CHAPTER 2

REVIEW OF LITERATURE

A comprehensive review of literature is an essential part of any scientific investigation. The review of literature leads the researcher to conclude his findings with reference to past studies. To develop a conceptual frame as well as an appropriate design for the study a review of past studies is necessary. Review of literature of the studies conducted so far in the area of people's participation in soil and water conservation for watershed development are reviewed in the present chapter as follows:

2.1 People's participation in watershed management
2.2 People's participation in different development programmes
2.3 Reviews related to variables
2.4 Conclusion

2.1 People's participation in watershed management:

Ingle and Kude (1991) conducted a study based on the evaluation of Comprehensive Watershed Development Programme (COWDEP) at Kapsi and Goregaon watershed area in Akola district of Maharashtra. Most of the beneficiaries of the programme were marginal and small farmers. The study was taken with the main objectives:

i) To study the socio economic profile of the respondent beneficiaries.

ii) To study the awareness and adoption of improved farm practices recommended in the watershed area.

iii) To study the changes in cropping pattern in the watershed area.

The major findings of the study revealed that Comprehensive Watershed Development Programme (COWDEP) helped in increasing the area under hybrid sorghum by 300 per cent and also helped in introduction of more remunerative crops viz., fruit crops and agro-forestry. Knowledge of contour sowing was found low and adoption of recommended watershed practices was nil. Cropping intensity also did not change significantly. Lack of technical guidance and costly inputs were the main constraints in the adoption of new technologies. It was also observed that majority of the respondents (72.92%) were not members of any organization, not even the cooperative society in the village.

Pandya (1991) conducted a study entitled "adoption of farm technology in watershed management area in Gondal sub-division of Gujarat state". The study carried out in Gondal area of Rajkot district in Gujarat tate. The main objective of the study was to know the different agricultural technologies adopted by the farmers of Gondal area for watershed management. The social participation of farmers was also studied with relation to the watershed management. The major findings of the study were that majority (68.46%) of the dryland farmers under watershed management area had medium social participation followed by those having low social participation (23.42%), while only 8.12 per cent of the farmers had high social participation.

Sakaria (1991) revealed that majority (53.00%) of the respondents had low extension participation followed by high (44.00%) and medium (3.00%) extension participation in various extension activities.

Satyamurthy (1991) conducted a study on people's participation and revealed that most of the obstacles to people's participation arising from the heterogeneous socio-economic structure of a community can be removed by an external entity - usually an NGO - which is apolitical, neutral and acceptable to the community by and large. In many situations, such problems can be resolved by dividing the large heterogeneous community into small and relatively homogenous groups and then organizing them. MYRADA - a Bangalore based NGO - has adopted this approach for micro-watershed development under its PIDOW project in Gulbarga district of Karnataka. The approach is now being replicated in other watersheds in Karnataka.

Tantray (1991) conducted a study on "Participation of women in farm activities" in two blocks of districts Pulwama of Kashmir state, where by cropping activities go on almost round the year. Two villages from each block and fifteen households from each village were selected randomly and one active farm woman from each household was selected as the respondent for the study. The responses were collected by means of a structured interview schedule. The major findings concluded from the study that farm women in Kashmir valley attend and spend more time to kharif farm activities than that of rabi farm activities. Their participation in almost all farm activities except ploughing of fields, marketing of

produce, irrigation, and application of pesticides and fungicides, implies that our technology transfer projects should take care of remaining major crop production activities where participation of farm women is ensured so as to achieve successful results.

Kanwar (1994) conducted a study to assess the "gender involvement in Dairying farming". The study was taken with the objective to know the extent of participation of men and women in different activities of dairy farming. District Kangra of Himachal Pradesh was selected for the study. Area of district Kangro falls in three major agro-climatic zones. One block from each agro-climatic zone and two villages from each block were selected randomly. A sample of twenty five households from each village and two respondents from each household (male and female) were selected randomly, thus comprising a total sample of thirty respondents. (150 male and 150 female). The major findings can be concluded from the study that dairy is a female entrepreneur enterprise in Himachal Pradesh. The level of participation of females increases from Zone I (i.e. sub-mountain and low hills subtropical) to zone III (i.e. high hills temperate wet), whereas it decreases in case of males. In zone III, the participation of the males is negligible and the inter-gender differences in the level of participation are maximum.

Nandvana (1994) conducted a special research study on "farmers' knowledge about well recharge practices" with the guidance of Department of Extension Education, College of Agriculture, GAU, Junagarh. The study was taken with the objective to measure the knowledge level

of farmers regarding different well recharge practices and social participation of respondents. It was found that four fifth (80.00%) of the respondents had a low social participation, whereas, one-fifth (20.00%) of the respondents had high participation in social affairs.

Gowda (1996) undertook a research study on "Impact of watershed development programme". The study was carried out in the Chitravati watershed project located in Kolar district of Karnataka State. Out of the five sub-watersheds, which had completed five years period of implementation, Haristala sub-watershed was randomly selected for the study. A total of six villages from the sub-watershed and three villages from non-watershed area were selected. The study was taken with the following objectives:

(i) To study the technological consequences of watershed development project on participants.

(ii) To know the technological consequences of WDP among different categories of farmers.

(iii) To identify the factors contributing to variation in technological consequences.

The finding of the study are discussed as it is evident that the Watershed Development Programme was able to bring about significant changes among its beneficiaries and also among different categories of farmers. Incentives given to beneficiaries have played prime role in influencing technological changes among beneficiaries, besides, management orientation. Therefore there is need to give due importance for the above

factors with suitable changes by the watershed staff to promote successful implementation of Watershed Development Programme.

Rakholia (1996) conducted a research study on "Impact of watershed development programme". The study was taken for requirement of M.Sc. (Agril.) degree programme under the banner of Gujarat Agricultural University, S.K. Nagar. The study was taken with the main objective to determine the socio economic impact of watershed development programme on farmers. The findings of the study are as under:

i) It was revealed that the mean social participation score of BFs and NBFs was 2.38 and 1.15, respectively which differed significantly.
ii) It was also observed that there was positive and significant association between level of knowledge of BFs and their social participation.

Singh (1996) undertook a study entitled "Participation of women in agricultural activities". The study was conducted in Muraual block of Muzaffarpur district in Bihar. Out of eighty villages in the block, the study was conducted by selecting eight villages randomly, viz. Mahamadpur Sriram, Titra Ashanand, Bargaun, Pirapur, Chapra, Gopinathpur, Shanmkarpur, Dholi and Harishingpur Latam. The sample for the study comprised of 30 per cent of marginal, small and medium farm families. While respondents form each farm families (in 21 to 45 years), actually used to involve themselves in agriculture, allied and household activities were selected. Finally, a total of 163 women constituted the

sample for the study. The nature of participation in the study was determined in the terms of (i) actual doing by contribution of labour work. (ii) supervision and the both kind of participation.

It was concluded that participation of women in post harvest operations was higher as compared to their participation in pre-harvest operations. Involvement of respondents in respect of livestock related activities were also very higher. It was interesting to note that all the respondents were involved in all the household activities except in choling wood where only 31.9 per cent women involved as supervisor.

2.2 People's participation in different development programmes:

Sastry (1980) conducted a research study on "Participatory dimension in rural development" and find out that the Panchayat Raj institutions will bridge the gap if they are actively involved in the planning, decision making and implementation of rural development programmes and thereby facilitate the distribution of development benefits among the rural poor. Further more, it has steadfastly been advocating the strengthening of Panchayat Raj institutions so that an institutional base for the active involvement of people in the planning process as well as in plan implementation is provided for.

Santhanam (1984) a study on "people's participation - some psychological dimensions" was conducted to understand the concept of participation and also to study

some of the behaviour aspects that facilitate effective participation of people in development programmes. This study was taken up with the main objective of understanding the human and social factors, which contribute to participation. The study was undertaken in three states, viz. Rajasthan, Uttar Pradesh and West Bengal. The study covered a total sample of 450 respondents from all the three states. To collect the data, survey method was used because many of respondents were illiterate. The study was concluded with the following implications.

The participation has been conceived as a major component of the development programme from its very inception. Efforts have been made to bring about participation by creating rural institutions. But they did not have the desired effect because of lack of representation from all caste groups. Hence there is a need to ensure that all caste groups are given adequate representation in rural organization.

The present system of top-down approach where programmes are planned without much involvement of villagers needs to be changed to bottom-up approach where people are consulted and involved right from the stage of identification of their needs to the implementation of the programme. May be the existing set-up does not permit such a sudden change from top-down to bottom-up. Hence, an attempt needs to be made to merge these two approaches where both the "givers" and "receivers" of the programme play mutually supportive role in evolving the programme. The programme should first be aimed at satisfying the

basic needs of the people to involve them actively in the programme.

It was found that education plays an importance role in bringing about participation. All possible attempts should be made to educate the people on various aspects of the programme and their importance, so that people get a clear idea about the nature of the various aspects of the programme. This would enable them to organize themselves into small functional groups.

It was also observed that because of illiteracy, there is less mass media contact, poor accessibility and adequacy of social facilities and low level of awareness and contact with officials and non-officials. People's involvement in the activity is influenced by literacy rate and, therefore, provision of education, formal and informal to all people is as essential requisite. This would enhance the capacity of the people to plan, initiate and follow up schemes.

Santhanam also revealed that one of the reasons for remaining as non-members as expressed by the respondents was the unattractive programmes of the rural organizations and also scant involvement of the organizers in any programme. Hence the existing rural organizations like panchayats, cooperatives, mahila mandals, and youth clubs should be activated and developed and welfare programmes meant for the community should be routed through these organizations. It has two definite advantages: one being that the organizations get activated, and secondly this would attract people's active involvement.

It is also revealed from the study that a feeling of dependency on the government that it would do everything for the people and they are only to be at the receiving end has been nurtured over the decades for various reasons. So a process of unlearning of this idea should be initiated, which would start a thinking process that people are important and they can bring about a change in the community, both social and economic.

Sen (1986) conducted a study on people's participation in community forestry - a case study in Maharashtra, in Aurangabad circle of Northern Maharashtra. Because there had been quite a number of plantation taken up during the last decade. The social forestry department initiated several plantations in this region. Some plantation has also been taken up under the USAID assisted project. The study was taken with the following objectives:

i) To develop understanding of the status of social forestry in Maharashtra.
ii) To analyze the utilization pattern of various forest products by the villagers.
iii) To study the mechanism of planning and implementation of community forestry programme with reference to people's participation.

The study concluded that the strategy for planning and implementation of rural development programme needed a review and should be tailored to make it more effective in achieving the objectives of the programme once it is accepted as community welfare programme, it is suggested that the approach should cover the dual perspective of

providing short term as well as long term benefits to the rural community. In an effort to reach such goals, community education is of vital importance, which will motivate them to increasingly participate, the programme.

Malaviya (1988) conducted a research study on "a comparative study of community participation in selected ICDS projects of Haryana". It was revealed that the beneficiaries, by and large, had little awareness of community participation. No much effort has been put into creating awareness of the ICDS schemes or to motivate people to participate in the Anganwadi activities. The functionaries do not possess adequate skills and capabilities to elicit community participation. However, a little input in the form of intervention in developing their capabilities resulted in enhanced participation.

Singh (1988) conducted a research study on "participation of rural farm women in agriculture in the hills of Uttar Pradesh". The study concluded that the women are the backbone of the hill agriculture, whereas, men are associated with it only at the time of ploughing and marketing operations. Women have a positive role in decision making but it is the man who is playing a dominant role in decision making. This pattern of work and role distribution (division of labour) between males and females has so many direct and indirect effects.

Ganesan and Muthiah (1992) conducted a research study on "participation of farm leaders in Agricultural Development Schemes". The study was conducted in Periyakulam agricultural division of Madurai district in Tamil Nadu. The sample consisted of randomly selected 75

farm leaders who were located by key informant method. The study was taken with the main objective to know the participation pattern of farm leaders in different agricultural development programmes. The data were collected from the respondents by means of pre-tested interview schedule and appropriate scoring procedures adopted.

The findings of the study revealed that it could be substantiated that the farm leaders by virtue of their nature of higher levels of information seeking behaviour establish more contacts with the extension functionaries at different levels and they exposed themselves to different mass media and hence these variables could influence the participation pattern of farm leaders in agricultural development schemes. It seems that the farm leaders having upper socio-economic status of the study area might have involved in other non-farming avocations too by which they could not fully involve themselves in agricultural development schemes.

Ganesan and Muthiah also reported that the variables socio-economic status, contact with extension agency and mass media exposure acted as crucial ones in influencing the participation of farm leaders, the extension workers must give utmost consideration to these traits. When they deal with farm leaders in order to make them fully participate in agricultural development schemes.

Bala, Moorti and Sharma (1993) undertook a study on "Participation of Rural women in Decision making" with the following objectives:

i) To study the pattern of decision making of female workers in rural areas.

ii) To examine the impact of various Socio-economic factors on decision making by the farm women in rural areas.

iii) To suggest suitable policy decisions for the study area.

This study was taken in Kangra district of Himachal Pradesh to development blocks Nagrota Bagwan and six from Dehra were selected randomly. Four villages from Nagrota Bagwan and six from Dehra were selected randomly. A sample of 120 households was selected by simple random sampling.

The findings of the study indicated that the women participated actively and diminutively in case of household decisions like the source of fuel and investment on household goods etc. In more than 90 per cent of the decisions, the participation of women was only of supportive nature. Illiteracy, lack of knowledge and awareness were major reasons for low participation. The participation of women in decision-making jointly with their counterparts was significantly affected by their educational status and age-group, whereas the independent participation was affected only by their age-group. Farm-size did not show any significant influence on the decision-making by women. It was suggested that education facilities to female may be provided on priority basis in order to broaden their out are horizon which will ultimately enhance their participation in decision-making. Adequate extension facilities preferably by female workers should also be made available to rural

women to aquaint them with latest agricultural developments. Their participation in such programmes is likely to bring forward the real and practical problems, which need immediate attention of the policy maker.

Dixit and Veerabhadraiah (1994) carried out a research study on "Beneficiaries' Participation in Integrated Rural Development Programme". The study was conducted in Chamarajanagar and Dharwad blocks of Mysore and Dharwad districts respectively of Karnataka State. Two hundred beneficiaries who were assisted under selected schemes of Integrated Rural Development Programme were selected at random for personal interview. The respondents were interviewed with the help of a structured questionnaire.

The study revealed that the beneficiaries' participation in IRDP schemes varied and asset retainers showed higher level of participation in Integrated Rural Development Programme (IRDP), while asset disposers had lower participation level. This can be taken as a cue by the implementing authority to set up their monitoring efforts and ensure asset retainment, employment and income generation among those, who seem to be sluggish in IRDP participation. Also needed is careful exercise in scheme allotment so that there will be sustained interest among beneficiaries in their enterprises. This would help for higher employment and income generation on a lasting basis leading to a sustainable quality of life above the property line.

Kumar, Babu and Ramchandran (1994) conducted a study on "Farmers Involvement in Agro-Forestry Programme" with the objectives as follows:

i) To assess the extent of involvement of farmers in agro-forestry programme in Kerala.
ii) To study the motivational pattern of farmers for participation in agro-forestry programme.

Two districts namely Thrissur and Wayanad of Kerala were selected for the study. From Thrissur district a range in which maximum number of seedlings distributed was selected. From that range a panchayat where the maximum number of seedlings distributed was selected for the study purposively. Similarly, from Wayanad district a range and panchayat where minimum number of seedlings distributed was selected purposively.

The findings revealed that the involvement of farmers in Agro-forestry programmes differed due to several factors. Among these, land availability, attitude, level of education, utilization of information source, and cosmopoliteness were important. The involvement of farmers would have been more effective if the supply of seedlings were of desired plant species. In Thrissur district the medium involvement group is more than that of Wayanad district. The predominance of middle class families with favourable land distribution and salaried persons in majority of the families who were exposed to the programmes of the developmental agencies were the reasons for high, medium involvement group in Thrissur district.

Bhaumik, Mira and Chatterjee (1996) undertook a study on "Participation of Rural Women in Decision Making". The study was carried out in Sunderbans with two stage random sampling. Initially ten villages were selected from 20 villages, which were exposed to various extension programmes of Krishi Vigyan Kendra, Kakdwip. A list of the women involved in the practices related to fishery from each village was prepared and 20 per cent of women from each list were selected at random. The selected women were interviewed with a structured schedule. The study was carried out with the following objectives:

i) To find out the extent of participation in fishery activities.
ii) To find out the extent of participation in decision making process.
iii) To find out the degree of consultation between husband and wife.
iv) To study the relationship between certain socio-personal and socio-economic variables and women's performance in the activities and decision making.

It was concluded from the study that women of Sunderbans from low economic category were found to participate more in practices related to fishery whereas women of high and medium economic categories were found to participate more in allied activities. Formation of Mahila Charcha Mandal, Mahila Fish Club etc. need be encouraged to increase their knowledge and skill, so that their participation in various practices of fishery will not only remove drudgery but also will bridge the protein gap.

Mahajan (1996) analyzed the study on "Community Participation in Integrated Child Development Services (ICDS) projects". The study was taken with the specific objectives:

i) To study the extent of community participation in ICDS slum projects.
ii) To study the level of use of Anganwadi (AW) facilities/services by the project beneficiaries.

Effectiveness of community interaction processes was studied both as perceived by the functionaries of the organization and actual contribution made by the beneficiaries. Urban slum project of Jama Masjid area New Delhi was selected for this purpose. All four supervisors and twenty percent of anganwadi workers from each supervisory zone with a total of 20 anganwadi workers were randomly selected. From the selected anganwadi centres a sample of 136 beneficiaries (one mother of toddlers and pre-schoolers each, one pregnant and one lactating woman) were drawn using stratified random sampling technique.

The findings revealed that only 33 per cent of the beneficiaries made any contribution to Anganwadi (AW) activities and much of this contribution is 'soft' in nature i.e. giving help in cooking of meals, and feeding children when needed, gathering children and ladies for Anganwadi activities etc. Hard contribution in terms of food, fuel, cash, utensils and space for Anganwadi activities was meagre, since the beneficiaries viewed it as a government programme rather than people's programme.

Chand (1997) conducted an investigation into "Extension Participatory Behaviour of Tribal Farmers of Himachal Pradesh". The study was carried out in three randomly selected villages of tribal district Kinnaur (HP) during 1994. Data were collected from a random sample of 60 farmers with the help of a well structured schedule through a personal interview technique.

The study concluded that farmers of higher caste, education, social participation, socio-economic status, joint and large family and land holding were found to have comparatively high extension participatory behaviour. It is suggested that in order to increase farmers' participation in various extension activities, the extension workers must give due consideration during their interaction with farmers to their caste, education, occupation, family type and size, land holding, social participation and socio-economic status as these variables where found to have influenced the extension participatory behaviour of the farmers to a large extent. Age of the farmers was not significantly associated with their extension participation. This indicated that irrespective of age farmers could be motivated to participate in various extension activities.

Khatik and Pandey (1997) conducted a study on "Participation of rural farm women in Sugarcane production". The study was conducted in Rae-Bareilly and Faizabad districts of Uttar Pradesh purposively, because in these two districts most of the farmers were sugarcane growers. Two villages from each district were selected randomly. Twenty five rural farm women were selected from each village. Thus, total 100 women were included in the

sample of the study from the four selected villages. The study was undertaken with the following objectives:

i) To assess the decision making and involvement in work by rural farm women in sugarcane production.
ii) To measure the women's participation in sugarcane production.
iii) To correlate socio-economic variables with women's participation.

The findings revealed that majority of farm women had high level of participation in operations of sugarcane cultivation but their participation in decision making during sugarcane cultivation was of medium level. It may be due to illiteracy or lack of knowledge among women.

Mohini (1997) carried out a study on "Nutrition Educational intervention through Participatory Development Planning". The study was carried out in the village Mangalam of Tirupati Rural Mandal, A.P. All the women aged between 20-40 years in the study area were contacted personally and explained about the intended research programme. The sample size for the study was 109 women.

The results of the study showed that the participatory development planning can bring about satisfactory results in nutrition educational intervention programmes by involving women at all the stages of the programme and thereby developing their commitment to better nutrition and health.

2.3 Reviews related to variables

Socio-economic status:

Sudharani and Raju (1991) conducted a study on "participation of women in agricultural operations". Prakasam district was selected purposively. Two mandals viz. Karamchedu and Yaddanapudi were selected as they contribute sizably to the area and production of paddy and cotton respectively. From each mandal three villages were selected making the total number of villages to six. A total of 140 respondents were selected at random. To specific objectives of study were as follows:

i) To study the magnitude of the female labour participation rate in the specific field operations as well as in other supportive activities in paddy and cotton based cropping system, and
ii) To examine the monthly employment of women in paddy and cotton based cropping system.

The study concluded that the even though female labour contribution was significant in the cropping systems, females were not employed fully throughout the year. So effective implementation of employment oriented home based subsidiary occupational programmes for women such as dairying, poultry, bee keeping, sericulture, mushroom cultivation and fruit preservation would generate additional gainful employment opportunities for the farm women.

Varma and Sinha (1992) analyzed a study on involvement of women and men in cultivation of crops. The

investigation was designed to study the nature and extent of involvement of rural men and women of various Socio-economic strata in agriculture and home activities in terms of operations and time spent.

The study was conducted in Haryana state, which has been divided into three zones i.e. hot-arid, hot-semi arid and hot-humid zone on the basis of agro-climatic conditions. Two districts namely Karnal and Hisar form the two regions i.e. hot humid and hot-semi arid respectively of the strata were purposively selected for the study. Two villages from each district were selected randomly for collection of data. Twenty five men and women form each of the four selected villages representing high, medium and low Socio-economic strata of the village community were finally selected randomly.

The findings of the study indicated that involvement of men and women in various operations of Bajra cultivation showed that mean score of women's work load was higher than men's work load in high, medium, low Socio-economic strata as well as in the pooled data. There was significant inter sex variation in high, low socio-economic strata and among the pooled data. As evident from the data, in case of male dominated operations, women's involvement was nil. Whereas, in case of female dominated operations (weeding by 'kasola' carrying load on head, winnowing and keeping part for the grains for consumption) males' involvement was substantially and significantly lower in case of all the socio-economic strata categories of respondents in isolation as well as in combination. Even in case of jointly operated operations, there was significant inter-

sex variation among high, medium, low socio-economic strata and pooled data. Obviously, therefore women undertook more burden of work in Bajra cultivation than men. Furthers shows that the low socio-economic stratum men and women do more works as compared to high and medium socio-economic strata respondents. These may be due to the fact that the respondents of low socio-economic stratum are mainly Landless and wage earners. They are left with no alternative for their livelihood, therefore, perform more work on other's field as agricultural labourers, that too in low paying, less skilled and monotonous work in crop cultivation.

Singh (1995) conducted a case study on watershed approach in improving the socio-economic status of tribal area. Under the watershed development project at Peepalwas of Udaipur district, soil and water conservation works were done in an area of 86.24 hectares. The peepalwas village watershed development project was implemented by IFFCO under the guidance and supervision of College of Technology and Agricultural Engineering, Udaipur in the year 1988. Out of the total watershed area of 90.16 ha, 86.29 ha land was covered under different soil and water conservation practices. The project was taken with the main aim of soil and water conservation measures is to apply new techniques and improved practices of land, putting more and more land under cultivation and to generate income from degraded lands to improve Socio-economic status of poor tribals. The salient findings of the study are that the improved agronomic practices led to 46.25 to 9.182 per cent increase in the gross return from agriculture crops. Due to the increased cropped area the per capita income has

gone up by s. 598 to Rs. 1739. The cropping intensity of the watershed area has increased from 86.57 per cent to 133.58 per cent and the productivity of different crops increased by 2.07 to 3.62 times. The watershed management programme has not only increased the crop yield but also developed fodder resources in the area. The average B:C ratio worked out to be 1.76:1 which shows that the watershed management project, Peepalwas, is economically feasible while helping the social upliftment of the tribal farmers.

Sadangi, Mishra and Patel (1996) studied "Socio-economic personal dimensions of Participation of Women in Farm Activities". It was decided to carried out the study in one of the eight undivided rainfed districts of Orissa state by using multi stage random sampling technique, four villages in two rainfed blocks of Bolangir district were selected. The study was designed with the following specific objectives:

i) To measure the extent of engagement of farm women in different farming system operations
ii) To study the influence of some selected socio-personal variables on the nature and amount of time devoted to different operations.

The research study was concluded with the following four implications:

i) It was observed that farm women have very little or no participation in apiculture, fishery, sericulture, Lac and mushroom cultivation. These components of the farming systems can give good

margin of profit and are capable of meeting various requirements of different target groups.

ii) Modules of the farming systems must be developed depending on the age and number of children of the farm women.

iii) The high caste and educated farm women may be motivated to start new Agro-based enterprise where in they can utilize some of their knowledge and management skills.

iv) As there is a tendency among the upper caste and educated farm women to do less of physical works and more of mental works appropriate strategies must be developed in R and D systems to design simple and easy farm machinery and tools. This would attract the women from status bars and help to raise their productivity.

Naik and Jayaramaiah (1997) conducted a study on "Adoption of watershed management practices and productivity levels attained by farmers in Mittemari watershed". The study was conducted in the five villages of Mittemari watershed in Bagepalli taluka, Kolar district, Karantaka State. Govt. of India launched the watershed development project (WDT) during 1984-85 in Mittemari area. From each of the identified villages a list of beneficiaries having land under watershed area was prepared. Fifty farmers each of marginal, small and big farmers were selected through random sampling technique.

The main objectives of the Mittemari watershed project were:

i) To improve the productivity of soil under rainfed situations through improved soil and water conservation practices.

ii) To impart stability to crop yields through runoff management, restructuring of cropping pattern and land use.

iii) To improve the economy of the inhabitants.

iv) To restore the ecological balance through resource conservation, afforestation and pasture development.

The findings of the study were that the Mittemari Watershed Project is one of the model watersheds being operated by the Departments of Agriculture, Forestry and Horticulture in an integrated approach. The University of Agricultural Sciences has lend its support and technical guidance through National Productivity Award from the National Productive Council, Govt. of India in 1987-88 for its impressive performance.

There was a considerable increase in the adoption of watershed management practices and yield levels of groundnut + redgram, and ragi + redgram after implementation of the watershed programme. In general, the programme proved to be beneficial to the farmers in the watershed area. Hence, such programmes can be taken up extensively with adequate financial assistance so as to achieve watershed objectives.

Nalatwadmath (1997) conducted a study on "Joladarasi model watershed development programme in Bellary district of Karnataka". Under the watershed development project on the black soils of Jaladarsi of Bellary in Southern part of India, soil and water conservation works and rain

water harvesting carried out in an area of 569.5 ha. The watershed was developed under the technical guidance and close supervision of Central Soil and Water Conservation Research & Training Institute, Research Centre, Bellary in the year 1984. The funding agency of for the Joladarsi watershed development programme was Drought Prone Area Programme (DPAP). The watershed was taken with the objective to improve socio-economic condition of rural farmers by conserving soil and water.

The salient findings of the project were that the improved conservation measures with agronomic practices led to 54.08 to 95.82 per cent increase in the net returns from agriculture crops. Due to the increased cropped area, the per capita income has gone up from Rs. 675 to Rs. 1342. The cropping intensity of the watershed area has also increased from 93.55 per cent to 108.40 per cent, while the productivity of different crops increased by 1.36 to 1.70 times. The watershed management programme has not only increased the crop yield but also developed fodder resources in the area. The average B:C ratio worked out to be 1.45, which shows that the watershed project, Joladarasi is economically feasible in helping the social upliftment of the rural farmers.

Padmaiah and Rao (1997) undertook a research study on "Determinants of awareness, knowledge, attitude and adoption behaviour of farmers of integrated watershed development programme". The study was carried out in three watersheds namely G.R. Halli, Joladarasi and Chinnatekur. A simple random sampling procedure was adopted was to select a total of 130 respondents from selected three watersheds.

The study concluded that income was the common factor in three watersheds correlated significantly with awareness, attitude and adoption towards integrated watershed development programme. There was no common factor associated with knowledge of farmers of three watersheds. In the case of adoption behaviour a set of common factor, such as extension contact, mass media exposure and income were correlated with adoption behaviour of three watersheds. Age and experience have no relation with the dependent variables. Thus, the importance should be given to the factors, which are correlated significantly in order to achieve the goal of the watershed development programme on sustained basis.

Social participation:

Shaw (1932) attempted a study on "comparison of individuals and small groups in the rational solution of complex problems". The study was carried out with the specific objective to assess the comparative performance of individuals and group. The findings of the study indicated that the performance of the groups was always found to be better than that of individuals. Groups produced solutions of better quality than those given by the individuals. Hence the groups have added advantage in the performance also.

Bhatt (1990) find out that out of 150 tribal respondents 86.66 per cent tribal respondents were having no membership in any of the village organizations. Only 12.66 per cent respondents were members in one

organization followed by only one respondent (0.67 per cent) having membership in more than one organizations.

Knowledge level of farmers regarding soil and water conservation practices:

Prabhu and Kadam (1990) stated that majority of the adopters and non-adopters had medium level of knowledge on soil conservation practices. About one fifth of both the categories of farmers had low level of knowledge. Only 30.00 percent of non-adopters were found to have high level of knowledge.

Patel (1991) studied on farmers' knowledge about soil and water conservation measures. He found that a great majority of the respondents (73.33%) belonged to medium level of knowledge category followed by 16.67 per cent and 10.00 per cent respondents belonged to high and low level of knowledge group, respectively. It was also revealed that majority (75.71%) of the respondent had favourable attitude, whereas equal number of them had highly (12.39%) and less favourable attitude (11.90%) towards watershed development programme.

Anwar, Kashen and Mehboob (1997) conducted a study on "Interest, participation and time use of rural youth in selected agricultural activities". The sample size for the study was 588 male rural aged between 15-25 years from three villages, namely Kakonhati, Kazizshimlan and Rangachapra of Mymensingh district in Bangladesh country.

The research study was taken with the specific objectives:

i) To determine the interest, participation and time use of rural youth in selected agricultural activities.

ii) To describe the selected characteristics of rural youth.

iii) To explore relationships between the selected characteristics of rural youth and their interest, participation and time use in agricultural activities and also to determine the contribution of factors and their effects.

The findings and discussion of the research study indicated that non-formal educational programmes involving the rural youth should be launched in the rural areas because of their explicit interest, participation and time use in agricultural activities. Agricultural knowledge, education and age of the rural youth have been the important variables and hence there should be provision of training programme to increase the innovative knowledge in the field of agriculture. To make youth programme effective, major emphasis should be on imparting training on improved agriculture practices for promoting skills of the rural youth. Youth programme planners should give due priority to these activities while executing rural youth programmes in a country like Bangladesh.

Adoption of soil and water conservation technologies by rural farmers:

Kunnel et al. (1984) found that on the whole, only 48.00 per cent of sample farmers adopted the soil and water conservation practices, 56.00 per cent of the farmers used improved varieties of sorghum, only 2.44 percent of sample farmers used fertilizers and plant protection chemicals in the crops.

Reddy (1987) reported that 54.00 per cent of the farmers found to be in high adoption group with respect to "soil conservation practices" as well as "Improved practices of Rabi cultivation". He further reported that 61.00 per cent of the respondents belonged to low category of adoption and majority of the respondents taken non-arable land development work of high adoption group (76.77%).

Padmiah et al. (1992) observed that majority (52.00%) of watershed farmers were in medium adoption group, followed by high adoption group (34.00%) and low adoption group (14.00%). In case of outside watershed farmers, the majority (66.00%) of respondents were in medium adoption group, followed by 34.00 pr cent under low adoption group.

Bhutiya (1993) observed that majority (73.00%) of adopter farmers were found to be in medium adoption category, followed by high level adoption category (30.00%). There was none in low category of adoption with respect to watershed management programme. In case of non-adopter farmers, majority (70.77%) of the respondents

were found t o be in medium level of adoption category and 28.33% of them were low adopters while only 1.67 per cent of the non-adopter farmers had high level of adoption with respect to "Watershed management programme".

2.4 CONCLUSION:

Few research studies have been conducted on people's participation in soil and water conservation programme for watershed development. Ingley and Kude (1991), Pandya (1991), Nandvana (1994) and Rakholia (1996) were conducted different studies to assess the level of social participation of respondents and to find out the different variables associated with the characteristic of social participation of farmers. Satyamurthy (1991) studied the different obstacles faced in people's participation from heterogeneous socio-economics structure of the society and stated that the constraints in people's participation can be properly managed by apolitical and neutral organization such as NGOs.

Tantray (1991), Kanvar (1994) and Singh (1996) were conducted different studies with the respondents as rural farm women. The findings reported that majority of agricultural activities were carried out with the participation and involvement of rural farm women in watershed management programme. It was also reported that most of the activities of dairy enterprises were carried out by rural women only. Some studies were also conducted on impact of watershed management programme on economic status of farmers. Singh (1995) reported that by adoption of watershed management programme, Peepalwas,

the productivity of different crops has increased by 2.07 to 3.62 times due to increased cropped area. The similar findings were also reported by Nalatwadmath (1997) that by adoption of conservation measures through Joladarasi watershed management programme, the per capita income has increased from Rs. 675/- to Rs. 1342/-. The productivity of different crops were also increased by 1.36 to 1.70 times.

There were also some studies conducted on people's participation in different rural development programmes. The studies were conducted on people's participation in Panchyat institution, different agricultural programmes, community welfare programmes and participation in Anganwadi activities sponsored by government. It was found that both men and women were participated in different agricultural programme and in rural institutions like panchayat, co-operative, youth club and Anganwadi. Mahajan (1996) found that 33 per cent of beneficiary made contribution to Anganwadi activities.

It is revealed from the present review of literature that very few research studies have been carried out on community participation in watershed management programmes and only two - three studies were conducted on impact of soil and water conservation programme on socio-economic status of farmers. None of research studies was carried out particularly on people's participation in soil and water conservation programme on watershed basis. Therefore, it was felt important to study the people's participation in soil and water conservation programme for sustainable agricultural production through watershed management.