# REVIEW OF LITERATURE

# CHAPTER II

## REVIEW OF LITERATURE

In the light of the background information and objectives of the study discussed earlier, a retrospective scanning and analytical persual of literature was done in order to gain an insight into the nature and types of empirical studies conducted by individual researchers and institutions in the area of current investigation, in Indian sub-continent and across the developing World. Conceptualizations of variables, hypotheses tested and the nature of relationships established were also examined. This type of exercise facilititated in identifying gap in research specifically from the perspective of study's approach which helped in lending strength and support to the rationale for the current investigation.

Since the Declaration of the International Year of Women in 1975, followed by Women's Decade, there has been virtually a global explosion of studies documenting the range and importance of women's work (Boserup, 1970; Hart, 1980; Deere and de Leal, 1982; Whyte and Whyte, 1982; Stevens and Date bah, 1984; Cloud, 1986 and Singal and Balakrishnan, 1988). A few researches have also touched upon the introduction of drudgery reducing technologies in certain areas and also their acceptance, use and impact. Different variables having an effect on the work pattern and availability, accessibility, utilization and impact of

technologies on rural women have also been identified in some of the researches.

Though a variety of literature exists pertaining to the issue of rural women in the Third World, findings from only those studies have been considered here that have a direct bearing on the current empirical study. Other findings of the concerned studies have not been elaborated. The literature thus reviewed, has been presented under the following broad heads.

2.1 Time and Energy Expenditure Pattern of Rural Women.

2.2 Rural Women's Access to Different Technology and Their Impact

2.3 Technology, Status of Rural Women and Family Resource Development.

## 2.1 Time And Energy Expenditure Pattern Of Rural Women

It is a well known fact that women carry out multiple jobs as a matter of routine. Besides doing household work, they play a number of roles roles that are either preparatory or supportive to agriculture, animal husbandry and household crafts (Darling, 1925; Michael and Moore, 1972; UNECA, 1975; Fortman, 1982; Sharma, 1985; Saradamoni, 1988 and Singh and Bhattacharya, 1988). This fact has been highlighted by some surveys conducted mainly in Asian and African settings. A few of them have brought to a sharp focus the time consuming and human energy-intensive nature of the work being done by the Third World rural women that can be used for calculating

human cost of work. As all types of work related to household, farm and animal care are so closely inter-linked without any clearcut demarcations between them, such activities have been discussed under the above heading. Studies presented here are related not only to the Indian conditions but also to the other developing countries.

In the African context, women especially in the rural areas are fully involved in all aspects of social and economic life and examples of high work loads and more number of hours worked by them are numerous. The evidence from Ghana, from parts of Malawi, from the United Republic of Tanzania and from Nigeria all indicate that women tend to contribute more labour than men, especially when domestic work is taken into account (Dasgupta, 1977). For example, the study relating to Ghana gives a figure for work time in farming households of 35.39 hours per week for men and 46.97 hours per week for women; of this time, 23.83 and 16.59 hours per week, respectively constituted time put in for farming alone. In a Tanzanian study, men are noted to have worked on an average 1,829 hours per year and women, 3,069 hours per year. Evidences from Zimbabwe, Nigeria and Uganda also clearly show that rural women put in longer hours than men when housework is taken into account; and in case of Uganda and Zimbabwe this was seen to hold true even when comparisons were based only on the work done on the farm (Cleave, 1974). A similar pattern emerges from a number of African studies reviewed by Wilde (1967). In one field research relating to

Nigerian cocoa farms, women were found to be putting in 17 percent more work time than men.

In all the empirical evidences cited above, a predominance of descriptive research component was found as they are largely surveys conducted by interviewing the rural population. Only typical average hours of work over the year have been considered in these studies. However, Cleave (1970) reported that at peak activity the men are observed to work on crops no more than 30 hours a week when planting and harvesting groundnuts, whereas for the women, the urgency of harvesting swamp rice in January includes a 45-hour working week in fields.

There are surveys which indicate that rural women spend 9-10 hours a day in fields during the busiest agricultural seasons. When all other tasks related to household and economically extended activities are added to this, it is not surprising to find that rural women spend as many as 15 hours per day at the busiest times of the year (Mitchnik, 1972; UNECA/FAO/Netherlands Government, 1973; Development Alternatives Inc., 1974, Pala, 1976 and Schofield, 1979). The research studies concerned with observing the time expenditure pattern of the rural African women have clearly pointed out that economically extended activities were consuming much time and energy. To illustrate, a survey conducted by UNECA (1975) reported that in parts of Sudan, rural women had to walk for a mile to fetch water and the

frequency of task performance on an average was found to be three times or more a day. In their study, White, Bradley and White (1972) have observed that rural homemaker had to walk 8 kilometers or even more in a day to collect water. They have further observed that in many parts of Africa there is a strong prejudice against men carrying water on their heads and backs, although it is interesting to note that water vendors are usually men, who often use donkeys, wheelbarrows or carts to carry water for sale.

Firewood gathering was also reported as highly human-energy intensive task. In African Sahel, women had to walk about 10 kilometers per day, taking an average of 3 hours daily to gather wood (Floor, 1977). Some researchers (Arnold and Jongma, 1977) have also pointed out that with deforestation the task of firewood gathering has become increasingly time-consuming and strenuous for the rural women.

Thus, at any time of the year, rural women in Africa spend a great many hours everyday on tasks that rarely have any monetary value.

An almost similar picture emerges when one critically analyses the literature available regarding time and energy expenditure pattern of the rural women in Asian setting. Many surveys have shown that rural women in Asia share abundant responsibilities and performs a wide spectrum of duties in running the family and maintaining the household, attending

to farm activities, tending domestic animals and extending a helping hand in rural artisianship and handicrafts (Gupta, 1976; White, 1976; Khan and Bilquees, 1976, Ashraf, 1977; Nag et al, 1977; Rogers, 1980 and Devdas, 1983).

A survey conducted by Quizon and Evenson (1978) on small farm families of Philippines revealed that men put in and average of 8.50 hours per day and women 8.95 hours per day, while in non-farm families men put in 8.77 hours and women 9.88 hours per day for farm work plus household chores.

In the Indian context also rural women are reported to work for 10-15 hours per day in various household chores to water and fuel collection to animal care to pre-harvest harvest and post-harvest work. Sandhu (1972) while studying the utilization of time in performing household activities by rural homemakers of Ludhiana district reported that farming families spent about 15 to 19 hours per day for various activities. Meal preparation consumed maximum time, followed by household cleaning, care of family members and care of animals.

Similar results have also been reported by surveys conducted by Grewal, 1980; Kaur, 1982; Ahuja et al, 1984 and Saxena and Bhatnagar, 1985).

Chakravorty (1975) observed that in peak wheat harvest season adult women in Haryana spend on an average of 15-16 hours or more a day on arduous, manual work at home and in the fields and get no or little time to rest. Water carrying

and firewood gathering, in particular, were the activities which consumed more time and energy. She further, reported that the village women of Rohtak district were noted to walk over three-quarters of a kilometre to fetch water, carrying a total of ten earthenware pots during the day. She concluded that women's contribution to crop production alone was always more than 50 per cent, while their work in animal husbandry and farm support activities at home would make their contribution to farm production even higher than that. Similar research findings with slight variations have also been reported by Devi and Reddy, 1984; Munjal, 1984; Verma and Malik, 1984 and AICRP Report, 1985.

Jain (1980) found that traditional division of labour existed within the household with respect to dairy chores. Women were generally associated with animal husbandry activities that were performed at home like cattle feeding, milking, fodder preparation and cleaning of shed, while the men generally performed tasks outside the home viz., procurement/collection of cattle feed and fodder, pasture, grazing and watering of animals. On the whole, women tended to spend longer hours than men in dairy activities.

Field surveys carried out by Menon 1979; Kanjla, 1980; Dey, 1981; Dhiman and Khirwar, 1986 and Patel and Mehla, 1988 showed that the entire management of livestock starting from fodder cutting, collection, carrying and chaffing of fodder to feeding and milking, preparation of milk products,

cleaning of cattle shed, collection of cowdung and preparation of cowdung cakes and their storage was done by the women.

Singal (1989) while studying the women's work pattern and economic contribution to family resource development in rural households of Haryana reported that respondents were spending 167.96 hours in lean season whereas 129.72 hours in peak season on livestock activities. Out of this maximum time was being spent on milking and milk processing (0.75 hours) in lean season to 0.58 hours in peak season, collecting and cutting of fodder was consuming 0.64 hours (lean) and 0.46 hours (peak), cleaning of cattle shed 0.46 hours (lean) and 0.32 hours (peak). Women were also found to spend time on caring of animals that was 0.37 hours in lean and 0.28 hours in peak season.

Time spent on livestock activities, both in lean and peak season, was found to vary significantly with most of the independent variables viz., women's work status, age, family occupation and income, SES, family size, age of the last child, presence of female child (above ten years of age), size of the operated land and ownership of livestock. Among the variables, significant predictors for both seasons were family income (b = 0.01 for both seasons), SES (b = 43.02 and 31.59 of lean and peak season respectively) and ownership of livestock (b = 81.02 and 50.81 for lean and peak season respectively). Besides these, women's work status also had a significant predictive value (b = -17.24) for lean season.

These findings are in accordance with the conclusions reached by Puri, 1974, Sarkar, 1987 and Agarwal, 1988. The aforesaid studies point out that most of the household, animal care, farm and economically extended activities are being executed by rural women alone and that too manually. If at all certain tools are being used, they are primitive and do not reduce much of the human cost of work.

Dixon (1982) while disussing the women in agriculture in developing countries observed that ploughing and heavy irrigation were men's task, sowing may be done by men or women or shared; weeding and transplanting were women's tasks; harvesting was frequently shared and most of the post-harvest operations (threshing, winnowing, drying, husking, cleaning and storing) were performed by women in South Asia. These findings are in accordance with the numerous researches conducted in the same field by Sharma, 1977; Dhar, 1978; Bagchi, 1981; Illaish, 1981; Acharya and Bennet, 1982; Gopinath and Karla, 1985 and Varma, 1992).

Studies on time and expenditure pattern on farm and household chores done in Haryana and Punjab will be of special concern for the current investigation as it is being conducted in various districts of Haryana. Information on time expenditure from the perspective of current study will constitute the human cost of work. Hence, in the following paragraphs recent research studies done on this dimension in Haryana have been reported.

Kaur (1987) conducted a survey of three districts of Haryana selected on the basis of level of rural development (most developed, moderately developed and least developed) mainly to examine the role of rural women in home and farm activities. Findings revealed that maximum time (8.70 hours) was being spent on household chores on an average per day. Out of this time, 75.43 minutes and 137.56 minutes were being spent in pre-cooking and cooking activities respectively. After cooking, maximum time was being spent on care of children, followed by cleaning of the house, washing the clothes, fetching water, washing utensils, cleaning the kitchen, stitching clothes and bringing fuel. In other activities such as cleaning of grains, making butter, mending clothes and shopping etc., 80.20 minutes on the whole were spent. Though the performance of all the household chores was the responsibility of females, males were also found to be participating in some of these chores such as fetching water (27.63 per cent), bringing fuel (35.26 per cent), washing clothes (16.84 per cent), care of children (15.00 per cent) and shopping (90.01 per cent). Statistical analysis of the data showed that household time expenditure pattern was found to be significantly related with socio-economic status, per capita income and level of adoption of household technology.

Total time devoted to animal husbandry tasks was found to be 1.70 hours. Of all the activities related to animal husbandry, highest amount of time was being spent in

preparing and giving feed (33.31 minutes), followed by carrying of fodder, making cow-dung cakes, preparing manure and chaff-cutting. Level of rural development, age, size of the land holding were negatively and significantly related with time devoted to animal husbandry.

It has been further highlighted by the survey that rural women were performing a variety of tasks related to agriculture. They were spending maximum time in harvesting in both the seasons (141.15 hours in Kharif and 100.18 hours in rabi season), followed by weeding (109.07 hours), threshing (37.64 hours), post-harvest activities (36.22 hours) and pre-sowing activities (21.58 hours) in kharif season; threshing (54.61 hours), weeding (44.02 hours), post-harvest activities (38.17 hours) and pre-sowing activities (17.47 hours) in rabi season. Age of the respondent, caste, size of the land holding, per capita income, SES and level of farm mechanization were the important variables identified as having significant effect on the rural women's participation in agricultural operations. These results with slight variations here and there have been reported by Kashyap, 1988; Kaur, 1988 and Singal, 1989.

In all these studies discussed above, survey method was overwhelmingly used with interview schedule as data collecting tool. In few studies, to record the time expenditure pattern of rural women of Haryana, recall method has been used mainly and that has also been supplemented by participatory observations.

All in all, there is substantial evidence to indicate that rural women are responsible for multiple, labour intensive and time consuming chores both inside and outside of their households. In all these activities, their role remains mainly of that of unpaid family worker. Hence, their economic contribution becomes invisible that affects their status in the household subsystem. Barring a few researches reviewed above, most of the studies have not attempted to quantify the human cost of work which could vary due to the availability of farm and household technology. This gap has been identified in the current study under the human cost-cum-benefit component vis-a-vis technology.

## 2.2 Rural Women's Access To Different Types Of Technology And Their Impact

While the previous discussion revolved around the time use data of rural women for performing "Work" - economically "Visible" and "Invisible", wherein lack of appropriate technology, could have emerged as a major intervening or direct variable, the cocern of the following paragraph is to present findings from research studies pertaining to impact of different types of technologies on rural women and their resource development. They have been presented under the four different sub-heads i.e. Household Technology, Farm Technology, Health Technology and communication Technology.

## 2.2.1 HOUSEHOLD TECHNOLOGY



For most of the household tasks there is now a sizeable range of human energy conserving and drudgery reducing technology available as alternatives to traditional methods. A number of surveys conducted mainly in rural areas of Africa and Asia by O'Kelly, 1973; UNICEF, 1978; Loose, 1979; Hemmings and Gapihan, 1981; Whitehead, 1981; Roy, 1985; Vidyarthi, 1985; Gibbon, 1987 and Kaur and Sharma, 1989 reported high adoption level for handpumps for drawing water, oil pressers, electric grain grinders and pressure stove in the rural areas whereas acceptance and use of biogas chulahs, smokeless chulahas, heaters and pressure cookers was found to be low and limited. Solar cookers and ovens had yet to make a mark in the rural areas. Adoption level of electric milk churning machine and community water taps were found to be high in the surveys conducted in Haryana State of Indian Union.

Variables affecting the acceptance and use of technology were identified as socio-economic status of the family as a whole and income of the family, size of the land holding, caste, occupation, educational level of the homemaker and the spouse and exposure to mass media.

It has been reported by a number of studies (Carruthers, 1970; Feacham et al, 1978; Mary, 1979; Sihag, 1985, Sharma and Ogale, 1989, Bhatti and Laharia, 1990) that adoption of household technology items had exerted an

influence on the way of living of the rural households. It was reported that rural women using technological items were saving time spent (2.3 hours) on various household and economically extended activities that, from the perspective of the current study, will be considered as the benefit component of technology as increase in leisure time is a qualititative indicator of availability of time for personal development. Some of the above mentioned researches have also reported that use of household technologies like smokeless chulahs, biogas chulahs, soak pits, pit latrines have made women's task of keeping the home clean and hygienic and much simpler.

There is no lack of equipment designed for use in, or designed to eliminate drudgery from, almost every task in which rural women are involved everyday of their lives. The fact that equipment exists, however is not sufficient. The most common sight in rural areas continues to be that of women walking long distances with heavy loads of water, fuel or other goods on their heads or backs; and the most common sound in the villages is still the pounding of grain that goes on and on throughout the early morning and evening. Women continue to be overburdened and overworked are unable to engage in income generating activities to help out with family expenses because they are fully occupied in economically 'unproductive' tasks.

The obvious question, by using concepts of the Ecosystem Model that is being used for the current empirical study, is to ask why the technologies that do exist in the outer system do not flow into the inner household subsystem as resource input? Certain studies have identified some household and personal characteristics as stumbling blocks in the entry of technology in the resource-input flow of the household subsystem. The constraints found have been economic, lack of technical know how to operate technological items, knowledge gap between the promoters of technology and the beneficiaries that are mainly rural women and resistance to change on the part of the users (Kaur, 1984; Sethi et al, 1985; Yadav et al 1985; Sharma, 1986 and Kashyap, 1988).

Technology is not always a 'boon'. A few researches have also brought out the negative impact of the household technology on rural women (Lindsey, 1980, Grover and Sharma, 1981 and Yadav and Sharma, 1988). They reported that the existing technology had not made any impact on the lives of rural women. More time consumption, high costs, more labour and money, health problems, increase in drudgeful operations and ineffective existing household technology were the major costs reported by the rural women.

A few highlights from the above literature, from the angle of the current study, are important as they point out that household technology in rural homes concerns only with fuel and energy saving technology. Though these are important

and crucial areas yet there are also other household chores where lack of technology accounts for heavy human cost of work of rural women. Only few researches have identified the benefits experienced and the constraints in the acceptance of technology. So there is a need for further research in this area in order to bring out the cost-cum-benefit dimension of the household technology vis-s-vis rural women. Moreover very recent researches have tried to establish a relationship between rural women's time and energy expenditure pattern and the use of household technology.

### 2.2.2 FARM TECHNOLOGY

This is relevant from the perspective of current study with its focus on Women and Technology since there is abundance of research evidence in the context of developing world that farm technology has proved detrimental from the perspective of rural women. It has either displaced them from gainful employment or has led to their marginalisation and pauperization (UNO, 1963; Ladejinsky, 1969; Bartsch, 1977; Bhatia, 1985 and Sharma and Dak, 1989).

The pioneering work by Boserup (1970) over two decades ago who attempted a global review of the effect of modernization on rural women was follwed by a flood of researches on this dimension. It has been repeatedly established by many studies that men take over responsibility for women's task as soon as they are mechanized or when they are transformed from a subsistence into market production.

The existing studies on rural women also conclude that technological change leads to harder work for longer hours with less appropriation of the economic returns to their own labour.

Palmer (1978) while summarizing the effect of introduction of high yielding variety (HYV) technology on women pointed out that HYV innovations affected land preparation, pre-harvest, harvest and post-harvest tasks in which both men and women engage at various points. On the basis of United Nations Research Institute for Social Development (Pearse, 1974 and Palmer, 1976) and other studies, she summarizes the demands of HYV technology as extra effort required in following men's and women's tasks' : for men, more careful and more frequent land preparation, harvesting a thicker crop; for women, increased transplanting and weeding works; applying chemicals; increased harvesting and processing work. Palmer further argued that land preparation, harvesting and some processing are the easiest to mechanize, and that where mechanization is introduced, female tasks become male tasks. Rice milling employing male labour is replacing hand pounding in Sri Lanka, Bangladesh, Java and South India and is thus decreasing employment for landless women (Timmer, 1973; Collier et al, 1974 and Harriss, 1977).

Studies relating to other parts of Asia like Philippines and Indonesia show that the shift to HYVs has been widely accompanied by a switch from hand-knife to the

sickle in harvesting, and this in turn has been accompanied by the displacement of hired female labour by male hired labour on a contract basis (Stoler, 1977; Barker and Cardova, 1978; Res, 1983 and White, 1983).

In addition, mechanization in various forms is observed to have negative implications for female labour as it has resulted in gradual displacement of rural women and shrinking of their activities (Hanger et al, 1973 in Kenya, Kabir et al 1976 in Bangladesh; White, 1976 in Java; Palmer, 1977 in Africa and Whyte et al, 1982 in Kenya).

A critical review of the evidence (mainly cross-sectional) from a number of studies in South Asia indicates that the use of tractors (which in South Asia are mainly being used for ploughing and transportation) reduces the requirements of labour time (Binswanger, 1978). However, as in Indian-based analysis (Agarwal, 1983) indicates, the use of tractors does not necessarily lead to a significant decrease in the number of persons employed. This is because the kind of labour affected is mainly male family labour or male permanent labour, since ploughing is rarely done by casually hired labour.

In contrast, the introduction of combine harvestors, wheat threshers, maize shellers etc. clearly displaced hired labour. Harvesting and threshing on Asian farms are generally done jointly by female and male labour, and there is usually a high dependency on casually hired labour particularly on

the larger farms. The use of combines, that mechanizes both these operations, thus has a significant displacing effect for casual labour (Asia Development Bank, 1978 Illo, 1983). In India, the use of combines is still limited but threshers are widely used in the HYV wheat areas and their negative effect on employment has been noted in number of studies (Billings and Singh, 1970; Mazumdar, 1975; Apte, 1979; Ahuja, 1979; Dhillon, 1980 and Agarwal, 1981).

In case of non-farm, post-harvest mechanization represented by grain processing mills, there is clear evidence that it is essentially women from the poorest rural households who have been displaced. This has been noted, for instance, in Bangladesh, where manual de-husking of rice is the most important source of female wage employment in the rural areas and often is the only source (Greeley, 1981). The mills, in contrast, tend to employ only men. Many of the women who have been so displaced in various parts of Asia were the sole supporters of their children and have now become destitute (Collier et al, 1974; Abdullah and Zeidenstein, 1975 and Halpern, 1978).

From the preceding discussion it can be concluded that in recent years a substantial number of researchers have pointed out the ways in which women are suffering negatively from agricultural technological changes brought about by the development process. But there is still a very large gap between the major types of problems tackled in the literature dealing with technological change in general and in the

relatively limited literature dealing specifically with technological change and rural women. The much more recently developed literature on technological change and women, in contrast, is more or less forced to rely on description of specific situations and on relatively low-level generalization about an emoirical association of men with advanced technology. Few general surveys of kinds of technological changes that affect women's work are available, and little or nothing has been done to determine the relationship of women's work to technological change except in so far as there has been stress on the fact that rural women of the Third World do play an impoprtant part in production. There is not much that can be directly inferred to serve as a conceptual framework for the issue of Rural Women and Technological Change.

### 2.2.3. HEALTH TECHNOLOGY

Health remains another area where technological intervention has brought about considerable changes having a direct bearing on the quality of life of the people. Improvements in this field have provided wide spectrum of service like primary health care, integration of preventive and curative services, health education, the protection of mother and children, family welfare and control of environmental hazards and communicable diseases. Though the changes brought about in social life of human beings by the application of modern medical technologies are not limited to women alone, but they are matters of peculiar concern to

women. From the current study's perspective also, it would be of concern to researcher, the development that has taken place in health technology and its impact on women. Hence the studies related to availability and access and use of contraceptives and other methods of birth control technologies used by rural women and their impact on them have been presented.

As the centuries have unfolded, the glaring contrasts in the picture of health in the developed and developing countries came into sharper focus, despite advances in medicine. The global conscience was stirred leading to a new awakening that the health gap between countries should be narrowed and ultimately eliminated. It was conceded that the neglected 80 per cent of the world's population too have an equal claim to health care, to protection from the killer disease of children, to primary health care for mothers and children, to treatment for those ills that mankind has long ago learnt to control if not to cure (Canadian International Development Agency, 1976).

Against this background in 1981, the members of WHO pledged themselves to an ambitious target to provide "Health for All by the year 2000 A.D.", that is attainment of a level of health that will permit all people to lead a socially and economically productive life (WHO-UNICEF, 1978). The Alma Ata International Conference endorsed the concept of primary health care and defined it as "essential socially acceptable methods and technology made universally accessible to the

individuals and families in the community through their full participation and at a cost that the community and country can afford ..... " (WHO - UNICEF, 1978).

Several studies (Gopal Rao, 1947, Balakrishna and Iyer, 1968, Operational Research Group, 1971, Pareek and Venkateshwar Rao, 1974; Rao, 1974; Talwar, 1975; Barnabas, 1977; Srinivasan et al , 1978; Rao and Kanbargi, 1977; Rajjguru, 1981 and Sharma and Mishra 1981) have been conducted on different aspect of family planning in India. Studies conducted in late fifties and sixties were manily descriptive but from seventies onwards they have become more evaluative in nature. Most of these studies are cross-sectional. The key variables used to explain fertility differentials were caste, religion, family type, land holdings, occupation, income, education, type of dwelling and socio-cultural practices such as age at marriage, post-lactation habits, type of marriage and their association with fertility. But very few researches have looked into the type of contraceptive methods being adopted by rural population and their impact. Since the government is spending exhorbitant quantities and varieties of resources for planning and maintaining primary health facilities, hence it becomes here to examine how far they are being utilized by the persons for which they are meant and what are the constraints resulting in the non-utilization of these facilities.

Statistics on health facilities and their use indicate that women go to hospitals and contact medical functionaries less often than men. Studies also indicate that the amount of money spent by households for medical treatment is greater for men and boys than for women and girls. The result is high morbidity and mortality among women, including a high maternal mortality rate (Mead, 1954, Dandekar, 1959, Jaggi, 1973 and National Committee on Status of Women, 1974).

Talwar and Bhandari's (1983) study on different aspects of health services in the rural areas of 8 districts of Madya Pradesh revealed that the utilization of ante-natal, post-natal care and child care services was very poor. None of these services were utilized by more than 12 per cent people. Factors influencing underutilization of government health services were distance, poor services, long waiting time, lack of medicine, poor quality medicine and poor accessibility of services. Also reported by Report of Narangwal Population Study, 1975; Ram et al 1976; Punia and Sharma, 1981; Devi, 1986; and Ahmed, 1989).

Report of a research project (1992) funded by Ford Foundation on health problems of poor women designed to obtain a community based data revealed that there is a great difference between what the health system wants from women and what their culture wants from them. Also, a large number of women do not use health services offered to them since our health system is insensitive to a woman's needs.

Certain studies have highlighted the benefits experienced by women after adopting any of the family planning methods. The benefits experienced by them are mainly : control over fertility, possibility of gainful employment, better health status as they are relieved from fertility drudgery and also better health status of the existing children (Freedmen, et al, 1959; Chaudhary, 1977, Ward; 1982; Sultana, 1984; Kaur, 1988 and Sunder, 1990).

Very few researches conducted recently have highlighted the negative effects of the contraceptive technologies ostensibly evolved for improving the health of the people, and particularly of women, but have created precisely opposite effect. With the government obsession about population increase, the entire burden and responsibility of birth control has been placed on women and specifically on poor women. The contraceptive technique thrust upon the women have two invariable adjuncts :

a. They are technologies which are outside women's control, requiring, trained professionals to install them or provide follow-up eg. IUDs, injectable contraceptives, laproscopic tubectomies etc.

b. They are technologies that can be hazardous to women's health at two levels : (a) either because the technology itself has side effects as is the case with injectables and intra-uterine devices like loop and copper-T or because to be safe the technology has to be

applied by highly trained and experienced hands and within an environment where sterile conditions and adequate care are scrupulously maintained. Under the present conditions, where mass laproscopy camps, with inadequately trained doctors and unhygienic conditions are the order of the day, such technologies place women at an even greater risk. It further reports that women suffer from serious health problems, excessive bleeding, cramps, backaches, headaches, dizziness and swellings after IUD insertions, laproscopic sterilization and most of all, injectable contraceptives like Net-En and Depoporvera. These findings are mainly result of an indepth analysis done by a National Commission on Self-employed Women and Women in the Informal Sector (1987).

Another study conducted by Hardon (1990) stated new types of contraceptives purpotedly invented for the convenience of women may have serious disadvantages, in terms of safety, efficacy and long-term effects. Problems with these new contraceptive technologies are related to the manner in which they are provided to women in health care settings and their 'medical' safety.

Most of the methods like harmone releasing IUDs, implants and more recently contraceptive vaccines are 'provider dependent'. Women depend on providers to have them administered and, in the case of implants and IUDs and also to have them taken out. Women are not very much aware of the

common side-effects of harmonal methods, such as headache, menstrual disorders and weight changes. These side-effects are however, not taken seriously in clinical research on the safety and efficiency of these methods. Similar conclusions were also reached by kwon, 1984 and Grub, 1987.

In health, a major effort has been underway since 1985 to improve the immunization of mothers and children in rural areas. Immunization has rarely covered more than 30 per cent of the target population and typically failed to reach clients for the second and third shots in vaccination series. The current Universal Immunization Programme (UIP) aims to reach atleast 85 per cent of the pregnant women with two doses or one booster dose of tetanus toxide vaccine and all infants with full schedule of DPT, BCG, Polio and Measles vaccines (World Bank Study, 1989).

Recent studies have shown that though government is promoting the immunization programme still its acceptance has been limited. The main reasons for failure of the immunization programme as expressed by majority of the respondents was the absence of vaccinators, the distacne to be covered to reach the place of vaccination, lack of information, lack of motivation and because of the pain caused to a small child as a result of vaccination (Bangoo and Kaur, 1985; Economic and Political Weekly, 1986 and Joshi and Bhattacharya, 1990).

All the aforesaid literature clearly points out that the vital aspects of health (concerning mainly women and children) that are being influenced by various technologies have not been studied by researchers holistically. Similarly, numerous studies are available related to fertility but none of the researchers have tried to determine the cost as well as benefit resulting to rural women due to technology use related to contraceptives and immunization. This vital gap in information emphasizes the appropriateness of the present study. One question which arises in this connection is could inaccessibility of communication media account for the failure of health and family welfare programmes?

### 2.2.4 COMMUNICATION TECHNOLOGY

In the present century means of communication have made tremendous strides. It is now possible to reach the remote corners, theoretically. Means of communiation include the mass media channels of radio, television, newspapers and magazines, etc. and the personal contact between various agents of change and their clientele. The focus of this sub-section is to present the research studies highlighting the availability, access to and use of communication technology and its impact on rural population in general and rural women in particular.

Research conducted by Knight and Singh, 1974; Bains, 1979; Pandey and Khanna, 1970; Davis, 1983; Roy and Khanna, 1985 and Bhagat, 1992 indicated that the most popular

channels of mass media in rural areas are radio and television followed by newspapers and some magazines. They have also shown that out of these channels women mainly had access to radio and television. Rural women were mainly watching film songs and movies and there were far and few cases in which they learnt about various technologies related to either household, agriculture or even health. The variables having a relationship with the level of exposure of the rural women to mass media were reported to be education, income, age and caste.

Second important mean of communication which can help in breaking the mental isolation of the rural women is their contact with development agents like extension personnel, gram sevikas, village health workers, anganwadi workers, etc. who can be very important media to make rural women aware about the outside world and help in improving their knowledge, attitudes and skills. Not much systematic information is available regarding the relative access of rural women and men to non-formal education, rural institutions, extension services, etc.. However, a rough estimate reveals that African women hardly have any opportunity to learn about agriculture co-operatives or animal husbandry (UNECA, FAO, 1974). Furthermore, the agricultural extension services are composed of male agents and tend to channel knowledge and training on improved farm technology to the male farmers (Bond, 1974; Abbott, 1975; Vellenga, 1977; Fortmann, 1981 and Youssef and Hetler, 1984).

The sexual bias in the channelizing of extension services is so prevading that technical assistance experts from abroad have trained men in activites that were entirely women's responsibilities as has occurred in Senegal in rice transplantation (Boserup, 1970) and in Liberia in wet rice cultivation (Tinker, 1977 and Carr, 1978).

An unequal channelling of extension services and key inputs is largely the result of the lack of appreciation and understanding of the complete role of women in the rural economy and society. Assuming only a narrow and partial view of rural women as farmer's wives, housekeepers, cooks and bearers of children, national development programmes and the international donor agencies have directed funds towards maternal and child health clinics, family planning programmes and Home Economics projects (Simmons, 1976). When training is available to African women it is usually in the supposedly 'female' areas of cooking and sewing (Carr 1978).

At a more specific level, there is a very strong case for training women in the operation and maintenance of technologies such as water pumps and any equipment and grinding mills that they own. Experiences from outside Africa have shown that women are very much capable of learning how to maintain equipment and how to carry out simple repairs - for instance, women in Bangladesh have recently been successfully trained in pump maintenance (UNICEF, 1978). Many women in Papua New Guinea have been successfully trained in black smithing and maintenance and repair of equipment at

workshops organised by the South Pacific Appropriate Technology Foundation (SPATE).

Researches conducted in Indian setting have also reached more or less similar conclusions viz., that women have been ignored by communication technology. Many are still dependent for information upon religious heads, friends and neighbours and local leaders controlling the economic resources and having political clout (Gupta, 1976; Kaur, 1986 and Shram Shakti, 1988).

The above mentioned empirical evidence indicates that not much effort has been made to bring out relationship between rural women and communication technology. A more systematic evidence is required to bring out the constraints which impede women's interaction with means of communication and also whether they have experienced and benefitted from the process of communication technology.

## 2.3 Technology, Status of Women and Family Resource Development

### 2.3.1 TECHNOLOGY AND STATUS OF WOMEN

Several researches have shown an inverse relationship between technological advancement and status of women (Lowie, 1947; Hawkes and Wooley, 1963; Gough, 1971; Leacock, 1972; Deckard, 1979 and Sharma and Dak 1979). This is particularly so in the field of productive technology like farm technology. With improved technology though women were relieved from some of the hardest labour but it also ended

their control of food supply and reduced their socio-economic status in the society (Mbieinye, 1972; Sacks, 1974 and Brain, 1976).

Further, withdrawal of women from visible' work in the field to invisible' work at home may end their access to resources and hence, diminish their status in the household as well as in the society (Harriss, 1979). In both the Asian and the African contexts, existing studies indicate that it is usually men who have primary control over the family's cash income (Chakravorty and Tiwari, 1977; Heyzer, 1980; Palmer, 1980 and Breman, 1981).

Another area where status of women declines with the introduction of technology is decision making, which is usually considered as an indicator of status of women. Many researches have indicated that the greater the degree of mechanization and commercialization of farm enterprise, the less is the joint involvement of homemaker and the spouse in major farm related decisions (Wilkening, 1958; Schlesinger, 1962; Craven, 1976; Sandhu and Dhesi, 1977; Dhillon, 1980 and Yadav, 1983). It was observed by many of the above mentioned studies that women were hardly being consulted while taking decisions regarding application of fertilizers and manures, use of weedicides, adoption of new seeds, farm implements, purchase of tractors etc.

These researches have pointed out that women had some say in household related decisions. But here also their

participation was confined only to decisions related to education of children, purchase of household articles, marriage of children, purchase of food materials, purchase of clothing and the like. Whereas in decisions related to purchase of household technological items, their participation was found to be abysmally low.

Women's participation in decision making was found to be lacking even on issues directly related to her health status. Kaur (1987) reported that none of the homemakers was being consulted while taking decisions regarding usage of health care facilities and adoption of family planning methods. She further reported that women had to take permission from spouse/head of the household even for joining craft centre, Mahila Mandal or taking loan for consumption purposes.

Age, education, type of family, size of the landholding and level of mass media exposure have been identified as major variables exercising an effect on level of participation of women in decision making process by the above mentioned studies.

Though status of women in terms of empowerment and social status has been the focus of many research studies, they have mainly studied how technological advancement especially in the farm sector has inversely affected labour force participation rate. But the effect of technological advancement in other spheres like household, health and

communication on status of women has not been adequately researched into. To the best of investigator's knowledge, the combined effect of technological advancement in all these spheres on women and through that on their decision making power in the household has not been studied.

There could be even intercorrelation among household, health, farm and communication technology and their effect on status of women. For instance, usage of household technology -> more leisure time -> better awareness -> better health status -> labour force participation by women or even otherwise an increase in women's status. It is, therefore, felt that more analytical research is required before presenting a holistic picture on this issue at micro level.

### 2.3.2 TECHNOLOGY AND FAMILY RESOURCE DEVELOPMENT

Advancement in technology in different spheres can either directly affect family resource development and also indirectly, with women's status coming as intermediating variable. Very few researches have concerned themselves with a theoretical study of relationship between advancement of technology in various spheres and its impact on level of living of rural population. Available studies dealing with effect of Green Revolution on consumption expenditure pattern of rural households (Pandey et al, 1986; Gill and Saini, 1987; Arora et al, 1989 and Gangwar, 1989) have been mainly conducted at macro level.

To get a realistic picture of impact of technology on quality of consumption, it is important that household level research should be considered. There are a few micro level researches available on this dimension highlighting that increase in income as a consequence of technological advancement has resulted in negative quality of consumption. For instance, one author has noted that it is not uncommon for nutritional levels to fall while wrist watches, transistors, televisions and bicycles (all largely utilized by men) are finding their way into the rural households (Palmer, 1977). Gupta and Sudan (1990) have also reported that the income received from sale of crops is more likely to be spent on semi-luxury goods than on basic necessities such as food, clothing and education for children.

However, there are studies which have reported positive impact of technological advancement on consumption expenditure pattern of households. Agarwal (1985) reported that large cultivator households have clearly gained from the introduction of HYV-irrigation package' and the women in such households have gained in terms of their absolute levels of consumption and perhaps even of cash income, although not necessarily relative to men.

Another survey by Varma (1992) in the rural areas of Haryana revealed that with the increase in socio-economic status there was corresponding increase in expenditure on the items which improve quality of life like preventive health care services, children's education and cattle rearing.

Anyhow, one disturbing trend which was also highlighted by the survey was the average amount spent by the respondents of low socio-economic group on wasteful things like smoking and drinking was very close to the amount spent by those from medium socio-economic status.

As the findings related to the effect of technology on consumption expenditure pattern are not very definite, the area is still open to greater and more indepth analysis.

The literature, thus, reviewed indicates that several researches are available on time activity pattern of the rural women related to household and farm activities. But very few of them have tried to measure the variation in human cost of work due to usage of technology.

Similarly many empirical studies are there that have established a negative relationship between introduction of agricultural technology and labour participation of women. But, mostly an exploratory type of research is available on the impact of technological advancement in the spheres of household, health and communication on status of women and family resource development. Existing literature on the issue under concern is inadequate to answer certain pertinant queries. The present study attempts to fill in such gaps so that composite and concrete results can be reached.