CHAPTER - II

Literature Review
A review of literature was undertaken keeping in view the specific objectives of this study. The study was designed to determine the knowledge and participation of rural women in agricultural operations, to assess their control over material and non-material resources, to examine the constraints in performing the agricultural operations effectively and their role in making household and farm decisions. There are only few studies available on these aspects which are applicable to rural women. Therefore the studies related to other areas of agriculture are also reviewed and presented covering all aspects of the investigation comprehensively in the following headings.

- Participation of farm women in agricultural operations.
- Knowledge about agricultural operations.
- Personal and socio-economic characteristics of farm women.
- Problems faced by rural women in performing the agricultural operations.
- Women and decision making.
- Time utilization pattern of farm women.
- Activities performed by men and women.
2.1 PARTICIPATION OF FARM WOMEN IN AGRICULTURAL OPERATIONS

Women play a predominant role in agriculture by participating in almost all the agricultural operations. The available review of literature on the participation of women in agriculture is presented below:

Sharma and Singh (1970) conducted a study in the National Extension Service Block of Jabalpur in the state of Madhya Pradesh. A sample of one hundred and seventy farm women was drawn by random procedure to study how far rural women participate in agricultural activities. It was found that nine operations were identified in which women actively participated. Those were seed storage, winnowing, care of animals, harvesting, weeding, soak pit, sowing, applying manure in the field, using inputs effectively. They further found that women participated in large proportion in farm operations such as, seed storage (75 percent) winnowing (75 percent), care of animals (74 percent) and harvesting (71 percent) in comparison to others.

In an article “Role of Rural women in decision making with respect to animal husbandry practices” Dubey et. al. (1982) emphasized that the participation rate of women in agricultural operations was high in all southern states of India and low in west Bengal community. The
participation of women in agriculture and animal husbandry was the highest among tribes followed by scheduled castes. Barring certain job taboos, the jobs traditionally done by women in most part of the country were, transplantation of seedlings, sowing, weeding, harvesting, storing, preparation of food, making churning of milk and other chores.

Laxmidevi and Venkureddy (1984) conducted a study in eight randomly selected villages of Gannavaram Block of Krishna District, Andhra Pradesh. From these villages 120 farm women from low, medium and high economic groups were selected at random. The study indicated the four major role areas of rural farm women as, pre-sowing and sowing role, inter cultivation role, harvest and post harvest role and allied agriculture role. The data indicated that the performance in all the agricultural activities was higher in case of low economic category women. Allied agriculture activities were mostly performed by the women of high and medium economic categories as compared to those of low economic category. It was observed that women belonging to small farm holdings, lower caste with low economic status, with less education, with less material possession, having less urban contact as well as having conservation values involved themselves more in farm activities.

Making use of the primary data Gangadharmath (1985) undertook a research in randomly selected 10 villages of Dharwad taluk of Dharwad District with a sample size of 150 respondents. It was emphatically stated that all most all farm women irrespective of the size of
land holdings and economic status performed the functions of preparation of food, cleaning of house, preservation of food grains, and serving of food. Large number of farm women had performed activities at home, on farm and outside farm and home. Harvesting the crops, seed treatment, fertilizer application to crops, application of manures to land were the functions performed by farm women on the farm. These activities in general were performed by more of small farm women than of big farm women and agricultural labour.

Singh et.al. (1988) in their study conducted in the hilly area of Uttar Pradesh of Dwarahat block of Almora district showed that on an average three fourth of the total work in agriculture was performed by female workers of the family alone, a fact that brought out the importance and magnitude of the contribution of rural women in hill agriculture. They further pointed out that women were the backbone of the hill agriculture where as men associated with it only at the time of ploughing and marketing operations.

Sheela (1989) undertook a study in Tamil Nadu state to examine the role of farm families in agriculture and related activities. In her investigation it was reported that women participated at medium level in case of nursery management and marketing. High level involvement of farm women was noticed incase of harvesting and post harvesting operations. Farm women participated at most level in dairy management
like preparation of food, feeding animals, cleaning the cattle shed, milking, processing of milk and marketing of milk and milk products.

A study conducted by Chawhan and Oberoi (1990)\textsuperscript{7} at Gaddi tribe women of Bharman tehsil of Chama district found that, the role of tribal women worker in the farm operation was of immense importance. The proportion of women participation was more than 70 percent. The participation of women in almost all farm activities except ploughing of fields, marketing of grains, irrigation and application of pesticides and fungicides implied that our technology transfer projects should take care of remaining major crop production activities where participation of farm women was ensured so as to achieve successful results.

Based on primary data obtained from a sample of 140 farm women of Prakasam district of Andhra Pradesh Sudharani and Raju (1991)\textsuperscript{8} made an attempt to evaluate the role of women in agriculture. It was inferred from their study that in paddy based cropping system on an average, human labour had been employed for 155.91 days per hectare. In this, female labour days were 92.68 days per hectare and male labour days were 63.23 days per hectare. In the case of cotton cultivation, total human labour days needed were 122.78 days per hectare, in which female contributed 73.29 days per hectare and males contributed 49.49 days per hectare. It was also noticed that the female contribution was significant, but females were not employed fully throughout the year.
Parekh et.al. (1992)\(^9\) undertook a study with a sample size of 100 respondents in Valsad district of Gujarat state to examine the role of women in farming. In their study on a scale to measure role expectation of farm women, it was observed that relative importance of four major farm roles expected to be performed by the rural farm women were in the order of allied agriculture, harvest and post harvest, inter cultivation and pre sowing and sowing.

In an article “Participation of rural women in agriculture in Kundapur taluk of coastal Karnataka.” Nagabhushan, et.al. (1993)\(^10\) pointed out the significance of women in agriculture. Their study, carried out in the Kundapur taluk of Dakshina Kannada district of coastal Karnataka revealed that majority of women belonged to medium group (70 to 80 per cent) of participation in agricultural operations, whereas 15 percent belonged to high participation and 14.2 percent belonged to low participation group.

Nataraju and Lovely (1993)\(^11\) in a study conducted in Devanahalli taluk of Bangalore Rural District in Karnataka revealed that, of the 20 practices, a higher percentage of women were not involved in seven practices which were preparatory tillage, nursery bed preparation, irrigation and account keeping, forming ridges and furrows, digging pits, plant protection, irrigation.

Shailaja and Jayaramiah (1993)\(^12\) in their research paper “Role of farm women in Kerala state” tried to analyze the participation of women in
farming. In their study conducted in Kollam and Kannur district of Kerala state which had the highest rural women population, they observed that farm women performed majority of the post harvest operations and kitchen gardening. Women agricultural labourers performed field oriented tasks. It was indicated that a proper training on post harvest operations to farm women was necessary to develop the appropriate technology and to perform these tasks efficiently.

Swarnalatha (1995) concluded that the adoption of watershed management programme and multiple cropping system had increased the involvement of rural women in agricultural operations. The study clearly revealed that women’s contribution increased by 150 per cent as compared to 85 per cent in the case of men. It means a major share of increased activities in the field of agriculture was contributed by women folk.

In their study conducted in Bihar on participation of women in post harvest operations, Meera Sing and Verma (1997) found that 59.51 per cent of the respondents had a high level of participation and 17.79 per cent fell in the category of low participation. Interestingly none of the respondents had very low level of participation confirming that women were an asset in post harvest operation and that they really contributed to family and ultimately to the national income.

Making use of the primary data of women in coffee cultivation of Wayanad district of Kerala Sadanandan (1998), revealed that women
participation was observed in all operations of coffee cultivation. More than 40 per cent of women growers had high level of work participation in the cultivation of coffee. Whereas 40 to 70 percentage of growers had low and medium level of work participation respectively.

Santha Govind and Perumal (1998) conducted a study in Periyar district to analyse the various dimensions of role of women in agriculture. The study revealed that generally women were involved in all the activities of seed management either by way of participation or supervision. Women's involvement in terms of participation was relatively more as compared to supervision. Women's participation was found to be highest in seed selection, germinating the seed, cleaning and storage activities that were traditionally attended by women. Women's involvement was found to be very less in the case of plant protection measures.

In their study undertaken in Haryana state Seema Rani et al. (2000) with a sample size of 1500 farm women inferred that women still had the sole responsibility of home management, irrespective of their involvement in agriculture and livestock activities. About 50 per cent of the women performed the activities of storage of food, either independently or jointly with other female members of the family. Joint male participation was negligible in all the activities.

Based on primary data obtained from a sample of 200 women respondents in Katihar district of North Eastern Bihar, Sinha and Singh
made an attempt to indicate the involvement of women in farm activities. It was noticed that collecting of weed was done almost entirely (85%) by farm women. The operation of weeding by khurpi almost (85%) and uprooting of weed was done entirely (100%) by farm women. The study further emphasized that the involvement of farm women was quite high in land preparation than male (women 37% and men 33%). It was concluded that the involvement of farm women in jute production was quite high and they participated in all major operations either independently or jointly except ploughing, sowing and harvesting.

Thus the views of the above researchers revealed that the farm women performed almost all the farm activities except some of the preparatory tillage operations like ploughing and those which involved heavy physical work like transportation of products. Women were also found to be active participants in majority of the dairy as well as animal husbandry activities in addition to household activities.

2.2 KNOWLEDGE ABOUT AGRICULTURAL OPERATIONS

Advanced and scientific knowledge about agricultural operations is also essential to those who perform the activities in order to step up the productivity. The review of literature available on this aspect is presented below.

Sithalaxmi (1975) in her research paper “Role of women in Agriculture” made a comprehensive study on the scientific knowledge
about agricultural operations in Coimbatore district of Tamil Nadu. It was revealed that even though women supervised all activities on the farm, the knowledge of these women in scientific method of cultivation and profitable utilization of the produce were only limited. She also reported their awareness related to topics such as cooking, childcare and family planning.

In their study with a randomly selected sample of 100 farm women, Sandhu and Sharma (1976) found that the existing level of knowledge about selected improved agricultural and home science practices was medium in 50 per cent of farm women, while it was low in 37 per cent and high in only 13 per cent. Information needs of farm women were perceived high in order of importance in respect of plant protection measures, seed selection and treatment, grading, storage and marketing of food grains, fertilizers use, improved agricultural tools.

Deepali (1979) undertook a study in four villages of Dharwad district with a sample size of 155 farm women to evaluate the knowledge of women about improved agricultural practices. It was disclosed in her investigation that women had appropriate knowledge to a greater extent about time of sowing, time of application of manure, optimum time of harvesting, method of sowing and name of the pests on stored grains. They lacked the knowledge about seed treatment, time of application of chemical fertilizers, quantity of manure and fertilizer applied per acre, chemical weed control and plant protection measures. It was also revealed
that rural women participated in all agricultural operations except ploughing and the participation was high in sowing, weeding, grain storage, land preparation and cleaning seeds for sowing.

Based on primary data obtained from the four villages of Bangalore district, Lalitha (1985) tried to assess the scientific knowledge of women in agriculture. It was inferred from her study that high percentage of the trained farm women were distributed in the high knowledge category. She also indicated that training had positive effect on the knowledge level of the respondents with respect to the recommended cultivation practices of rain fed ragi.

Seema (1986) in her thesis “Role of women in the decision making process of a farming community in Trivandrum district” reported that majority of farm women in her study had low level of knowledge in agriculture. She also observed that knowledge in farming was negatively related with role performance. There was no significant relationship between role perception, role performance and extent of participation in implementing the decisions with knowledge in farming.

In an article “Improved storage of grains, A least compatible practices as perceived by farmwomen” Jain and Verma (1987) tried to assess the knowledge of farm women about improved methods of agriculture. The investigation was made in Hissar district with a sample of 100 respondents selected by simple random sampling technique from four
villages. The study revealed that knowledge regarding improved storage of grains was positively significant with simplicity, complexity of attributes, whereas no relationship was statistically established between knowledge and other attributes of this practice.

Bhuyan and Tripathi, (1988)\textsuperscript{25} conducted a study in Ganjam District of Orissa on "role of women in agriculture" and it was observed that, women in the coastal and plain areas, had better knowledge about use of high yielding variety seeds, fertilizer and pesticides compared to tribal women. They also noticed that between the tribal and other women, there existed a wide range of variation regarding the adoption of modern agricultural technology. They had very little knowledge about the scientific storage, dose of fertilizer and pesticides and time cultivation operations.

Making use of primary sources of data, Nataraju and Lovely, (1989)\textsuperscript{26} made an investigation in two villages of Bangalore North taluka to find out the extent of knowledge of farm women about scientific agriculture. It was revealed by their study that the farm women had fairly good knowledge about paddy production practices. More than 60 per cent of farm women belonged to medium knowledge category, followed by high (14.00\%) and low knowledge (26.00\%) categories.

Madivanam (1989)\textsuperscript{27} in his study tried to assess the knowledge level of farm women of Tamil Nadu on major subject areas of farm activities. The study revealed that a high level of knowledge was observed with the
subject matter area of manures and manuring (78.4 percent). The knowledge regarding irrigation and transplanting was 52.9 percent and 39.4 percent respectively. Lowest level of Knowledge was noticed in case of plant protection 19 per cent, followed by seeds and sowing 25.6 percent.

A study conducted by Kulkarni et. al. (1990)\textsuperscript{28} in Mukhed Taluk of Nanded district was based on interviews be conducted with 210 farm women from 237 villages. Nearly 50 percent of respondents had high knowledge score regarding the improved agricultural practices. Where as 44 percent belonged to medium knowledge score and 9 percent of respondents were reported to have low knowledge score. Thus it can be concluded that majority of the respondents had high to medium knowledge regarding improved agricultural practices.

Verma and Sinha (1990)\textsuperscript{29} in their study on "Women involvement in agriculture and their cognitive access to modern farm technologies" in Haryana state reported that women respondents, on an average, were found to have about 70 per cent knowledge in case of wheat cultivation, 56 percent in case of paddy cultivation and cotton cultivation and about 61 per cent in case of bajra cultivation. But data clearly indicated that women were not found to have adequate knowledge of modern technology.

Samrit et. al. (1991)\textsuperscript{30}, undertook a study in Amagaon block of Bhadra district of Maharashtra. The data collected by 216 farm women
gave a mediocare picture about the knowledge of farm women about the improved agricultural practices. In their report it was identified that, the number of respondents with high knowledge were more, but it was also observed that they gained this knowledge through their years of experience. Most of the women had the knowledge of only those improved practices which were adopted in their farms by males and family heads.

In a study conducted in Amagaon block of Bhandra district of Maharashtra, Badiger et al. (1991) identified that the farm women were lacking knowledge about soil testing, fungicide used for seed treatment, weedicide, appropriate water levels for paddy and improved sickles. But knowledge about plant to plant distance, fertilizers, improved varieties of paddy, weeding schedules, need for leveling of farm level and various improved agricultural implements was good.

Making use of the primary data of 30 selected women Rahaman et al. (1992) reported that majority of the respondents were unaware of scientific poultry husbandry practices. The study was carried out in four villages of Shrinagar where farm women were being trained in raising poultry on scientific lines. They also inferred from their study that 66 percent of them knew about disease control measures that were present last time in the village and had wiped off their whole flock. They also observed that a discouraging trend was noticed regarding the scientific
knowledge about all the components of poultry husbandry, except type of breed.

Belgavimath Kavita (1994) selected Gokak taluk of Belgaum district purposively by considering its highest rural female population. The study was based on interviews be conducted with 180 randomly selected farm women of six villages. In her study it was found that thirty eight per cent of the farm women had medium level knowledge regarding the scientific methods of farming. Almost equal percent (36 percent) had low level of knowledge and 26 per cent of the respondents possessed high level of knowledge about improved agriculture.

In their study conducted in ten randomly selected villages of Chomu tehsil of Jaipur, with 100 respondents, Chaudhary and Sangramsingh (2000) observed that majority of farm women had medium knowledge about agricultural activities carried out by them on their farms. They opined that it was for the extension agencies and training institutes to focus their attention towards this fact and concentrate their efforts in updating the farm women's knowledge about improved agricultural operations.

From the above studies it could be inferred that majority of the farm women possessed limited knowledge about improved agriculture and they were aware of improved practices which were simple and adopted in their fields by their family heads.
2.3 PERSONAL AND SOCIO ECONOMIC CHARACTERISTICS OF FARM WOMEN

The personal and socio economic characteristics reflect the background of the farm women. The review of literature related to these issues is given in the following paragraphs.

2.3.1 Age

A study was conducted in the National Extension Service Block of Jabalpur in the state of Madhya Pradesh by Sharma and Singh (1970) to know the participation of women in agriculture. A sample of 170 farm women was drawn by random procedure to study how far rural women participated in agricultural activities. They found that farm women belonging to middle age group participated in farm operations in larger proportions than others.

Bala and Roy (1979), in their research paper 'Utilization of household knowledge by farm women', tried to assess the socio-economic conditions of farm women of some villages of Ludhiana district. While discussing about the age of farm women they categorically stated that majority (49.00%) of the farm women were young (below 35 years) and 51 percent of the women were above 35 years.

A report on assessment of the impact of training on knowledge level of farm youths at Hebbal and Jamakhandi centers under WYTEP, (1985) observed that 71 per cent of the farm youth trainees at Hebbal and
per cent in Jamakhandi were in the suggested age group of 18.25 years and the rest were mostly above the age limits prescribed.

Making use of the primary data, Sirohi (1985)\textsuperscript{38} in her study on involvement of rural women in farming reported that the nature of farm activities participated by farm-women varied with age. The investigation was undertaken in Bulandshahr district of Uttar Pradesh with a random sample of 100 rural women. The investigation was designed to study the extent of participation of rural women in farm operations and the effect of their socio-economic and personal characteristics and their participation in farm activities. It was observed that participation in sowing, harvesting and storage were dominated by women in the age group 25 to 40. Participation in irrigation and plant protection measures was almost confined to young women below 25 years.

Kapur (1988)\textsuperscript{39} in his research paper “Women the co-partner in agriculture production”, made a comprehensive study of the socio-economic conditions of women in agriculture. He also reported that the specific distribution of female workers showed that the highest number of female workers who were engaged in the farm activities belonged to the reproductive age group of 25-34 years. The study stressed the active involvement of women of middle age group in the farm operations.

In an article “Drudgery reduction of rural women in household activities an action research”, Indravati \textit{et. al.} (1992)\textsuperscript{40} tried to examine
the socio-economic conditions of farm women. The study was conducted in two villages of Hissar district with a sample of 50 respondents. It was found that majority of the respondents (72 percent) were of middle age group i.e. 25-50 years and that most of the respondents were illiterate (66.00 percent).

In the most of the studies it was reviewed that majority of the farm women belonged to middle age group.

2.3.2 Education

Patil and Kale (1972) made an investigation in the development block of the college of Agriculture, Pune comprising of 107 villages. With a sample of 302 respondents they tried to analyse the educational status of farm women. It was revealed by their study that 47 per cent of the farm women were illiterate and 43 per cent were educated up to fifth standard.

Based on the primary data obtained from a sample of 90 female agricultural labourers Ingle and Dharmadhikari (1987) tried to examine the participation of women in farming. In their study conducted in Punjabrao Krishi Vidhyapeeth Akola it was found that majority of the respondents (94.44 percent) were illiterate followed by a few primary educated respondents (4.44 percent). It was also indicated that these women must have been engaged at a very early age as a labourer.

Chauhan and Oberoi (1990) conducted a study in the villages of Chamba district. It was observed from their analysis that illiteracy was
found to be higher in females (57.30 percent) as compared to males (50.57 percent). The study also indicated that 3.65 percent of the female had their education till matriculation. In the study area no female was found to have attended college.

A research study was carried out by Prameelamma (1990)\textsuperscript{44} to assess the knowledge level and participation of rural women in agricultural operations with respect to paddy crop. The study was undertaken in the four villages of Kurnool district of Andhra Pradesh in the year 1989-90 with a sample size of 150 randomly selected farm women. While discussing about the socio-economic conditions it was emphatically stated that majority of the respondents were clustered in low education category. The study also revealed that the percentage of low education category was 79 percent and that of high education category was 21 percent.

By making use of the primary data Shurpali, (1991)\textsuperscript{45} carried out a research study in Byadgi and Shirahatti taluks of Dharwad district. Respondents were selected from 14 villages of two taluks, thus making a total sample size of 110. Illiterate formed 66.5 percent of the sample as compared to 33.5 percent of the literate group. Among the total respondents 17.3 percent were educated up to fourth standard. It was interesting to note that hardly 0.9 percent of the respondents were educated above tenth standard.
Malati et al. (1991) made an attempt to highlight the literacy level of farm women. The investigation was conducted in four villages of Dharwad district with a sample size of 155 randomly selected farm women. It was indicated that majority of the women (82.5 percent) were illiterate and the percentage of educated women was very less (17.4 percent).

Singhal et al. (1992) undertook a study on women expenditure pattern in rural households of Haryana. The study was based on interviews they conducted with a sample of 120 respondents of Hissar district. It was found that majority of the farm women were young i.e. two-thirds of the women were less than or equal to 35 years of age. While discussing about the literacy level it was observed that 88.33 percent of the respondents were illiterate and only 11.67 percent were educated.

An investigation was made by Bhavimani (1996), in eight selected villages of Gadag district to know the knowledge level and their involvement in chrysanthemum cultivation. With a sample size of 150 farm women, the study revealed that most of the respondents (54.67 percent) were illiterates followed by respondents with primary and middle school (39.33 percent) level of education. Very few respondents (4.67 percent and 1.33 percent) studied up to high school and college education.
Malik (1997)\textsuperscript{49}, undertook a study in Mahendergarh and Kurukshetra districts of Haryana state on the role and needs of farm women. With 200 respondents drawn from eight villages Malik observed that majority (54.5\%) of the farm women were found to be illiterate. As regards to education, 26.5 percent of the respondents had primary level of education, the percentage of high school educated respondents was 5.0 percent and that of higher education was just 1.5 percent.

From the above reviews it could be informed that majority of the farm women were illiterate and among few literates most of the farm women studied only up to primary level.

\textbf{2.3.3 Family Type and Size}

Mooley (1986)\textsuperscript{50} conducted a study in a village of Vidharbha Maharashtra to know about social background of the farm women. It was inferred from his study that majority (69.00\%) of the rural women were from nuclear families and rest (31\%) were from joint families. The study also revealed that majority of the families had four to six members in the family.

A study conducted by Ingle and Dharmadhikari (1987) \textsuperscript{51} in Punjabrao Krishi Vidyapeeth, Akola showed that 90 percent of the respondents had family members up to five only, out of which 40 per cent had only one to three family members and 50 per cent with four to five family members.
In a research paper 'Assessment of nutrition knowledge attitudes and practice of mothers,' Kumar et. al. (1989) tried to analyse the various dimensions of rural life of women. They conducted a study in Hissar city and reported that majority (69%) of the mothers were from nuclear families which showed the disintegration of joint family system.

Making use of the primary data Nirmala et. al. (1991) made an attempt to study the socio-economic conditions of agricultural women. The research was undertaken with a sample of 200 rural households selected randomly from four villages of Dharwad taluk. It was reported that majority of (61 percent) the mothers were having joint families and 39 percent nuclear families.

In an article "Drudgery reduction of rural women in household activities an action research", Indravati et. al. (1992) tried to examine the socio-economic conditions of farm women. The study was conducted in two villages of Hissar district with sample of 50 respondents. It was found that majority of the respondents (72 percent) were from the middle age group i.e. 25-50 years. It was also revealed that majority of the families were of small size (52 percent).

A research on time utilization pattern of farm women was conducted by Sheela (1993) in Bangalore rural district. While examining the socio-economic conditions of farm women she disclosed that a majority of farm women (54.56 percent) had lower formal education
followed by higher formal education (43.75 percent) and medium formal education (1.39 percent). It was observed that a majority of farm women (52.78 percent) belonged to small family and 47.22 percent to big family.

In the most of the studies it was reviewed that majority of the farm women belonged to small and nuclear families.

2.3.4 Annual Income

Patnaik and Sailabala (1986)\textsuperscript{56} undertook research to determine the contribution of women to farm sector in two villages of Satyabodi block of Puri district in Orissa with a sample size of 130 households. They found that the contribution of women towards the family income was more than men. It was also observed that the contribution of female labour towards family income was more when the size of holding was low and vice-versa. They further indicated that when the households were landless one percent increase in female's earnings lead to an increase of .58 percent of the total family income, while one percent increase in the male earnings increased the family income by .42 percent.

In an article "Personal and socio-economic status of women agricultural labour" Ingle and Dharmadhikari (1987)\textsuperscript{57} tried to throw light on the income level of farm women. The investigation was carried out at Punjbrao Krishi Vidhyapeeth Akola with help of randomly selected 90 female labourers. It was reported that only 17.18 per cent respondents had a family income below Rs. 3000 annually. These respondents were
might be mainly earning members in the family. Majority of the respondents (82.22 percent) had annual family income of more than Rs. 3000/-.

Based on the primary data obtained from a sample of 200 respondents Sheela, (1991) made an attempt to evaluate the economic contribution of farm women. The study was conducted in five villages of Bidar taluk of Bidar district in Karnataka. It was observed that 42 percent of the respondents had family income between Rs. 4800 and 10000. Thirty six percent of the respondents had family income of above Rs. 10000, and 20 percent of the respondents had family income up to Rs. 4800. It indicated that majority of the respondents had medium income level.

In a research paper 'Women's expenditure pattern in rural households of Haryana', Singhal et. al. (1992) tried to analyse the economic conditions of women in agriculture. In their study conducted in Hissar district of Haryana state it was revealed that 71.76 per cent of the families had per capita yearly income upto Rs. 3000.

Verma Shashikanta (1992) undertook a study to determine the level income possessed by the farm women. The study was based on interviews be conducted with 100 respondents from four villages of two districts of Haryana. The data regarding total income clearly indicated that there was disparity in income among the respondents of various socio-economic strata. The average family income of the respondents
drawn from high socio-economic stratum was about Rs. 1,19,000 per annum. It was to the tune of 33.5 thousands for the respondents of medium socio-economic stratum and Rs. 14.5 thousand for respondents of low socio-economic stratum.

With the help of multistage random sample of 160 farm women spread in four villages of Tumkur district of Karnataka Mamata (1993) made an attempt to study the socio-economic dimensions of farm women. The results indicated that 92.5 percent of medium category farm women and 12.5 percent of small category women belonged to the high income group of more than Rs. 20000 per annum. In medium income group (9000-20000) small category constituted 87.5 percent and only a small proportion of 7.5 percent of medium category. In labour category all the respondent families belonged to the low income group of less than Rs. 9000.

Belgavimath Kavita, (1994) selected Gokak taluk of Belgaum district of Karnataka purposively by considering its highest rural female population. The study was based on interviews be conducted with 180 randomly selected farm women of six villages. In her study it was found that thirty eight per cent of the farm women had medium level knowledge regarding the scientific methods of farming. Almost equal percent (36 percent) had low level of knowledge and 26 per cent of the respondents possessed high level of knowledge about improved agriculture. She also pointed out that the economic position of the families of the respondents
indicated that half of them (53.88 percent) had income above Rs. 11,500 per annum and less than half of them (36.11%) had income up to Rs. 11,500 per year.

Most of the studies reviewed indicated that the income of farm families was up to 3000 per month.

2.4 PROBLEMS FACED BY RURAL WOMEN IN PERFORMING THE AGRICULTURAL OPERATIONS

Women face various problems while performing the agricultural operations. The review of literature available on the constraints is presented below.

Pradhan (1983) in his book “Women in Rice Farming”, tried to emphasize the role of women in household production systems and rice farming in Nepal. While discussing about the constraints faced by women he opined that most of the training on agricultural technologies and dissemination of information on new technologies were focused on men. Women lacked skill in dealing with credit institutions, faced bureaucratic difficulties at filling up forms, lacked connections with office personnel and lacked knowledge of the procedures for getting loan.

Making use of the primary data Devi and Reddy, (1984) made an attempt to examine the problems of women in agriculture. The research was conducted in eight randomly selected villages of Gannavar Block of Krishna District, Andhra Pradesh. From these villages 120 rural women,
40 each from low, medium and high economic groups were selected at random. It was observed that ladies did not go out for farm work, since they considered it to be husbands work, “there was no land to attend to farm works” and “land was leased out “ were the reasons enlisted by rural women for non-fulfillment of certain expected roles in agriculture.

In a report on “ Women in food production and food security”, Momba, (1984) concluded that constraints in farm women's performance were (i) insufficient data on women farmers for use by planners (ii) Female headed households, which have now increased to 28 per cent of all farming families suffer from capital and labour shortages. (iii) Many women farmers were neglected by extension and credit staff who concentrated on their husbands. (iv) There were few female extension agents and husbands who were often unwilling to allow their wives to work with male extension workers. (v) Not all women could attend training centers or group meetings, they remained unreached by extension agents.

Singh And Bhattacharya (1988), in their study conducted in the hilly area of Uttar Pradesh of Dwarahat block of Almora district showed that on an average three fourth of the total work in agriculture was performed by female workers of the family alone, a fact that brought out the importance and magnitude of the contribution of rural women in hilly agriculture. With regards to the problems of women they pointed out 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 time during transplanting, harvesting, weeding and using hand operated *chakki* for dehusking/shelling.

In an article “Developing vocational attitudes of the rural women of Haryana”, Kashyad and Sharma, (1988) 67 tried to throw light on the problems of farm women. Their study found that lack of credit facilities, marketing and post training follow up were the main constraints of land less and marginal farm women. Irregular supply of raw materials and lack of incentives market intelligence and post training follow up were cited as the important constraints faced by women from farm families having medium sized holdings. Preoccupation with child care, and social and political views of elders were cited as reasons by the women from families with large holdings.

Sheela, (1989) 68 conducted a research on “Role of the farm families in agriculture and related activities a whole farm approach” in Tamil Nadu. While discussing about the role of women she emphatically stated the various difficulties faced by the women in agriculture. According to her investigation the problems encountered by farm women were inadequate income, lack of assistance from others, high cost of food stuffs, inadequate supply and high cost of fuels, difficulty in childcare and tutoring of children.

Based on the primary data Punita Sagar, (1989) 69 undertook a study on multi-dimensional role of women in Andhra Pradesh. She
identified the following various constraints of farm women in performing the roles effectively and properly. These were lack of professional extension workers available for consultation or to give needed help, lack of literacy, lack of financial help, physical hardship involved which may be beyond their capacity to cope; energy constraints.

Antwal and Bharaswadkar, (1990)\textsuperscript{70} conducted an investigation in the four villages of Parbhani district of Maharashtra state. It was reported 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 utilization of new technology.

A research study was designed by Verma and Sinha (1990)\textsuperscript{71} in order to throw light on the various constraints faced by farm women. The study was based on the interviews be conducted with 100 respondents of farm women of four villages of Karnal and Hissar districts of Haryana state. It was revealed from their study that the socio economic characteristics failed to influence the load of drudgery undertaken by farm women in cultivation of both wheat and paddy crops. It was concluded that pesticide dusting was 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.
Poonam et. al. (1992) conducted a study in Government dairy development programs, at Lohardaga district of Bihar; community service guild, Kalrayan Women’s Development Scheme, Kalrayan Hills, Tamil Nadu; and Self Employed Women’s Association Ahmedabad, Gujarat. The study revealed that the major constraints faced by women milk producers included poor health, nutrition and productivity of milch animals, limited training opportunities for women dairy farmers and inadequate institutional support to producers. They opined that eliminating these constraints would result in a more equitable distribution of dairy benefits and an increase in the total benefits produced in this sector. They proposed several strategies to overcome these constraints.

A research on time utilization pattern of farm women was conducted by Sheela (1993) in Bangalore rural district of Karnataka. It was found that the farm women faced three types of problems. The problems on farm were non availability of water, strenuous weeding operations, working in scorching sun, non availability of labour, high wage rates of labour, inadequate training in agricultural production etc. The problems 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 childcare. The other problems were difficulty in obtaining loans and difficulty in repayment of loans.
With the help of 179 respondents selected on the basis of proportionate random sampling procedure, Sheela and Sundaraswamy (1994) conducted a study in Bidar District of Karnataka. The study pointed out that lack of loan facilities (51 percent) as the main problem, followed by high cost of commercial cattle feed (24 percent) and long distance to veterinary hospital was another problem faced by the women respondents.

A study undertaken by Saroj and Grovery (1997) presented a clear picture of constraints faced by women in grape cultivation. The study was undertaken in Kurdi village of Hissar Block in Haryana state. The sample comprised of 110 women drawn proportionally from the landless, small and large farm households. It was revealed that women suffered maximum from technological constraints like lack of knowledge and skill about treatment of diseases, fertilizer application, quality improvement, banking and credit facilities followed by physical constraints like skin irritation, ache in hand, back ache, blisters, insect bites, etc. The other constraints faced by women were lower wages than men, misbehavior by other members etc.

Meti (1999), in her study concentrated on the various problems of agricultural labourers in the family as well as in the rural community background. The research was conducted in ten randomized villages of Mundaragi taluk, with a sample of 140 female workers. It was found that all the respondents were facing the problems of health, no work...
during off season/drought and work related problems. Majority of respondents were found to face the problem of food (93%), child care (93%), collection of firewood and drinking water (91%). Nearly one third (36%) of them were found to face marital problems. About one-fourth (23%) of the respondents were found to have alcoholic husbands. General body ache and low back pain were chronic health problems found among all respondents. One fourth of them were found to be female heads of the family. Majority (67%) of the respondents took loan from the landlords.

Making use of the primary data Mrunalini et. al. (1999) conducted a study in Mehaboobanagar district, found that women in rural areas were the main source of manual labour both for the economically productive occupations and the domestic tasks. Due to lack of concern for their contribution, they still stood as victims of discrimination in the payment of wages, technology access, work load distribution, women were viewed as programmed robots destined for drudgery and with their work never ending by the sunset. The long hours of productive physical labour, feeling of physical exhaustion due to the working conditions, ineffective routines, tools and techniques contributed to the drudgery of farm women. Maximum time was consumed for routine activities like cooking, washing clothes, water fetching and other household activities. It could be inferred that the subjective feelings related to work had to be improved by affecting changes in the work place arrangement, tools and technology available,
postural convenience to increase the ease and comfort while performing the work.

Thus the views of the above researchers revealed that the farm women faced problems of health, no work during off season/drought and work related problems. Majority of respondents were found to face the problem of lack of rest, lack of assistance, low wages, lack of training, physical drudgery, health hazards, etc.

2.5 WOMEN AND DECISION-MAKING

Farm women play an important role in the development of agriculture. But she is not equally involved in the process of decision-making of farm as well as home activities. The available review of literature on this behalf is presented below.

A research study was designed to understand the role of women in decision making of farm and home aspects in four villages of Dharwad district by Badiger (1979). With the help of 140 respondents the decision making pattern was studied both for home aspects and farm aspects. The extent of participation of farm women in decision making of home aspects was more in religious practices, health and hygiene practices, home improvements and purchasing of home equipments and her participation was least in savings for future and selection of occupation for children. In farm area her participation in decision making was higher in care of animals and storage of grains while least in selection
of fertilizers and quantity and type of fertilizers. Proportion of farm
women's participation in home areas was more than in farm, that is
about 75 percent of the farm women participated in decision making of
home aspects, while it was 52 percent in farm aspects.

Nimbalkar and Thorat (1984) 79 tried to examine the decision
making process of farm women in Divale village in Pune district. The
study was based on the interviews of heads of 93 families. It was found
that 73-82 percent of the decisions on farm activities like marketing of
produce, use of fertilizers and insecticides were taken by husbands. Most
of the decisions regarding household and agricultural matters were taken
up by the family heads alone. In a negligible portion the farm women took
independent decisions.

On the basis of primary data obtained from a sample of 206
households from different land holding categories, Susheela et al. (1990)
80 made an attempt to analyse the decision making pattern of farm women
in four villages of Dharwad district. It was inferred from their study that
the type of the family was one of the influencing factor in decision
making because of the fact that it involved the various factors like social
and financial adjustments, age experiences and aspirations. Conclusions
that could be drawn by this study were that the majority of the family
decisions on expenditure and consumption of food items and clothing
were taken jointly by husband, wife and adult children.
Badiger et al. (1990) conducted research on decision making of farm women in four villages of Dharwad district. With the help of 140 respondents the decision making pattern was studied for 15 home aspects and 13 farm aspects in the area of 'wife alone', 'husband alone' and 'joint types'. It was found that in case of decision making pattern of home aspects, wife alone participated more in the areas of decision making of religious practices, health and hygiene practices, home improvements and marketing. The participation of husband alone was higher in savings for future, expenditure for future, selection of occupation for children and taking and giving loans. Joint decisions were observed in the areas like selection of suitable match for children, family planning. Where as in farming activities 82 percent of women were in the management of animals and storage of grains. The decision making of husband alone was highest in case of most of the farm activities. Joint decisions were seen in selection of crops and application of non-family labour.

In an article, 'Perception of women about their involvement in Farm decision- Making and Farm Operations' Rekha et al. (1991), attempted to study the participation of women in decision making of farm activities. The findings of the study were based on the data collected from 75 women belonging to farm families in Wardha district of Maharashtra. More than two third of the women perceived that they should be involved in decision making connected with preparation of seed, weeding operations, storage of farm produce and engaging of labourers. More than
one third of women were of the view that they should be involved in the
decisions related to purchase and sale of land, application of fertilizers,
deciding about cropping pattern and harvesting of crops. A small
proportion of farm women however felt that they should be involved while
taking decisions about other farm operations. The findings showed that
farm women were not involved in farm decisions and also indicated that
they should be involved in such farm decisions which were concerned to
female workers.

Satyavati et. al. (1993) in their study tried to analyse the various
dimensions of decision making process of farm women. The study was
based on interviews be conducted with 100 respondents in Hissar district
of Haryana state. The investigation indicated that approximately one third
of the respondents(30%) were fully involved in taking decisions regarding
credit and little less than that (29%) were partially involved. It was
astonishing to observe that more than two fifth of the respondents (41%)
were not at all participating in decision making regarding the credit which
was availed on their name. Regarding the source of credit it was
interesting to note that the majority of the respondents (60%) did not
participate at all. The results of the study revealed that the money related
decisions in agriculture and farm business operations were dominated by
males. The study proved the meager involvement of the rural women in
decision making regarding credit procurement.
In a research paper 'Participation of rural women in Decision Making' Brij et al. (1993) tried to emphasize the role of women in decision making. They carried on a study in Kangra district of Himachala Pradesh and the study indicated that women participated actively and dominantly in household decisions like the source of fuel, investment on household goods etc. In more than 90 per cent of the decisions the participation of women was only of supporting nature. Illiteracy lack of knowledge and awareness were major reasons for low participation.

On the basis of the primary data obtained from a sample of randomly selected 160 farm families Gaikwad et al. (1997) conducted a study in Purandhar tahsil of Pune district to investigate the involvement of farm women in decision making. It was revealed from the study that the highest magnitude of women involvement was observed with the activity of purchase of family consumption items (57%) and next to it was the performance of farm operations. It was concluded from the study that there was meager participation of farm women in decision making process, particularly related to agriculture. The study recommended for diverting the time of farm women from kitchen and to other fields.

A study was conducted by Chaudhari et al. (1998) in Kamptee Panchayat Samiti of Nagpur district of Maharsashtra state. With the help of randomly selected sample of 25 women spread in the five villages it was
noted that individual decisions taken by male was less than 2 percent regarding home and family related decisions, where as individual decisions taken by female was less than 5 percent. It was also concluded that age, education, mass media exposure and extension contact were positively related with decision-making ability of farm women in relation to farm and home aspects. It was clearly indicated that educated women having contacts outside their social system having more mass media exposure and better extension contacts influenced the decision making.

Making use of the primary data Alka et. al. (1999) made an attempt to examine the pattern of decision making in Akola district of Vidarbha region. The study was based on interviews conducted with 200 respondents from farm women of ten villages. It was clearly indicated that the husband and wife play an important role in decision making. It was seen that in skillful and risk bearing practices women decision-making was less. The rural women participated in decision making of most of the animal husbandry practices and not in all practices.

Govinda Gowda (1999) conducted a study in upper Krishna project command area. The study supported the fact that decision-making in the family was of collective nature involving both male and female members in a equal manner in most of the issues connected with their lives. The study invalidated the notions that the women members were kept out of the decision making process in the family.
In a research paper 'Women and Economic Growth' Chaturvedi and Chaturvedi (1999) tried to emphasize the role of women in decision taking. It was confirmed by the investigation that the participation of women in decision making was 100 percent in case of sowing of crops, use of seed, purchase of grocery, livestock and livestock products and 50-60 per cent in case of hiring of labour, taking and giving credit, spending money and purchasing and selling domestic appliances.

With a random sample of 150 farm women spread in three villages of Hirekerur taluk of Haveri district of Karnataka, Shakuntala Masur (2000) conducted a study on expenditure pattern of farm women. She concluded that the decision on farm related tasks were taken either by the husband alone or jointly by the husband and wife. None of the farmwomen alone participated in making decisions regarding purchase of equipment and purchase of fertilizers. More than 50 per cent of farmwomen responded that the decision regarding storage of produce, marketing and fixing the time of agricultural operations were taken by the husband and wife jointly. It was observed that most of the decisions regarding home related tasks were taken jointly.

Cherian (2001), undertook a research to determine the areas of decision making of the farm women of Udhamapur Nagar and Saharanpur districts of Uttaranchal state. With a sample size of 1500 respondents she pointed out that women usually made joint decisions with males regarding homestead, farm and animal husbandry related
decisions. Thus it could be concluded that women did not make independent decisions regarding any of the activity whether related to home or outside.

Based on the primary data obtained from a sample of 64 farm women, Usha Rani et al. (2001) conducted a study in Himachal Pradesh to evaluate the role of men in decision making. They found that decisions related to the agricultural activities were taken by the male members of the family and the women were generally decision makers regarding the subsidiary enterprises only. Though the middle aged farm women were found to devote more time in agricultural and domestic activities, yet they were not given due share in decision making.

From the above reviews it could be informed that farm women took decisions in family activities and their participation in taking decisions on farming activities was less.

2.6 TIME UTILISATION PATTERN OF FARM WOMEN

Farm women has to manage both home and farm activities. Hence she has to devote her precious time effectively to manage these activities.

Making use of the primary data Chakravarthy (1975) made an attempt to analyse the various dimensions of women's role in the farmers' families in Haryana state. The study revealed that an active farm woman 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 other household activities.

In a research paper "Home responsibilities: Are they still 'Her' Job?" Francis et al. (1981) tried to analyze the various dimensions of household responsibilities of women. While studying the home makers in South Louisiana they 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.

In a research article "A day in the life of rural women" Bhatnagar (1982), examined the work participation of women in agriculture. He indicated that participation of women in agriculture was seasonal. During the peak season of work of sowing and harvesting, the rural women had spent 8-9 hours in the field which was almost a full day. During ordinary days the rural women spent on an average 2-3 hours on the farms daily which included intercultural operations. About 8 hours were spent in irrigation and this was done 4-5 times in one season.

Singh and Usha Rani (1983) in their investigation tried to assess the work burden of farm women. The study was based on interviews conducted with 75 households from Karnal district of Haryana state. It was observed that the domestic work consumed the highest female labour hours followed by dairying activity accounting for about 47 and 24 percent respectively of the total work hours per day in all the activities.
The overall average work burden on a female was as high as 2964 hours in a year. Considering the average norm of 225 days per annum for women it could be concluded that females were overburdened with work in all the categories of households.

With the help of randomly selected sample of 50 landless agricultural labour households spread in eight villages of Sibsagar district of Assam Saikia (1984) made an attempt to throw light on the time utilization pattern of farm women. It was pointed out that working hours per day in farm activities for female agricultural labours in Assam were between six to eight hours but in case of family workers working hours varied between 4-8 hours.

Suryawanshi and Kapare (1985) undertook a study in Ghod irrigation project area and tried to analyse the various dimensions of employment of female agricultural labour. They opined that the availability of irrigation facilities had increased the time spent by women on agriculture. It was estimated that during the peak period a women worked for about 8-9 hours on the field and 5 hours during ordinary days.

Shrivastav (1985) reported that women irrespective of land status of the family provided 14-18 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 spend particularly in a below subsistence level of living.

A study was undertaken by Lakshimidevi (1986) in Krishna district of Andhra Pradesh to evaluate the time spent by women on farm activities. In her study it was reported 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. She also observed that women spent 40.41 percent of their time on household activities, 15.83 per cent on agriculture and 43.75 per cent on sleeping, resting and other social and leisure time activities.

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

With the help of random sampling of 130 households spread in Ali Neova village in Muzaffarpur District in North Bihar Jyotsna (1985) made an attempt to evaluate the role of women in agriculture. While discussing about the time utilization pattern of women she emphatically stated that women spent 10-12 hours daily in household activities and they contributed in an important way to agricultural production, animal husbandry and other related activities.
In a research paper "Socio-economic amelioration of rural women; a tentative module for rural development" Akhtar, (1989) tried to assess the utilisation of daily time by rural women in Pakistan Northwest Frontier province. It was emphatically stated that women worked from 5.00am to 9.30 pm with one to two hours leisure time per day.

Based on primary data obtained from a sample of 105 respondents of seven villages of Melghat area Ingle et. al. (1990) made a comprehensive study of the time spent by women in various activities. In their study it was found 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.

Based on the primary data obtained from a sample of 160 farm women Shashikala (1990) conducted a study in sixteen villages of Nargund and Kundagol taluks of Dharwad district. It was indicated by the study that farm women of rain fed area spent 0-4 hours of time on farm activities, where as in irrigated area it was 2-6 hours. Majority of the farm women of both rain fed and irrigated area spent 0-4 hours on dairy activities and 4-8 hours on household activities. The mean time spent by women of irrigated area was higher than that of rain fed area with respect to farm activities and it was reverse in case of household activities. The time spent on dairy activities was almost same in rain fed and irrigated areas.
In a research abstract "Women’s work patterns – a time allocation study of rural families in St. Lucia. Szeto and Cebotarev (1990)\textsuperscript{106}, made a comprehensive study of women’s participation in agriculture. It was inferred from their investigation that women of St. Lucia were responsible for the well being of their families and they worked in the homes, on the farmers and when ever possible engaged in income generating activities.

With help of randomly selected 144 farm women spread in the four villages of Devanahalli taluk of Bangalore Rural district Sheela (1993)\textsuperscript{107} tried to assess the time devoted by women for various home and farm activities. It was inferred by the study that marginal farm women spent more time on farm activities followed by small and large farm women. Small farm women devoted more time for household activities followed by marginal and large farm women. There was no significant difference in time utilization pattern on farm by small and marginal farm women. Large farm women got more time for resting and other activities when compared to other categories of farm women.

Antwal and Bellurkar (2000)\textsuperscript{108} concluded that the maximum time spent by rural women was highest in farming, followed by kitchen work, household work, personal care and care of children and family members during peak season. In slack period maximum time was spent in kitchen work followed by household work, personal care, care of children and family members. Least time was spent in grazing of animals both in peak and slack season.
The majority of the studies revealed that women spent more time on farm activities since agriculture was one of their main occupations and they spent more time on farm activity than household activity.

2.7 ACTIVITIES PERFORMED BY MEN AND WOMEN

The participation of women in agriculture is much older than that of men. However, with the introduction of plough and other devices men's role has become more perceptible and dominant and the recent development have led to gross under estimation of women's contribution to agriculture production including allied enterprises.

A number of studies have been carried out to ascertain the various activities done by women and men in agriculture and related disciplines.

In a research paper "Role of Rural Women in Agricultural Development", Achanta (1982) indicated the vital part played by women than men in agricultural development .She reported that the different operations carried out by women were transplanting, weeding, watering, watching fields, sowing behind the plough, winnowing, storage and preparing of Farm Yard Manure .She further observed that women did all the work except ploughing . If there was no male member in the family the woman did everything, but rarely found a man doing the work of a woman.

Dak et.al. (1987) in their study tried to assess the social and institutional framework of female participation in agriculture. They opined
that majority of women were playing a monopolizing or dominating role in about half of the total of 17 agricultural production tasks in a study conducted at four districts in Haryana. These tasks were tending farm cattle, collecting fodder for the cattle, milking of animals, processing of milk, making cow dung cakes, weeding, storage of produce, harvesting of crops and making of Farm Yard Manure. They also played a supportive role in threshing, application of manure and carrying inputs to field. But the tasks such as inter cultivation, irrigating crops, construction/repair of field channels, ploughing, marketing and plant protection measures were performed by the men folk.

In an article “Inter gender involvement in farm, home and dairy operations”, Charulata et al. (1990) made a comparative study of men and women in farming activities. It was revealed by their study that involvement of farm women in paddy cultivation, household and animal husbandry activities was more than that of men. Women devoted more time than men in these activities irrespective of socio-economic strata. More the time spent by women in agriculture activities, higher were the wages earned by them especially in transplanting and harvesting operations.

Based on primary data obtained from a sample of 140 farm women of Prakasam district of Andhra Pradesh Sudharani and Raju (1991) emphasized that in both cotton based and paddy based cropping systems hired female labour contribution was more than that of the hired male’s
contribution. It was inferred from their study that in paddy based cropping system on an average, human labour has been employed for 155.91 days per hectare. In this female labour days were 92.68 days per hectare and male labour days were 63.23 days per hectare. In the case of cotton cultivation, total human labour days needed were 122.78 days per hectare, in which female contributed 73.29 days per hectare and males contributed 49.49 days per hectare. It was also noticed that the female contribution was significant, but females were not employed fully throughout the year.

Making use of the primary data Kapur Kanta (1991)\textsuperscript{113}, highlighted the role of women in rain fed farming in the states of Maharashtra and Gujarat. It was disclosed by the study that men did all operations that needed more muscle power such as ploughing, threshing and stocking, women did such jobs that were highly strenuous such as weeding, delicate and time consuming jobs like planting seeds, picking fruits, splitting, winnowing etc They were also entrusted with the tedious job of preparation of farm yard, manure and manuring each plant at the root.

With the help of the primary data collected from a sample of 150 farm couples Badiger (1999)\textsuperscript{114} made an attempt to find out the participation of men and women in agriculture and allied activities. The findings revealed that participation of women was cent percent in removing of stalks and stubbles, weeding, picking, sieving, processing of milk, making cow dung cakes, preparation of feed and feeding activities.
Cent per cent participation was observed in ploughing, clod crushing, harrowing, transportation, marketing, grazing animals, selling milk and collection and selling of eggs. Majority of women faced the problem of low wages and lack of training and most of the men faced the lack of credit facility as their major problem.

Saraswati (1999) conducted a study on the time utilization pattern and participation of women in sericulture enterprise in non-traditional areas of Karnatak in the year 1998-99. With a sample size of 173 farm women spread in Dharwad Hubli and Kalaghatagi taluks of Dharwad districts Saraswati tried to evaluate the works performed by men and women in agriculture. It was found that majority of indoor activities such as disinfection, storage of leaves, feeding, harvesting and cleaning and sorting of cocoons were carried out by farm women. While disease management and temperate and humidity maintenance were looked after by men. Among the outdoor activities more than 90 percent of the women took care of planting, application of manures, weeding and pruning, while land preparation, pest and disease management and fertilizer management were attended by men.

In their research paper Chaturvedi Vibha and Chaturvedi (1999), focused their attention on the vital role played by women in agriculture. The paper gives the results of a sample survey of 100 families conducted in 20 villages of hill districts of Uttar Pradesh. Women took part in all most all the farm activities. Their back bending hard work in agriculture
and animal husbandry operations did not result in any significant economic benefits. Hill women worked thrice as much as the males and got poor economic rewards.

The review of literature on various activities performed by women and men in agriculture and allied enterprises thus indicated the farm women's contribution to physical activities in agriculture and other disciplines. Women performed almost all field operations such as sowing, weeding, transplanting, harvesting and storage of seeds except ploughing and harrowing which were done by men.

2.8 GOVERNMENT MEASURES TO IMPROVE THE STATUS OF FARM WOMEN

With the help of primary data obtained from the villages of Kerala state Lakshmidevi (1985) 117 conducted a study in order to evaluate the impact of IRDP on rural women. It was inferred from her study that IRDP provided an opportunity for rural women to shift from agriculture to non-agricultural activities. IRDP had a positive income benefit only for a small percentage of women in the rural areas. The study also pointed out the fact that IRDP could not improve the status of women in the rural areas substantially. It was a fact that IRDP has done some good for a very small percentage of women in the rural areas.

In a research paper 'Rural Women's March to Beijing', Sushama, (1995) 118 throws light on the various rural welfare schemes introduced
by the government. It was indicated that for the “master” of the house, his women was still a possession like the cattle and the house. Assessing the various welfare schemes launched by the centre and the states with the focus on rural women author pointed out that the success of any empowerment scheme depends on an enabling environment as also women’s understanding of the programme.

Shrivastav et.al. (1996)\textsuperscript{119} in their study conducted in Jabalpur tried to assess the benefits enjoyed by the farm women from government training programmes. They reported that before training only 28% of female farmers were of high knowledge and 72% of low knowledge about storage of food grains while after training 56% were of high knowledge and 44 \% remained in low knowledge. The level of knowledge of home practices increased cent percent after the training of female members belonging to middle standards.

Based on the source of primary data Meera Rao (1997)\textsuperscript{120} undertook a study in Dharwad district to determine the development of women and children in rural areas. It was concluded that although the DWCRA programme had great potential, implementation at the gross roots level needed attention. At its best, the group mechanism had empowered women to approach functionaries, offices banks and markets but often with mixed results.
A study was carried out by Seema and Kantha (1997) to assess the impact of training on income generating activities on practical gain and knowledge acquisition of trainees in Dabra village of Haryana state. A sample of 60 women respondents who were interested in income generating projects was drawn to study the impact of training programmes. It could be concluded from the study that the training on income generating activities created desirable changes in the knowledge component of the trainees. Through these projects the rural women not only met their domestic needs but also raised income for their subsistence and betterment of living standards.

With the help of random sampling of 108 respondents spread in four villages of nine taluks of Dharwad district in Karnataka Badiger and Parekh, (1999) made an attempt to reveal a comprehensive picture of rural development programmes. The study revealed that the various women and children programmes focus on the different sections of the community. To make these programmes successful, leaders should be identified. The trained community leaders could help village women to develop favourable attitude for active and effective participation in different development programmes.

Sarkar (1999) conducted an investigation in Birbhaum district to study the awareness of women about rural development programmes. It was found that generally women were not aware of all the rural development programmes running in the villages. Maximum awareness
was however found regarding the *anganwadi* centres followed by IRDP. All services and training for women in rural areas should be integrated and offered as a package programme. The focus of all these services should be agriculture and animal husbandry.

Based on the primary data obtained from a sample of 30 respondents of Thiruvantapuram district of Kerala state Parvathi and Sushama (2000)\textsuperscript{124} made an effort to examine the benefits of training programmes. While discussing about the training activities of the government they stated that rural women preferred orchid cultivation, handicrafts and processing of fruits as major areas where they needed training. So such training programmes should be conducted by the government. They concluded that the training programmes would be effective purposeful only when they are based on felt needs, besides helping in framing of the curriculum and evaluation of training strategies.

Panicker and Choudhary (2000)\textsuperscript{125}, tried to analyse the various dimensions of training needs of women with the help of the 150 respondents spread in 15 villages of Nagapur panchayat samiti. They concluded that the training need in the modern practice of agriculture increased with increase in the socio-economic status because farm women having more socio-economic status were more aware of the modern practices and hence more interested in receiving training. As economic motivation increased training needs also increased. Family size
was found to be negatively co-related with training needs in the modern practices of agriculture.

Rajkumar (2000)\textsuperscript{126}, made an attempt to explain the various problems and development services of women. He suggested that Government should establish multisectoral programmes to promote the productive capacity of rural poor women in food and animal production, create off farm employment opportunities, reduce their work load and that of their children, reverse their pauperisation, improve their access to all sources of energy and provide them with adequate water, health, education and transportation.

From the above studies it could be inferred that majority of the government programmes although were having great potential, great attention was not given at the grass root level. Particularly government training programmes for women have failed to cover majority of the farm women.

\textbf{2.9 ISSUE OF GENDER EQUALITY}

Though women perform most of the agricultural activities, their work is not recognized and valued. Farm women do not enjoy similar rights in terms of access to resources which include land and credit. Women face glaring inequalities especially in rural areas with regard to control of material and non-material resources,
In a research paper "Women in Agriculture", Widge (1995) pointed out that in agriculture sector the remuneration and division of labour was highly sex based. Discrimination was manifest in the male and female earnings. Though the existing legislations like, the minimum wages act, the equal remuneration act, the plantation act, did not permit discrimination in wages on the ground of sex, the daily earnings of women labourers were generally less than those of men. The basic reasons for the disparity in wages noted were seasonal nature of the demand for labour, traditional classification of some jobs as the monopoly of women, unorganised nature of farm labour, ease with which hired labour could be substituted by family labour, poverty, illiteracy and ignorance regarding the laws.

Making use of the secondary data Marathe (1995), in his research article "Gender Equality for Social Integration" made an attempt to examine the gender disparity. He suggested that gender issues can never be solved by treating women as separate entities or by granting concessions or reserving seats for them, They have to merge with the main stream of human beings. Co-operatives provided the best avenue for this. Functioning at the gross root level, the co-operatives can not only provide opportunities for improvement of the social and economic status of the rural and urban people but also bring about a change in the approach and attitude towards gender equality and social integration.
Suvarna (1995) tried to examine how the developmental processes have bypassed women at every stage. She disclosed that the much awaited realization of the need and demand for gender equality is yet to dawn on the horizons of rural India. The developmental messages that could have hardly reached rural women, with the tools of development exclusively remaining in the hands of men. Lamenting that the contribution of the rural women, the main shock absorbers in Indian economy, go unrecognized, the author says that the appreciation of the problems of rural women by the government is closest to reality. She concludes that recently Panchayat Raj institutions with their intricate network in every village of India coupled with the serious determination of the government and NGOS offered promising potential to generate demand for gender equity in the country side.

Swaminathan, (1995) addressing the issues involved in women's empowerment and gender equality emphasized the need for a qualitative change and says that it could be achieved only with the enlightenment and involvement of men. The grass roots level democratic structures which have triggered off a silent social revolution can play an effective role in achieving the twin goals of female empowerment and male enlightenment making gender equality a reality. A national grid of institutions can help to optimize the new opportunities offered by the decentralization process thereby making India a role model for others. What is needed is a quantitative change in our mind set and methods and not one more national yojana.
In her research paper Marina, (1995) 131 underlying the correlation between human development and peoples participation, recognised that development had not only by passed women, but also made them victims of it. Participation lead to empowerment supported by economic independence. Stressing the role of education in the emancipation of women, author said that empowerment of women was a *sine qua non* for creating a more egalitarian relationship between men and women. The empowerment process encompassed several mutually reinforcing components but began with and was supported by economic independence which implied access to and control over production resources. A second component of empowerment was knowledge and awareness, the third was self image and the final was autonomy.

Based on the primary data obtained from a sample of 114 respondents spread in four villages of Nuh block of Haryana state Santosh and Sangwan (1996) 132, showed the consistent discrimination against female children in comparison to male children. Differential treatment of boys and girls begins at birth with former receiving better, the latter poorer child care. Large differentiation persisted between boys and girls in terms of availability of medical attention. Differential care could also be seen in feeding practices and care to new born when the mother went out to work. One possible explanation of sex-biased child care behaviour was related to general attitude towards girls, the inferior status, role and work opportunities of women. More over, old-age security question also played important role in differential care of children.
Ambigadevi and Ponmani (1997) stated that there is a great disparity between the education of boys and girls. The gender disparity in education is further accentuated between the states. In the state of Rajasthan, the gender gap in terms of primary gross enrolment ratio, drop outs, and literary rates was very high. This needed to be rectified immediately. Kerala was the model state in terms of low gender differentials in these states. The removal of women's illiteracy and obstacles inhibiting their access to and retention in elementary education should receive over riding priority. This called for special support services, setting of time targets and effective monitoring.

An investigation was undertaken in Ranchi district of Bihar state with the help of random sample of 288 farm women by Niva Bara et. al. (1998) In their study they observed that gender issues have not been given due importance while developing technologies and extension strategies. It was observed that most of the training programmes were designed for men. It was recommended that agricultural training and extension programs should be broadened to support tribal women's immense roles in agricultural production systems.

In an article “Gender Disparity and Poverty” Manasi Bhattacharyya, (1999) made an attempt to analyze the various dimensions of gender discrimination. While discussing about the gender inequality he quoted that the extensive discrimination against women which continued to exist in different spheres of life stood in the way of
participation of women on equal terms with men and that hampered the growth and prosperity of the family and society.

Human Development Report (1999)\textsuperscript{136} observed that in Karnataka, the development programs must aim at eliminating Gender disparities to enable women to become equal citizens. Justice and equality for women is possible only with transformation in many spheres; in legal and economic thinking as well as in social and religious perceptions. The effort required is immense and will extend over a long period.

Meti (1999)\textsuperscript{137} conducted a study on the various problems of agricultural labourers in the family as well as in the rural community background. Her research was concentrated in ten randomized villages of Mundaragi taluk, with a sample of 140 female workers. While discussing about the socio-economic conditions of farm women she observed that the ownership of land holdings of women was to the tune of only six percent in Dharwad district.

In his book "Women Problems" Rajkumar, (2000)\textsuperscript{138} throws light on various problems encountered by women in family and in society. He pointed out that discrimination promotes an uneconomic use of women's talents and wastes the valuable human resources necessary for development and for the strengthening of peace. Ultimately society is the loser if the talents of women are under utilised as a result of discrimination.
Making use of the secondary information Pattanaik (2001) made an attempt to evaluate the decisive role played by women in the alleviation of household property. He further suggested that empowering women with property rights and with savings and investment facilities would contribute much more to the household income. Moreover women work participation in the income earning activities would raise the gender per capita income. It can be recommended that income in the hands of women would contribute much more to the household food security than the income controlled by men. The economic empowerment of women is sine-qua-non for eradication of poverty in general and rural poverty in particular.

Padmanabhan (2001), in his research paper "Women Empowerment in Farm sector" made an attempt to evaluate the economic empowerment of women. He observed that the need for empowering rural women in agriculture through effective training and extension services arised from the gradual decrease in the availability of arable land, increasing population pressure and growing environmental degradation which have far reaching implications for food and nutritional security in future.

In his article Bharat Dagra (2002) tried to explain the need of women farm workers to organize themselves. While discussing about the gender discrimination he categorically stated that women farm workers are generally the double victims of class based exploitation and gender
based discrimination. Due to this economically precarious condition they generally agreed to work out at very low wages for sheer subsistence. If the wages of women could be made equal to those of men, this could make a significant difference to the overall earnings of the family. There have been very few movements to resist the injustice specifically done to women farm workers despite the obvious injustice of women farm workers.

Most of the studies reviewed indicated that in agriculture sector the remuneration and division of labour is highly sex based. It was also reported that women farm workers are generally the double victims of class based exploitation and gender based discrimination.

**Research Gap**

The studies reviewed above are unanimous in highlighting the subordinate plight of rural women in the society. Women are found to perform dual functions namely as a farm women where she undertakes a wide range of activities starting from the preparation of the field to preservation of foodgrains that are grown. The household activities include preparation of food, child care and looking after the animals. Profiles show that most of the women are middle aged, illiterate to lowly educated, lacking social skills and whose family income is low. More than two-thirds of their waking hours are spent in work and her independent decision making is limited to domestic matters. Drudgery, incessant work,
lack of proper personal care and child care are the common problems of all farm women. The exception being women belonging to upper economic classes who enjoy better conditions. Gender studies indicate women contributions are hardly acknowledged, leave alone measured and that fundamental changes of attitudes among the society is necessary in order to affect improvement among women.

The present study is an attempt to research the dimensions of the farm women in Dharwad district using a more comprehensive approach i.e. as performers, decision makers and the entitlements they obtain. It tries to outline the role of women and their position vis-à-vis men both on the farm and households. It also tries to elicit the reasons and underlying factors so that change can be effectively designed.
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