

INTRODUCTION

CHAPTER I

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Time and again scientific discoveries and inventions coupled with innovative technological developments have opened many paths to human prosperity. Technology is the most powerful tool promoting the mechanism by which both developed and developing countries could satisfy their basic needs and services (Hassan, 1990).

Technology is the established instrument in transforming society and removing the residues of economic backwardness. The role of Science and Technology in accelerating the process of socio economic development is now accepted as key mover by policy makers, social workers and promoters of technology. The International Encyclopaedia of Social Sciences defined technologies as 'bodies of skills, knowledge and procedures for making, using and doing useful things (Sills, 1968). Technology serves almost all fields of development in many ways such as increasing the production, upgrading the efficiency and saving time. Our former Prime Minister Mrs. Indira Gandhi was of the view that it is science with its spectacular advances which will help to speed up the development. For developed nations, science should help in their further advancement and for developing

countries, it has to be the basic tool for accelerating the development, reducing the drudgery, improving the economic conditions and the overall living standards of people.

The situation in the world today is not static with regard to the development of science and technology. Innovations, advances in the new and emerging fields are helping mankind to solve many of the crucial problems. Whether one is talking of food, shelter, energy or other basic minimum requirements, it is through harnessing science and technology that one would be able to make up for the deficiencies and would be able to fulfill the aspirations of the people. For doing this, there is need for the fullest deployment of the human resources (Sharma and Dey 1990). The women folk constitute the nerve centre of families, vital section of societies and the backbone of the nations. They constitute half the population of our society. The significant and largely unused reservoir of talent and work power of women needs to be placed in such a position as to make its contribution to the development process and to improve the levels of living and productivity of the society.

The problems of women in urban and rural surroundings are different. It is basically in the context of women in rural areas, one has to consider the impact of technologies which will either help in attaining better life styles or in opening up employment avenues (Sharma and Dey 1990). In

India, where rural hinterland occupies nearly 96 per cent of the total geographical area and the rural people constitute more than 76 per cent of the total population, the heart of the people naturally beats in rural areas which serve as the seedbed of the national economy (Rajasekharan, 1988). Any strategy aimed at rural development will be incomplete without involving the womenfolk or without upgrading skills particularly towards mitigation of drudgery, accessibility to new/improved technologies, increased income sources and gainful employment.

Women's Task in Rural Areas

Rural women are responsible for multiple labour intensive and time consuming chores, both outside and inside their household. They have worked as one of the wheels of the family bullock cart and tried to put household's economy on the sound footing (Singh and Rani, 1983). On daily basis, women's activities include 'domestic chores' such as cooking, fetching water and fuel, household maintenance and childcare. The various tasks carried out by women are laborious, time consuming and wasteful because of the rudimentary tools that women use. They face physical and mental drudgeries mainly in fetching water from long distance and deepwells, collecting fuel, cooking in smokeful environment and with traditional methods of work and also due to uncongenial environment of work.

Rural women besides performing household tasks, have been predominantly engaged in crop farming and plantation in peak -agricultural season. Their involvement in agricultural tasks is besides their usual obligation of discharging domestic work. They perform extremely tedious, time and labour intensive works like sowing, transplanting, seeding and interculture, harvesting, threshing, winnowing and post-harvest operations. These involve considerable amount of drudgery because it is mostly done manually. They continue to use age old tools and implements which are slow in operation and cause considerable fatigue and there is drudgery involved in their use. Srivastava (1988) reported that women, irrespective of land status of the family, provide 14 to 18 hours of productive physical labour in different chores. The energy spent by them in performing these tasks is more than it is physically feasible for them to spend. This draws our attention to the plight and drudgery of rural women.

Other tasks performed by rural women are processing of food grains, preservation and storage of seeds, growing vegetables for the family as well as for the market and rearing poultry, pigs and other livestock. In addition to their above stated tasks at home and in the agricultural fields, they are engaged in pickling, tailoring, embroidery etc. to supplement the family income. The women are able to contribute more in household industries because they can

attend to domestic work alongwith their involvement in such industries and are not required to leave their homes in such cases. Thus women in rural areas provide not only a substantial part of the labour force engaged in agriculture and allied activities, but bear the brunt of tedious, repetitive and unavoidable household work. This hard and disagreeable life that the rural women have, leaves little time for leisure, rest and recreation. (Swarup, 1985).

The Place of Women in Labour Force in India

In India, women constitute 48.2 per cent (33 crores out of 68.4 crores) of the total population as per the 1981 census. But the percentage of women in the total labour force is only 20.85 per cent whereas in other developed countries it ranges from 30 to 45 per cent. The work participation rate for females increased from 15.9 per cent in 1971 to 28.09 in 1981 in the rural areas of the country showing thereby increasing participation of women in economic activities during the decade 1971-81. The primary sector (Farming, livestock, forestry, fishery, plantations, orchard, allied activities etc.) provide work for about 83 per cent of women and 46 per cent of them work as agricultural labourers, 33 per cent are cultivators; while workers in the secondary and tertiary sector account for 5 per cent and 16 per cent respectively.

- Next to agriculture, in view of their inherent large

employment potential and due to their labour intensive character, handlooms, handicrafts and rural industries play a vital role in providing work opportunities to women by using their skills. The low literacy (1981 census) percentage of women at 22.88 per cent as compared to 47 per cent among men, also contributed to the limited employment opportunities of the formers. The participation rate of women in household industry is 4.59 per cent. The women labour force participation rate has remained generally unchanged for the last three decades around 28 per cent while in the case of men, it has remained stable around 57 per cent. In the organised sector women's share increased only slightly from 11 per cent in 1971 to 12.4 per cent in 1981.

Assam is the largest state among the isolated groups of North Eastern states of India. Assam is predominantly an agricultural State and bulk of rural people depend on agriculture as the primary source of their livelihood. The percentage of population dependent on agriculture which was 67.77 per cent in 1951, slightly decreased to 65.01 per cent in 1971. It is to be noted that most of the rural agriculture households in the state are of small and marginal farmers. Female work participation rate in Assam is 6.15 of which 6.31 is from rural areas and 4.25 is from urban areas (Census of India, 1971). Rural women in Assam share multifarious responsibilities and perform a wide spectrum of jobs and duties in running a family. In this direction their

jobs include cooking, washing, cleaning, fetching of water, collection of fuel wood and other household chores. In addition they participate in agricultural and allied work on family farms as family helpers or agricultural labourers.

Handloom weaving is the primary household industry providing self employment to females in Assam. The industry is practised both as a part time as well as full time occupation and is also pursued as a pastime of leisure hours. The most noticeable aspect of the handloom industry here is that it is practised by all sections of the people in the state. Most of the looms primarily operate to meet the requirement of domestic consumptions. Assamese women of the rural areas are expert in spinning and weaving. Gandhiji once remarked that "the Assamese women weave dreams in their looms". Sericulture as a household industry is also practised in Assam as subsidiary occupation. Assam has a global monopoly of production of muga' silk and also in the largest producer of eri silk' in the country.

Women and New Technology

A lot of new technology and many more institutions have been introduced into rural economies in the last hundred years. Most of these have not been directly concerned with women or women's work. Since women are part of the rural economy and rural social structure, it is obvious that these technological changes have at least an indirect effect on

women (Nelson, 1985). It is in this context that lately such technologies are discussed as an effective means of bringing relief to the Third World rural women from their numerous back breaking tasks, an increase in their income conditions and a general improvement in their conditions of life as well as that of their families and communities that greatly depend upon them. The focus on rural women and improved technologies in the developing countries in recent years is also related to the observation that the technologies already developed have tended to assist rural men more than women. The bulk of rural women remain saddled with traditional techniques and tools that are not always efficient and that also tend to make the tasks laborious, time consuming and strenuous. (Date Bah, 1985).

Recognising the need for application of Science and technology to benefit women, the India's Sixth plan document has made a strong appeal :

"Application of Science and Technology to the improvement of the life and status of women will depend upon the development of home technologies, suitable technologies and technologies for improvement of productivity"

(Sixth Five Year Plan, p 323)

The important sphere where technological innovations and adaptation is of crucial importance to women is that of household work. Any input of the management of household

will directly benefit her. United Nations Conference on Decade of women (1980) held at Copenhagen (Denmark) emphasized the importance of alleviating the daily burden of rural women and the introduction of appropriate technology. Thus drudgery which the women-folk suffer can be removed to a great extent by adoption of improved technology. Drudgery is usually as a result of long hours of work and physical strain. The primary objectives of improved technologies are thus to reduce time spent on given activities and to relieve of the strain associated with them. A large number of technologies have been developed that could scientifically improve day to day life of rural women. Some of these are : Smokeless Chulah, Solar cooker, Biogas plant, Haybox, Janata Refrigerator, improvement in hand pumps, windmill and improved pulleys for lifting water as well as pressure cooker and many other time and energy saving tools and equipment.

However, in the field of agriculture, modernization and technological advancement have helped mainly in the traditional tasks of ploughing, irrigation, harvesting, threshing etc. performed by men while they have not contributed towards easing the labourious manual operations performed by women who continue to use primitive tools and techniques thereby spending long hours. There is a qualitative difference between the tools controlled by men and those controlled by . Whereas men's tools are wholly based on the use of sources of energy other than human,

(hydraulic, animal, mechanical, chemical, electric energy) women's tools are usually operated by their own physical energy (ILO, 1985). This means that even the families which own agricultural implements, the women have control only over a few simple tools like sickle and their own bodies as means of production. In India, very little or no effort has been made to ensure that farm women are also exposed to new technologies in agriculture.

Technology, Women and Quality of Life

Peaceful and purposeful living with a reasonably good quality of life is the ultimate goal of every nation (Rajasekharan, 1988). Technology is an important instrument for improving the lot of rural mass specially the women in minimising their drudgery, enhancing sanitation and reducing health hazards with a view to achieving improvement in the quality of their life. Quality of life has recently acquired sociological importance and has become a topic of social research which converge largely on people's welfare and well being, their living conditions, their style of life, and their standard of living. Chakravarty commented:

While Science and Technology provide the foundations for wealth and development, the benefits of development have been generally unevenly distributed. In particular the benefits have not accrued equally to aspects of the quality of life that are not normally included when measuring economic development. Women

often have a keen sense of such unquantified measures of quality of life. Therefore, women's role in shaping the quality of life and the impact of Science and Technology on women vary according to different perceptions and there is generally no uniformity in such perceptions in the dynamics of Scientific and Technological changes prevalent today.

(Chakravarty, R. 1990, p.1).

This relates largely to selection of technologies in the rural context since rural development and application of Science and Technology to further it, is currently a priority item in many countries.

One of the most direct ways of analysing the impact of technological changes on rural women is to consider its overall welfare implications in terms of the 'quality of life of the women concerned rather than simply by considering the income changes brought about by technological evolution but also the pattern of time disposition of these working women (Bhaduri, 1985). The time spent on non-monetised tasks could be reduced by introduction of technologies and could positively affect the income situation of rural women. Technology, is therefore, a mixed blessing as far as time is concerned. According to De-grazia (1962), adoption of technology has given people control over the use of their time, particularly their ability to participate in leisure and other non-work activities that represent an improvement in the quality of their lives. Work results inevitably in

fatigue and often in boredom and drudgery is associated with long hours of work. Hence, reduction of work hours and increase in leisure time would add to the quality of life of rural women as well as of the rural households.

Rationale for the study

Women and technology as a dimension in the development process has remained an ignored and unexplored territory till only recently when the subject became important as an item of sociological interest. Research in this area is not adequate. Such research is very massive in the advanced industrial countries where almost all household chores have been researched and drudgeries reduced (Sarala Gopalan, 1987).

Women spend long hours and much effort and labour on repetitive operations resulting in fatigue and drudgery. It has been widely reported that rural women shoulder the prime responsibility of household work (Sahdhu, 1985, Kaur, 1986, Devadas et al. 1988) and spend considerable amount of time on performing household tasks (Munjai et al. 1985, Devi, 1986; Gandhi, 1987; Devadas et al. 1988, Kashyap, 1988). If the women have to participate in activities that will increase the family's economic resources, she must be freed from some of the essential tasks that occupy her time. Hence, there is a need to find out ways and means of reducing the work load of rural women. An important point to be considered;

therefore, is how to improve on and develop local utility technologies in a way that is appropriate and which may serve the women folk. This would require first hand knowledge about the tasks in which women are generally engaged and their resultant drudgery. But review of available evidence on analytical and empirical work on technology and rural women confirms a lack of indepth quantitative and qualitative data, although researches in Africa have recently focussed on the activities of rural women, drudgery therein, the techniques they use in the performance of daily tasks and on potential improvements on those technologies (Date-Bah 1984, Stevens, 1984, Carr, 1985). There is not much detailed documentation of the women's time use pattern and methods and tools they currently use to accomplish their ends. This is an important area with which any project on improved technology for rural women should begin. Moreover, the significance attached to science and technology in the Sixth Five Year Plan, especially in the rural sector, have motivated the investigator to design the present study, wherein a systematic assessment of the use of improved technologies in the performance of women's tasks with special reference to household tasks and quality of life of rural women is envisaged. Also, this study might be of great utility to the Home Scientists, extension personnel and administrators who are involved directly or indirectly in attempting to stimulate the adoption of improved practices,

in planning and executing the educational and developmental programmes.

Hence there is a great need for indepth empirical investigation to provide answers to the questions like : What are the traditional tools/methods used for performing household tasks, household industry related tasks, agricultural tasks ? To what extent do women possess knowledge regarding improved technology ? What is the attitude towards the use of improved technology ? What is the extent of adoption of improved technology for these tasks? What role do women play in agricultural tasks and Household Industry ? How much time do they spend in performing these tasks? Do they experience drudgery while performing these tasks? Is there saving of work time because of adoption of improved technology ? Do they enjoy more leisure time because of adoption of improved technology ? What are the constraints faced for acceptance of improved technology ? What are the difficulties faced by adopters of technology ? What are variables in terms of personal and family characteristics which affect task performance ? What is the general quality of life of rural households? What is the quality of life resulting from adoption of improved technology ?

The present research was planned to obtain answers to these questions about technology, women's task performance and quality of life of rural households.

Statement of the Problem

The present investigation is an attempt to determine Technology used, women's task performance and quality of life of rural households of Assam.

Objectives of the Study

The specific objectives drawn to give direction to the investigation were :

1. To assess rural women's task performance in terms of :
 - a. Frequency and extent of help received in performance of household tasks.
 - b. Role of women in agricultural and household industry related tasks.
 - c. Time spent in performance of households tasks, agricultural tasks and household industry related tasks.
2. To explore the traditional tools/technologies used in the performance of various tasks.
3. To ascertain (i) knowledge level of rural women about improved technology and (ii) attitudes of rural women towards the adoption of improved technology and to find out the relationship of selected variables with knowledge regarding improved technology and attitude towards adoption of improved technology.

4. To find out the extent of adoption of improved technology by rural women for various tasks and to determine the factors associated with the adoption of improved technology.
5. To assess (a) the quality of life of rural women with reference to impact of use of improved technology on women's task performance as reflected in :
 - i. Work time
 - ii. Availability of leisure time
 - iii. Drudgery felt in task performance(b) the general quality of life of rural households as indicated by :
 - i. Housing conditions
 - ii. Health status of family as perceived by the respondents
 - iii. Consumption expenditure
 - iv. Food consumption pattern.
6. To identify the variables influencing time spent on (i) household tasks (ii) agricultural and allied tasks (iii) household industry related tasks.
7. To assess direct and indirect effect of selected variables on (i) adoption of improved household technology (ii) time spent in total household work.

Assumptions of the study

The study is based on the following assumptions :

1. Rural women participate in various household, agricultural, allied agricultural and household industry related tasks and rural women differ from each other in the extent of use of technologies for task performance.

Hypotheses of the Study

1. There exists a significant relationship between knowledge regarding improved technology and selected personal, family and communication variables.
2. There exists a significant relationship between attitude of the respondents towards adoption of improved technology and selected personal, family and communication variables.
3. There is a significant association between the adoption of improved technology and selected personal, family and communication variables.
4. There exists a significant difference in the time spent on various tasks and selected personal and family variables.
5. There exists a significant difference in (i) work time

(ii) leisure time (iii) drudgery according to level of adoption of improved technology.

6. There is direct and indirect effect of selected variables on (i) adoption of improved household technology and (ii) on total household work time.

Delimitations of the study

1. The study was carried out in three districts of the state of Assam.
2. The study was limited to a sample of 270 rural households.
3. The data were collected during agricultural lean season only.