A STUDY ON TIME UTILIZATION PATTERN OF FARM WOMEN IN BANGALORE RURAL DISTRICT

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Affectionately Dedicated to

My Beloved Parents

Shri N. ACHUTHAN

Smt. K. KANTHI MATHI

and

My Sister

Mrs. Susheela Viswanathan

DEPARTMENT OF AGRICULTURAL EXTENSION
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BANGALORE

C E R T I F I C A T E

This is to certify that the thesis entitled "**A STUDY ON TIME UTILIZATION PATTERN OF FARM WOMEN IN BANGALORE RURAL DISTRICT**" submitted in partial fulfilment of the requirements for the degree of **MASTER OF SCIENCE in AGRICULTURAL EXTENSION** to the University of Agricultural Sciences, Bangalore, is a record of bona-fide research work carried out by **Ms. K.A. SHEELA** under my guidance and supervision and that no part of the thesis has been submitted for the award of any other degree, diploma, associateship, fellowship or other similar titles.

Bangalore
July 24th, 1993

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INTRODUCTION

The womenfolk constitute the nerve centre of families and are the vital section of societies and backbones of nations. Women form half of the world's population, one-third of the total work force and perform two-thirds of the world's work. So, women have a greater role to play in the total development of a country. In India, according to 1991 census female population is 48.15 per cent (406, 332, 932) out of which more than 75 per cent come from rural areas. Millions of women in the far flung rural regions in India have been carrying on their shoulders the burden of poverty, ignorance, superstition and out-moded customs and traditions. Despite the multitude of social disabilities, economic deprivations and woeful neglect, these women have been the embodiment of sacrifice, surrendering all their comforts for the welfare of children and other members of the family, and indirectly for the well-being of the community. In fact, one can call her the unsung heroine of the country who, without any glore of publicity, contributes her best to the welfare and progress of the nation.

In a village setting, woman works as house wife, economic provider, food producer and dynamic community leader. She contributes to agriculture, animal husbandry, other rural based occupations and also to family's welfare. So women have a double work burden. Though they are taking on work outside the home, they continue to perform almost all domestic work.

Agriculture is the backbone of Indian economy which has always been a way of life rather than a commercial vocation. It is the largest industry in the country contributing to the source of livelihood for over 70 per cent of the population. Agriculture is a family enterprise in which men, women and children join hands to cultivate the land. Among them, from time immemorial, women have played a pivotal role in farming. According to the UN Food and Agricultural Organisation, women are responsible for 50 per cent of all food production. They contribute to farming either as cultivators of their own property or as hired agricultural labourers. The majority of the women may not be solely responsible for farm management, but, they take part in decision on what crops to be grown and actively participate in most of the agricultural operations like sowing of seeds, transplanting of seedlings, weeding, application of

fertilizers, harvesting, threshing, winnowing and storage of seeds and food grains. So when we take a look at the picture of women in agriculture, perhaps most of the manual and backbreaking jobs are done by women. In addition to these wide varieties of activities, they are engaged in their routine domestic work. As a wife or a mother, she takes the burden of child care and house work in addition to agricultural activities, often carrying them out simultaneously. She takes and carries out the decisions regarding development of farm and home. So, the work load of women is much heavier than that of men and their other male counterparts at home.

Time is an important human resource and an important part of the total pattern of living. Time is highly limited resource, which can neither be saved nor can be detained. Every individual is endowed with a limited time of twenty-four hours a day. In a farm family, woman who has the multiplicity of the tasks to be performed both at home and on the farm will have to distribute her time to meet all the responsibilities. She works for longer hours in kitchen and on farm when compared to her counterpart at home. She is the key person on whom depends the success of both the family and the farm.

Farm women in rural areas are engaged in different enterprises. Some pursue only agriculture while others are engaged in other important subsidiary enterprises like dairy, sericulture etc., in addition to agriculture. Involvement of farm women with single enterprise is different when compared to their involvement in more than one enterprise in different farm, household and other activities. Therefore, it was thought that it is worth investigating into the time utilization pattern of farm women with single (agriculture-crop production only), two (agriculture and dairy) and three (agriculture, dairy and sericulture) enterprises in order to quantify the amount of time spent on different farm, household and other activities and also identify their training needs and problems so that suitable training strategy could be developed for the well being of the farm women. Keeping these aspects in view a study was conducted with the following objectives:

1. To study the time utilization pattern of farm women practising different enterprises.
2. To find out the factors contributing to variation in time utilization pattern among farm women.
3. To identify the training needs and problems of farm women.

REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

The study was designed mainly to study the time utilization pattern of farm women and to study the factors contributing to variation in their time utilization pattern. Further, it was also intended to identify training needs of farm women and problems faced by them in performing the different activities. Keeping these things in view, the review of relevant literature is presented in this chapter under the following headings:

2.1 Time utilization pattern of farm women

2.2 Factors contributing to variation in time utilization pattern of farm women

2.3 Training needs of farm women

2.4 Problems faced by farm women

2.1 TIME UTILIZATION PATTERN OF FARM WOMEN

Time utilization refers to the quantum of time spent by farm women on different farm, household and other activities in a day.

2.1.1 Activities performed and time spent

Sachdeva (1961) observed that women did not take to ploughing but they worked mainly in sowing, transplanting, weeding and harvesting operations. Harvesting being a rush work, accounted for the largest number of mandays worked (11.54 mandays) and it is in this operation that women were mostly employed though weeding (7.65) and transplanting(4.10) operations also emerged as predominantly women's work as shown by the mandays which were more than those put in by men. The amount of time in terms of percentage of mandays worked by women on all agricultural operations was 31.51 and while on non-agricultural ones was 2.54 mandays.

Sharma and Singh (1970) reported that rural women of Madhya Pradesh state participate in larger proportions in four farm operations - seed storage, winnowing, care of animals, harvesting in comparison to others.

Sandhu (1972) indicated that farming home makers spent maximum time for kitchen work and the unemployed home makers were found to spend more time for household tasks as compared to gainfully employed homemakers.

Panwar (1973) reported that women of Meerut in Uttar Pradesh were generally employed in agricultural operations such as weeding, transplanting paddy and picking of cotton etc. and usually got employment for about 40 days in a year.

Khan and Bilques (1976) reported that typical village women of Pakistan worked for four hours on a normal day. But in harvesting and sowing seasons she worked about ten hours a day in the field.

Chakravarthy (1975) reported that an active farm women in Haryana spent eight to nine hours on the farm during the peak agricultural season, three to four hours on taking care of the cattle and three to four hours on their household chores.

In a study in Oyo state, Nigeria, Spiro (1980) reported that domestic chores occupied 33 to 38 per cent of time, farming occupied 25 per cent of time, marketing 8 to 12 per cent and other tasks (eating, bathing,

resting, visiting, plaiting hair and church going) 30 per cent.

Francis et al. (1981) while studying the homemakers in South Louisiana reported that the respondents on an average spent 6.7 hours per day in household work of which most of the time was spent in food preparation and the least in clothing construction.

Lunven (1983) in his study showed that women in the Ivory coast performed two-thirds of all household tasks and half of food production tasks, as well as contributing one-third of money spent on food purchase, buying more than half of the market food and producing 75 per cent of home produced food supply.

Mazumdar (1983) carried out a field study in Bangladesh and reported that the hours spent by housewives on agricultural activities stood at about one-third of the hours spent on non-agricultural activities.

Singh and Usha Rani (1983) revealed that the domestic work consumed the highest female labour hours followed by dairying activity accounting for about 47 and 24 per cent respectively of the total work hours per day in all the activities.

Halim (1984) revealed that the daily working hours of the women labourers in Mymensingh district of Bangladesh ranged from 1 to 9 hours with an average of 6.23 hours. More than one-third (38 per cent) of the labourers worked for an average of 8 hours on wage rate basis. More than 50 per cent worked for two-thirds of the day. The rest of the time they spent in their own household activities.

Saikia (1984) reported that working hours per day in farm activities for female agricultural labourers in Assam were between six to eight hours, but in case of family workers, working hours varied between four to eight hours.

Agarwal and Narain (1985) reported that women spent nearly 90 per cent of the time in cooking and 80 per cent of that was spent on fetching water and remaining time was spent on collecting and carrying firewood and carrying food to the farm.

Dhongade et al. (1985) conducted a study in jowar, cotton and sugarcane regions in Maharashtra and revealed that the domestic work was the main category of employment for women in all regions and in all the size groups of holdings while the important source of

employment of family women labour was in crop production on own farm, work on others farm, tending of cattle, work on own farm other than crop production. In sugarcane region, women did not work on other's farms.

Due and Mudenda (1985) examining women's contribution of farm household income on small farms in three areas of Zambia reported that females contributed more than half of the hours of agricultural labour work done by their households as well as more than four-fifths of the hours of household labour.

Jaiswal and Singh (1985) reported that in Uttar Pradesh a women labourer found highest employment in harvesting (32.68 per cent), followed by threshing and winnowing (13.2 per cent), interculture (12.99 per cent) and sowing and irrigation (12.99 per cent) of total employment respectively.

Marothia and Sharma (1985) revealed that, on an average, family female labour spent more than 60 per cent of their time in subsidiary activities while the share of female labour in total family labour was highest in fodder collection activities followed by making farm yard manure.

Singh and Bhati (1985) reported that, on an average each female worker devoted 4.2 hours of work per day on marginal farms, 4.1 hours on small farms and 3.6 hours on medium size farms. About two-thirds of their time was utilized for tending of cattle and one-third for crop production activities. In addition to this, women devoted considerable time in household chores.

Sisodia (1985) reported that women labour in Madhya Pradesh on an average spent 728.37 hours per year cultivating household on animal based tasks, 21 hours in preparatory or supportive activities to agricultural production process, 28 hours in processing and marketing activities. So, on an average 777 hours per cultivating household were required by the farm women to complete the above activities.

Srivastava (1985) revealed that women irrespective of land status of the family, provided 14 to 18 hours of productive physical labour in different chores. The energy spent by them in performing these tasks was more than it was physically feasible for them to spent particularly in a below subsistence level of living.

Lakshmi Devi (1986) observed that, on an average a rural women of Krishna district of Andhra Pradesh spent

40.41 per cent of their time on household activities, 15.83 per cent on agriculture and 43.75 per cent on sleeping, resting and other social and lesiure time activites.

Prakash Kumar (1986) observed that in Ramanagara Taluk more than half of the labour required both in cultivation of mulberry crop and silkworm rearing was from farm women.

Dinesh Kumar and Singh (1987) revealed that on an average, three-fourth of the total work in agriculture was performed by female workers of the family alone, a fact that signifies the importance and maynitude of the contribution of rural women in hill agriculture.

Walter and Menon (1987) reported that a Orissa tribal housewife put in an average 14 active hours of work per day of which eight hours are spent in work outside the house, in agriculture, collection of forest produce and remaining six hours on housework.

Ingle and Dharmadhikari (1987) in their study revealed that majority of the respondents (76.66 per cent) did not get leisure time. However, 15.56 per cent spent leisure time on entertainment

through movie while the remaining 7.78 per cent spent such a time in chitchatting with neighbours.

Singh et al. (1987) reported that on an average, a rural home maker in Haryana spent about 16 hours per day on various household activities and 26 per cent of it was spent on meal preparation. About 28 per cent time was spent on leisure time activities.

Roy and Saini (1987) while studying the farming and non-farming homemakers revealed that farming homemakers spent an average time of 7-13 hours for kitchen work which was 4.46 hours more than the average time spent by non-farming homemakers.

Batish (1987) while studying the families which had a good working environment and families with poor working environment with regard to their time spent pattern found that on an average, the first group devoted 4.44 hours and second group 5.71 hours daily for food activity, 0.83 hours and 1.15 hours for care of the house, 1.11 hours and 1.03 hours daily for care of family members, 1.06 hours and 1.97 hours for care of clothes and 1.16 hours and 0.43 hours daily to participate in social activities by the first and second group of families respectively.

Gandhi et al. (1987) revealed that cooking, cleaning, washing and care of family members were the major concern of almost all the females in Haryana and participation of females in maintaining domestic animals was found to be more.

Harry and Knudson (1988) indicated that women were recognised as co-workers of all farm enterprises and contributed an average, 22.3 hours per week to farm work.

Kapur (1988) indicated that on an average 87.20 per cent of the working time of women was devoted to the tending of animals, 11.9 per cent in crop production and 0.9 per cent in other farm activities.

Pandey et al. (1988) revealed that the rural women in Haryana worked between 9 and 14 hours per day both in farm and household activities. Both on medium and big farm, the rural women employment ranked first in crop-production followed by household activities as well as preparing farm yard manure and cleaning of cattle shed. The rural women on medium farms relatively devoted more time in crop production and tending of cattle as compared to big farms. The rural women on big farms were found to devote highest time on household activities as compared to women of other farm categories.

Singh et al. (1988) in their study in Uttar Pradesh reported that, on an average, three-fourth of the total work in agriculture is performed by female workers of the family alone in hill agriculture. Women have to walk daily for about four to five hours for collection of the leaf and grasses in the forest.

Akhtar (1989) conducted a study on the utilization of daily time by rural women in Pakistan Northwest frontier province and reported that the women worked from 5 a.m. to 9.30 p.m. with one to two hours leisure time per day.

Patnaik (1989) reported that around 50 to 60 per cent people of both Puri and Ganjam traveled 5 to 15 km. for collection of firewood and spent around six hours or more for it.

Ingle et al. (1990) in their study revealed that the average time spent daily on agricultural activities was 5.31 hours, household 6.18 hours, cattle management 2.12 hours, collection of fuel 1.92 hours and social activities 1.6 hours.

Katuwal (1990) made an attempt to discuss the role of women in agriculture, household activities reported that women devote as much as 50 to 55 per cent of their

time to routine household duties and 25 to 30 per cent to livestock production.

Szeto and Cebotarev (1990) reported that women of St.Lucia are responsible for the well being of their families and they work in the homes, on the farms and whenever possible engage in income generating activities.

2.1.2 Comparison of time utilization pattern of men and women

Chandra (1982) in his study showed that girls and women in a household put in 1229 human days of labour in shifting cultivation yearly compared to 848 by men, whereas in settled agriculture (work on orchards) their contribution was only 122 human days compared to 533 by men.

Agarwal and Narain (1985) reported that women contribute 46 per cent of all the human hours spent in village on agriculture industry and domestic work, men 37 per cent and children 17 per cent. But in domestic activities alone, women contributed half the total human hours spent, men and children about a quarter each.

Guleria and Agnihotri (1985) revealed that female participation in the total working force was higher than the male workers.

Dangat and Yadav (1985) reported that the average per hectare labour used for crop production was 23 days for a male and 12 days for a female.

Grewal (1985) reported that the level of employment for scheduled caste female agricultural workers was low but quite high for scheduled caste male workers.

Joshi and Alshi (1985) found that per hectare male labour use in high yielding variety cotton was 80 per cent more as against 157 per cent in case of female labour. High yielding variety jowar farms required more male labour than local jowar per hectare to the extent of 29 per cent.

Dinesh Kumar and Singh (1987) observed that an average per capita employment of 51 days for women workers in crop activities against only 19 days for each male worker.

Singh et al. (1988) in their study indicated an average per capita employment of 60 days for women workers in crop activities against only 19 days for each

male worker. Considering crop as well as livestock enterprise, the average per capita employment of women workers was twice that of the average of their male counterparts.

Sikka and Swarup (1990) in their study in Himachal Pradesh found that male spent a greater proportion of their time on crop production than females while females spent more time tending cattle than males. On an average, females contributed more time to farm activities than males which stood at 3.90 hours and 3.19 hours per day, respectively.

2.1.3 Seasonal variation in time spent

Singh and Usha Rani (1983) revealed that the female labour employment in different months ranged from 6.20 hours per day in the month of May to 11.13 hours per day in April, the average being 8 to 12 hours. The months of April, June, October and January registered higher hours performed by farm women as compared to other months.

Gadre and Mahalle (1985) conducted a study in Akola and Amaravati districts of Maharashtra and revealed that monthwise employment of female farm worker ranged from 2.61 days in the month of March to 21.52 days in the month of July.

Grewal (1985), reported that, female workers were employed for 102 out of 132 days in the second half of the year from July to December whereas male workers got employment for 137 out of 241 days in the corresponding period.

Jaiswal and Singh (1985) reported that, women labour got the highest employment to the extent of 10.19 per cent in the month of April and 8.25 per cent in each of the months of May, November and January. The lowest employment was in the months of July, August and September, each accounting for about 6.3 per cent of the total employment.

Munjal et al. (1985) found that a farm woman on an average, worked for 13.62 and 12.19 hours daily during peak and slack agricultural seasons respectively.

Vinod Kumar et al. (1985) revealed that employment per women labour was slack in September, accounting for only 19 days in farm and non-farm work as well as in August. The months of October to May are the peak periods for agricultural operations. In the months of June and July the women labour was mostly employed in non-agricultural work.

Lakshmi Devi (1986), reported that during peak employment period, the rural women found 6 to 9 days work and during scattered employment period, they found 3 to 4 days work in a week. They spent 8 to 9 hours per day to agricultural work.

Roy and Saini (1987) revealed that the average time spent in performing kitchen work was 9.08 and 10.18 hours respectively during sowing and harvesting periods for farming homemakers while they spent only 3.43 hours on it during slack period.

Bhatnagar and Saxena (1987), in their study with tribal and non-tribal women observed that during peak seasons, tribal women spent 14.66 hours on daily activities out of which 8.24 hours were spent on agricultural work and 6.42 hours on home activities, whereas non-tribal women spent 8.14 hours on farm activities totalling 15.75 hours per day. As compared to this time utilization during slack agricultural season, tribal women spent 4.17 hours on farm activities and 10.69 hours on home activities, which comes to a total of 14.86 hours. Non-tribal women devoted 4.34 hours on farm activities and 12.54 hours on home activities with a total of 16.88 hours per day.

Sangwan et al. (1990) revealed that average time spent by women of Karnal per day during slack and peak agricultural seasons was 0.72 hours and 3.98 hours respectively in farm activities.

2.1.4 Effect of technology and time spent

Gadre and Mahalle (1985) revealed that average utilization of female labour per hectare for cotton, jowar, wheat and groundnut crops grown by using modern technology in 1980-81 was higher by 183.39 per cent than that for the same crops grown in 1956-57. The availability of total annual employment per female family worker increased from 114.24 days in 1956-57 to 149.83 days in 1980-81 due to more employment in agriculture on account of modern technology.

Joshi and Alshi (1985) reported that HYV cotton required about 743 hours of female labour as against about 289 hours in local variety while HYV jowar required about 305 female labour hours per hectare as against 242 hours in local jowar.

Panghal and Mange Ram (1985) indicated that the employment of woman labour was the highest in cotton followed by paddy and wheat. In case of cotton crop the medium farms obsorbed the maximum woman labour (875 man-

hours) followed by large farms (792 man-hours) and the lowest on small farms (751 man-hours) per hectare.

Bhat et al. (1987) in their study in Kashmir valley revealed that female labour participation ratio has been higher for non-progressive farms than for progressive farms.

Usha Rani et al. (1991) indicated that the employment opportunities before becoming a member of the society and after showed that female labour employment per annum increased from 428 hours to 937 hours with the establishment of women dairy cooperatives.

2.1.5 Total employment and time spent

Singh and Usha Rani (1983) revealed that the average annual work burden on a female was as high as 2964 hours in a year while it was 3037 hours in a year for the female of landless labourers.

Saikia (1984) reported that the average annual wage employment for female agricultural labour was 132.60 days out of which employment in farm activities was 108.04 days and in non-farm jobs it was 24.56 days.

Dhongade et al. (1985) in their study in three crop regions i.e., jowar, cotton and sugarcane region in

Maharashtra revealed that the average employment for a women during the year ranged between 2,019 hours to 3,206 hours in the three regions.

Jaiswal and Singh (1985) reported that in Uttar Pradesh women labourers got total employment of 270 days on an average per annum, of this 85.56 per cent was from agricultural sources and the rest from non-agricultural sources.

Singh Senger et al. (1985) observed that the employment per household per annum was available for 720 days for women labour participant households and in case of women labour non-participant households it was available for 504 days. Considering that 300 days were available for work to the labourer, the percentage of employment was 80 and 84 in the two groups of households respectively.

Vinod Kumar et al. (1985) revealed that the total employment per woman labour in a year in Meerut came to 307 days out of which 203 days were devoted to agriculture and 104 days to non-agriculture.

Muniraju (1988) reported that out of the 4,800 mandays of work generated per hectare of irrigated mulberry, the employment women got was 2,900 mandays.

Similarly, in case of one hectare rainfed mulberry, out of 2000 mandays of employment generated the women got employment for more than 1200 mandays accounting for more than 60 per cent in both the cases.

Shashikala et al. (1990) revealed that farm women of Dharwad district, on an average spent 651.21 hours/year (81.4 mandays) in rainfed area and 1374.33 hours/year (171.8 mandays) in irrigated area on farm activities, 580 hours/year (72.5 mandays) in rainfed area and 569.22 hours/year (71.2 mandays) in irrigated area on dairy activities and 2982.17 hours/year (372.8 mandays) in rainfed area and 2583.05 hours/year (322.9 mandays) in irrigated area on household activities. Therefore, farm women of irrigated area spent more time towards farm activities and in rainfed area it was more towards household activiites.

2.2 FACTORS CONTRIBUTING TO VARIATION IN TIME UTILIZATION PATTERN OF FARM WOMEN

Review of literature pertaining to the influence of various factors comprising of personal, socio-economic and other related variables which contributed to variation in time utilization pattern of farm women is presented below:

Age:

Singh (1968) reported inverse relationship between age and time utilization.

Sharma and Singh (1970) found that age and time utilization were inversely related.

Dipali (1979) stated that lower age group of respondents were in high participation score range in contrast to other groups.

Francis et al. (1981) indicated that age of the homemakers was significant factor with respect to total time spent on household tasks.

Batish and Miglani (1988) found that age had a significant association with the availability of leisure time.

Sushila Gangadharamath and Channegowda (1988) revealed that younger and older farm women have performed similar number of activities.

Prameelamma (1990) reported that the participation of rural women in agricultural operations was found to be significantly associated with their age.

Sunita et al. (1990) reported that age was not a crucial factor associated with the performance of women labour.

Education:

Singh (1968) observed inverse relationship between education and time utilization.

Sharma and Singh (1970) found education and time utilization were inversely related.

Dipali (1979) revealed that illiterate group were in high participation score range in contrast to other group.

Laxmi Devi and Venku Reddy (1984) reported that farm women with less education involve more in farm activities.

Batish and Miglani (1988) revealed that education did not have much effect on leisure time availability.

Sushila Gangadharamath and Channegowda (1988) revealed that illiterate farm women performed more number of activities than literates.

Prameelamma (1990) indicated that education and participation of rural women in agricultural operations were significantly associated.

Malaviya and Seema Rani (1990) found that education was not a crucial factor associated with the performance of women labour.

Family Size:

Sandhu (1972) indicated that the family and household characteristics have also affected the amount of time spent.

Bhatnagar and Saxena (1987) indicated a significant effect of the number of children on time utilization pattern of women in the areas of child care, cattle care and agricultural work.

Batish and Miglani (1988) revealed that size of family had a significant association with the availability of leisure time.

Sushila Gangadharamath and Channegowda (1988) found that farm women belonging to nuclear or extended or joint family have conducted similar number of activities.

Malaviya and Seema Rani (1990) indicated that size of the family was not a crucial factor associated with the performance of women labour.

Farm size:

Singh (1968) indicated that there was inverse association between farm size and time utilization.

Sharma and Singh (1970) found farm size and time utilization were inversely associated.

Mazumdar (1983) found that as farm size increases the hours spent on agricultural activities decreases while the hours spent on non-agricultural activities increases.

Laxmi Devi and Venku Reddy (1984) revealed that women belonging to small land holdings involved more in farm activities.

Saikia (1985) found inverse relationship between farm size and time spent on farm activities.

Dangat and Yadav (1985) found that farm size and time spent on farm activities were inversely related.

Panghal and Mange Ram (1985) reported that as the size of the farm increased the participation of woman labour also increased.

Munjal et al. (1985) revealed that as the farm size increased work participation of farm women decreased in the farm sector and increased in home and dairy sector.

Bhat et al. (1987) revealed that the employment of family female labour in field operations decreased with the increase in the size of holding.

Singh et al. (1987) found positive correlation between land owning status and time spent on household activities and meal preparation.

Bhatnagar and Saxena (1987) reported that the mean time spent on agricultural activities increased with the increase in the size of the holding.

Punjabi and Sadhu (1988) found that as the landholding of the farmers increased, the work participation of family females decreased.

Pandey et al. (1988) revealed that there was a negative correlation between farm size and time spent on agricultural activities and positive correlation with time spent on household activities by farm women.

Sushila Gangadharamath and Channegowda (1988) found that big farm women performed less number of activities.

Patnaik (1989) reported that as the size of the land holding increases there was a decline in the participation of women in forestry.

Sangwan et al. (1990) found that as the farm size increased time spent by farm women in farm activities decreased irrespective of the agricultural seasons.

Shilaja (1990) found positive and significant association between farm size and mixed farming productivity.

Chaudhari and Ganorkar(1992) reported that the land holding size and working hours of females were inversely related.

Cropping intensity:

Longhurst (1980) reported that different cropping patterns influenced time allocation within the household.

Dhongade et al. (1985) indicated that in high cropping intensity areas, women did not work on others farm.

Sudharani and Raju (1991) indicated that in case of cotton cultivation (long duration crop), total human labour days needed were 122.78 days per hectare in which females contributed 73.29 days and male 49.49 days per hectare.

Irrigation facility:

Shashikala et al. (1990) reported that farm women of irrigated area spent more time towards farm activities and in rainfed area it was more towards household activities.

Material possession:

Laxmi Devi and Venku Reddy (1984) observed that women with less material possession involved more in farm activities.

Bhatnagar and Saxena (1987) found that the mean time devoted to agricultural activities decreased with the use of farm equipment.

Income:

Dipali (1979) in her study on farm women of Dharwad district in Karnataka found that low income group had high participation score.

Farouk (1980) observed that the household productive work like cash earning at home, work in kitchen and expenditure saving work increased when the family income was smaller.

Francis et al. (1981) observed that family income was a significant factor with respect to total time spent on household tasks.

Laxmi Devi and Venku Reddy (1984) found that farm women of low economic category were found to participate more in farm operations.

Mueller (1984) found inverse relationship between income and time spent on farm activities.

Lakshmi Devi (1986) revealed that high and medium economic categories of rural women spent more time on household and allied agricultural activities and low economic category were spending more time on agricultural activities.

Batish and Miglani (1988) revealed that family income had a significant association with the availability of leisure time.

Sushila Gangadharamath and Channegowda (1988) indicated that farm women with low annual family income had fulfilled large number of activities as against farm women with high annual family income who performed less number of activities.

Patnaik (1989) reported that as the income of the household increased there is a decline in the participation of women in forestry.

Szeto and Cebotarev (1990) found that women from wealthier families usually worked exclusively at home whereas women from poorer households had varied occupations.

Prameelamma (1990) found significant association between income and participation of women in agricultural operations.

Shilaja (1990) found positive and significant association between income and mixed farming productivity.

Extension contact:

Sawer (1973) reported that wife's extension contact was not significantly related to involvement in either general decision or decision leading to adoption.

Badiger (1979) found that low extension contact category respondents participated in significant proportion in decision making than that of high extension contact group.

Dipali (1979) revealed that rural women who had contact with extension agency were found to have participated less in agricultural operations in comparison with those non-contacted group.

Shilaja (1990) found positive and significant association between extension contact and mixed farming productivity of farm women.

Extension participation:

Badiger (1979) stated that there was no significant association between farm women's participation in decision making and extension participation.

Prameelamma (1990) found significant association between extension participation and participation of rural women in agricultural operations.

Shilaja (1990) reported positive and significant association between extension participation and mixed farming productivity.

Social participation:

Sharma and Singh (1970) found that social participation of women was not a discriminating factor in participation of women in farm operations.

Prameelamma (1990) indicated non-significant association between social participation and participation of rural women in agricultural operations with respect to paddy crop of farm women.

Shilaja (1990) reported positive and significant association between social participation and mixed farming productivity.

Mass media participation:

According to Kaur (1982) majority of women found the lessons useful and liked the content 'Fruits and Vegetable Preservation' (60.4 per cent), 59 per cent liked 'Food Science' and 56 per cent liked 'Home Management' printed lessons.

Saradamoni (1983) opined that women in land owning households were aware of the radio programme for farmers and listen to them. But they would follow the suggestions only if they felt that they were beneficial to them.

Lalitha (1985) revealed that there was no significant difference in knowledge level of high and low mass media participation groups.

Bhagat and Mathur (1989) in their study on "Mass media and farm women" indicated that about 25 per cent of women had low mass media exposure whereas 26 per cent had high mass media exposure and rest were categorised as having medium mass media exposure.

They also reported that women's programmes and rural programmes which are educational in nature were preferred by farm women. They opined that radio provide education to them for improving their living, increasing their knowledge and providing information on home improvement.

Punitha Sagar (1989) reported that there was no significant relationship between mass media exposure and role performance in rice cultivation of the respondents.

Prameelamma (1990) found significant association between mass media participation and participation of rural women in agricultural operations.

Shilaja (1990) reported positive and significant relationship between mass media participation and mixed farming productivity of farm women.

2.3 TRAINING NEEDS OF WOMEN

Agriculture generally involves five stages namely, production, consumption, processing, storage and marketing. In most of these stages farm women are actively involved, more so in stages like consumption and storage of grains. The only operation in which women are little involved are ploughing the field and irrigation. Of course, in the fifth stage of marketing

of agricultural produce men are more involved than women. Despite the major roles played by women in food production, planners and researchers and policy makers seem to have overlooked the vital role played by women and ways of strengthening them in performing these roles effectively. There have been short term and long term agricultural education and training courses for men at the field level, but very little has been done for farm women in this direction. Farm women also require training in subjects like seed treatment, selection of seed, preparation of compost, storage of grain, care and management of cattle.

Kumar and Snehalata (1974) assessing the needs of farm women in Haryana found that nutrition and child care were considered as important training needs than the agricultural aspects of livestock keeping and crop farming followed by clothing, arts and crafts and family planning, fruits and vegetable preservation, removing stains from clothes, repair of clothes, kitchen gardening and milking of animals were the areas in which women required training.

Sandhu and Sharma (1976) stated that information needs of Punjab farm women were perceived as high in order of importance in respect of plant protection

measures, seed selection and treatment, grading, storage and marketing of food grains, fertilizer use and improved agricultural tools so far as agricultural areas are concerned. In respect of home science practices, the perceived information needs of farm women in the order of content areas were family planning, food and nutrition, home management, child development, health and sanitation.

Savorimuthu (1981) reported that farm women needed intensive training on method of sowing of maize crop (65 to 83 per cent), transplanting (64.17 per cent), weeding (63.13 per cent), manuring (62.50 per cent) and irrigation (54.17 per cent).

Dhamija (1982) in his study on technology as a threat to the development of women's skill in Africa, revealed that with limited resources and the worsening economic situation, unless immediate measures are taken to direct education and training activities in the areas of production that meet local consumer needs and use of available resources, the African women will remain as rather unequal partner in development.

Castillo (1982) identified the need for an integrated development programme for rural women geared

towards both their social and economic needs. More courses on handicrafts, health and hygiene, home making, backyard farming and community improvement were to be provided.

Tadesse (1982) observed that lack of training and education was both a serious cause and a consequence of women's exploitation in the production process.

Devi (1987) found that 23 training needs areas of farm women in Andhra Pradesh were buying new catle, feed and care of milk cattle, poultry keeping, compost making, kitchen gardening/fruit and vegetable cultivation, social forestry, bee keeping, sericulture, cultivation of mushroom on home scale, getting credit for agriculture and allied purposes, cultivation of commercial flowers, seed selection and treatment, raising nurseries, seed beds, sowing methods, transplantation of paddy and other crops, identification and handling of chemical fertilizers and pesticides, hoeing and weeding/gap filling, harvesting/winnowing and hand threshing, grain storage, cleaning grains and new technologies in processing, marketing of agricultural and animal husbandry products, use of simple agricultural implements, farm supervision and maintenance of accounts.

Om Prakash (1988) reported that medium level of training need was perceived in case of feeding practices with maximum level of training need in health care practices followed by breeding and management. He further stated that training needs of landless women was maximum in all the practices namely, breeding, feeding, health care and management in comparison with marginal and small farm women. Moreover, all the categories of farm women perceived the training needs to maximum extent in health care practices as compared to other practices of dairy farming.

Sawant and Dalvi (1989) revealed that majority of farm women expressed desire to have training in the subject of food production, followed by poultry farming. Some of the respondents had also desired to have training in the subject of professional skills, dairy farming, preservation of fruits and vegetables and cultivation of fruits and vegetable crops.

Chandargi and Varughese (1990) reported that rural women expressed training needs related to pickle preparation, followed by bakery, food for school children, pappad preparation, food preparation, food for pregnant and lactating mothers. Few expressed training needs in the area of storage of food grains, vegetable

preparation, jelly preparation and improved cooking methods.

2.4 PROBLEMS OF FARM WOMEN

Women of rural areas face a number of problems in performing farm and household activities. An attempt has been made to review literature regarding problems faced by farm women and is presented below.

Singh and Bhattacharya (1988) reported that the physical drudgeries suffered by women in various operations in crop production were bending for a long time, working in scorching sun, sitting on toe for long during transplanting, harvesting, weeding and using hand operated chakki for dehusking/shelling.

Antwal and Bharaswadkar (1990) found that women expressed reasons like-unable to have personal contact with extension workers, lack of money, ignorance of new technology, habit of using traditional technology, non availability and complexity in the use of the devices as some of the constraints in the utilisation of new technology.

Rakesh Nanda and Tantray (1990) found that restrictions due to religious taboos, sin to go outside, male dominance in training programme and lack of time

were the important reasons for low level of participation in Krishi Vigyan Kendra programmes.

Varma and Sinha (1990) found that pesticide dusting is considered to have the highest amount of drudgery followed by carrying load on head, harvesting etc., and the reasons for drudgery were health hazard due to pesticide inhalation, posture of bending or sitting on toes, strained movement of eyes and neck, etc.

Chaudhari and Ganorkar (1992) found that women faced the difficulty of high cost of production, inadequate loan facility, inadequate irrigation water and labour problems.

METHODOLOGY

CHAPTER III

METHODOLOGY

The study was conducted in Devanahally taluk of Bangalore rural district in Karnataka state during the year 1992. The details of the methodology used in planning and conduct of the study are presented in this chapter under the following headings:

3.1 Locale of the study

3.2 Selection of the villages and respondents

3.3 Methods of measuring independent and dependent variables

3.4 Method used for data collection

3.5 Statistical tests and techniques used

3.1 LOCALE OF THE STUDY

The study was conducted in Devanahally taluk of Bangalore rural district in Karnataka. The taluk was purposively selected as it had substantially majority of farm women pursuing different enterprises ie., only agriculture, agriculture with dairy enterprises and also combination of three enterprises viz., agriculture, dairy and sericulture. This taluk was also selected keeping in view the convenience of the researcher.

3.2 SELECTION OF VILLAGES AND RESPONDENTS

A list of villages was prepared under each of the four hoblies of Devanahally taluk namely Kasaba, Chennarayapatna, Kundana and Vijayapura. From each Hobli, one village was randomly selected. The villages were (i) Kannamangala, (ii) Boodigere, (iii) Aradeshally and (iv) Bijavara.

A list of farm women practising three types of enterprises i.e., (i) agriculture (crop-production only), (ii) agriculture (crop-production only) and dairy, and (iii) agriculture (crop production only), dairy and sericulture was prepared for each village. Further, respondents belonging to each type of enterprise were grouped according to their size of the land holding ie., large, small and marginal. Four respondents from each of the above groups were randomly selected thus totalling to 12 under each enterprise categories. So, 36 respondents were selected from each of the four villages making total sample size of 144 respondents for the study comprising of 48 respondents belonging to each of three enterprise categories.

3.3 METHODS OF MEASURING INDEPENDENT AND DEPENDENT VARIABLES

Time utilization pattern was considered as the

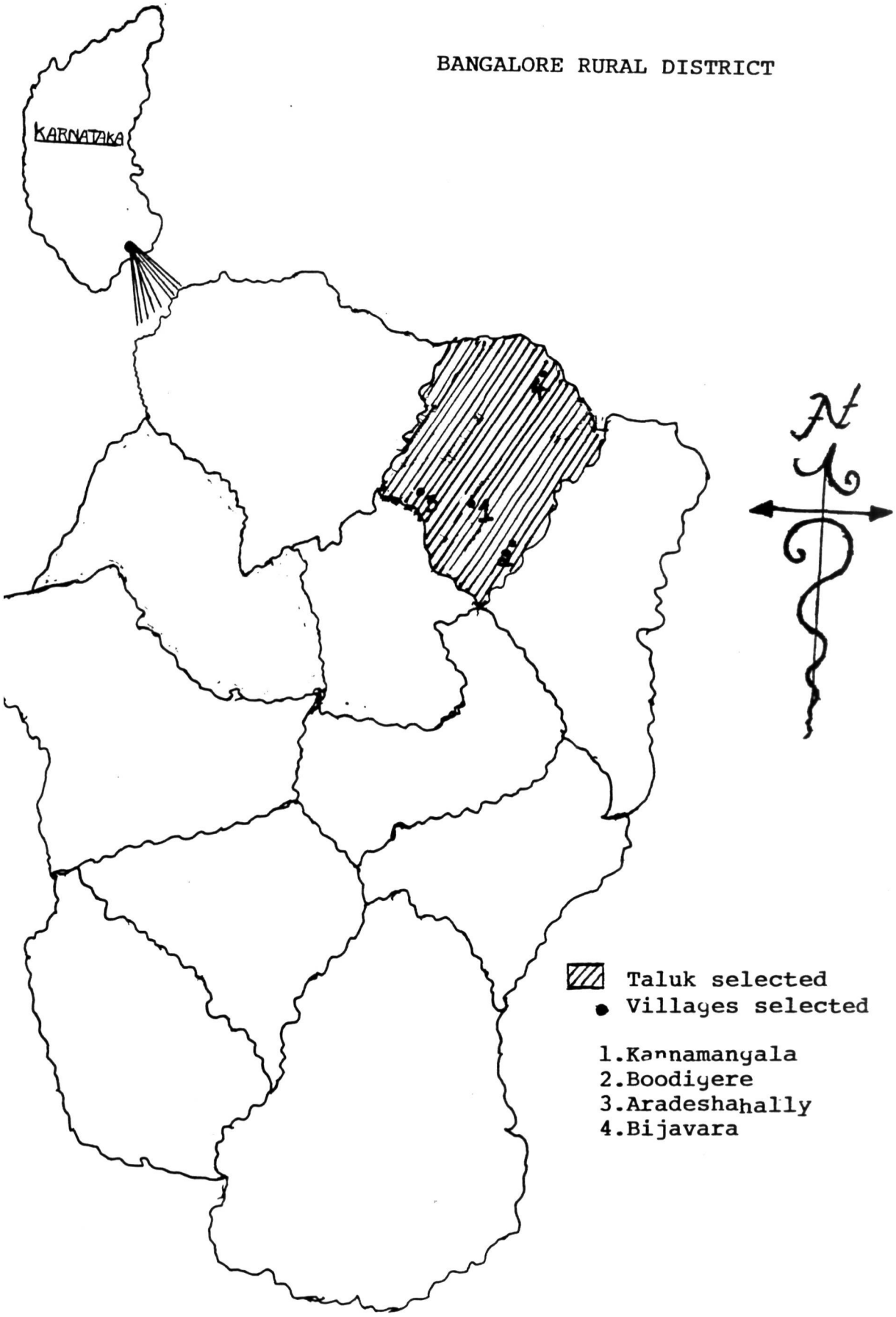

Fig.1. Map of Bangalore rural district showing the taluk and villages of farm women selected for the study

dependent variable in the study. The independent variables considered were: age, education, family size, occupation, farm size, irrigation facility, cropping intensity, material possession, income, extension contact, extension participation, mass media participation, social participation and training undergone.

3.3.1 Dependent variable

3.3.1.1 Time utilization pattern : Time utilization pattern of farm women was measured by developing a time chart for 24 hours with half an hour interval. The respondents were asked to specify the activities performed in a day against the time indicated in the chart.

3.3.2 Independent variables

Fourteen independent variables were considered for the study. They were measured using the appropriate measuring devices.

3.3.2.1 Age : This refers to the actual number of years completed by the respondent at the time of study.

The respondents were classified into three groups viz., young, middle and old age as follows :

Category	Age
Young	Below 36 years
Middle	36 to 50 years
Old age	Above 50 years

3.3.2.2 **Education** : The respondents were asked to state their formal educational level. The quantification of this variable was done based on the procedure suggested by Trivedi (1963) with slight modification. The scoring pattern was as follows :

	Education level	Score
1.	Illiterate	0
2.	Can read	1
3.	Can read & write	2
4.	Primary school	3
5.	Middle school	4
6.	High school	5
7.	College & above	6

Considering the above scoring pattern, the individual score for each respondent was arrived at and

they were classified into three categories taking mean and standard deviation as a measure of check.

Category	Score
High ($\bar{x}$ + 1/2 SD)	Above 2.954
Medium ($\bar{x} \pm$ 1/2 SD)	0.786 to 2.954
Low ($\bar{x}$ - 1/2 SD)	Below 0.786

3.3.2.3 Family size : Information from each respondent about the total number of members in their family was collected. Based on the total number of members, the respondents were grouped into two categories as suggested by Trivedi (1963).

Category	Size of family
Big	5 and above 5
Small	Below 5

This variable was expresed in terms of percentage under two categories, ie., Big & Small families.

3.3.2.4 Occupation : Based on the information obtained from the respondents, the enterprise was grouped as follows:

1) Agriculture (crop-production only)
2) Agriculture (crop-production only) + Dairy
3) Agriculture (crop-production) + Dairy + Sericulture

3.3.2.5 Farm size : Farm size was recorded in terms of total number of acres owned by the respondents. Wet and garden lands owned by respondents were converted into dry land acres using the standards laid out by Karnataka Land Reforms Act 38 of 1966 (Part B). Based on the standard dry land area, the farm women were classified into three groups viz., marginal, small and large.

Category	Acres
Large	> 5.0 acres
Small	2.5 to 5.0 acres
Marginal	< 2.5 acres

3.3.2.6 Irrigation facility: Respondents were asked to indicate the total area of land under irrigation and their farm size. The procedure followed by Singh (1980) for obtaining the irrigation index was utilised. Accordingly, the following formula was used to obtain the irrigation index score.

$$\text{Irrigation index} = \frac{\text{Total area under irrigation}}{\text{Total farm size}} \times 100$$

Using the above scoring pattern, individual irrigation index score was arrived at and they were

classified into three categories taking mean and standard deviation as a measure of check.

Category	Score
High ($\bar{x}$ + 1/2 SD)	Above 74.947
Medium ($\bar{x} \pm$ 1/2 SD)	4.309 to 74.947
Low ($\bar{x}$ - 1/2 SD)	Below 4.309

3.3.2.7 Cropping intensity : The respondents were asked to indicate the crops being grown in acres of area of land being cultivated by them for all the three seasons namely kharif, rabi and summer. Total cropped area in case of each respondent was obtained by summation of all the cropped area in acres per year. The quantification was done according to the procedure followed by Sinha & Kolte (1974). The formula used was

$$\text{Cropping intensity index} = \frac{\text{Total annual cropped area}}{\text{Total cultivable area}} \times 100$$

By using the above formula, cropping intensity score was arrived at for each of the respondents and they were classified into three categories taking mean and standard deviation as a measure of check.

Category	Score
High ($\bar{x}$ + 1/2 SD)	Above 223.654
Medium ($\bar{x} \pm$ 1/2 SD)	102.316 to 223.654
Low ($\bar{x}$ - 1/2 SD)	Below 102.316

3.3.2.8 Material possession : To place the respondents at different levels with respect to the material possession they had, Trivedi's (1963) material possession index with slight modification was used in the study.

Items included under different heads and the respective weights assigned to them are as follows

	Items	Score
I	**Agriculture**	
	a) Wooden plough	1
	b) Kunte	1
	c) Harrow	1
	d) Iron plough	2
	e) Seed drill/seed-cum fertilizer drill	1
	f) Sprayer/Duster	2
	g) Pumpset	2
	h) Tractor	4
	i) Power tiller	2
	j) Chopper	1
II	**Sericulture**	
	a) Rearing stands	2
	b) Trays	1
	c) Mountage	2

d)	Knife	1
e)	Wooden trays for chawki rearing	2
f)	Trays to change worms	1
g)	Leaf storing trays	1
h)	Bamboo basket	1
i)	Thermometer	2
j)	Others	2

III Domestic

a)	Biogas	4
b)	LPG	4
c)	Mixie	2
d)	Grinder	3
e)	Cooker	2
f)	Refrigerator	5
g)	Television	2
h)	Radio	1
i)	Cycle	1
j)	Motor cycle	2
k)	Car	6

Based on the above scoring the individual score for each respondents was arrived at and they were grouped into three categories using mean and standard deviation.

Category	Score
High ($\bar{x}$ + 1/2 SD)	Above 19.19
Medium ($\bar{x} \pm$ 1/2 SD)	10.61 to 19.19
Low ($\bar{x}$ - 1/2 SD)	Below 10.61

3.3.2.9 Income : It was measured by computing the annual income obtained by the respondent through the major and subsidiary enterprises. The main income was conceived as one that was derived from agriculture. The income that was derived from sources other than agriculture was conceived as subsidiary income. The above two items were considered to arrive at the annual income of each respondent. Based on the annual income of the respondent, they were classified into three categories taking mean and standard deviation as a measure of check.

Category	Score
High ($\bar{x}$ + 1/2 SD)	Above 27,105
Medium ($\bar{x} \pm$ 1/2 SD)	979 to 27,105
Low ($\bar{x}$ - 1/2 SD)	Below 979

3.3.2.10 Extension contact: This refers to the degree to which an individual contacted extension workers in a specified period of time. This variable was measured by the procedure followed by Kullai Reddy (1983) and Kantha

Raju (1989) with slight modification. The respondents were asked to indicate their extent of contact in terms of four responses i.e., once in a week, once in a month, once in 6 months and never in respect of each extension worker listed in the schedule. The scoring pattern adopted was 3, 2, 1 and 0 respectively.

Based on the scores obtained, respondents were grouped into three categories using mean and standard deviation as a measure of check.

Category	Score
High ($\bar{x}$ + 1/2 SD)	Above 2.86
Medium ($\bar{x} \pm$ 1/2 SD)	0.18 to 2.86
Low ($\bar{x}$ - 1/2 SD)	Below 0.18

3.3.2.11 Extension participation: It refers to the extent of participation of the respondent in different extension activities during the past one year. This variable was quantified using the procedure followed by Kullai Reddy (1983) and Kantha Raju (1989) with slight modification in the list of extension activities. The respondents were asked to indicate their extent of participation in selected extension activities. The response categories were- regular, occasional and never with score of 2, 1 and 0 respectively.

Based on the scores obtained the respondents were grouped into three categories using mean and standard deviation.

Category	Score
High ($\bar{x}$ + 1/2 SD)	Above 2.664
Medium ($\bar{x} \pm$ 1/2 SD)	0.126 to 2.664
Low ($\bar{x}$ - 1/2 SD)	Below 0.126

Based on the extent of participation in extension activities, the responses also were expressed in terms of percentage.

3.3.2.12 Mass media participation: In order to assess the extent of use of various mass media by the respondents, different mass media were listed and the respondents were asked to indicate as to how often they used each of these media. The procedure used by Trivedi (1963) was adopted for measuring mass media participation of the respondents with scoring pattern of 2 for regular, 1 for occasional and 0 for never.

Based on the scores obtained, the respondents were grouped into three categories using mean and standard deviation.

Category	Score
High ($\bar{x}$ + 1/2 SD)	Above 4.60
Medium ($\bar{x} \pm$ 1/2 SD)	2.22 to 4.60
Low ($\bar{x}$ - 1/2 SD)	Below 2.22

Based on the extent of use of various mass media, the responses were also expressed in terms of percentage.

3.3.2.13 Social participation: This refers to the degree of involvement of an individual in formal organisation either as a member or an office bearer. This variable was quantified using the method followed by Trivedi (1963) with suitable changes in items and weightages as given below:

Items	Score
Not a member of the organisation	0
Member in any one organisation	1
Member in more than one organisation	2
Office Bearer	3

With regard to attendance at the meeting of the organisations, the scoring pattern followed was

Regular	2
Occasional	1
Never	0

Thus the scores for each respondent were obtained and the respondents were grouped into three categories using mean and standard deviation as a measure of check.

Category	Score
High ($\bar{x}$ + 1/2 SD)	Above 0.47
Medium ($\bar{x} \pm$ 1/2 SD)	.12 to 0.47
Low ($\bar{x}$ - 1/2 SD)	Below 0.12

Based on the degree of involvement in formal organisations, the responses were also expressed in terms of percentage.

3.3.2.14 Training undergone: The respondents were asked to indicate whether they had undergone training. The scores given were as follows:

Category	Score
Yes	1
No	0

This variable is expressed in terms of percentage under two categories - training undergone and training not undergone.

3.4 METHOD USED FOR DATA COLLECTION

An interview schedule was developed based on the objectives of the study and was pre-tested in a non-

study area. After pre-test, necessary corrections were made in the interview schedule and final schedule was prepared. Further, this schedule was translated into Kannada for easy administration. A copy of the schedule is furnished in Appendix I. Data collection was done during October 1992 by personally interviewing the respondents.

3.5 STATISTICAL TESTS AND TECHNIQUES USED

The following statistical tests and techniques were used for analysis of the data.

i. Frequency and percentage were used to explain the different personal, social and psychological characteristics of farm women.

ii. Student 't' test was used to find out differences in the time utilization pattern of three categories of farm women.

iii. Principal component analysis: The principal component analysis was used to identify the factors or group of factors influencing the time utilization pattern of farm women. The detail procedure suggested by Overall and Klett (1972) is furnished in Appendix II.

RESULTS

CHAPTER IV

RESULTS

The results of the study are presented under the following heads :

4.1 Profile of the farm women

4.2 Time utilization pattern of farm women

4.3 Factors contributing to variation in time utilization pattern of farm women

4.4 Training needs of farm women

4.5 Problems of farm women

4.1 PROFILE OF THE FARM WOMEN

An examination of Table I projects the profile of the farm women comprising of different personal, socio-economic and other related variables. This projection is only an attempt to document the background of respondents which may facilitate to understand and interpret the behaviour of farm women with regard to their time utilization pattern.

4.1.1 Age : A majority of farm women (57.64 per cent) were young followed by middle (33.33 per cent) and old age (9.03 per cent).

4.1.2 Education : A majority of farm women (54.86 per cent) had lower formal education followed by higher formal education (43.75 per cent) and medium formal education (1.39 per cent).

4.1.3 Family size : A majority of farm women (52.78 per cent) belonged to small family and 47.22 per cent to big family.

4.1.4 Occupation: An equal per cent of farm women (33.33 per cent) were in the categories of single, two and three enterprise groups which was due to purposive sampling.

4.1.5 Farm size : An equal per cent of farm women (33.33 per cent) were in the categories of large, small and marginal farm women which was due to purposive sampling.

4.1.6 Irrigation facility: A considerable percentage of farm women (47.92 per cent) had less irrigation facility followed by medium (31.94 per cent) and high (20.14 per cent) level of irrigation facility.

4.1.7 Cropping intensity :A majority of the farm women (54.17 per cent) had medium level of cropping intensity followed by low (28.47 per cent) and high (17.36 per cent) level of cropping intensity.

4.1.8 Material possession : A large percentage of farm women (42.36 per cent) had medium material possession followed by low (33.33 per cent) and high (24.31 per cent) categories of material possession.

4.1.9 Income : A great majority of the farm women (88.19 per cent) had medium income followed by high (11.81 per cent) and none had low income.

4.1.10 Extension contact : As high as 65.97 per cent farm women had low extension contact followed by high (22.92 per cent) and medium (11.11 per cent) level of extension contact.

4.1.11 Extension participation : A large majority of the farm women (86.11 per cent) had medium level of extension participation followed by high (13.89 per cent) level of extension participation.

4.1.12 Mass media participation: A slightly more than one-third of farm women (38.19 per cent) had medium and low level of mass media use followed by high (24.31 per cent) level of mass media use.

4.1.13 Social participation : A large majority of the farm women (86.81 per cent) had medium and 13.19 per cent, high social participation.

Table I

Profile of farm women

n=144

Sl. No.	Characteristics	Categories	No.	%
1.	Age	Young < 35 years	83	57.6
		Middle 36-50 years	48	33.3
		Old > 51 years	13	9.0
2.	Education	High	63	43.7
		Medium	2	1.3
		Low	79	54.8
3.	Family size	Big	68	47.2
		Small	76	52.7
4.	Occupation	Agriculture	48	33.3
		Agriculture+Dairy	48	33.3
		Agriculture+Dairy +Sericulture	48	33.3
5.	Farm size	Large > 5.0 acres	48	33.3
		Small 2.5 to 5.0 acres	48	33.3
		Marginal < 2.5 acres	48	33.3
6.	Irrigation facility	High	29	20.1
		Medium	46	31.9
		Low	69	47.9
7.	Cropping intensity	High	25	17.3
		Medium	78	54.1
		Low	41	28.4
8.	Material possession	High	35	24.3
		Medium	61	42.3
		Low	48	33.3
9.	Income	High	17	11.8
		Medium	127	88.1
		Low	-	-
10.	Extension contact	High	33	22.9
		Medium	16	11.1
		Low	95	65.9

Table 1 Contd...:

Sl. No.	Characteristics	Categories	No.	
11.	Extension participation	High	20	13.89
		Medium	124	86.11
		Low	-	00.00
12.	Mass media participation	High	35	24.31
		Medium	55	38.19
		Low	54	37.50
13.	Social participation	High	19	13.19
		Medium	125	86.81
		Low	0	00.00
14.	Training undergone	Training undergone	22	15.3
		Training notundergone	122	84.7

4.1.14 Training undergone : A large majority of farm women (84.70 per cent) had not undergone any training and only 15.3 per cent had undergone some training.

4.2 TIME UTILIZATION PATTERN OF FARM WOMEN

The time utilization pattern of farm women practising single, two and three enterprises was studied by classifying them according to their farm size as large, small and marginal farm women in respect of different farm, household and resting and other leisure time activities under each group. The results are, accordingly, reported under these aspects.

4.2.1 Time utilization pattern of farm women with single enterprise

The average time spent per day by the farm women with single enterprise i.e., agriculture on different farm, household and other activities are given in Table II and also illustrated graphically in Fig. 2. The results in the table revealed that large farm women spent 20.83 per cent of their time on farm activities, 32.54 per cent on household, 34.63 per cent on sleeping and 12 per cent on resting and other leisure time activities.

Table II

Time utilization pattern of farm women with single enterprise on different farm, household and other activities

n=(16+16+16)

Activities	Average time spent (hrs/day)					
	Large		Small		Marginal	
	hrs	%	hrs	%	hrs	%
A. Farm						
Agriculture	5.00	20.83	8.06	33.58	9.12	38.00
Sub-total	5.00	20.83	8.06	33.58	9.12	38.00
B. Household						
Breakfast preparation	0.47	1.96	0.31	1.29	0.06	0.25
Lunch preparation	1.55	6.46	1.90	7.92	1.75	7.29
Dinner preparation	1.64	6.83	1.47	6.12	1.50	6.25
Cooking	3.66	15.25	3.68	15.33	3.31	13.79
Cleaning house	0.99	4.12	1.00	4.17	0.87	3.63
Serving	0.50	2.08	0.66	2.75	0.42	1.75
Washing vessels	0.94	3.92	0.81	3.37	0.69	2.87
Fetching water	0.78	3.25	1.47	6.13	1.06	4.42
Fetching fuel/fodder	0.00	0.00	0.00	0.00	0.00	0.00
Child care	0.94	3.92	0.75	3.13	1.19	4.96
Sub-total	7.81	32.54	8.37	34.88	7.54	31.42
C. Others						
Personal care	0.94	3.92	0.63	2.62	0.69	2.87
Watch TV/Reading newspaper	0.91	3.79	0.47	1.96	0.52	2.17
Resting	1.03	4.29	0.43	1.29	0.19	0.79
Sub-total	2.88	12.00	1.53	6.37	1.40	5.83
TOTAL TIME SPENT (A+B+C)	15.69	65.37	17.96	74.83	18.06	75.25
Sleeping	8.31	34.63	6.04	25.17	5.94	24.75
GRAND TOTAL	24.00	100.0	24.00	100.0	24.00	100.0

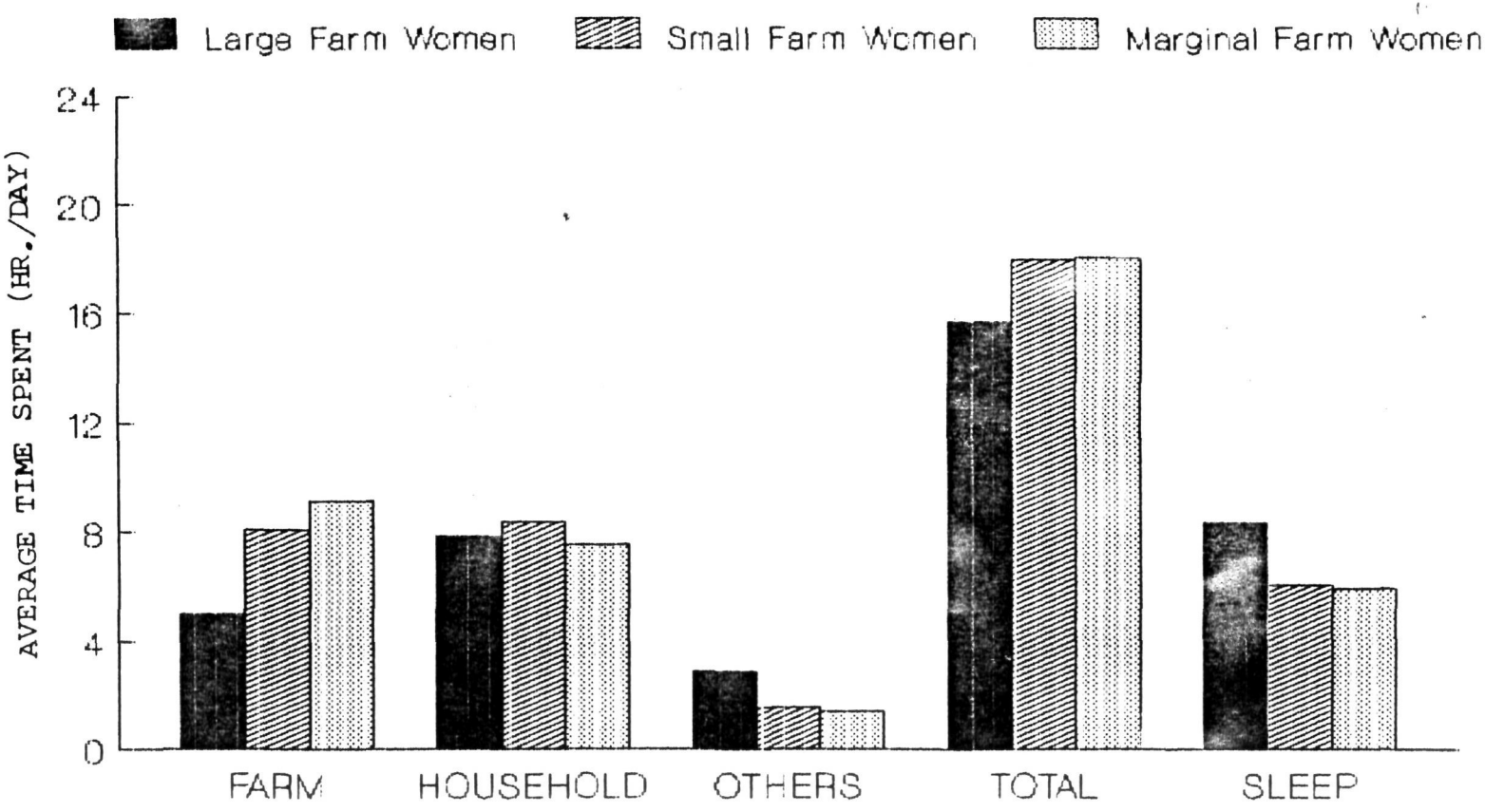

FIG.2: TIME UTILIZATION PATTERN OF LARGE, SMALL AND MARGINAL FARM WOMEN WITH SINGLE ENTERPRISE

The small farm women spent 33.58 per cent of their time on farm activities, 34.88 per cent on household, 25.17 per cent on sleeping and 6.37 per cent on resting and other leisure time activities.

The marginal farm women spent 38.00 per cent of their time on farm activities, 31.42 per cent on household, 24.75 per cent on sleeping and 5.83 per cent on resting and other leisure time activities.

4.2.1.1 Comparison of time utilization pattern of large, small and marginal farm women in respect of farm activities

An examination of the results in Table III indicates that the mean time spent on farm by large farm women was 5.00, while it was 8.06 for small farm women. Further the 't' test computed revealed that the difference between the two means was significant at 1 per cent level indicating that small farm women were found to spend more time on farm activities than the large farm women.

It was observed from the Table IV that the mean time spent on farm by large farm women was 5.00, while it was 9.12 for marginal farm women. The 't' test showed that difference was highly significant at

Table III

Comparison of time utilization pattern of large and small farm women with single enterprise in respect of farm activities

n=(16+16)

Category	Time utilization pattern Mean time spent	S.D.	't' value
Large farm women	5.00	2.94	
			3.69**
Small farm women	8.06	1.61	

** Significant at 1 per cent level

Table IV

Comparison of time utilization pattern of large and marginal farm women with single enterprise in respect of farm activities

n=(16+16)

Category	Time utilization pattern Mean time spent	S.D.	't' value
Large farm women	5.00	2.94	
			5.01**
Marginal farm women	9.12	1.54	

** Significant at 1 per cent level

one per cent level. This indicates that there was highly significant difference in the mean time spent by the two groups of farm women. Marginal farm women were found to spend more time on farm activities than large farm women.

The mean time spent by small farm women was 8.06, while it was 9.12 for marginal farm women (Table V). Further the 't' test conducted for the data showed significant difference in time spent by two categories of farm women. This implies that marginal farm women spent more time on farm activities than the small farm women.

4.2.2 Time utilization pattern of farm women with two enterprises

Details on average time spent per day by the farm women with two enterprise i.e., agriculture and dairy on different farm, household and other activities are given in Table VI and also illustrated graphically in Fig.3 in a classified form according to their farm size.

The large farm women spent 20.17 per cent of their time on farm activities, 19.58 per cent on household, 37.04 per cent on sleeping and 23.21 per cent on resting and other leisure time activities. Further, the small

Table V

Comparison of time utilization pattern of small and marginal farm women with single enterprise in respect of farm activities

n=(16+16)

Category	Time utilization pattern Mean time spent	S.D.	't' value
Saml1 farm women	8.06	1.61	
			1.93*
Marginal farm women	9.12	1.54	

* Significant at 5 per cent level

Table VI

Time utilization pattern of farm women with two enterprises on different farm, household and other activities

n=(16+16+16)

Activities	Average time spent (hrs/day)					
	Large		Small		Marginal	
	hrs	%	hrs	%	hrs	%
A. Farm						
Agriculture	2.03	8.46	2.87	11.96	4.35	18.12
Dairy :	2.81	11.71	3.19	13.29	3.34	13.92
Cleaning cattle shed	0.94	3.92	1.16	4.83	1.09	4.54
Keeping fodder & water	0.84	3.50	0.94	3.92	0.94	3.92
Milking	0.97	4.04	1.03	4.29	0.84	3.50
Going to cooperatives	0.06	0.25	0.06	0.25	0.47	1.96
Sub-total	4.84	20.17	6.06	25.25	7.69	32.04
B. Household						
Breakfast preparation	0.06	0.25	0.09	0.37	0.47	1.96
Lunch preparation	1.31	5.46	1.56	6.50	1.31	5.46
Dinner preparation	1.03	4.29	1.60	6.67	1.31	5.46
Cooking	2.40	10.00	3.25	13.54	3.09	12.88
Cleaning house	0.37	1.54	0.84	3.50	1.00	4.17
Serving	0.55	2.29	0.31	1.29	0.36	1.50
Washing vessels	0.28	1.17	0.50	2.08	0.47	1.96
Fetching water	0.78	3.25	0.94	3.92	1.12	4.66
Fetching fuel/fodder	0.06	0.25	1.75	7.29	0.78	3.25
Child care	0.26	1.08	0.78	3.25	1.28	5.33
Sub-total	4.70	19.58	8.37	34.87	8.10	33.75
C. Others						
Personal care	1.09	4.54	0.97	4.04	0.59	2.47
Watch TV/Reading newspaper	1.78	7.42	0.53	2.21	0.62	2.58
Resting	2.70	11.25	1.56	6.50	0.62	2.58
Sub-total	5.77	23.21	3.06	12.75	1.83	7.63
TOTAL TIME SPENT (A+B+C)	15.11	62.96	17.49	72.87	17.62	73.41
Sleeping	8.89	37.04	6.51	27.13	6.38	26.58
GRAND TOTAL	24.00	100.0	24.00	100.0	24.00	100.0

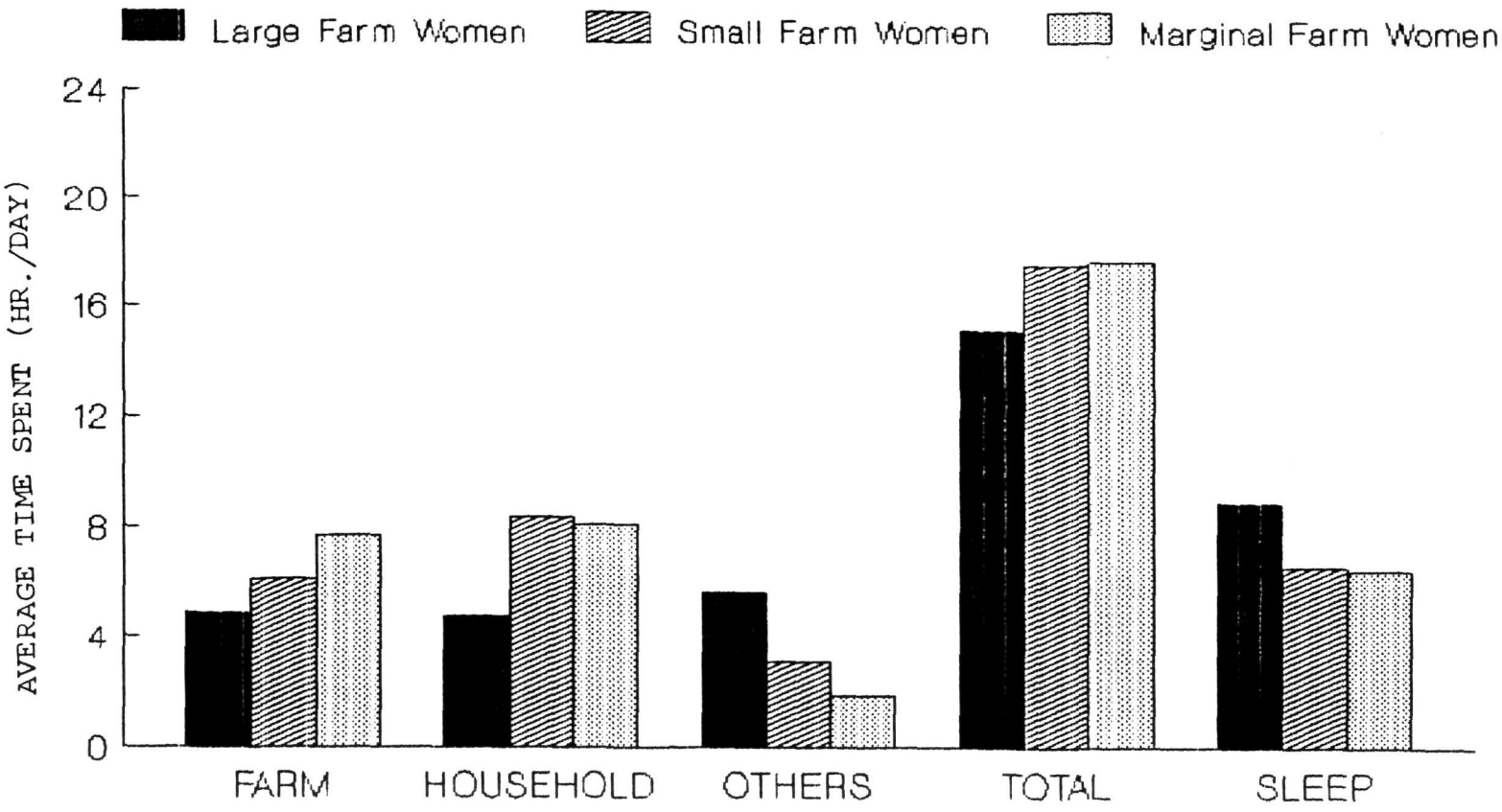

FIG.3: TIME UTILIZATION PATTERN OF LARGE, SMALL AND MARGINAL FARM WOMEN WITH TWO ENTERPRISES

farm women spent 25.25 per cent of their time on farm activities, 34.87 per cent on household, 27.13 per cent on sleeping and 12.75 per cent on resting and other leisure time activities.

The marginal farm women spent 32.04 per cent of their time on farm activities, 33.75 per cent on household, 26.58 per cent on sleeping and 7.63 per cent on resting and other leisure time activities.

4.2.2.1 Comparison of time utilization pattern of large, small and marginal farm women in respect of farm activities

An examination of the results in Table VII revealed that the mean time spent on farm activities by small farm women was higher than large farm women. The 't' test computed displayed no significant difference between the two means.

The mean time spent on farm activities was 4.84 by large farm women, while it was 7.69 for marginal farm women (Table VIII). On administrating the 't' test it was found that there was significant difference between the two means at 1 per cent level. This shows that marginal farm women spent more time than the large farm women.

Table VII

Comparison of time utilization pattern of large and small farm women with two enterprises in respect of farm activities

n=(16+16)

Category	Time utilization pattern		
	Mean time spent	S.D.	't' value
Large farm women	4.84	3.06	
			1.02^{NS}
Small farm women	6.06	3.71	

NS - Non significant

Table VIII

Comparison of time utilization pattern of large and marginal farm women with two enterprises in respect of farm activities

n=(16+16)

Category	Time utilization pattern Mean time spent	S.D.	't' value
Large farm women	4.84	3.06	
			2.64**
Marginal farm women	7.69	3.11	

** Significant at 1 per cent level

The data in Table IX indicate that the mean time spent on farm activities by small farm women was 6.06, while it was 7.69 for marginal farm women. Further, the 't' test conducted for the data showed non-significant differene between the two means.

4.2.3 Time utilization pattern of farm women with three entereprises

The average time spent per day by the farm women with three enterprises i.e., agriculture, dairy and sericulture on different farm, household and other activities are given in Table X and also illustrated graphically in Fig.4 in a classified form according to their farm size.

The large farm women spent 29.66 per cent of their time on farm activities, 20.84 per cent on household, 33.75 per cent on sleeping and 15.75 per cent on resting and other leisure time activities.

The small farm women spent 33.04 per cent of their time on farm activities, 29.71 per cent on household 25.46 per cent on sleeping and 11.79 per cent on resting and other leisure time activities.

Data relating to marginal farm women revealed that they spent 41.92 per cent of their time on farm

Table IX

Comparison of time utilization pattern of small and marginal farm women with two enterprises in respect of farm activities

n=(16+16)

Category	Time utilization pattern Mean time spent	S.D.	't' value
Small farm women	6.06	3.71	
			1.36^{NS}
Marginal farm women	7.69	3.11	

NS Non — significant

Table X

Time utilization pattern of farm women with three enterprises on different farm, household and other activities

n=(16+16+16)

Activities	Average time spent (hrs/day)					
	Large		Small		Marginal	
	hrs	%	hrs	%	hrs	%
A. Farm						
Agriculture	3.87	16.12	4.22	17.58	6.28	26.17
Dairy :	2.69	11.21	2.87	11.96	2.66	11.08
Cleaning cattle shed	0.94	3.92	1.03	4.29	1.13	4.71
Keeping fodder & water	0.88	3.67	0.78	3.25	0.69	2.88
Milking	0.81	3.37	1.00	4.17	0.75	3.12
Going to cooperatives	0.06	0.25	0.06	0.25	0.09	0.37
Sericulture	0.56	2.33	0.84	3.,50	1.12	4.67
Sub-total	7.12	29.66	7.93	33.04	10.06	41.92
B. Household						
Breakfast preparation	0.53	2.21	0.56	2.33	0.19	0.79
Lunch preparation	1.03	4.29	1.62	6.75	1.37	5.71
Dinner preparation	0.69	2.88	1.31	5.46	0.94	3.92
Cooking	2.25	9.38	3.49	14.54	2.50	10.42
Cleaning house	0.63	2.63	0.97	4.04	0.44	1.83
Serving	0.25	1.04	0.47	1.96	0.28	1.17
Washing vessels	0.48	2.00	0.72	3.00	0.34	1.41
Fetching water	0.44	1.83	0.63	2.63	0.62	2.52
Fetching fuel/fodder	0.00	0.00	0.25	1.04	0.06	0.25
Child care	0.95	3.96	0.60	2.50	1.13	4.71
Sub-total	5.00	20.84	7.13	29.71	5.37	22.37
C. Others						
Personal care	0.84	3.50	0.50	2.08	0.80	3.33
Watch TV/Reading newspaper	1.41	5.88	1.39	5.79	1.05	4.38
Resting	1.53	6.37	0.94	3.92	0.78	3.25
Sub-total	3.78	15.75	2.83	11.79	2.63	10.96
TOTAL TIME SPENT (A+B+C)	15.90	66.25	17.89	74.54	18.06	75.25
Sleeping	8.10	33.75	6.11	25.46	5.94	24.75
GRAND TOTAL	24.00	100.0	24.00	100.0	24.00	100.0

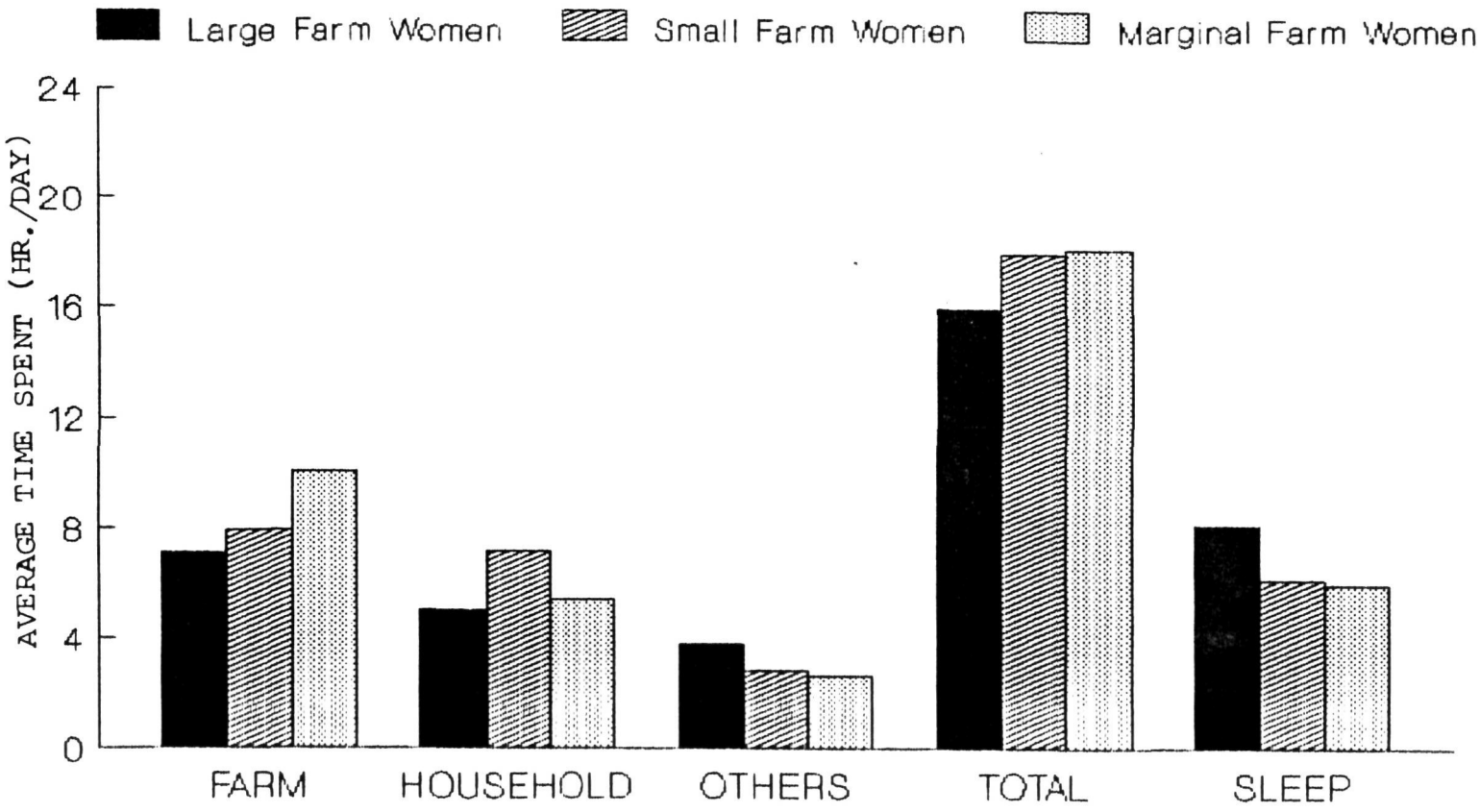

FIG.4:TIME UTILIZATION PATTERN OF LARGE, SMALL AND MARGINAL FARM WOMEN WITH THREE ENTERPRISES

activities, 22.37 per cent on household, 24.75 per cent on sleeping and 10.96 per cent on resting and other leisure time activities.

4.2.3.1 Comparison of the time utilization pattern of large, small and marginal farm women in resepct of farm activities

A perusal of Table XI indicated that the mean time spent on farm activities by large farm women was 7.12, while it was 7.93 for small farm women. The 't' test computed for the data showed non significant difference between the two means.

It was observed from the Table XII that the mean time spent on farm activities by marginal farm women was higher than the large farm women. The 't' test computed displayed no significant difference between the two means.

A glance at Table XIII indicated that the mean time spent on farm activities by small farm women was 7.93, while it was 10.06 for marginal farm women. Further, the 't' test conducted showed non significant difference between the two means.

Table XI

Comparison of time utilization pattern of large and small farm women with three enterprises in respect of farm activities

n=(16+16)

Category	Time utilization pattern Mean time spent	S.D.	't' value
Large farm women	7.12	2.93	
			0.76^{NS}
Small farm women	7.93	3.12	

NS Non significant

Table XII

Comparison of time utilization pattern of large and marginal farm women with three enterprises in respect of farm activities

n=(16+16)

Category	Time utilization pattern Mean time spent	S.D.	't' value
Large farm women	7.12	2.93	
			0.70^{NS}
Marginal farm women	10.06	16.66	

NS Non significant

Table XIII

Comparison of time utilization pattern of small and marginal farm women with three enterprises in respect of farm activities

n=(16+16)

Category	Time utilization pattern		
	Mean time spent	S.D.	't' value
Small farm women	7.93	3.12	
			0.51^{NS}
Marginal farm women	10.06	16.66	

NS Non significant

4.2.4.1 Comparison of three enterprise groups with regard to their time utilization pattern in different activities

The average time spent per day by farm women with single, two and three enterprise on different farm, household and other activities are given in Table XIV and illustrated graphically in Fig. 5.

An appraisal of Table XIV showed that, on an average, farm women with single enterprise i.e., agriculture spent 30.80 per cent of their time on farm activities, 32.95 per cent on household, 28.21 per cent on sleeping and 8.04 per cent on resting and other leisure time activities.

Farm women with two enterprises i.e., agriculture and dairy spent 25.83 per cent of their time on farm activities, 29.41 per cent on household, 30.22 per cent on sleeping and 14.54 per cent on resting and other leisure time activities.

As revealed from the table, farm women with three enterprises i.e., agriculture, dairy and sericulture spent 34.91 per cent of their time on farm activities, 24.29 per cent on household, 28 per cent on sleeping and 12.80 per cent on resting and other leisure time activities.

Table XIV

Comparison of three enterprise groups with regard to their time utilization pattern in different farm, household and other activities

n=(48+48+48)

Activities	Average time spent (hrs/day) Enterprise groups					
	Single		Two		Three	
	hrs	%	hrs	%	hrs	%
A. Farm						
Agriculture	7.39	30.80	3.09	12.87	4.79	19.96
Dairy :	-	-	3.11	12.96	2.74	11.41
Sericulture	-	-	-	-	0.85	3.54
Sub-total	7.39	30.80	6.20	25.83	8.38	34.91
B. Household						
Breakfast preparation	0.27	1.12	0.21	0.87	0.43	1.79
Lunch preparation	1.74	7.25	1.39	5.79	1.34	5.58
Dinner preparation	1.54	6.42	1.31	5.46	0.98	4.08
Cooking	3.55	14.79	2.91	12.12	2.75	11.45
Cleaning house	0.96	4.00	0.74	3.08	0.68	2.83
Serving	0.53	2.21	0.41	1.71	0.33	1.38
Washing vessels	0.81	3.37	0.42	1.75	0.52	2.17
Fetching water	1.10	4.58	0.95	3.96	0.56	2.33
Fetching fuel/fodder	0.00	0.00	0.86	3.58	0.10	0.42
Child care	0.96	4.00	0.77	3.21	0.89	3.71
Sub-total	7.91	32.95	7.06	29.41	5.83	24.29
C. Others						
Personal care	0.75	3.12	0.88	3.67	0.71	2.97
Watch TV/Reading newspaper	0.63	2.63	0.98	4.08	1.28	5.33
Resting	0.55	2.29	1.63	6.79	1.08	4.50
Sub-total	1.93	8.04	3.49	14.54	3.07	12.80
TOTAL TIME SPENT (A+B+C)	17.23	71.79	16.75	69.78	17.28	72.00
Sleeping	6.77	28.21	7.25	30.22	6.72	28.00
GRAND TOTAL	24.00	100.0	24.00	100.0	24.00	100.0

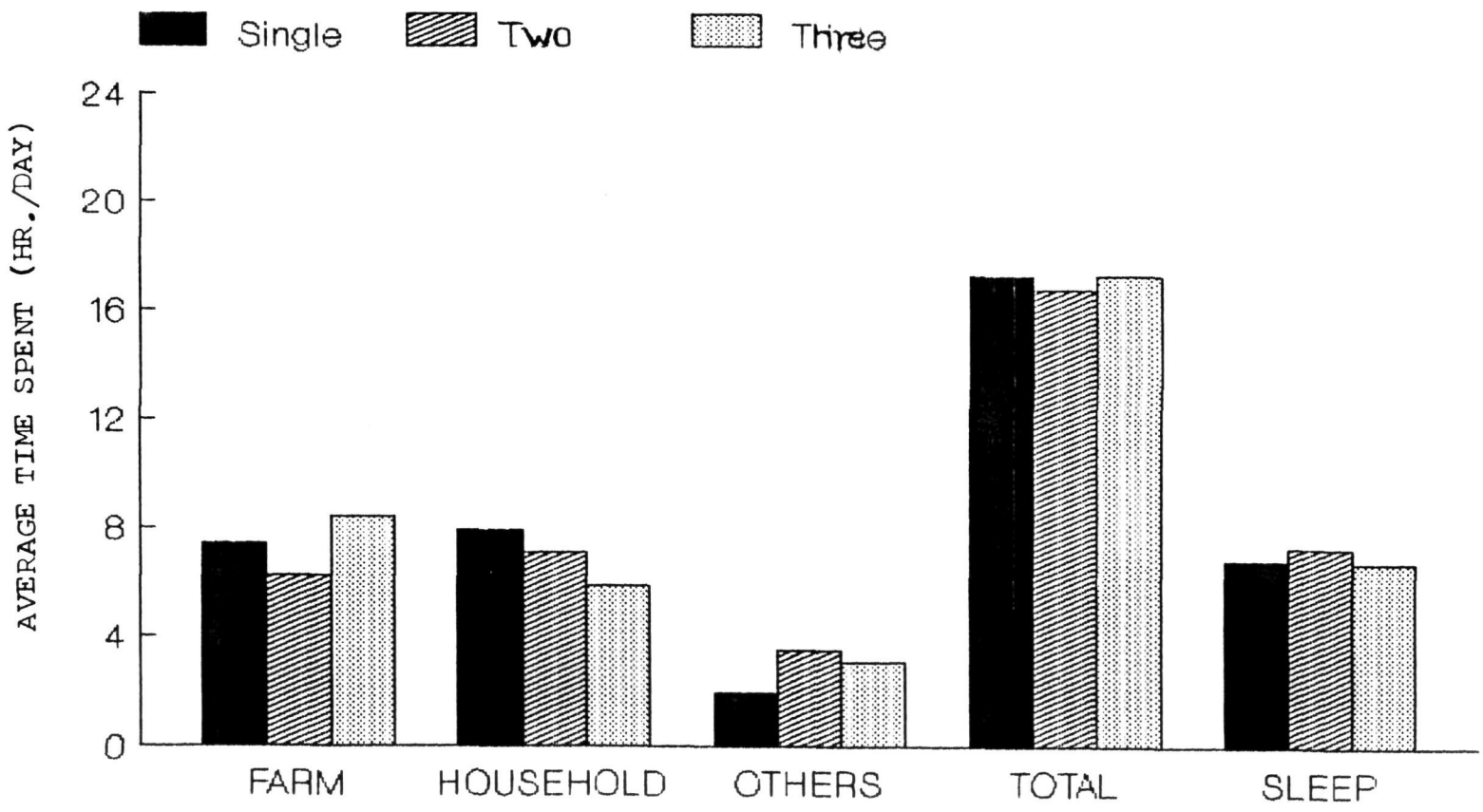

FIG.5: TIME UTILIZATION PATTERN OF SINGLE, TWO AND THREE ENTERPRISE GROUPS OF FARM WOMEN

4.3 FACTORS CONTRIBUTING TO VARIATION IN TIME UTILIZATION PATTERN OF FARM WOMEN

The factors which contribute to the variation in time utilization of farm women has been analysed using "Principal component analysis", separately for farm women with single, two and three enterprises. This was done to identify the various factors which operate together and have a bearing on the time utilization of the respondents. The results are presented in this section.

4.3.1 Factors contributing to variation in time utilization pattern of farm women with single enterprise

Table XV gives the eigen values and percentage cumulative variation of the various components. Time spent on different farm activities by farm women with single enterprise i.e., agriculture is the focus in the analysis. The first component appropriates about 26.13 per cent of total variation. Of the 14 components, 6 components account for more than 70 per cent of the variation.

It is possible to obtain the zero order correlation coefficient between variables and components from the coefficients of eigen values, which is in other words

Table XV

Eigen values of the orthogonal transformation for the 14 variables for the time utilization pattern of farm women with single enterprise

Component number	Eigen value	% cumulative variation
1	7.578	26.131
2	4.940	43.167
3	2.561	52.007
4	2.330	60.035
5	1.988	66.890
6	1.657	72.602
7	1.339	77.769
8	1.030	80.769
9-14		100.000

the coefficients of the component. The zero order correlation coefficient of a variable with the component is the square of the coefficient of that variable in the component. These statistics are depicted in Table XVI. It can be noted from the table that only three components viz., component number 1, 4 and 2 have contributed maximum to the variation (more than 5 per cent) in the time utilization of farm women with agriculture as their main occupation.

Table XVII gives all the significant components where the association of total time spent on farm activities exceeds 5 per cent of the total variation.

The time spent on farm by farm women displayed a strong association with component 1. In this, time spent on farm activities is found to operate through education (0.383), farm size (0.480), material possession (0.865), income (0.692), extension participation (0.301), mass media participation (0.641) and training undergone (0.274).

The next important component where time spent on farm activities is associated is component 4. Here, time spent on farm is found to be associated with education (-0.407), farm size (-0.299), cropping

Table XVI

Variation of time utilization pattern of farm women with single enterprise broken into components

Component number	Eigen values	Zero order correlation coefficient with time spent on farm	% of variation of output in component
1	7.578	-0.649	42.1201
2	4.940	0.442	19.5364
3	2.561	-0.047	0.2209
4	2.330	0.449	20.1601
5	1.988	-0.044	0.1936
6	1.657	0.046	0.2116

5% Level

Table XVII

Principal components in which time utilization pattern is significantly associated in case of farm women with single enterprise

Sl. No.	Variables	Components 1	4	2
1.	Age			-0.558
2.	Education	0.383	-0.407	-0.405
3.	Family size			
4.	Farm size	0.480	-0.299	-0.466
5.	Irrigation facility			0.519
6.	Cropping intensity		0.536	0.456
7.	Material possession	0.865		
8.	Income	0.692	-0.277	-0.464
9.	Extension contact			
10.	Extension participation	0.301		0.725
11.	Mass media participation	0.641		0.523
12.	Social participation		0.371	0.485
13.	Training undergone	0.274		0.563
14.	Time spent on farm	-0.649	0.449	0.442

intensity (0.536), income (-0.277) and social participation (0.371).

In component 2, time spent on farm activities by farm women is related to age (-0.558), education (-0.405), farm size (-0.466), irriyation facility (0.519), croppiny intensity (0.456), income (-0.464), extension participation (0.725), mass media participation (0.523), social participation (0.485) and traininy underyone (0.563).

4.3.2 Factors contributiny to variation in time utilization pattern of farm women with two enterprises

Table XVIII yives the eiyen values and percentaye cumulative variation in order of size of roots of time spent on farm by farm women with two enterprises i.e., ayriculture and dairy. The first component was found to account for 19.88 per cent of the variation. Of the 14 variables, 7 components approximate to more than 70 per cent of the total variation. The four components which cause laryer variation (more than 5 per cent) in time utilization of farm women were 3, 2, 1 and 4, which can be seen from Table XIX.

Table XVIII

Eigen values of the orthogonal transformation for the variables for the time utilization pattern of farm women with two enterprises

Component number	Eigen value	% cumulative variation
1	5.964	19.880
2	5.034	36.660
3	2.565	45.210
4	2.302	52.882
5	2.008	59.574
6	1.721	65.310
7	1.476	70.230
8	1.161	74.100
9	1.066	77.654
10	1.037	81.111
11-14		100.000

Table XIX

Variation of time utilization pattern of farm women with two enterprises broken into components

Component number	Eigen values	Zero order correlation coefficient with time spent on farm	% of variation of output in component
1	5.964	-0.324	10.4976
2	5.034	0.367	13.4689
3	2.565	0.773	59.7529
4	2.302	-0.285	8.1225
5	2.008	-0.139	1.9321
6	1.721	0.061	0.3721
7.	1.476	-0.002	0.0004

5% level

Table XX gives all the significant zero order correlation coefficient of the variables with the four components, contributing more than 5 per cent variation of the total output.

The 3rd component which contributes the maximum to the variation (59.75 per cent) in the time spent on farm by farm women was found to operate through education (-0.386), material possession (-0.210), extension contact (-0.291) and social participation (-0.331). These variables negatively affected their time spent on farm.

The 2nd component, which is next in importance so far as the time utilization of farm women are concerned is associated with the variables like age (-0.545), education (-0.247), family size, (-0.441), income (-0.264), mass media participation (0.488), social participation (0.335) and training undergone (0.430).

The component number 1, which was the third most important component had as many as 7 variables viz., education (0.365), farm size (0.805), irrigation facility (-0.245), material possession (0.847), income (0.708), extension participation (0.347) and mass media participation (0.638).

Table XX

Principal components in which time utilization pattern is significantly associated in case of farm women with two enterprises

Sl. No.	Variables	Components 3	2	1	4
1.	Age		-0.545		0.480
2.	Education	-0.386	-0.247	0.365	
3.	Family size		-0.441		0.439
4.	Farm size			0.805	
5.	Irrigation facility			-0.245	-0.202
6.	Cropping intensity				-0.354
7.	Material possession	-0.210		0.847	0.230
8.	Income		-0.264	0.708	
9.	Extension contact	-0.291			-0.304
10.	Extension participation			0.347	-0.227
11.	Mass media participation		0.488	0.638	
12.	Social participation	-0.331	0.355		-0.678
13.	Training undergone		0.430		
14.	Time spent on farm	0.773	0.367	-0.324	-0.285

The 4th component consisted of variables, age (0.480), family size (0.439), irrigation facility (-0.202), cropping intensity (-0.354), material possession (0.230), extension contact (-0.304), extension participation (-0.227) and social participation (-0.678).

4.3.3 Factors contributing to variation in time utilization pattern of farm women with three enterpirses

Table XXI gives the eigen values and percentage cumulative variation in order of contribution to the time spent on farm by farm women. The first component is seen to explain about 18.18 per cent of the total variation of the 14 variables and eight components compose more than 70 per cent of the variation. It could be observed from the data in Table XXII. The components 3, 4 and 2 explain maximum variation (more than 5 per cent) in the time spent on farm by farm women with three enterprises i.e., agriculture, dairy and sericulture.

Table XXIII gives all the significant zero order correlation coefficients of the variables with the three components, which caused more than 5 per cent variation of total output.

Table XXI

Eigen values of the orthogonal transformation for the variables for time utilization pattern of farm women with three enterprises

Component number	Eigen value	% cumulative variation
1	5.639	18.189
2	4.820	33.738
3	3.177	43.987
4	2.320	51.471
5	1.835	57.390
6	1.588	62.512
7	1.496	67.337
8	1.335	71.642
9	1.260	72.706
10	1.106	76.273
10-14		100.000

Table XXII

Variation of time utilization pattern of farm women with three enterprises broken into components

Component number	Eigen values	Zero order correlation coefficient with time spent on farm	% of variation of output in component
1	5.639	-0.109	1.1881
2	4.820	-0.288	8.2944
3	3.177	0.794	63.0436
4	2.320	0.334	11.1556
5	1.835	-0.126	1.5876
6	1.588	-0.061	0.3721
7	1.496	0.016	0.0256
8	1.335	0.099	0.9801

5% level

Table XXIII

Principal components in which time utilization pattern is significantly associated in case of farm women with three enterprises

Sl. No.	Variables	Components 3	4	2
1.	Age			0.381
2.	Education	-0.252		
3.	Family size	-0.224	0.511	0.356
4.	Farm size		-0.379	0.601
5.	Irrigation facility	0.275		
6.	Cropping intensity	0.228		-0.452
7.	Material possession	-0.428	-0.243	0.698
8.	Income		-0.327	0.609
9.	Extension contact		0.218	
10.	Extension participation			
11.	Mass media participation			
12.	Social participation		0.489	
13.	Training undergone			
14.	Time spent on farm	0.794	0.334	-0.288

The 3rd component which explain the maximum variation (63.04 per cent) in the time spent by farm women was found to operate through education (-0.252), family size (-0.224), irrigation facility (0.275), cropping intensity (0.228) and material possession (-0.428).

The 4th component which is of second importance, consisted of variables, family size (0.551), farm size (-0.379), material possession (-0.243), income (-0.327), extension contact (0.128) and social participation (0.489).

The component number 2, which is next in importance had included as many as 9 variables namely age (0.381), family size (0.356), farm size (0.601), cropping intensity (-0.452), material possession (0.698) and income (0.609).

4.4 TRAINING NEEDS OF FARM WOMEN

Table XXIV gives the different subject matter areas for training as perceived by the respondents.

4.4.1 Agriculture

A large majority of farm women (52.08 per cent) gave their preferences for training in the areas of plant protection measures, followed by diagnosis of

Table XXIV

Training needs of farm women

n=144

Sl. No.	Subject matter area	Farm women No.	%
	Agriculture		
1.	Plant protection measures	75	52.08
2.	Diagnosis of pests & diseases	41	28.47
3.	High yielding varieties	25	17.36
4.	Seed selection	12	8.33
5.	Seed treatment	11	7.64
	Dairy		
6.	Care of pregnant animals	58	40.28
7.	Balanced feeding	47	32.64
8.	Care of sick animals	43	29.86
9.	Diagnosing the diseases	41	28.47
10.	Control measures for various diseases	23	15.97
11.	Milking	11	7.64
12.	Maintenance of animals	10	6.94
	Sericulture		
13.	Rearing aspect	61	42.36
14.	Diagnosing the silkworm pests & diseases	18	12.50
15.	Control measures for various pests & diseases	13	9.03
16.	Silkworm balanced feeding practices	13	9.03
17.	Table method of rearing silkworm	12	8.33
	Domestic		
18.	Tailoring	58	40.28
19.	Labour saving devices	49	34.03
20.	Preparation of bakery products	45	31.25
21.	Child development & health	19	13.19
22.	Pickle preparation	18	12.50
23.	Pappad preparation	11	7.64
24.	Food & Nutrition	10	6.94

pests and diseases (28.47 per cent), high yielding varieties (17.36 per cent), seed selection (8.33 per cent) and seed treatment (7.64 per cent) respectively in the order of imporance.

4.4.2 Dairy

The different aspects relating to dairy subject matter areas where in the training needs were felt in the order of importance were: taking care of pregnant animals (40.28 per cent), balanced feeding (32.64 per cent), care of sick animals (29.86 per cent), diagnosing the diseases (28.47 per cent), control measures for various diseases (15.97 per cent), milking (7.64 per cent) and maintenance of animals (6.94 per cent) respectively.

4.4.3 Sericulture

The different areas in which the farm women expressed their need for training were: rearing aspect (42.36 per cent), diagnosing the silkworm pests and diseases (12.50 per cent), control measures for various pests and diseases (9.03 per cent), silkworm balanced feeding practices (9.03 per cent) and new table method of rearing silkworm (8.33 per cent).

4.4.4 Domestic

The different domestic aspects relating to which the farm women expressed their desire for training in the order of importance were : tailoring (40.28 per cent), labour saving devices (34.03 per cent), bakery product preparation (31.25 per cent), child development and health (13.19 per cent), pickle preparation (12.50 per cent), pappad preparation (7.64 per cent) and food and nutrition (6.94 per cent) respectively.

4.5 PROBLEMS OF FARM WOMEN

Farm women are facing several problems in their day to day work situation while performing different farm, household and other activities. These problems are grouped under different heads in this section (Table XXV).

4.5.1 Farm problems : The different problems related to farm faced by farm women were: non-availability of water (38.19 per cent), streneous weeding (32.64 per ent), working in scorching sun (23.61 per cent), non-availability of labour (23.61 per cent), high wage rates of labour (20.14 per cent), improper veterinary

Table XXV

Problems of farm women

n=144

Sl. No.	Problems	Farm women No.	%
	Farm		
1.	Non-availability of water	55	38.19
2.	Streneous weeding operation	47	32.64
3.	Working in scorching sun	34	23.61
4.	Non-availability of labour	34	23.61
5.	High wage rates of labour	29	20.14
6.	Improper veterinary aid	16	11.11
7.	Getting fodder consumes time	07	4.86
8.	Inadequate training in agricultural production aspects	04	2.78
	Household		
9.	Heavy and tiresome workload at home	80	55.55
10.	Fetching water from long distance	51	35.42
11.	More time consumption for cooking	49	34.03
12.	Lack of assistance in household work	34	23.61
13.	Lack of time for child care	16	11.11
	Others		
14.	Difficulty in obtaining loans	11	7.64
15.	Lack of drainage facility	05	3.47
16.	Difficulty in repaying loans	03	2.08

aid (11.11 per cent), getting fodder consumes time (4.86 per cent) and inadequate training in agricultural production aspects (2.78 per cent).

4.5.2 Household problems : A large majority of farm women (55.55 per cent) faced the problem of heavy and tiresome workload at home followed by fetching water from long distance (35.42 per cent), more time consumption for cooking (34.03 per cent), lack of assistance in household work (23.61 per cent) and lack of time for child care (11.11 per cent) respectively.

4.5.3 Other problems : Difficulty in obtaining loans (7.64 per cent), lack of drainage facility (3.47 per cent) and difficulty in repaying loans (2.08 per cent) were the other problems faced by farm women.

DISCUSSION

CHAPTER V

DISCUSSION

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

5.1 Profile of the farm women

5.2 Time utilization pattern of farm women

5.3 Factors contributing to variation in time utilization pattern of farm women

5.4 Training needs of farm women

5.5 Problems of farm women

5.1 PROFILE OF THE FARM WOMEN

An appraisal of Table I in relation to the profile comprising of personal characteristics of farm women revealed that majority of them were young in age, less educated and had small families. The fact that needs special attention in this section is that majority of the farm women even now are less educated which is typical of rural Indian women.

The profile of farm women pertaining to farm related characteristics revealed that majority of them were in low and medium categories in respect of irrigation facility, cropping intensity, material

possession and income, which speaks of their low resource capabilities. However, in respect of farm size, there was an equal distribution among the three categories which could be explained due to the purposive sampling done in the present study.

The profile even with regard to extension related characteristics like extension contact, extension participation, mass media participation, social participation and training undergone also revealed that majority of them were belonging to low and medium categories rendering a small proportion in the higher levels. This situation causes great concern in view of the fact that although rural women occupy as high as 48.15 per cent of the country's population, their human resource capabilities are at a very low level. This unfortunate status of the farm women could be understood from the fact that traditional and non-progressive socio-family environmental factors supported by low educational background forbids the required psychological and physical freedom on the part of farm women to participate in social, extension and training activities.

5.2 TIME UTILIZATION PATTERN OF FARM WOMEN

5.2.1 Time utilization pattern of farm women with single enterpirse

Time utilization of different categories of farm women on different farm, household and other activities presented in Table II indicated that marginal farm women spent more time on farm activities followed by small and large farm women. This finding was in conformity with the results reported by Singh (1968), Sharma and Singh (1970), Mazumdar (1983), Laxmi Devi and Venku Reddy (1984), Saikia (1985), Dangat and Yadav (1985), Dhongade et al. (1985), Bhat et al. (1987), Pandey et al. (1988), Sangwan et al. (1990).

The reason might be due to the fact that marginal farm women belonged to the low income group and the income obtained from their small farm cannot be sufficient for a comfortable living. Hence apart from working in their own fields, they are required to work in other's fields for their livelihood as they have no other source of income except agriculture.

An examination of the results indicated that small farm women devoted more time on household activities when compared to large and marginal farm women. However,

not much difference was found between the three categories of farm women.

With regard to resting and other social and leisure time activities and also sleeping, large farm women got more time when compared to small and marginal farm women. These results are in agreement with the findings of the past researches of Munjal et al. (1985), Singh et al. (1987), Pandey et al. (1988).

Large and small farm women belonging to high and middle economic categories are not engaged in outside employment. Hence demand on their time for farm activities may be probably light and thus making these groups to stretch their time for household and other activities.

So, on an average marginal farm women spent maximum time in a day on different farm, household and other activities followed by small and large farm women.

5.2.1.1 Comparison of time utilization pattern of large, small and marginal farm women

Interesting observation that could be made from Table III, IV and V was that marginal and small farm women spent more time on farm activities when compared to large farm women. Thus, it indicated that farm size

was inversely related to their time utilization on farm activities.

This finding was in conformity with the results reported by Singh (1968), Sharma and Singh (1970), Mazumdar (1983), Laxmi Devi and Venku Reddy (1984), Saikia (1985), Dangat and Yadav (1985), Dhongade et al. (1985), Munjal et al. (1985), Bhat et al. (1987), Punjabi and Sadhu (1988), Pandey et al. (1988) Sushila Gangadharamath and Channegowda (1988), Patnaik (1989), Sangwan et al. (1990), Chaudhari and Ganorkar (1992).

The reason might be due to the fact that the large farm women might not have felt the need for working in the field in view of their financial soundness to hire labourers, whereas marginal and small farm women have felt the necessity of working throughout for their living. Another reason might be that the socio-cultural norms might have acted as a barrier for non-working on the part of large farm women.

5.2.2 Time utilization pattern of farm women with two enterprises

The time spent on different farm, household and other activities by different categories of farm women with agriculture and dairy enterprises presented in

Table VI indicated that marginal farm women spent more time on farm activities followed by small and large farm women.

This finding was in conformity with the results reported by Singh (1968), Sharma and Singh (1970), Mazumdar (1983), Laxmi Devi and Venku Reddy (1984), Saikia (1985), Dangat and Yadav (1985), Dhongade et al. (1985), Bhat et al. (1987) Pandey et al. (1988), Sangwan et al. (1990).

The reason might be that large farm women do not physically work in the field. They engage agricultural labourers to work in their field and also take care of animals. Some farm women feel below to their dignity to work in the fields. But, marginal and small farm women were not in a position to engage hired labourers to work in their field and hence they themselves work in the field. So considerable amount of time is spent by marginal and small farm women on fields as well as in taking care of animals.

The results reported in Table VI also revealed that small farm women got more time for household activities when compared to marginal and large farm women.

As far as the resting and other leisure time activities and also sleeping is concerned, large farm women spent considerable amount of time followed by small and marginal farm women.

The results are in conformity with the results obtained by Munjal et al. (1985), Singh et al. (1987) and Pandey et al. (1988).

This might be due to the fact that large farm women employ labourers to do field work as well as household work. As a result, she is left with not much work. So she spends in leisure time activities. But this is not the case with small and marginal farm women. They have to work at home as well as outside as a result they hardly find time for leisure time activities.

Therefore, it is interesting to note that marginal farm women spent more number of hours per day on different farm, household and other activities followed by small and large farm women.

5.2.2.1 Comparison of time utilization pattern of large, small and marginal farm women

A perusal of Table VII and IX revealed that there was no significant diference between the mean time spent on farm activities by large - small and small - marginal

farm women. But, the findings in Table VIII revealed that there was significant difference in time utilization of large and marginal farm women. Marginal farm women spent more time on farm activities when compared to large farm women.

Large farm women belong to high income group and have servants to assist in their work at home, whereas marginal farm women have to work outside, look after the animals and do the routine household chores. So time spent on farm activities by marginal farm women is relatively more than large and small farm women.

5.2.3 Time utilization pattern of farm women with three enterprises

Tables X depicted details regarding time spent on different farm, household and other activities by different categories of farm women. It was observed that marginal farm women spent more time on farm activities followed by small and large farm women.

The results are in conformity with the results of Singh (1968), Sharma and Singh (1970), Mazumdar (1983), Laxmi Devi and Venku Reddy (1984), Saikia (1985), Dangat and Yadav (1985), Dhongade *et al*. (1985), Bhat *et al*. (1987), Pandey *et al*. (1988) and Sangwan *et al*. (1990).

The reason might be that farm women belonging to the high and medium economic categories do not go out for attending to farm operations. Class consciousness and status are operating in rural areas on affluent strata of society preventing them from attending on farm works. Marginal farm women owing to economic hardships depend more on farm operations for their livelihood as workers whereas the other two categories of farm women consider the subsidiary enterprise as important for them.

The results in Table X revealed that small farm women spent slightly more time in household activities when compared to marginal and large farm women.

Further, it indicates that large farm women got enough time for resting and other social and leisure time activities and also sleeping followed by small and marginal farm women.

This finding is in conformity with the results reported by Munjal et al. (1985), Singh et al. (1987) and Pandey et al. (1988).

Since marginal farm women are over burdened with farm and household tasks, they get hardly any time for rest and other leisure time activities.

It is interesting to note that marginal farm women spent more number of hours per day in different activities followed by small and large farm women.

5.2.3.1 Comparison of time utilization pattern of large, small and marginal farm women

A perusal of Table XI, XII and XIII indicated that there was no significant difference in mean time spent on farm activities by large, small and marginal farm women. This implies that farm size had no association with time utilization of different categories of farm women with three enterprises i.e., agriculture, dairy and sericulture, although there is an indication that marginal farm women spent more time in farm activities when compared to small and large farm women. The reason for this kind of situation might be due to the fact that women get absorbed in the subsidiary enterprises like dairy and sericulture.

5.2.4 Comparison of three enterprise groups with regard to their time utilization pattern in different activities

The results relating to comparison of three enterprise groups with regard to their time utilization revealed that it is the group with three enterprises i.e., agriculture, dairy and sericulture that had spent

the highest extent of time in farm activities (34.91 per cent) compared to the remaining two categories. This trend could be explained from the fact that as the number of enterprises pursued by the farm families increases, the demand for farm women labour would automatically increase especially with the addition of highly labour intensive enterprise like sericulture.

The farm women having single enterprise i.e., agriculture ranked second in terms of the time spent on farm activities which could be explained in terms of the psychological insecurity of depending on a single enterprise that too with lack of irrigation facilities as evidenced from the findings pertaining to the profile of the farm women in this study.

Table XIV also revealed that although the three groups with different enterprise combinations did not differ much in terms of the total time spent i.e., the work hours, they differ in terms of the time they alocate on their household activities in view of the fact that the group with three enterprises have spent least time (24.27 per cent) as compared to the group with single (32.95 per cent) which is quite normal to expect.

5.3 FACTORS CONTRIBUTING TO VARIATION IN TIME UTILIZATION PATTERN OF FARM WOMEN

To identify factors contributing to variation in time utilization of farm women, "Principal Component Analysis" was employed. In this analysis time spent on farm activities was the focus.

5.3.1 Factors contributing to variation in time utilization pattern of farm women with single enterprise

The factors mainly (i) education (ii) farm size (iii) material possession (iv) income (v) extension participation (vi) mass media participation and (vii) training undergone influenced the time utilization pattern of farm women on farm activities (Table XVII). These variables were inversely related to the time spent on farm. These findings implied that education, farm size and income were the three variables which played major role in influencing time spent as evidenced by their occurence in all the three components of the Table XVII.

The other important factor which influenced time utilization pattern is cropping intensity which is amply supported by component 4 and 2. In addition to the above

factors, age and irrigation facility were also found to operate on time spent.

Further, the findings relating to extension participation, mass media participation, social participation and training undergone have not revealed conclusive results about the influence of these variables considering their direction of operation.

The probable reason might be due to the fact that a great majority of respondents selected for the study were in low and medium categories in respect of these variables as evident from the profile study of the sample in this research. Similar findings have been reported by earlier researchers like Prameelamma (1990), Shilaja (1990) - extension participation; Punitha Sagar (1989), Prameelamma (1990), Shilaja (1990) - mass media participation; Prameelamma (1990), Shilaja (1990) - social participation.

So, farm women belonging to old age group, who are educated, own big size farms, with less irrigation facility, low cropping intensity, low materialpossession and high income spent less time on farm activities.

5.3.2 Factors contributing to variation in time utilization pattern of farm women with two enterprises

The factors which contributed to the variation in the time utilization of farm women on farm activities were (i) education (ii) material possession (iii) extension participation and (iv) social participation (Table XX). Education and material possession played a crucial role on farm women's time utilization, since they are found to be occuring in most of the components.

It was interesting to note that the time utilization was also associated with age, family size, and income (component 2). Apart from this, variables like farm size, irrigation facility and cropping intensity affected the time spent on farm by farm women.

Findings on factors like extension contact, extension participation, mass media participation, social participation and training undergone have not revealed conclusive results about the influence of these variables.

The probable reason might be due to the fact that a great majority of the respondents selected for the study

were in low and medium categories in respect of these variables as evident from the profile study of the sample in this research. The findings are in line with the results of Dipali (1979), Shilaja (1990) - extension contact; Prameelamma (1990), Shilaja (1990) - extension participation; Punitha Sagar (1989), Prameelamma (1990), Shilaja (1990) - mass media participation.

Hence, farm women who belonged to young age group, who are illiterates, come from small family, own small size farms, better irrigation facilities, high cropping intensity, low material possession and low income spent more time on farm.

5.3.3 Factors contributing to variation in time utilization pattern of farm women with three enterprises

The factors which influenced the time utilization pattern of farm women were (i)education (ii) family size (iii) irrigation facility (iv) cropping intensity and (v) material possession (Table XXIII).

The other factors which played a major role in time spent on farm were farm size, income, extension contact and social participation as revealed in component 4. In addition, the variable age has also a bearing on time utilization of farm women.

Therefore, more time on farm was spent by farm women who belonged to young age group, who are illiterate, come from small family, own small size farms, endowed with irrigation facility, high cropping intensity, less material possession, low income, higher extension contact and social participation.

The results under this section pertaining to the factors contributing to variation in time utilization of farm women are in line with the results of the past researchers indicated below.

Age - Singh (1968), Sharma and Singh (1970), Dipali (1979), Prameelamma (1990).

Education - Singh (1968), Sharma and Singh (1970), Dipali (1979), Laxmi Devi and Venku Reddy (1984), Sushila Gangadharamath and Channegowda (1988), Prameelamma (1990).

Family size - Bhatnagar and Saxena (1987).

Farm size - Singh (1968), Sharma and Singh (1970), Saikia (1985), Dangat and Yadav (1985), Dhongade et al. (1985), Bhat et al. (1987), Punjabi and Sadhu (1988), Pandey et al. (1988), Sangwan et al. (1990).

Irrigation facility - Shashikala et al. (1990).

Cropping intensity - Longhurst (1980).

Material possession - Laxmi Devi and Venku Reddy (1984), Bhatnagar and Saxena (1987).

Income - Dipali (1979), Laxmi Devi and Venku Reddy (1984), Mueller (1984), Lakshmi Devi (1986), Sushila Gangadharamath and Channegowda (1988).

Extension contact - Shilaja (1990)

Social participation - Shilaja (1990)

5.4 TRAINING NEEDS OF FARM WOMEN

The findings in the Table XXIV showed that farm women expressed their desire in the areas of plant protection measures, diagnosis of pests and diseases, high yielding varieties, seed selection and seed treatment with respect to agriculture.

With regard to dairying, farm women expressed their needs in the areas of taking care of pregnant animals, balanced feeding, care of sick animals, diagnosis of diseases, control measures for various diseases, milking and maintenance of animals.

Further with respect to sericulture, farm women gave their preference for training in the areas of

rearing, diagnosis of silkworm pests and diseases, control measures for various pests and diseases, silkworm feeding practices and the new table method of rearing silkworm.

As far as domestic area is concerned, farm women expressed their desire to get training in tailoring, labour saving devices, preparation of bakery products, child development and health, pickle preparation, pappad preparation and food and nutrition.

Farm women of all the three enterprise categories contribute to the farm sector by their physical involvement in field operations. Inspite of this they have no avenues in getting trained since they are busy throughout the day either in farm or household activities thus making it difficult for them to leave the village for undergoing training probably in various subject matter areas to acquire knowledge and skills. This situation has lead to emergence of training needs indicating the need to train farm women.

These findings are in conformity to some extent with the findings of researchers like Kumar and Snehalata (1974), Sandhu and Sharma (1976), Devi (1987), Om Prakash (1988), Sawant and Dalvi (1989), Chandargi and Varughese (1990).

5.5 PROBLEMS OF FARM WOMEN

A perusal of Table XXV revealed that non-availability of water, streneous weeding, working in scorching sun and non-availability of labour were some of the important problems related to farm. Household problems faced by farm women were heavy and tiresome workload at home, fetching water from long distance and more time consumption for cooking. Other problems were difficulty in obtaining loans, lack of drainage facility and difficulty in repaying loans.

As evident from the results of this research, with more involvement in farm operations of all the three categories of farm women, the work load of women is much heavier than the men as they have to work at home as well as outside. Further, in general non-availability of labour and water is the greatest problem in rural areas. In villages proper drainage facilities are not provided. In addition they also face the problem of high wages of labour, difficulty in obtaining loans and repaying it. Therefore, it is natural that farm women have perceived these as their problems.

These findings are supported with the findings of past researchers like Singh and Bhattacharya (1988), Antwal and Bharaswadkar (1990), Varma and Sinha (1990), Chaudhari and Ganorkar (1992).

SUMMARY

CHAPTER VI

SUMMARY

Women of India constitute 48.15 per cent of the total population and have been carrying on their shoulders the burden of poverty, ignorance, superstition and out-moded customs and traditions. These women have been the embodiment of sacrifice, surrendering all their comforts for the welfare of children and other members of the family. Women contribute to agriculture, animal husbandry and other rural based occupations. She works as a housewife, economic provider, food producer and also as a dynamic community leader. So women have a double work burden. Though they are taking on work outside the home, they continue to perform almost all domestic work.

Time is an important but scarce human resource. In a farm family, since woman has the multiplicity of the tasks to be performed both at home and on the farm, she will have to allocate her time to meet all the responsibilities. Some pursue only agriculture while others are engaged in other important subsidiary occupations in addition to agriculture. So apportioning of time by these women may be different on various farm,

household and other activities. Therefore, a study was undertaken to know these aspects in detail with the following objectives.

1. To study the time utilization pattern of farm women practising different enterprises.
2. To find out the factors contributing to variation in time utilization pattern among farm women.
3. To identify the training needs and problems of farm women.

The study was conducted in randomly selected four villages of Devanahally taluk in Bangalore rural district. The taluk was purposively selected as it had substantially large number of farm women practising different enterprises i.e., only agriculture (crop-production only), agriculture (crop-production only) with dairy enterprise and also a combination of three enterprises viz., agriculture (crop-production only), dairy and sericulture. A list of farm women practicing only agriculture, agriculture with dairy and agriculture, dairy and sericulture was prepared for each village. Further respondents belonging to each enterprises were grouped according to their size of the landholding i.e., large, small and marginal. Four respondents from each of the above groups were randomly

selected thus totalling to 12 under each enterprise categories. So a total of 36 respondents were selected from each of the four villages, thus giving a total sample size of 144 respondents for the study comprising of 48 respondents belonging to each enterprise categories of agriculture, agriculture with dairy, and agriculture, with dairy and sericulture.

Fourteen characteristics of farm women (independent variables) viz., age, education, family size, occupation, farm size, irrigation facility, cropping intensity, material possession, income, extension contact, extension participation, mass media participation, social participation and training undergone were selected for studying the relationship with their time utilization pattern. These variables were measured by using appropriate scales and scoring procedures. A structured interview schedule was used for collection of data. The statistical tools used in the study were percentages, mean, standard deviation, frequencies, student 't' test and principal component analysis.

The important findings of the study were as follows:

FARM WOMEN WITH SINGLE ENTERPRISE (Agriculture)

1. Marginal farm women spent more time on farm activities when compared to small and large farm women.
2. Small farm women devoted more time on household activities when compared to large and marginal farm women.
3. Large farm women got more time for resting and other activities when compared to small and marginal farm women.
4. Marginal farm women spent maximum time in a day on different farm, household and other activities followed by small and large farm women.
5. There was highly significant difference in time utilization on farm activities between large and small farm women.
6. There was highly significant difference between large and marginal farm women with respect to time spent on farm activities.
7. The time spent on farm activities by small and marginal farm women was significantly different.

FARM WOMEN WITH TWO ENTERPRISES (Agriculture and Dairy)

8. Marginal farm women spent more time on farm activities when compared to small and large farm women.
9. Small farm women devoted more time for household activities followed by marginal and large farm women.
10. Large farm women got enough time for resting and other activities when compared to small and marginal farm women.
11. Marginal farm women spent maximum time in a day on different farm, household and other activities followed by small and large farm women.
12. There was no significant difference between large and small farm women with regard to time spent on farm activities.
13. There was highly significant difference in time utilization pattern on farm by large and marginal farm women.
14. There was no significant difference in time utilization pattern on farm by small and marginal farm women.

FARM WOMEN WITH THREE ENTERPRISES (Agriculture, Dairy and Sericulture)

15. Marginal farm women spent more time on farm activities followed by small and large farm women.
16. Small farm women spent slightly more time in household activities compared to marginal and large farm women.
17. Large farm women got more time for resting and other activities followed by small and marginal farm women.
18. Marginal farm women spent maximum time in a day on different farm, household and other activities followed by small and large farm women.
19. There was no significant difference in time utilization pattern on farm activities by large and small farm women.
20. There was no significant difference between large and marginal farm women with respect to time spent on farm.
21. There was no significant difference in time utilization pattern on farm activities by small and marginal ~~women~~ farm women.

COMPARISON OF THREE ENTERPRISE GROUPS (i.e., single, two and three enterprises)

22. Farm women with three enterprises spent more time on farm activities followed by single and two enterprise farm women.
23. Farm women with single enterprise devoted more time on household activities followed by two and three enterprise farm women.
24. Farm women with two enterprises got more time for resting and other activities when compared to three and single enterprise farm women.

FACTORS CONTRIBUTING TO VARIATION IN TIME UTILIZATION PATTERN ON FARM ACTIVITIES BY FARM WOMEN

25. The factors which contributed maximum variation in the time utilization of farm women with single enterprise i.e., agriculture were education, farm size, material possession, income, extension participation, mass media participation and training undergone.
26. The variables viz., education, material possession, extension contact and social participation exerted maximum influence on the time spent on farm by farm women with two enterprises i.e., agriculture and dairy.

27. Education, family size, irrigation facility, cropping intensity and material possession caused maximum variation in the time spent on farm by farm women with three enterprises i.e., agriculture, dairy and sericulture.

TRAINING NEEDS OF FARM WOMEN

28. Farm women needed training on different aspects related to agriculture i.e., plant protection measures, diagnosis of pests and diseases, high yielding varieties, seed selection and seed treatment.

29. Training needs of farm women on dairy were: taking care of pregnant animals, balanced feeding, care of sick animals, diagnosing the diseases, control measures for various diseases, milking and maintenance of animals.

30. Farm women indicated their need for training on different aspects related to sericulture i.e., rearing aspect, diagnosing silkworm pests and diseases, control measures for various pests and diseases, silkworm balanced feeding practices and new table method of rearing silkworm.

31. Farm women needed training on diferent household aspects i.e., tailoring, labour saving devices,

preparation of bakery products, child development and health, pickle preparation, pappad preparation and food and nutrition.

PROBLEMS OF FARM WOMEN

32 The problems faced by the farm women were: non-availability of water, streneous weeding operation, working in scorching sun, non-availability of labour, high wage rates of labour, improper veterinary aid, getting fodder consumes time and inadequate training in agricultural production aspects.

33. The problems faced by the farm women with respect to household aspects were: heavy and tiresome workload at home, fetching water from long distance, more time consumption for cooking, lack of assistance in household work and lack of time for child care.

34. The other problems faced by the farm women were: difficulty in obtaining loans, lack of drainage facility and difficulty in repaying loans.

IMPLICATIONS

1. The fact that marginal farm women spent more time on farm activities compared to small and large farm

women irrespective of the number of enterprises persued is a clear indication of the importance of farm size in determining the time utilization pattern. Therefore, there is a need for developing appropriate technologies which consume less of their time and physical energy and also training the farm women on such technologies is also equally important so that they find it easier in performing such activities.

2. The study clearly establishes the fact that farm women's involvement in farm work is dictated by considerations of income and to bridge the shortage of labour particularly on irrigated farms where the cropping intensity is high. No matter how many types of enterprises are being followed, when farm size increases together with income, the extent of time spent by farm women reduces. This is particularly so when they are educated.

Programmes aimed at educating farm women should take into consideration this fact and plan different types of programmes for different categories of farm women. They can be grouped based on the family income, farm size, education etc. and suitable programmes be designed for them based on their aptitude.

3. Adequate attention may be given in training the farm women on different training need areas, i.e., agriculture, dairy, sericulture and household aspects.

4. Efforts in solving different problems faced by farm women pertaining to farm, household and other aspects require urgent attention.

5. Situation of overloading the farm women warrants special efforts of social education in orienting other family members about a rational allocation of the activities considering the women's physical capabilities in order to reduce burden of work load on the part of farm women.

NEED FOR FURTHER RESEARCH

The study was conducted on a limited scale confining only to four villages in a taluk in view of the limited time and resources available to the student researcher. In order to generalise the findings for a larger area, it is necessary to plan and conduct similar studies in other geographical areas.

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CHAPTER VII

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* Original not seen

APPENDICES

APPENDIX I

A STUDY ON THE TIME UTILIZATION PATTERN OF FARM WOMEN IN BANGALORE RURAL DISTRICT

INTERVIEW SCHEDULE

PART I

GENERAL

1. Name of the respondent :
2. Husband's Name :
3. Name of the village :
4. Name of the taluk :
5. Name of the district :

SPECIFIC

1. Age :..... years
2. Caste :.....
3. Occupation

   Main :

   Subsidiary
4. Education

   Illiterate :

   Can read only :

   Can read & Write :

   Primary school :

   Middle school :

   High school :

   College level :

5. **Family size**

		Number
Male	:	
Female	:	
Children	:	
Total	:	

6. **Please provide the following information about the members of your family**

Sl. No.	Name of family member	Age	Education	Whether involved/ assisting in farming Yes/No	If yes, type of assistance
1.					
2.					
3.					
4.					
5.					

7. **Farm size**

		Acres
Type of land		
a) Dry	:	
b) Wet	:	
c) Garden	:	
Total	:	

8. **Irrigation**

Source of water	Area irrigated (Acres)
Wells	
Tanks	
Canals	
Others (Specify)	
a)	
b)	
c)	
Total	

9. Cropping pattern/cropping intensity

Type of land/Season	Kharif		Rabi		Summer	
	Crop	Acre	Crop	Acre	Crop	Acre
Dry land						
a)						
b)						
c)						
d)						
e)						
f)						
Wet land						
a)						
b)						
c)						
d)						
e)						
f)						
Garden land						
a)						
b)						
c)						
d)						
e)						
f)						

10. Material possession

I Agriculture

a) Wooden plough
b) Kunte
c) Harrow
d) Iron plough
e) Seed drill/seed-cum fertilizer drill
f) Sprayer/duster
g) Pumpset
h) Tractor
i) Power tiller
j) Chopper

II Sericulture

a) Rearing stand
b) Trays
c) Mountage
d) Knife
e) Wooden trays for chawki rearing
f) Trays to change worms
g) Leaf storing trays
h) Bamboo basket
i) Thermometer
j) Others

III Domestic

a) Biogas
b) LPG
c) Mixie
d) Grinder
e) Cooker
f) Refrigerator
g) Television
h) Radio
i) Cycle
j) Motorcycle
k) Car

11. Annual income

Please indicate source of income and total annual income

Sl. No.	Source of income	Annual income Rs. P
1.	Agriculture	
2.	Dairy	
3.	Sericulture	
4.	Poultry	
5.	Labour wages	
6.	Others	
	Total	

12. Extension contact

How often you consulted the following extension agency during the last few months?

Sl. No.	Extension agency	Often (Weekly)	Sometimes (Once in a month)	Occas-ionally	Never
1.	Extension guide				
2.	Agricultural Assistant				
3.	Assistant Agricultural Officer				
4.	Sericultural Extension Officer				
5.	Assistant Horticultural Officer				
6.	Any other (Specify) a) b) c)				

13. Extension participation

How often you have participated in the following extension programmes last year?

Sl. No.	Activities	Regularly	Occasas-ionally	Never
1.	Meetings			
2.	Demonstration			
3.	Exhibition			
4.	Field days			
5.	Film shows			
6.	Krishimela			
7.	Training			
8.	Others (specify) a) b) c) d) e)			

14. Mass media participation

How do you use the following mass media?

Sl. No.	Mass Media	Regularly	Occasas-ionally	Never
1.	Read newspaper			
2.	Read magazines			
3.	Listen to radio			
4.	Watch TV programmes			
5.	Others (specify)			
	a)			
	b)			
	c)			
	d)			
	e)			

15. Social participation

Are you a member in any of the following village institution. Please indicate

Sl. No.	Village Institutions	Member Yes/No	If you are an Office bearer	Attendance in meeting and other activities of the institutions					
				As member			As Off.Bearer		
				Reg.	Occ.	Nev.	Reg.	Occ.	Nev.
1.	Village/Mandal panchayat								
2.	Mahila Mandal								
3.	Co-op.Society (specify)								
	a)								
	b)								
	c)								
	d)								
4.	Others in any (specify)								
	a)								
	b)								
	c)								
	d)								

16. Nature of training undergone

Have you undergone any training? Yes/No.
If yes, please indicate the following details about the training programme you have undergone

Sl. No.	Title of the training programme	Subject matter area/s covered	Duration	Venue
1.				
2.				
3.				
4.				
5.				

17. Training needs

Do you prefer to undergo (further) training in any area? If yes, mention the areas	Yes/No
A) <u>Agriculture</u>	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10	

B) Sericulture

1.

2.

3.

4.

5.

6.

7.

8.

9.

10

C) Dairy

1.

2.

3.

4.

5.

6.

7.

8.

9.

10

D) Household/domestic

1.

2.

3.

4.

5.

6.

7.

8.

9.

10

PART II

TIME UTILIZATION WORK SHEET

To measure the time utilization pattern of farm women in farm, household and other activities

TIME	ACTIVITIES
5.00 - 5.30 a.m.	
5.30 - 6.00	
6.00 - 6.30	
6.30 - 7.00	
7.00 - 7.30	
7.30 - 8.00	
8.00 - 8.30	
8.30 - 9.00	
9.00 - 9.30	
9.30 -10.00	
10.00 -10.30	
10.30 -11.00	
11.00 -11.30	
11.30 -12.00	

12.00 -12.30 p.m.

12.30 - 1.00

1.00 - 1.30

1.30 - 2.00

2.00 - 2.30

2.30 - 3.00

3.00 - 3.30

3.30 - 4.00

4.00 - 4.30

4.30 - 5.00

5.00 - 5.30

5.30 - 6.00

6.00 - 6.30

6.30 - 7.00

7.00 - 7.30

7.30 - 8.00

8.00 - 8.30

8.30 - 9.00

9.00 - 9.30

9.30 -10.00

10.00 -10.30

10.30 -11.00

11.00 -11.30

11.30 -12.00

PART III

PROBLEMS OF FARM WOMEN

Please indicate the problems faced by you in performing the different farm, household and other activities

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

APPENDIX II

Principal component analysis: The principal component analysis was used to identify the factors or group of factors influencing the time utilization pattern of farm women. The detail procedure suggested by Overall and Klett (1972) is given below:

The main objective of principal component analysis is to economise the number of variables. To achieve this, linear transformations of the following type were sought.

$$B_1 = a_{j1} X_1 + a_{j2} X_2 + \ldots\ldots + a_{jp} X_p$$

where, X_1, X_2 ..... X_p are the P variates under study and j = 1,2,....p.

The coefficients $_{j1}$, a_{j2}.... a_{jp} are chosen, so that the variate a_j is chosen to be uncorrelated with first, and to have as large a variance as possible, etc. The X variates are thus transformed into a new variates which is uncorrelated with other variates and account for as much of variation as possible in descending order. The variate B_1 is most informative because weights were assigned in a way which captures the minimum variance of X_1, X_2.... X_y variates. It was thus possible to calculate a most informative index (B_1) from

a set of observable personal, socio-psychological factors of the respondents. In fact P uncorrelated indices can be constructed to explain as much of the variance in the original data as possible in descending order.

Once a set of variables is transformed by successively extracting largest common elements, then each variable can be compared to components for the measure of association with the common elements. By establishing the values of eigen vectors, it is possible to correlate a component with a variable. If one variable is considered to be of special interest, then it is possible to allocate the variation of the variable among the total number of components. If t_{ij} is the coefficient of linear transformation where i refers to the component and j refers to the original variable, then

$$\sum_{ij}^{2} t_{ij} = 1, \text{ where } n = \text{number of variables.}$$

Thus, t_{ij}^{2} gives the variation of variable in the component. It is then possible, because by definition the correlation between the components is zero, to ascertain the variation attributable to each component for the selected varible.

The following are the advantages of this procedure:

1. Each component can be seen as containing so much of variation of the variable as a group. Therefore, the important components associated with a particular group of variables can be matched against the association suggested by zero order correlations of those components with the other variables.

2. There is no need to be concerned with the identification of problem and also the number of variables as for the regression equation.

3. Avoids overlooking of certain variables which, because of selection of variables in a regression equation, would not appear on the basis for their 't' values to be significant.

4. By including in the analysis as many facet as are thought necessary, direct indication can be gained of their separate and related association of any chosen variables.