever utilized are for the operations like weeding, harvesting and post harvest operations.

5.1.1 Roles of men and women in the farming system type – I (Homestead with crop components alone)

This type of farming system constitutes the major type of agricultural production system of marginal and small farmers in Madakkathara panchayath. The average size of the farm holdings in this type is 1.5 acre. Sixty per cent of the farmers have major occupation as farming (Table 3). Tables 9 and 10 depict the roles of women and men in the farm operations of this system. Since coconut is one of the major crops in this system and most of the operations of coconut are male oriented, hired labour utilization is very low in this system.

The nature of gender involvement in the farm operations needs special focus. The operations like planting, irrigation, manuring, plant protection and harvesting are found to be performed by men and women without much specificity. The observed gender neutral nature of the practices underlines needed orientation on the part of the development functionaries in terms of research, extension and planning. The technologies that are evolved for the various operations should also be gender neutral – i.e. they should be suitable for both male and female of the system.

In this particular type of farming system, very few post harvest activities were observed, which indicate the lack of farm level value addition. The families are either consuming the produces from the major crops – coconut, arecanut, tapioca, banana etc. or are being sold without much value addition. The noticed trend of women specificity in some of the post harvest activities warrants attention. There should be programmes which can impart needed training and skill in these areas to the women. Technologies designed for these practices also should be conducive for the women. The low utilization of hired labour is noticed in this system. The family male and family female labour mainly perform the farm operations.

5.1.2 Farming system Type – II (Homestead with crop components and extended garden)

Rice, coconut, arecanut and rubber are the major crops in this system. The average size of farm in this type of the system was noticed to be 1.8 acre (Table 4). Slightly varied trend in the involvement of male and female in the different operations of crops management can be noticed from the Tables 11 to 12. Rice is a major labour intensive crop wherein for planting and weeding female hired labour are mostly utilized. In comparison to the I type, in this system, planting, post harvest practices and plant protection activities were found to be male dominant.

The increased hired labour utilization also was noticed in comparison to the first type, which can be attributed to the increased size of holding in the system.

The low participation of family women in the post harvest operations is another peculiarity that was noticed in the II type system. The post harvest operations related to rice and rubber were observed to be performed by men (both family and hired). The family female labour work force of the system was found to be underutilized due to the class factors. Similar conclusion was drawn by Geethakutty *et al.* in 1995.

5.1.3 Farming system Type – III (Homestead with crop components and livestock components)

The third type of farming system which is a combination of the first type with the additional component of livestock highlights the possibility of efficient utilization of the resources in the major types of the farming systems in the study area (Tables 13 and 14). The system is observed to be more women friendly with four major areas of operations identified as female dominant viz. weeding, post harvest operations, cattle shed cleaning and cattle feeding. This observation was supported by the observations of Varma and Malik (1984) that

activities like fodder collection, giving water and feed to cattle, bathing and cleaning cattle etc are female dominant activities.

Two farm operations were observed in this system as gender neutral i.e. selection of varieties / breeds and planting activities.

However, this system was also in line with the general trend with regard to the male dominance existing in marketing, milking, land preparation, manuring and plant protection activities.

It was noticed that a special scheme exists in the study area wherein the Veterinary doctors extend services to the homestead in the case of women headed. This deserves special appreciation and mention which could be considered as a women friendly development scheme.

The possibility of identifying this type of farming system as more women friendly is discussed elsewhere in the text.

5.1.4 Farming system Type – IV (Homestead with crop components live stock and extended garden)

The average farm size is 2.7 acre in this system (Table 6). Tables (15 and 16) indicate the scope of the farming system to utilize women power both on crop management as well as livestock management activities. From the tables it is clear that the post harvest operations in this system were female dominant in addition to livestock management practices. These findings comply with the observations of Sheela (1989) that farm women involve to a greater level in dairy management activities like preparation of feed, feeding the animal and up to a certain level in processing and marketing of milk and milk products. The increased involvement of women, especially the family women in crop management activities is observable here. The observation made by Sharma (1989) that female work participation was a complex phenomenon influenced by a variety of factors like family cycle, structural changes in the economy, cultural biases in the society

and the economic status of the household concerned holds true here. The observed increased employment of women labour in the system is also to be interpreted in this context. The gender neutral nature of weeding in this system is worth mentioning. The involvement of weedicide application usually carried out by the male labourers has led to the present observation. This had to be considered as an example of the gender impact of new technologies on the traditional gender roles in an area.

5.1.5 Farming system Type – V (Agribusiness component)

In this system out of the 25 identified farming units, 17 had nursery enterprise, four had rabbitry enterprise and another four had piggery enterprise. It could be observed from the table that majority of the operations in the systems were handled by family male and family female members (Tables 17to 20).

Singh (1989) had observed the joint involvement of family men and women in farm and family enterprises. In nursery management weeding is identified as a female dominant activity. The involvement of female in other activities like land preparation, pot mixture making, planting include grafting, layering and budding is also noticeable. Kumar (1996) had observed in the case of marginal homesteads of Thrissur district that apart from crop combinations, most families have a variety of other enterprises of which dairying occupied the first place followed by poultry.

In rabbitry and piggery, activities like cleaning of premises, cleaning of shed, feed collection and feeding were observed to be female dominant activities. But like in other farming systems, the men dominate here also in marketing. This trend could be changed with support of modified marketing facilities and agencies wherein women may be able to carryout marketing activities also. In the present system, earnings of women's effort are not reaching the deserving hands. The very low utilization of hired labour is also noticeable in this system. During interview, it was observed that in majority of the units studied these activities of the enterprises

were sincerely and dedicatedly performed by women amidst their home management and child care activities.

These gender role categorizations in general and in specific systems and their implications should serve as an eye opener for all development functionaries. It may be noticed that women involve in major practices and operations in the different farming systems and how they are discriminated to engage in menial hard, strenuous and physical work without any aid of machines. This warrants serious thinking on the part of those concerned about the emancipation of women. The general trend seen with the invisibility of the farm involvement family women and the low wage rate to the hired women labour also should be considered together to obtain a clear picture of gender discrimination existing in the farm sector. The extent of contribution of farm women to the livelihood security of the household in each of these system is also analysed elsewhere in the text.

5.2 Roles of men and women in farm family as perceived by the development functionaries

The observations in Tables 24 to 27 indicate the failure on the part of the development functionaries to perceive realistically in relation to the field about the role of men and women involved in major areas of farm operations like weeding, harvesting, marketing and cattle management. It was noticed that weeding which is a female dominant activity is perceived as gender neutral by the development functionaries. In the context of the introduction of chemical weed control and its operation by the male might be the reason behind this observation which needs correction for realistic research, extension and policies. Other areas in which the development functionaries had differential perception with farmers are in harvesting, marketing and cattle management. These observed misconceptions are also of critical importance which have adverse repercussion on gender promotion.

The perception that harvesting is male dominant on the part of the functionaries would result in all research and development programmes to brand them as male friendly. Similarly the perception of the marketing accessibility as gender neutral on the side of the development functionaries would seriously affect any chance for bringing about changes for women friendly marketing facilities.

Another major difference noticed with the wrong perception of cattle management as gender neutral needs attention on the part of all authorities concerned with the development of the sector. The prevalence of the female dominant activities in livestock management should be brought to the attention of the scientists, extension personnel and policy makers for proper recognition, planning and implementation of women friendly programmes.

5.3 Farm income contribution of female labour in different farming systems

The observations in Table 28-29 are self revealing about the work participation pattern of women in rural area.

The women belonging to comparatively lower income groups with small land holdings, in the type – I, type – III and type – V were found to physically participate as unpaid labourers while the other two systems were found mainly depending on paid female workers.

The contribution of women in the system with livestock component can be attributed to the fact that majority of the livestock management activities are undertaken by women farmers themselves and hence the high imputed value of women's contributions in that system. The observation indicates an inverse relationship between the contribution of female and land holdings due to social, cultural and economic factors. This was well indicated earlier by Geethakutty *et al.* (1996) in a study on irrigation in coconut garden in Thrissur district. This observation can be supported by the questions and observations made by

Gulati *et al.* (1997) i.e. why a large proportion of women in Kerala remain out of the ambit of work participation. The increased percentage of unemployed rural female above 15 years of age in Kerala as 57 per cent in comparison to the reported 35 per cent of India is also worth mentioning in this context.

The observation on the high potential of agribusiness avenues of nursery, rabbitary, piggery, etc. to utilize family labour of farm women should be accounted. This should lead to more and better planned development strategies targeting farm women who are in marginal homesteads.

Programmes on training need identification, skill imparting, provision of infrastructural facilities, marketing facilities and support services in these line should also come into the purview of planners and implementors. The invisibility of the work contribution of farm women and their right and recognition in this context also should form agenda at all levels - farm women themselves, family members, planners and community administrators.

5.4 Time utilization pattern of farm women

Table 30 highlights the time utilization pattern of farm women in various activities such as home management which includes cooking, child care, parental care etc. farm / livestock activities which include field operations and cattle management activities, leisure time activities including watching television, hearing radio, reading newspapers etc., social participation including attending meetings, neighbourhood activities, religious activities etc., personal activities including bathing, sleeping, personal affairs, friendly visits etc.

According to Kaur (1996) women's works are categorized mainly into three groups – productive, reproductive and community works. In the present study, the reproductive works are grouped as home management works, while the productive works are described as farm management activities, and the community activities are described as social participation activities. In the paradigm developed

for the present study, two additional spaces are also included in the women's life space namely leisure time activities and personal activities. Geethakutty (2000) has indicated the need of space let alone for women's self development while discussing about the multiple roles played by women and the resulting conflicts which erode the quality life of women.

It is evident from Table 30 that there was not much variation in time utilization of women among the different types of the farming systems with respect to the five groups of activities. But it is also quite interesting to notice the slight variation evident in the type-V i.e. women in the farming system with agribusiness. They were found to spend more time in social participation and leisure time activities compared to the women in other systems. It seems they were able to participate at an increased rate as they could reduce their time for their personal activities. Any how, the higher percentage of farm family income, the women in the system is able to generate also should be taken into account.

Among the five types of farming system studied, two types- system with homestead crop components and livestock components and the system with agribusiness component can be identified as women friendly. The drastic difference between the III and IV types of system is also thought provoking. This reveal the low level of family labour input and income contribution by the farm women of large sized farm holdings.

Usually the small farmers spend more time in the field. The reason behind this may be that there is an inverse relationship between the time spent on farm activities and land holdings. This was supported by the study of Viravi *et al.* (1994) who reported that women belonging to marginal and small farm holdings devoted more time on farm activities due to economic factors.

It may also be taken into account that though the average time spent by farm women in farm per day is 2.0, during peak seasons like sowing, planting and

harvesting especially in rice cultivation, most of the women spent 8 to 9 hours in the field. This had been pointed out in earlier studies by Bhatnagar (1982) and Beevi (1993) who reported that women's work in agriculture was more seasonal.

The observation on time utilization for social participation for community work needs further analysis. The present observation can be explained from the high degree of group work among the neighbourhood groups and self help groups initiated in the study area as part of people's plan campaign or Panchayathraj activities. Another interesting observation is the positive relationship observed between increased social participation and increased percentage of contribution to the farm income.

5.5 Problems and constraints of farm women

A perusal of Table 31 would help to get a quick grasp of the general problems and constraints faced by the farm women. The most important problem identified by farm women was lack of economic freedom. Even though women contribute significantly to the farm income, this fact is totally unaccounted and neglected. In the farming system with both crop and livestock components, the women's contribution was found to be more than half of the total farm income. But even in that system also women are out of access and control on money matters. The observation that marketing is relatively a male dominant role also may be taken in to account in this context.

High labour and other input costs (seed, fertilizer, pesticides, etc.) was the next major problem pointed out by the farm women. The observation pinpoints the need of strategies and programmes which are specially targeted for farm women. Previous studies on resource availability by Das *et al.* (1997) have pointed out lack of ownership among the women as a major constraint for availing credit, insurance, subsidies, etc in farming.

Majority of the respondents also had indicated another real problem i.e. lack of their involvement in marketing. This was observed in the case of both small and big farmers. The observation of Kashyap and Sharma (1998) also supports the present finding, who reported that lack of credit facilities and marketing were the major constraints of marginal and medium farm women.

Table 31 also highlight the major problems faced by livestock farmers as low price for milk and lack of facility for fodder cultivation. Another problem pointed out was the back breaking nature of the women's gender roles on agriculture. There are a wide range of agricultural implements used for tilling, weeding, planting, harvesting, threshing and drying. With the introduction of new technology mostly the male members are the ones who get the opportunity for training and make use of the machines. The scientists and technicians involved in developing new machines and tools should also be oriented to design women friendly tools and implements considering the ergonomy of women. Gender sensitive programmes also should be formulated to promote the women in using the tools.

5.6 Perceived problems and constraints of farm women by the development functionaries

The result obtained from the Friedmenn's two way Anova showed that there is significant difference in perception among the three groups, viz., extension personnel, scientists and political functionaries. This observation has got much relevance in the formulation and implementation of agricultural programmes and policies.

The observation that extension personnel have higher level perception about farm women's problems and constraints is quite meaningful. It is natural as the extension personnel are nearer to the farmers and hence in better contact with farming communities. But equal insight and experience on the part of other

functionaries is also needed for targeting research and administration as women friendly in agriculture.

5.7 Content and beneficiary analysis of development programmes

Almost all the development programmes like back yard chicken rearing, vaccination for chicken in homestead, mini-dairy, rabbit rearing etc. implemented by the Department of Animal Husbandry were well targeted towards the women. This is to be considered as a positive trend towards gender sensitive perspective in development. This reflects the identification of high involvement of women in livestock management on the part of the planners and development personnel in the sector.

At the same time, very general, non targeted programmes in the agricultural sector reflects gender blindness that exists in the sector. This demands attention on the part of the development planners and other functionaries. Sufficient orientation and capacity building on the part of the development functionaries and policy makers only can bring about the needed shift in agenda setting. Women friendly avenues like vermicomposting, bee keeping etc. were implemented as general programmes without any women involvement. The only programme specially meant for women was the agricultural nursery programme. The major thrust of this programme is to provide employment for 10 women labourers.

The programme on mechanisation in rice cultivation was implemented as a general programme. This is a programme wherein the women development component can be built in. It is an area where women labourers are facing the threat of displacement from their major employment opportunities in rice cultivation like transplanting, harvesting, threshing etc. Emphasis shall be given to programmes of skill development and providing facilities for the women to use and own the machines. This calls for planning and implementing specific training strategy focusing on the target groups of farm women to make them aware of their

own potentialities to involve in such operations like land preparation, spraying and other machine operated activities. Organising gender specific trainings to make farm women conscious of their role and importance in changing rural sociological set up could definitely motivate the rural women folk to actively take part in the development programmes of agriculture and allied sectors. Similar gender sensitisation is needed on the part of the scientists, extension personnel, administrators and policy makers also.

Summary

SUMMARY

History recognizes woman as the first farmer of humankind. Eventhough due to the commercialisation in agriculture, men are considered to be the farmer, women also do play major roles in farming. In fact it is the major productive area of work, wherein majority of the women in Kerala take part. It is a reality that, the gender roles which the women and men perform in a society are culturally and socially driven and decided. The invisibility and unaccountability of women's roles and contribution in agriculture is still neglected by all concerned. In this context, gender sensitivity about the real situation of farming systems and a correct perspective of who are performing what and why, and who are denied of what and why, in the farming system etc. on the part of planners, researchers and extension personnel is very much needed for sustained development in agriculture.

To highlight the importance of women in the different farming systems and to analyse the gender dimensions, a micro level study on the role and accountability of women in the farming systems was planned and implemented in the Madakkathara Grama panchayath of Thrissur district.

6.1 Objectives:

1. To identify the practices and enterprises which are women friendly and women operated in the farming system.
2. To analyse the role performance and extent of contribution of women labour to the income generation of farm units.
3. To analyse the problems and constraints faced by the farm women in different farming systems.
4. To study the differential perception among political functionaries, agricultural scientists and development personnel about the role performance and problems of women in the farming systems.

6.2 Methodology

The major types of farming systems of Madakkathara panchayath were identified based on the primary socio-economic data available in the panchayath as (1) Homestead with crop components alone. (2) Homestead with crop components and extended garden. (3) Homestead with crop components and livestock components. (4) Homestead with crop components, extended garden and live stock components. (5) Homestead with agribusiness component.

The respondents of the study consisted of two categories. The first category consisted of 145 female heads of the identified farming systems. From the list of the farming systems, 30 units each were selected randomly for the first four types and 25 units for the fifth type. The second category of respondents consisted of 90 randomly selected members of the development functionaries in the district - 30 extension personnel from the Department of Agriculture, Animal husbandry and Dairy development, 30 scientists of Kerala Agricultural University and 30 political functionaries including elected members of Legislative Assembly, Block panchayath, Jilla panchayath and Grama panchayath.

Based on the objectives of the study, observations on roles, involvement, contribution and constraints of men and women in the farm activities of the selected farming systems were collected. The various development programmes in agriculture implemented in the panchayath during the last three years were also analysed to understand the gender sensitivity that existed in the development programmes.

Relevant data on the above aspects were collected using semi structured interview schedule and questionnaire prepared for the purpose. Using appropriate statistical tools, the data were analysed and interpreted.

The salient findings of the study are summarised and presented below.

1. In the case of the farming system with crop components alone, the practice of weeding was identified as the only activity which is female dominant. Planting, irrigation, plant protection, manuring and harvesting were identified as gender neutral practices. Selection of variety, land preparation and marketing were observed to be male dominant.
2. The only female dominant farm activity identified was weeding in the farming system with crop components and extended garden also. The gender neutral practices observed were planting, irrigation, manuring and harvesting. The male dominant activities were selection of variety, land preparation, post harvest practices and marketing.
3. Weeding, post harvest practices and cattle management practices like shed cleaning and fodder collection were identified as female dominant in the farming system with crop and livestock components. The gender neutral practices observed were selection of variety and planting. Land preparation, irrigation, manuring, plant protection, harvesting, milking and marketing were observed as male dominant in this system.
4. In the case of farming system with crop, livestock components and extended garden the female dominant farm activities observed were post harvest practices of rice, coconut and rubber and cattle management practices like shed cleaning and fodder collection. The identified gender neutral practices were planting, weeding and harvesting. The male dominant activities observed were selection of variety, land preparation, manuring, plant protection, milking and marketing.
5. The system with agribusiness component exhibited a better utilization of family labour. In nursery units, the identified female dominant activity was weeding and planting. Shed cleaning activity and feed collection were found to be female dominant in rabbitry and piggery units. The only gender neutral activity observed was irrigation in nursery units. The activities like selection of variety, land preparation, manuring, plant protection and marketing in

nursery units and selection of variety and marketing were identified as male dominant in rabbitry and piggery units.

6. The farm operations could be identified as female dominant were weeding, cattleshed cleaning and feeding of cattle. The significant male dominant activities identified were marketing, milking, land preparation, selection of varieties, manuring and plant protection. The activities identified as gender neutral were planting, irrigation, harvesting and post harvest practices. None of the activities was identified as male specific or female specific.
7. With regard to higher utilization of family labour and their contribution to farm income, the farming system with crops and livestock components was identified as women friendly, followed by the system with agribusiness component. The system with crop and livestock components had also the highest number of female dominant and gender neutral farm practices.
8. Comparison of the time utilisation pattern of the different farming systems indicated that the increased labour utilization of family female was in farm activities of the system with crops and livestock component. The system was utilizing 3 hrs of family female labour on an average every day on farm related activities.
9. The analysis made on the perception of development functionaries about the gender roles revealed that there is a need for gender sensitisation among the different functionaries like extension personnel, researchers and people's representatives as there is difference between their perception and the reality in the farming system. It was also observed that extension personnel had a more real perception with regard to the real gender role performance.
10. The differential perception analysis of development functionaries about the problems and constraints of farm women indicated that there is significant difference in perception between the three groups of development functionaries such as extension personnel, scientists and political functionaries.

11. The content and beneficiary analysis of the programmes of agriculture and allied sectors implemented during the three years in Madakkathara panchayath revealed that in the nine programmes of Department of Animal Husbandry, more than 90 per cent of the beneficiaries were women. Similarly programmes implemented by the Department of Dairy Development also exhibited gender sensitivity i.e. 53 per cent of the beneficiaries were women. But with regard to the development programmes of the Department of Agriculture out of the eight programmes implemented only one programme was found to be targetted towards women.

6.3 Implications of the study

It could be seen that many of the observations in the study should act as the indicators to those who are involved in administration, planning, policy making, research and extension efforts of agricultural development in different levels and sectors in the State.

The roles which women play in the different types of farming systems in the Central Zone of Kerala were revealed from the study. In general, the study has indicated the activities in which women are involved as farm family labour and hired labour along with men which emphasized the need for special attention to be given to gender sensitivity in planning, development programmes and in research efforts for evolving technology and agricultural policy.

The differential perception existing on the part of the development functionaries with regard to the roles of women and their constraints also should be considered. All those concerned with planning, decision making and implementation of the interventions for agricultural development – the planners, policy makers, researchers, extension personnel and financial agencies need gender sensitization for shifting their stereotypical male-oriented outlook/approach in development to a gender friendly one. The observation on the gender blindness in

the development programmes of agriculture reflect the special attention to be given in the sector for gender concerns and gender targets in agricultural development.

The women friendly resource integration possibilities in the homestead farming system with crops and livestock components and agribusiness operations need to be promoted. These types of farming systems indicate the possibilities of planned resource utilization in similar areas and similar section of the society. The dominance of men in the farm operations like marketing, in all the types of systems demand attention and action. Women are being denied the opportunities to sell their produce and to possess real cash in their hands. There should be alternate marketing systems where women can enter without cultural barriers. The possibilities of establishing marketing facilities through self help groups, Kudumba Sree programmes etc. are to be explored.

Another salient point is the male domination of farm operations wherein mechanisation has occurred. Most of the women are not even aware about the threat of displacement by mechanisation which they have to face. However, women have pointed out the hard toiling and strenuous work attached with their gender roles. All these reemphasise the needed shift to build up gender sensitive approaches by which the women can be equipped and empowered through appropriate skill development programmes, financial assistance programmes, etc. so as to enhance their entry into the mechanised farming.

Similarly, the roles identified as female dominant and gender neutral in the different systems also need to be taken into account by the researchers while setting their research agenda. Care should be taken to analyse the gender impact of the improvements and modifications brought in the technologies.

The higher percentage contribution to the farm income by the family female is a gender dimension that is to be recognized by the society as a whole. The family women themselves should be made aware of their contribution, as their

work are usually being described as 'home chores' and natural work of women and tend to be 'invisible' to all – to the family, society, development authorities, state and nation. This is a matter of concern which needs due attention and action for the accountability of the women's work in farm and home.

6.4 Suggestions for future research

1. Gender analysis for different farming systems may be of use to bring out the system specific gender issues and potential for further development.
2. The methodology and tools utilised in the study can be refined and utilised for further indepth studies on gender analysis. The scoring used in categorizing the gender roles can be utilised for studies in similar lines.
3. A detailed indepth study involving the time utilization pattern of farm women is of paramount importance because many of the farm operations are seasonal except livestock farming.
4. The present study helps in understanding the farming systems of Madakkathara panchayath only. An extensive cross sectional study can be undertaken to cover the different farming systems in the entire State.

171795



References

REFERENCES

- Ahamed, S. 1999. Changing gender roles in irrigation management-Sadgeiru's lift irrigation co-operatives. *Proceeding on Engendering under graduate Agricultural Education*, 16-17, December, 1999, Organised by MSSRF, at Chennai. p.25
- Ajit, R.L.T. 1994. "Review of Research Studies on Women in Agriculture in India, Implications for Research and Extension", ICAR, New Delhi, pp.76-77
- *Anandalakshmy, S. and Kelkar, G. 1980. *Role of Women in Post Harvest Food Conservation*. United Nations University, Tokyo. p.314
- Andrews, S.K. 1994. Role of women in sericulture in Palakkad District. M.Sc. (Ag.) thesis Kerala Agricultural University, Vellanikkara. p.142
- Asuri, P. 1987. *Gender and Poverty in India – A world Bank country study*. World Bank, D.C. p.525
- Aviskar, K. 1994. "*Communication Strategies: A Guide for Agricultural Change Agents*". The Interstate Printers and Publishers, Inc., Illinois, p.172
- Ayyadurai. 1993. "New Methods for Agricultural Research and Education: the Need to Integrate Women", Monograph submitted to the office of Women in Development, USAID.
- Babu, M.N. 1995. Evaluation perception of homesteads farmers in relation to appropriations of farming systems and cropping patterns. M.Sc.(Ag.) Thesis, Kerala Agricultural University, Vellanikkara, p.140
- Bajaj, S.S. and Shaikh, A.M. 1989. Role of Farm Women in decision Making regarding Agriculture. *Maharashtra Journal of Extension Education*, 8:185-88
- Bantsingh, C.P., Singh, R.N. and Kapee. 1995. "Effect of Changes in Cropping Pattern on Female work Participation". *Indian J. Agrl. Econ.*, 40(3):274

- Bara, N.S. and Sumayo, R.B. 1998. Tribal farm women's perception of some selected gender issues in Agriculture. *Maharashtra J. Extn. Edn.* 17:3 p.313-316
- Beevi, S. 1993. "Creating More Jobs for Female Workers". *Kurukshetra*, 32(19):29
- Bhaduri, M. and Rahman, A. MD. 1982. (Eds) *Studies in Rural Participation*. Oxford and IBH publishing company, New Delhi. p-422
- Bhatnagar, J.E. 1982, "Attitude Towards farm Diversification: Results from a survey of Devan Farms". *J. of Agrl. Econ.*, 40(1):96
- Bhople, R.S. and Patki, A. 1992. Correlates of role performance and training needs of farm women labour. *J. Rural Dev.* 11(1):49-58
- Bilgrami, S. 1988. Participation of women in Rural Development – an Analysis of Discriminatory Assessment. *Khadi Gramodyog*, 35(3):150
- Belgome, N. 1994. "Role of Women in Crop Production: A case study of Dry Farming Area in Maharashtra". *Indian J. of Agrl. Econ.*, 40(3):7
- Chakravarthy, S. 1992. "Training for Rural Women: Must for sound Dairy Extension Programme". *The Tamil Nadu J. of Co-operation*, 74(8):p.475
- Dantwala, M.L. 1975. A Profile of Poverty and Unemployment in 12 Villages. *Indian. J. Agrl. Econ.*, 30(2):5-7
- Das, S.K., Sahoo, P.K. and Ghosh, S.S. 1997. Gender issues in agriculture. *Proc. of National seminar on the technological empowerment of women in Agriculture*, 3-4, December, 1997, Chennai. pp.207-218
- Dubey, V.K. 1988. For the Hill Women of Uttar Pradesh – All Work No Pay. *Indian Farming*, 38(8):6-8

- Geethakutty, P.S., Anju Annie Syriac, A.A., Sheeja, B. and Karalum, S.B. 2000. (Editors) *Proc. of the Consultation Workshop on Women Labour in Agriculture*. Centre for studies on Gender Concerns in Agriculture, Kerala Agricultural University, p.53
- Geethakutty, P.S., Indira Devi, P., Bhaskaran, C.P.V., Prabhakaran, P.V. and Thomas, E.K. 1996. Project Report on Analysis of the impact of irrigation in the small Coconut Gardens of Thrissur District. Kerala Agricultural University, p.9
- Goyal, S.K. and Mahepal. 1999. Some aspects of Gones in Agrarian activities, *Women's contribution to India's Economic and Social Development*, Mahajan, V.S. (eds.) Deep and Deep Publication, New Delhi, p.110-112
- Ghuman, P., Hansra, B.S. and Mehta, A.K. 1999. Training needs of farm women in agriculture. *J. of Extn. Edu.* (10):2 18-21
- Govind, S. 1984. Participation of farm women in farm and home activities. M.Sc. (Ag.) Thesis (unpubl.), Tamil Nadu Agricultural University, Coimbatore
- Gulati, L.S., Ranjan, I. and Ramalingam, A. 1997. Women and work in Kerala : A comparison of the 1981 and 1991 censuses. *Indian J. Gender Studies* 4(2):29
- Gurusamy, S., Muthiah, M., Ravichandran, V., Krishnakumar, K.N. and Ravi, K.C. 1990. "Study of Information and Programme Preference of Rural Women". *Tamil Nadu Journal of Extension Education*, 1(3&4):191-194
- Hanman, F.M. 1986. Alternative ways of incorporating women concerns in farming system Research. In Report of the Asia Rice farming system Working group meeting 5-11 October, 1980, IRRI, Philippines, p.222
- Hemalatha. 1998. Gender analysis of Rice farmers in Trivandrum District. M.Sc.(Ag.) thesis College of Agriculture, Vellayani p.149

- Kumar, S.R. 1996. Participation of farm family women in marginal homestead farming system in Thrissur District. M.Sc.(Ag.) Thesis, Kerala Agricultural University, Vellanikkara. p.110
- Lovely, S. 1993. "Experimenting Cultivators: A Methodology for Adaptive Agricultural Research", Agricultural Administration (Research and Extension), Network Discussion Paper 23, Overseas development Institute, London.
- Mamba, M.B. 1984. Women in Food Production and Food Security in Africa. Report of the Government Consultation held in Harare, Zimbabwe, F.A.O.
- Maundy, K. 1994. "Social and Institutional Frame Work of Female Participation in Agriculture". *The Indian J. of Social Work*, 47(3):285-291
- Mies, M. 1988. Indian Women in subsistence and Agricultural labour. *Journal of Rural Development*, 7(2):238
- Mishra, A. and Aswathi, P.K. 1988. Technological impact of female labour participation in Agricultural sector. *Proc. of International Conference on Appropriate Technology for farm Women : Future Research Strategy and Linkage with Development System, Abstracts*. Indian Council of Agricultural Research, New Delhi.
- Mitra, G. 1988. "Know the Role of Women in Food Raising". *Intensive Agriculture*, 26(28):5-9
- Mohamed, J.V. 1994. "Diversification of Farming with Crop Cultivation and Dairying in Punjab – An Appraisal of Success and Constraints". *Indian J. of Agrl. Econ.*, 4(3):330-331
- Nagppal, M.T.P. 1994. "The Diversity of Economic Activity". *Dry Grain Farming Families*, Cambridge University Press, pp.148-294
- *Nagpoli, K. 1995. "An Exploratory Study on Expectation and Performance of women Labour Engaged in Paddy cultivation". M.Sc.(Ag.) thesis, Haryana Agricultural University, Hissar. p.125

- *Pratibha. 1981. New Agricultural Technology and Employment of Women. M.Sc.(Ag.) thesis, Lady Irwin College, New York. p.102
- Rangnekar, S., Vasiani, P. and Rangnekar, D.V. 1994. "A study on women in Dairy Production". *World Animal Review*, 79(1):51-54
- *Renola, R. 1990. Evaluating Marketing Systems Capabilities to Support New Cropping Systems. Farming systems Training Course Material, IRRI, Philippines.
- Rao, R.R. 1985. Shift in female work participation. *Kurukshetra*, 31(12):4
- Rahi, J. and Bave, A.M. 1982. Actual and desired type of participation by rural women in selected areas of decision making. *J. Extn. Edu.* 18(42):84-89
- Reddy, B.S.W. and Prasad, R.N. 1988. Mothers and Maidens have much of the benefit. *Indian farming*, 3(8):11-20
- Revu, R., Crow, G. and Singol. 1995. "Multiple Occupation of farm Women Issues and Implications". International Conference on Appropriate Technologies for Farm Women, ICAR, p.6.
- Salam, A.M. and Sreekumar, D. 1990. Coconut Based Mixed Farming System to sustain Productivity. *Ind. Coco. J.* 10:1-3
- Sailaja, A. and Reddy, N.M. 1999. Training needs of women in Sericulture. *J. Extn. Edu.* 10(1):75-80
- Savarimuthu, G.V. 1982. Training needs of farm women. M.Sc.(Ag.) thesis (unpubl.), Tamil Nadu Agricultural University, Coimbatore
- Sawney, H.K. and Daevani, H.D. 1976. Impact of Farm Mechanisation on Farm Employment. M.Sc.(Ag.) thesis, Lady Irwin College, New York. p.107
- Sethini, S.B. 1995. "Women in Root Crop Technology, Filipino Women in Rice Farming Systems". IRRI, pp.121-126

Appendices

APPENDIX-I

PRACTICES/OPERATIONS IN CROP/LIVESTOCK MANAGEMENT

Practices/Operations followed for coconut cultivation

<u>Sl. No.</u>	<u>Practices</u>
1.	Selection of site and variety
2.	Selection of mother palm
3.	Selection of site for nursery
4.	Preparation of pit for nursery
5.	Preparation of bed for nursery
6.	Planting of nuts in nursery
7.	Spacing to be adopted for nursery
8.	Care and management of nursery
9.	Provide protective fencing to the nursery
10.	Irrigating the nursery
11.	Weeding in nursery
12.	Spraying fungicides
13.	Selection of seedlings
14.	Pulling out seedlings from nursery
15.	Shading the seedling
16.	Preparation of land for seedlings
17.	Planting of seedlings
18.	Formation of pit for nursery
19.	Type of planting system to be followed
20.	Time of planting
21.	Shading the seedlings
22.	Irrigating the field
23.	Manuring the young palms
24.	Weeding the field
25.	Ploughing the field
26.	Digging, raking and forming mounds
27.	Drought management in coconut garden
28.	Moisture conservation in the field
29.	Husk burial in the field
30.	Mulching
31.	Application of green manure in the field
32.	Application of cover crops in the field
33.	NPK application for adult palm
34.	Time of fertilizer application
35.	Frequency of fertilizer application
36.	Method of fertilizer application
37.	Intercropping
38.	Mixed cropping

39. Multiple cropping
40. Irrigation / water management in the field
41. Hybrid production
42. Selection of mother palm for hybrid production
43. Method of hybridisation
44. Spraying 0.15% carbaryl in nursery
45. Plant protection
46. Management of pest in coconut
47. Spraying of chemicals like carbaryl 0.01%
48. Management of diseases
49. Spray fungicides
50. Harvesting
51. Collection of nuts
52. Storage of nuts
53. Dehusking
54. Oil extraction
55. Transporting
56. By product collection
57. Recycling of palm waste
58. Organic recycling in coconut field
59. Coconut by product as fuel

Practices / operations followed for Rubber cultivation

1. Selection of site for rubber planting
2. Selection of clones
3. Bed formation in nursery
4. Raising of seedlings in nursery
5. Spacing to be adopted in nursery according to the type of planting material
6. Weeding, manuring and pest and disease management in nursery
7. Planting techniques in nursery
8. Planting distance
9. Pit formation
10. Digging the pit
11. Refilling the pit
12. Type of planting
13. Poly bag planting
14. Cover crop selection
15. Mulching
16. Manuring
17. Application of manures in seedling nursery
18. Application of manures in bud wood nursery
19. Application of manures in immature rubber
20. Application of manures in mature rubber under tapping
21. Weed management
22. Application of weedicides

23. Harvesting of rubber tree by tapping
24. Tapping
25. Time and interval of tapping
26. Plant protection in rubber
27. Disease management
28. Spraying of fungicides for controlling pest
29. Post harvest operations
30. Drying
31. Transporting
32. Marketing the produce
33. Sieving
34. Transporting to tray
35. Mix with acid
36. Drying with the help of hand roller
37. Smoking
38. Sun drying

Practices / Operations followed for Arecanut

1. Selection of varieties
2. Selection of site
3. Selection of mother palms
4. Selection of seednuts
5. Preparation of nursery bed
6. Cover the seed nuts with sand and irrigate daily
7. Transplanting the seedlings
8. Irrigating the field
9. Selection of seedlings
10. Field planting
11. Planting seedlings
12. Manuring the field
13. Irrigating the field
14. Provide drainage channels
15. Cultural operations
16. Weeding
17. Intercropping and mixed cropping
18. Spray fungicides
19. Application of fertilizers
20. Spray Bordeaux mixture
21. Harvesting
22. Bunch separation

Practices / Operations followed for Banana cultivation

1. Ploughing the field
2. Digging the pits for planting
3. In low lying areas formation of mounds for planting
4. Rhizome treatment with cowdung
5. Selection of variety
6. Spacing to be adopted
7. Planting of suckers
8. Manuring the field
9. Application of fertilizers
10. Time of fertilizer application
11. Weed management
12. Hand weeding
13. Apply herbicides like paraquat
14. Desuckering the plant
15. Intercropping in Banana field
16. Pest management in Banana
17. Application of pesticides like carbofuron
18. Disease management in Banana
19. Application of Bordeaux mixture
20. Harvesting of Banana bunch
21. Transporting
22. Marketing the produce

Practices / operations in Vegetable cultivation

1. Selection of varieties
2. Selection of seeds
3. Preparation of land
4. Preparation of nursery bed
5. Seed treatment with Bevistin
6. Sowing seeds in nursery
7. Irrigating the nursery
8. Preparation of main field
9. Pulling out the seedlings from the nursery
10. Transplanting to the main field
11. Provide shade / staking to the transplanted plants
12. Manuring the field
13. Application of farm yard manure
14. Conduct weeding regularly and earth up rows during rainy season
15. Application of herbicides
16. Application of plant protection chemicals
17. Harvesting
18. Collection of fruits
19. Transporting

20. Marketing
21. Selling the produce
22. Preparation of dried seeds for next season
23. Preservation of seeds under moisture free conditions

Practices / Operations followed in Rice cultivation

1. Choice of variety
2. Preparation of nursery bed
3. Seed treatment with fungicides
4. Pre-soaking of seeds in gunny bag for direct sowing
5. Sowing seeds nursery
6. Maintaining water depth in nursery
7. Ploughing the main field
8. Puddling
9. Levelling
10. Bunding
11. Trimming and plastering
12. Spreading the farm yard manure and green manure in the main field
13. Pull out seedlings from nursery
14. Transporting to the main field
15. Transplanting the seedlings
16. Irrigating the main field
17. Forming drainage channels
18. Drainage activities
19. Gap filling
20. Plugging the rat holes
21. Application of manures and fertilizers
22. Pest surveillance and management
23. Plant protection measures
24. Scaring the birds
25. Weeding
26. Harvesting
27. Staking and bundling the harvested produce
28. Threshing
29. Winnowing
30. Drying
31. Dehusking
32. Processing of seeds
33. Storage of dried seeds
34. Byproduct collection
35. Transporting
36. Marketing the produce
37. Selling the produce

Dairy cattle

1. Cleaning cattleshed
2. Cleaning utensils
3. Milking
4. Preparation of feed
5. Feeding
6. Fodder collection
7. Grazing control
8. Purchase of feed
9. Bathing
10. Sale of milk
11. Taking for artificial insemination
12. Taking for treatment/vaccination

Piggery

1. Housing of pig
2. Cleaning the pig sty
3. Purchase of pig lets
4. Washing the pig
5. Breeding of pig
6. Feeding the pig
7. Purchase of feed
8. Taking for disease control treatment
9. Sale of pigs

Rabbitry

1. Housing of rabbits
2. Cleaning of cages
3. Feeding of rabbits
4. Purchase of feed
5. Breeding of rabbits
6. Taking for vaccination
7. Disease management in rabbit
8. Selling of rabbit

APPENDIX- II

Average farm expense in different farming systems

Farming systems	Farm expenses (Rs.)
Farming system with crop components alone - Type I	7740.00
Farming system with crop components and extended garden – Type II	10073.00
Farming system with crop components and livestock components – Type III	8760.00
Farming system with crop, livestock components and extended garden – Type IV	45500.00
Farming system with agri-business component – Type V	9200.00

APPENDIX – III

Interview schedule for data collection of the study on role and accountability of women in the farming systems of Madakkathara panchayath in Thrissur district

Date of Interview

Ward No.

1. Name of the respondent
(Female member of the
farm family) :

Address :

2. Name of the farm head :

3. Family size, education level and occupational status of the farm family

Sl No.	Adults		Children		Age	Education	Occupation	Monthly income
	Mae	Female	Girl	Boy				

4. Farm components (Crop / animal and other)

Sl. No. Component	Total Area	Total no or units
I. Major crops		
a.		
b.		
c.		
d.		
II. Animals		
a. Cattle		
b. Goat		
c. Poultry		
d. Rabbit		
e. Piggery		

III. Fisheries a. Marine b. Inland c. Integrated d. Processing IV. Agri business a. Nursery b. Mushroom c. Processing d. e.		
---	--	--

5. Occupational details of the farm women

a) Main occupation

6. Daily activity and time utilization pattern of the farm women

Sl. No.	Time From To	Activity	Total amount of time utilized	Remarks
1	5 am – 6 am			
2	6 am – 7 am			
3	8 am – 9 am			
4	10 am – 11 am			
5	12 noon – 1 pm			
6	1 pm – 2 pm			
7	2 pm – 3 pm			
8	3 pm – 4 pm			
9	4 pm – 5 pm			
10	6 pm – 7 pm			
11	8 pm – 9 pm			
12	10 pm – 11 pm			
13				

2a. Operational expense (crop wise)

Crop grown :

Variety adopted :

Area :

Operations	Human labour days					Machinery		Material cost		
	Permanent		Casual		Wage rate	Hrs	Operat- ing charges	Item	Qty	Price/ unit
	Family	Hired	Family	Hired						
Land preparation										
Soil amendment application								Soil amendments		
FYM application								FYM		
Sowing/transplanting								Seed		
Fertilizer application a) Basal b) Top dressing c) PP chemicals application								Fertilizer N P K		
Irrigation 1. 2. 3.								Fuel/ Electricity charges Water charges		
Intercultural operations 1. 2.								Herbicides		
Plant protection								PP chemicals		
Harvesting										
Threshing										
Others								Miscellaneous		

a) Main product: Qty (kg) Price: (Rs.) Gross income (M.P) :

b) Bye-product : Qty (kg) Price: (Rs.) Gross income (B.P) :

c) Total income (a+b) : Rs.

d) Net farm income = Gross income - Total expenses

2.b.i) Operational expenses (livestock)

Operations	Human labour (hours)					Machinery	
	Permanent		Casual		Wage rate/day	Hors	Operating expenses
	Family	Hired	Family	Hired			
Feeding							
i) Watering							
ii) Grazing							
iii) Milking/egg collection							
iv) Cleaning of sheds & animals							
v) Cleaning of premises							
vi) Fodder cultivation							
vii) Semen collection and artificial insemination							

2.b.ii) Material costs (specify the period)

Item	Quantity	Price/unit	Total cost
a. Feed			
i) Concentrate			
ii) Green grass			
iii) Hay/silage/straw			
iv) Others (if any)			
b. Medicines			
c. Biologicals			
d. Bedding/litter materials			
e. Fuel/electricity charges			
f. Water charges			
g. Maintenance of vehicles			
h. Repair of farm equipments			
i. Other items (specify)			

2.b.iii) Milk output in litres

(To be collected from the participant's milk card during the reference period)

Cows	Cow1		Cow2		Cow3		Total	
Age								
Month of calving								
Avg. Yd/ months	Daily	Monthly	Daily	Monthly	Daily	Monthly	Daily	Monthly
1 st M								
E								
2 nd M								
E								
3 rd M								
E								
4 th M								
E								
5 th M								
E								
6 th M								
E								
7 th M								
E								
8 th M								
E								
9 th M								
E								
10 th M								
E								
11 th M								
E								
12 th M								
E								

2.b.iv) Livestock products other than milk

Products	Family/farm consumption		Sales		Total	
	Qty.(kg)	Value (Rs.)	Qty. (kg)	Value (Rs.)	Qty. (kg)	Value (Rs.)
Poultry meat						
Goat meat						
Egg						
Animal drug						
Others						

a) Main product: Qty (litres/kgs/Nos)

Cost (Rs.)

Gross income

b) Bye-product : Qty (kg)

Cost (Rs.)

Gross income :

c) Total income (a+b) .

d) Net farm income = Gross income - Total expenses

**ROLE AND ACCOUNTABILITY OF WOMEN IN
THE FARMING SYSTEMS OF MADAKKATHARA
PANCHAYATH IN THRISSUR DISTRICT**

**By
BINDU, V. S.**

ABSTRACT OF THE THESIS

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

Master of Science in Agriculture
(AGRICULTURAL EXTENSION)

**Faculty of Agriculture
Kerala Agricultural University**

**Department of Agricultural Extension
COLLEGE OF HORTICULTURE
VELLANIKKARA, THRISSUR- 680 656
KERALA, INDIA**

2001

ABSTRACT

A study on role and accountability of women in the farming systems was conducted in the Madakkathara panchayath of Thrissur District. A sample of 145 women heads selected from five types of farming systems - homestead with crop components alone (Type-I), homestead with crop components and extended garden (Type-II), homestead with crop and live stock components (Type-III), homestead with crop, extended garden and livestock components (Type-IV) and homestead with agri-business components (Type-V) formed the major respondents of the study. Another category of respondents consisted of 90 development functionaries (30 each of extension personnel, scientists and political functionaries) of Thrissur District.

Relevant data were collected through personal interview and questionnaire. Regarding the extent of involvement of men and women and categorization of farm activities, the study could observe that there were female dominant, male dominant and gender neutral practices in the farming systems of the study area.

In general, weeding, shed cleaning and feeding of cattle were found to be female dominant practices while marketing, selection of varieties, land preparation, manuring and plant protection were observed as male dominant practices. The practices observed as gender neutral were harvesting, post harvest operations, planting and irrigation.

The analysis on farm income contribution by family women members revealed that in the case of farming system with crop and livestock components, family women were contributing the highest i.e. 37 per cent followed by the type with agri-business component, where in women were able to provide 30 per cent of income.

Time utilization pattern of farm women could reveal the better potential of system with crop and livestock components which was using on an average three hours of family women labour per day for farm management activities.

The major problems and constraints faced by farm women were lack of economic freedom followed by lack of marketing facilities and low price for milk.

The differential perception on the part of the development functionaries brought out the need for gender orientation and sensitivity with respect to the roles and constraints of farm women among the different functionaries.

Content and beneficiary analysis of development programmes of Agriculture, Dairy development and Animal Husbandry Department revealed the essential changes in gender orientation to be brought in the programmes of the Department of Agriculture.