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ABSTRACT

The role of women in India has undergone several changes over many years. Today women are emerging as self-reliant persons with equal status in all spheres of society, but they are still mostly employed in low-paid, low-skilled and low-status jobs. The emerging trends in technology indicate a greater need for the employment of many women, particularly in the skill-intensive and knowledge-intensive modern sectors. New educational policies and programs need to be formulated. Strategies must be worked out to overcome the lingering problems women face and improve the access of women to technical and vocational education and related areas of employment in India. (Contains 18 references.) (KC)

36

STUDIES IN TECHNICAL AND VOCATIONAL EDUCATION

Access of Women and Girls Technical Vocational Education

UNESCO

STUDIES IN TECHNICAL AND VOCATIONAL EDUCATION

1. Developments in Commercial Education (1983, English, Arabic).
2. The Organization of Productive Work in Technical and Vocational Education in the United Kingdom (1983, English).
3. The Organization of Productive Work in Secondary Technical and Vocational Education in the People's Republic of Bulgaria (1983, English).
4. Policy, Planning and Administration of Technical and Vocational Education in Ghana (1983, English).
5. Politique, planification et administration de l'enseignement technique et professionnel en Turquie (1983, French).
6. Politique, planification et administration de l'enseignement technique et professionnel en Algérie (1983, French).
7. Policy, Planning and Administration of Technical and Vocational Education in the Netherlands (1983, English).
8. Policy, Planning and Administration of Technical and Vocational Education in India (1983, English).
9. Computers in Technical Teacher Education in the United Kingdom (1984, English, Arabic).
10. Computer Sciences in Vocational Teacher Education in Denmark (1984, English).
11. The Organisation of Educational and Vocational Guidance Services (1985, English).
12. Policy, Planning and Management of Technical and Vocational Education in the Hashemite Kingdom of Jordan (1985, Arabic).
13. Elaboration des programmes d'enseignement technique et professionnel - URSS (1983, French).
14. Content of General Education in Technical and Vocational Schools - USSR (1985, English).
15. Les disciplines d'enseignement général dans les programmes de l'enseignement technique et professionnel - France (1985, French).
16. Organization of Centralized Workshops - USSR (1985, English).
17. The Content of General Education in Technical and Vocational Education Programmes in the United Kingdom (1985, English).
18. Mobile Units for Vocational Education - USSR (1985, English).
19. Design and Use of Mobile Units for Technical and Vocational Education - Denmark (1985, English).
20. Technical and Vocational Education in the Arab Gulf Countries (1985, Arabic).
21. Content of General Education in Programmes of Technical and Vocational Education - Finland (1985, English).
22. Innovations in Technical Teacher Training - Ukrainian SSR (1985, English).
23. Training Apprentices in Industrial Training Workshops - German Democratic Republic (1985, English).
24. Innovations in Teacher Training in the Field of Agriculture - Federal Republic of Germany (1985, English).
25. The Application of Computing in the Teaching and Learning Process in Technical and Vocational Education in Australia (1985, English).
26. Content of General Education Programmes of Agricultural Technical and Vocational Institutions - Ukrainian SSR (1987, English).
27. Distance Learning for Technical and Vocational Education at Pre-University Level Establishments of Open Tech Type (1985, English).
28. Organization of Productive Work in Technical and Vocational Education in Kenya (1985, English).

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A Study on Access of Women and Girls to Technical Vocational Education in India

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PREFACE

The present document is a further addition to the series "Studies in Technical and Vocational Education". These studies are based on a Unesco policy instrument, the Revised Recommendation concerning Technical and Vocational Education, which was adopted by the UNESCO General Conference at its eighteenth session in November 1974, as well as the Convention on Technical and Vocational Education, which was adopted by the UNESCO General Conference at its 25th session in November, 1989. Furthermore, it is conformity with UNESCO's Approved Programme and Budget, which indicated that a number of guides, studies and publications in the field of technical and vocational education would be reproduced. The studies are intended to assist policy-makers, planners, administrators and experts in technical and vocational education. They reflect UNESCO's concern with fostering an effective exchange of experiences and ideas in this field, as well as Member States' efforts in promoting the implementation of the Revised Recommendation and the Convention, and the development and expansion of technical and vocational education in general.

The studies, which were prepared under contract for UNESCO, should be considered as information documents that require continual revision and updating. A list of the studies appears at the beginning of this document.

We wish to express our appreciation to all those who participated in preparing this study and hope that it will provide its readers with information useful to them in the promotion and development of technical and vocational education.

The views expressed in this study are those of the individual's) concerned with its preparation and do not necessarily reflect those of UNESCO. The designations employed and the presentation of the material do not imply the expression of any opinion whatsoever on the part of the UNESCO Secretariat concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

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C O N T E N T S

INTRODUCTION

The role of women has undergone several changes in the long history of the nation. Today they are emerging as self-reliant individuals with equality of status in all spheres of activity. Many laws have been enacted to prevent them from exploitation. Educational opportunities have been enlarged to improve their literacy. They are experiencing an increasing urge for economic independence towards emancipation in the real sense. The society is becoming greatly aware of the imperative need to bring them into the main stream of socio-economic activity.

Against this background, many women have started taking to technical and vocational education, in recognition of its potential for gainful employment, contribution to national economy and improving quality of life. Though their participation is picking up speed, there is a heavy concentration in the stereo-typed programmes commonly known as 'female preserves'. A high percentage of them is employed in low-paid, low-skilled and low-status jobs and occupations both in the organised and unorganised sectors. Discrimination is still being witnessed in employment and payment of wages.

The emerging trends in technology and world of work indicate great scope for large scale employment of women, particularly in the skill-intensive and knowledge-intensive modern sectors. There is a pressing need to release the more than 80 per cent of women engaged in agriculture and home-based occupations from the drudgery and long hours of work as well as to improve their productivity and wage earning capacity. Due consideration has been given to many of these aspects in the formulation of new educational policies and programmes of action. Strategies are being worked out to overcome the lingering problems and sustain the tempo to improve the coverage and access of women to technical and vocational education and related areas of employment.

An attempt is made in this study to deal with several of these aspects in greater detail, supported by statistical data and findings of surveys conducted on associated themes and topics. The matter is presented in Six Chapters which are self-explanatory and telescopic in nature and may take the reader from one stage to another in a logical sequence.

CHAPTER 1

WOMEN TOWARDS TECHNICAL AND VOCATIONAL EDUCATION
A CURTAIN RISER

As in many other countries, religious traditions, social structures, cultural norms and value systems had created wide variations and inequalities among people in India also. These factors had adversely affected the social status of many sections of the society and restricted their opportunities for effective participation in socio-economic activities. Among them, women were the worst hit. The inequalities heaped on them for many centuries have however started receding due to the untiring efforts of many social reformers during the past 150 years.

In the present context, women are increasingly becoming aware of their role in the nation building processes and activities, particularly relating to socio-economic development for which technical and vocational education has become critical and crucial. Moreover, transformations taking place in the society in terms of increasing consciousness for equal status of women, growing legislation for removal of discrimination against them, changing societal perceptions for their amelioration, widening educational opportunities for

improving their literacy, increasing urge amongst them for economic independence, and growing realisation for improving productivity and removing drudgery in their operations and occupations -- have started facilitating them to participate in the socio-economic development of the nation on a large scale.

This chapter deals with many of these aspects in greater detail and their cumulative effect resulting in a large number of girls and women turning towards technical and vocation education and training.

RISING STATUS

The status of women has undergone several changes in the long history of the country. During the Vedic period, (about 1500 B.C.) women were held in high esteem and their views were respected. They were given education along with men in Ashrams which had facilities for co-education. Many women became philosophers, scholars and renowned teachers. They also enjoyed the freedom to choose their life partners or to remain celibate. In this context, it is worthwhile to recall what Dr. A.S. Altekar said in his book 'Education in Ancient India' --In the heyday of its glory, ancient Indian education was widely spread, women and a large section of the masses being admitted to its privileges.. -- It produced a galaxy of able scholars and thinkers

from age to age who made important contributions to the advancement of knowledge in the spheres of philosophy, logic, mathematics, astronomy,medicine and chemistry.

Around the time of Christ, there was a climb-down in the status of women for reasons not known very clearly. Women started losing the privileges of education and were given away in marriage without any regard to their wishes. By about 100 A.D., women were ascribed to a subordinate, sub-servient and completely dependent status. It could be seen in what Manu, the law-giver, had said around that time - 'In childhood, a woman must be subject to her father, in youth to her husband, and when her lord is dead to her sons. A woman must never be independent'. She was viewed solely as a mother and a wife and these roles were idealised.

Consequent to invasion of the country by Muslim rulers during the medieval period, the status of women had further gone down, due to the influence of seclusion or 'pardah' system. Muslim women were governed by a separate personal law as enshrined in Islam. This practice of seclusion imposed many restrictions on the behaviour of women and deprived them of the opportunities for education and participation in socio-economic development.

Protest movements within the Hindu fold like Buddhism, Jainism, Vaishnavism, Veera-Saivism and Sikhism contributed to some improvement in the status of women, particularly in religious and spiritual activities. However, they were continued to be relegated to the rearing of children, performing household chores, helping the men-folk in agriculture, animal husbandry and craft-related activities.

With the advent of industrialisation, urbanisation and formal educational system, men started moving away from their occupations, hitherto confined to agriculture and village-based crafts, to urban and wage-based vocations. Alongside men, many women also had migrated to nearby towns and cities and joined the work force as unskilled labourers accepting wages lower than those paid to men - a beginning which eventually led to the practice of discrimination against women in employment and payment of wages.

The social reformers of the nineteenth century realised that education of women was essential for amelioration of their status and created a movement for providing wider opportunities for their education. However, many women belonging to the lower strata of society could not avail these opportunities and the privileged few in the upper classes took to education in arts, humanities, home sciences and the like. This sort

of education has incidentally enabled them to take an active part in the freedom movement and other social activities.

The economic pressures experienced in the later part of the twentieth century due to increasing cost of living prompted women to look at education as a means of livelihood, employment, career growth and opportunity for advancement. Society also has encouraged them in this regard, more as a matter of necessity. Marriage as a profession, has undergone a change making room for economic independence, comradeship and interdependence with men. This realisation has led many women towards technical and vocational education which has a potential for providing opportunities for lucrative employments.

The cumulative effect of these shifts in their roles and dynamics of socio-economic environment has led to emergence of interdependence and self-reliance in the status of women. This long journey from subservience and dependence to interdependence and self-reliance has landed them at a place from where they can move away now in a direction of their choice without any inhibition.

GROWING LEGISLATION

Though the social reforms referred to above have brought home that equality of status is a basic

necessity for social, economic and political development of the nation, what was accepted in theory has not often been made available to them in practice due to deep-rooted traditions. This is particularly so with regard to women of the lower strata, both in urban and rural areas. A number of legislative and administrative measures have been introduced to eliminate discrimination against them. As a first step, equality of status was included as one of the specific objectives in the Preamble, Fundamental Rights and the Directive Principles of State Policy in the Constitution of India. Towards achievement of this objective, many Acts were passed on matters like child marriages, dowry, widowhood, sati, polygamy, inheritance, citizenship, suppression of immoral traffic, minimum wages, maternity benefits and equal pay for equal work. The salient features of some of these Acts are as under:

- The Special Marriage Act, 1954: sought to prevent marriage of girls before attaining the age of majority at 18 and freedom to choose life partners.
- The Hindu Marriages Act, 1955: Provided for prohibition of polygamy to uphold the dignity of women.
- The Dowry Prohibition Act, 1961: Aimed at putting an end to the evil practice of buying husbands in the matrimonial market.

- The Hindu Adoption and Maintenance Act, 1956: Permitted adoption of a daughter; insisted on the consent of the wife for giving/taking in adoption; and gave the unmarried, widow or divorced women a right to adopt.
- The Hindu Marriages Act, 1955: Provided adequate grounds for women to seek divorce to free themselves from the unhappiness of their married life.
- The Hindu Succession Act, 1956: Conferred on women heirs the rights of inheritance.
- Suppression of Immoral Traffic in Women and Girls Act, 1956: Aimed at suppressing seduction, exploitation and commercialisation of women.
- Citizenship Act, 1955: Provided adult suffrage to women on par with men.
- Equal Remuneration Act, 1976: Sought to put an end to the discriminatory practices against women in employment and payment of wages.
- The Maternity Benefit Act, 1961: Provided for availing maternity leave on full wages.

The legal rights of women belonging to other major religions practised in India (Islam, Christianity, Zorastrianism) are more or less similar in intents and purposes, with minor modifications here and there, except the continued practice of a separate personal law

for Muslim women. All these legislative measures, inspite of their short-comings in implementation, reflect the social value, cultural advance and commitment of the nation to the emancipation of women through equality and social justice. Armed by these and accompanying administrative mechanisms, the women are well placed today to chart out a course of their choice in life and profession without any hindrance.

CHANGING SOCIETAL PERCEPTIONS

The traditional myths such as - preference should be given to education of male children; girls should be given in marriage at an early age; husbands should support their wives; women need not work; women's work is in the home; married women are not reliable workers; women may, at the most, work till they marry - have become topics for debate and discussion. Their validity is being questioned and their continued practice is resisted. On the other hand, a movement is gaining ground to look at the role of women on the basis of new perceptions such as:

- Equality of women is necessary as a basic condition of social, economic and political development of the nation;
- Improvement of employment opportunities and earning power should be given the highest priority in order to release women from their dependent and unequal status;

- Society owes a special responsibility to women as mothers; safe bearing and rearing of children, therefore, is an obligation that must be shared by the mother, the father and the society;
- The contribution made by an active house-wife to the management of a family should be accepted as economically and socially productive and as essential for national savings and development;
- Marriage and motherhood should not become disabilities, preventing women from fulfilling their full and proper role in the task of national development for which society, including women themselves must accept their due responsibilities;
- Disabilities and inequalities, of which women are victims, cannot be removed for women only; such action must form part of a total movement of removal of all inequalities and oppressive social institutions;
- Some special temporary measures will be necessary to move in the direction of the goals set by the Constitution and to transform de-jure equality into a de-facto one.

Society's support and approval have greater force than the legal provisions. With many women now within the reach of willing support of the society, their chances of success in education, employment and life are on the brighter side.

GROWING FEMALE LITERACY

The four decades after independence in 1947 have witnessed phenomenal expansion of education aimed at improving the literacy of its 860 million people. Many schemes were introduced to increase the access, expand the coverage and improve the quality of education. Among them, universalisation of elementary education, incentive schemes for retention, and nonformal education for out-of-school youth and adults are the most important. Special attention has been paid to the education of women in all these schemes.

As a result of the above measures and according to census of 1981, the percentage of literacy of girls has gone up from 7.0 in 1901 to 7.9 in 1951, to 18.0 in 1971 and to 24.9 in 1981. During this period (1951 - 1981), female enrolment has increased from 5.38 to 29.0 millions in grades VI to VII and from 0.19 to 3.0 millions in grades IX to XII. The university enrolments also rose from 0.08 to 1.0 million during the same period, constituting 28.5 per cent of the total enrolment at this level. Female literacy and education has grown almost twice the pace of that of males. Though literacy has not spread evenly among all sections of women; and 75 percent of them still remain illiterate, the number of women available with secondary and post secondary education is around five times the

total intake capacity of all the technical and vocational institutions taken together in the country.

School education is a pre-requisite to formal technical and vocational education. Adult literacy is essential for imparting non-formal training in technical and vocational occupations. With the growing numbers in education of girls and literacy among adult women, the scope for their taking to technical and vocational education is continuously on the increase.

INCREASING URGE FOR ECONOMIC INDEPENDENCE

The importance of economic independence, either at individual or national level, need not be emphasised. It is central to development in many other areas also. In the case of women, it is crucial for their emancipation in the real sense. They are increasingly becoming aware of this. They started realising that it is going to help them in choosing a life partner of their choice, maintaining proper equations with the people in and outside the family, tiding over difficulties arising out of possible occurrence of divorce, widowhood, sickness or protracted old age. Women earnings have also become necessary to supplement the family income to cope with the improving living standards and rising costs. Towards fulfillment of this urge, women are becoming more inclined to take up lucrative employment in technical and vocational areas.

In addition, the country which is striving very hard to attain economic independence cannot afford to keep its women, constituting about 50 per cent of the population, idle or under-productive. It is imperative to bring them into the main stream of economic activities. As such, providing them ample opportunities for technical vocational education has become vital towards developing their creative and productive skills and abilities in the process-product-service-management oriented activities.

TECHNOLOGICAL CHANGES IN FEMALE OCCUPATIONS

It is said that women constitute the invisible work force and hold up more than half the sky. They make a significant contribution to the nation's economy and family welfare and this is often un-recognised or over-looked. According to 1981 Census, 89.5 per cent of women workers are engaged in the un-organised sector, of which a huge chunk of about 82 percent actively participate in agricultural and allied operations. On an average, they sweat out on the fields for about 12 hours a day, performing operations like sowing, weeding, transplanting, threshing, husking and receive wages lower than those paid to men for the same work.

Similarly, a large number of urban women of lower strata are engaged in performing many arduous and monotonous tasks in home-based industries like beedi

rolling, masala pounding, bangle making, papad rolling, ready-made garments, sub-assembling of electrical and electronic items, packaging and labelling goods. They receive lower wages, work longer hours, face health hazards and risk disfigurations. Apart from releasing them from exploitation, they must be trained to apply the principles of science and technology in their operations; adopt labour-saving devices, methods, processes, tools, equipment; and overcome resistance to technical and technological changes in their occupations.

Many women are showing openness to learn and acquire the related knowledge and skills for improving their productivity and escaping from the drudgery of the operations. A strong need is therefore increasingly felt for introducing technology appropriate to and compatible with these occupations and operations and training them through non-formal programmes.

SUMMING UP

What has been said in the preceding sections goes to suggest that equality of sexes has been recognised de-jure; a number of laws have been enacted to prevent women from exploitation and discrimination; society has started playing a supportive role for their amelioration; their literacy has grown several fold; their urge for economic independence is on the increase;

and a strong need is increasingly felt for training them to improve productivity and reduce drudgery in their operations, particularly in the un-organised sector. A stage is therefore set for consolidating the provisions made in the technical vocational education of women on one hand and on the other, for increasing the access to a larger number of women aspiring to be brought into its fold.

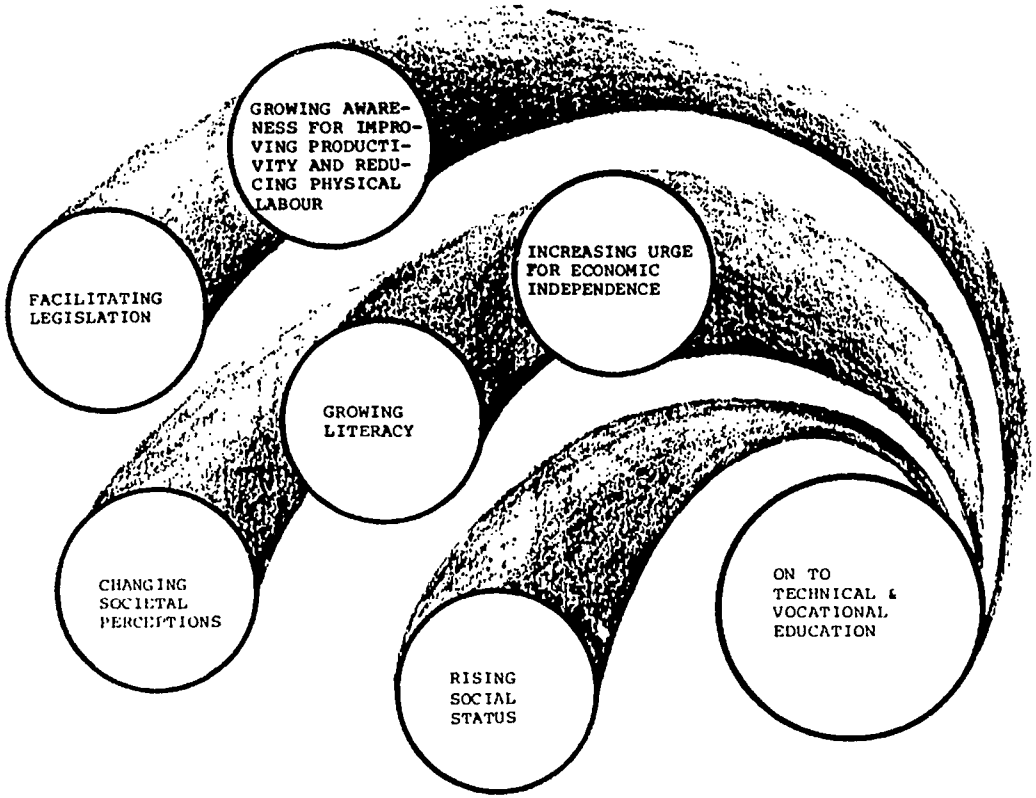


FIG.1 : EMERGING DEVELOPMENTS AIDING WOMEN TOWARDS TECHNICAL AND VOCATIONAL EDUCATION

CHAPTER 2

TECHNICAL AND VOCATIONAL EDUCATION OF WOMEN - A REVIEW

The design and development of technical and vocational education in India is based on the following premises:

- Technical and vocational education plays a pivotal role in facilitating and expediting the process of economic and industrial development.
- The economic progress and achievement of the people can be heightened by improving their creativity and productivity for which technical and vocational education is crucial.
- Technical and vocational education prepares people with capability for generating new technologies, adaptating and adopting emerging technologies, developing technology appropriate to and compatible with the needs of rural, informal and other unorganised sectors.
- Technical and vocational education has a potential to enable people not only to secure immediate employment in the world of work but also to generate employment including self-employment.
- The principles, applications, processes and products of science and technology should reach as

many people as possible, particularly women of the lower strata living in rural and remote areas and in urban slums.

- Women should have the same opportunities available to them as men in order to prepare them for an occupation and they should be encouraged to take advantage of these through special provisions to make up for the opportunities denied to them earlier.

COVERAGE

Technical and vocational programmes are currently offered to target groups such as - students of secondary and higher secondary education; graduates of secondary and higher secondary education; out-of-school population comprising drop-outs, unemployed youth and adults; and people already in employment at different levels. The programmes are aimed at preparing manpower required at the level of semi-skilled workers, skilled craftsmen, supervisory technicians, professional engineers, technologists and managers. The programmes are conducted in well over 8000 institutions such as Industrial/Technical schools; Agricultural/Veterinary/Animal husbandry/fisheries/forestry schools; Pharmacy/Nursing/Para-medical schools; Commerce/Accountancy/Secretarial Practice schools; Arts/Crafts/Dress-making schools; Industrial Training Institutes, Technician Institutes

(Polytechnics) and Colleges of Engineering and Technology. More than 500 courses of different nature and level are designed and developed around major areas relating to -- Agriculture and Animal husbandry, Engineering and Technology, Business and Commerce, Health and Para-medical services, Home sciences and Humanities, Arts and crafts and the like. The total enrolment is of the order of 1.4 millions of which women constitute around 28 per cent.

ENTRY ROUTES FOR WOMEN

Women are provided two alternate routes to technical and vocational education. They have a choice to take any course in any Institute along with men as these Institutes are co-educational in character. Alternatively, they can join any of the special Institutes, set up exclusively for them in order to speed up their education / training and even out the imbalances because of the continuing male edge in this sector of education. The progress and achievements made in the technical and vocational education of women are discussed in the following sections.

GENDER-FREE CURRICULUM

The educational system is the most important institution which can counteract the deep foundations of inequality of sexes that are built in the minds of men and women through the socialisation process. In

realisation of this, the earlier practice of separate curricula for girls with an accent on subjects considered specially suitable for them, such as domestic science, needle-work or fine arts was done away with. A common curriculum for boys and girls laying emphasis on mathematics and sciences was introduced. This is resulting in changing the traditional attitudes with regard to certain tasks as 'manly' and others as 'womanly' and also replacing the conventional value system based on inequality by a new value system centering round the equality of sexes.

WORK EDUCATION

As a prelude to and a promotional measure for creating interest in technical and vocational education, work education has been introduced in all grades as an integral part of the curricula of secondary education. This is aimed at enabling the students to understand the socio-economic environment better through observation, enquiry, experimentation, work practice; and acquire positive attitudinal changes and values such as respect for work and workers, self-reliance, cooperation and proper work habits right from their child-hood. Women constituting 35 per cent of 100 million students enrolled (1981) in the secondary education system have received work education and have been oriented to pre-vocational aspects. These experiences have increased their employability in the world of work.

PRE-EMPLOYMENT TRAINING

Pre-employment training is provided in a variety of institutions run by the Departments of Agriculture, Ani-mal Husbandry, Forestry, Fisheries, Health, Education, Culture and the like. These institutions aim at provi-ding training for entry level jobs as semi-skilled workers. Women constituted 44.9 percent (1974) of the trainees in non-engineering trades, with heavy concen-tration in tailoring and cutting, embroidery and needle- work, knitting and stenography. In the engineering trdes, their percentage was about 1.2 of the total trainees at this level.

VOCATIONAL EDUCATION

Vocational education has been introduced in 1977 as a separate stream at higher secondary level (+2 stage) following 10 years of school education. It is aimed at providing diversification in educational opportunities to enable the students to choose subjects and programmes of study in a wide field of knowledge and skills in keeping with their aptitudes, interests and abilities and thereby improving their competence in the relevant areas for gainful employment. Under this scheme, more than 100 courses of 2 year duration are offered in about 1500 institutions with an enrolment of 120,000 students covering all the major areas of industrial and economic activity. The percentage enrolment of women in these

courses is of the order of 28 and their concentration is heavy in Secretarial Practice, Para-medical services, Garment technology, Architectural assistantship, Electronics and the like.

SKILLED MANPOWER TRAINING

Industrial Training Institutes (ITIs) prepare skilled level manpower with a specified level of skill proficiency in a given trade with a view to enable them to raise the quality and quantity of industrial production and services. There are 950 (600 Government and 350 private) Institutes of this kind, providing training in 38 engineering and 26 non-engineering trades with an enrolment of over 300,000 trainees. Of these, 104 were set up exclusively for women and they give training in 23 different trades such as Draughtsmanship, Radio Mechanic, Electrician, Electronics, Hotel receptionist, Machine mechanic, Book binding and the like.

TECHNICIAN EDUCATION

Technician education is given in polytechnics which produce middle level supervisory personnel. Of the 450 recognised polytechnics, 35 have been set up exclu-sively for women. Out of about 100 courses offered at this level, women's polytechnics provide training in 26 different courses in diverse areas such as Civil engi-neering, Electronics, Pharmacy, Hotel Management, Food technology, Commercial art, Textile design,

Cosmetology and the like. About 12000 students pursue the courses in these women's polytechnics. In addition, many women join the co-educational polytechnics whose intake capacity is around 75000 a year. In all, the percentage of women taking to technician education is around 18.

PROFESSIONAL EDUCATION

Many women are also pursuing courses at undergraduate, post-graduate and doctoral levels in several technical, technological, medical, agricultural, management disciplines. The courses generally favoured by them are in the areas of Medicine, Architecture, Town Planning, Electronics and Computer Sciences. Of the students joining engineering colleges and medical colleges, women constitute 7 per cent and 25 percent respectively.

ON-THE-JOB TRAINING

Many of the major industrial establishments provide in-service training to the large number of workers employed at unskilled and semi-skilled levels, which include a substantial percentage of women. This training enables them to acquire knowledge skills and attitudes related to their area of operations. They are also entitled to obtain trade qualifications by appearing for the trade tests in any of the 134 trades designated under the Apprenticeship Act, 1961 for this purpose. Though the number of women (110 in 1974) availing this

opportunity was very low when compared to men (53,000 in 1974), the improvements being noticed in the literacy of women through adult education programmes are likely to increase their participation in these training programmes.

NON-FORMAL TECHNICAL TRAINING

Non-formal adult education is taking deep roots in the country to provide opportunities to both working and non-working adults for enabling them to acquire functional literacy and productive skills for increasing their earning capacity through gainful wage or self-employment. A large number of adult women are making use of these programmes. Their percentage of total enrolment which was 36 in 1980 has gone up to 52 in 1984.

In addition, a large number of technical and vocational training programmes are conducted by governmental and voluntary agencies such as Khadi & Village Industries Commission (KVIC), All India Handicrafts Board, Bharath Krishik Samaj, Bharatiya Grameen Mahila Sangh, Central Social Welfare Board, Departments of Rural Development and Human Resource Development. Of the various programmes in vogue, Training of Rural Youth for Self Employment (TRYSEM) and programmes conducted by the Community Polytechnics are very popular. These programmes are aimed at training school dropouts, youth

and adults particularly in rural and remote areas, to enable them to acquire basic skills, knowledge and attitude for improving their productivity and employability and adopting modern principles of science and technology in their vocations. A large number of women are coming forward to join these programmes and the functional literacy gained by them through adult education programmes is greatly helping them in this regard.

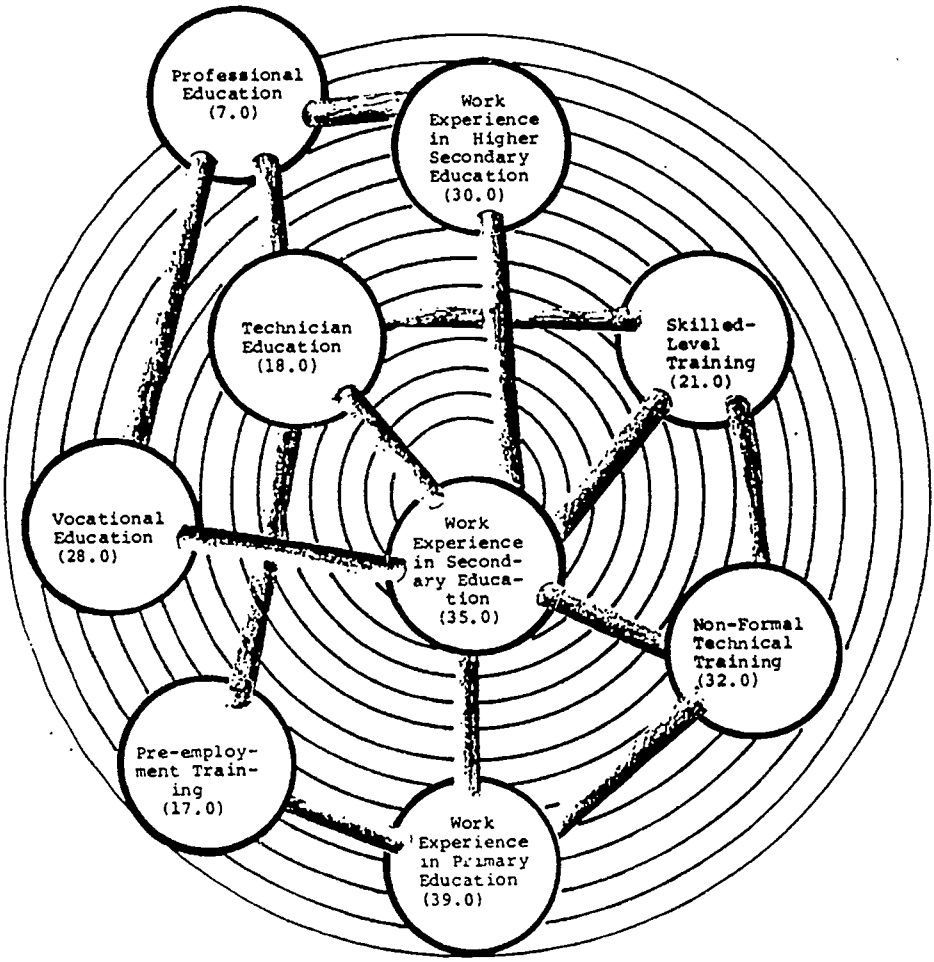
CONCLUSION

The importance of providing technical and vocational education for women to prepare them for effective participation in industrial and economic activities has been very well recognised.

Two alternative routes have been made available to them in the form of entry to all institutions along with men and to special institutions exclusively meant for them for speeding up their participation and even out the continuing male edge in this sector of education.

Though the rate of participation is gradually increasing, women constitute, on an average, only about 10 per cent of total enrolment in technical and vocational education at post-secondary level and about 28 percent at secondary and post-secondary levels taken together.

Despite equal opportunities provided to them on par with men, there is a heavy concentration of women in stereotyped non-engineering programmes in areas like nursing (97%), primary teacher training (91%), secretarial practice (19%) and pharmacy (28%).



FEMALE LITERACY 24.9%
CENSUS 1981

FIG.2 PERCENTAGE ENROLMENT OF WOMEN IN TECHNICAL & VOCATIONAL EDUCATION

CHAPTER 3

EMPLOYMENT OF WOMEN IN TECHNICAL AND VOCATIONAL OCCUPATIONS - A STUDY

Education, employment and economic development are closely inter-related. Employment statistics provide useful information on how the products of educational institutes are employed, in what ways they are contributing to economic development and how they are paid for the services rendered in the world of work. The statistics also indicate the areas in which the scope for employment is increasing or decreasing as well as point out the areas for which manpower has not been produced, despite heavy scope for productive employment. Because of this nexus between education and employment, the inequalities noticed earlier in the education of women are bound to reflect in their employment also. This chapter deals with the patterns of employment of women, their working conditions and discriminatory practices in regulation of wages, with particular reference to agriculture and home-based occupations in the un-organised sector and industries and services in the organised sector.

OVERVIEW

Some of the major findings as returned by the census of 1981 and other surveys conducted in this regard are as under:

- The female work force (31.7 millions) constituted about 19.8 percent of the total work force in the country. An overall decline was noticed from 28.98 per cent in 1951; 31.53 in 1961; and 17.3 in 1971. Of this, more than 87 per cent women workers were illiterate or had marginal education.
- About 88 percent of this female work force was engaged in the unorganised sector. Of this, 82 per cent was in agriculture and related activities and the rest of the 6 per cent in non-agricultural and home-based occupations.
- The remaining 12 percent of the female work force was employed in industries, services and professions both in public and private establishments. Majority of them were at unskilled, semiskilled and skilled levels.
- Women employees are generally concentrated in low-paid, low-skilled and low-status occupations both in the organised and un-organised sectors. However, their visibility in high-status, high-skilled and high-paid jobs is on the increase.

UNORGANISED SECTOR

Agriculture:

Census reports and findings of the various studies made on the employment of women reveal that:

- Women workers in agriculture and related activities constitute about 88 per cent (of the total female work force) in rural areas and 18 per cent in urban areas.
- These female agricultural workers sweat out, on an average, for 12 hours a day on the fields, performing operations like sowing, weeding, transplanting, threshing and husking, besides involving themselves in allied operations in live-stock, horticulture, forestry and fisheries.
- Introduction of agricultural machinery aimed at mechanisation of these operations is feared to displace women by taking away the tasks traditionally performed by them.
- These workers are paid on an average, 60 to 70 per cent of the wages the male workers get for the same work. This type of discrimination was also endorsed in the National Perspective Plan (NPP) Document for Women, which outlined gross exploitation of female labour in terms of low wages, long working hours and utter vulnerability.

It is interesting to observe that in this area dominated by female workers, the percentage of women at skilled, technician and professional level in agricultural machinery, production, marketing and extension services is just around 4 per cent. Here is a massive segment of working women which is badly in need of training through non-formal modes to help them adopt scientific and technological principles and devices to reduce physical labour in the operations performed by them, improve productivity in their vocations and insist upon equal wages for equal work.

Home-Based occupations:

More than 4 millions of women are reported to have been employed in home-based industries such as beedi rolling, masala pounding, bangle making, papad rolling, block printing, ready made garments, embroidery, sub-assembling of electrical and electronic items, packaging and labelling of industrial goods and products.

Female labour force in these occupations is in the form of contract workers (about 90 per cent), self-employed contract workers (about 4.5 per cent) and a handful of direct employees. They suffer from insecurity of employment, non-observance of standards for minimum wages, excessive hours of work and absence of welfare measures and amenities, as these small-scale industries are characterised by poor techniques, low productivity and inadequate capital.

The disabilities of women in these occupations are manifest in illiteracy, helpless dependence on intermediaries, ignorance of welfare agencies and laws, and exploitation in various forms including non-remunerative wages. Some measures taken by the government in the form of the Contract Labour (Regulation and Abolition) Act, 1970 and the Beedi and Cigarette (Conditions of Employment) Act, 1966 for regulating the working conditions in these types of industries also do not seem to have come to their rescue, in view of their ineffective implementation.

The commercialisation of production and marketing and the rise of intermediaries are causing hardships to a large number of women, who are self-employed either as producers or as retailers, and are resulting in loss of employment in many cases. The support of the government and efforts of the welfare organisations to develop self-employment among them in areas like production of processed goods, crafts and garments have not helped them much, as they are ignorant of marketing methods and techniques of sales promotion. Credit providing agencies like banks also consider them as poor risks.

Here is another massive population of women in employment which requires non-formal education and training in an integrated manner to help them acquire

knowledge and skills in areas like production, marketing, sales, co-operatives and trade union movement.

Organised sector:

The findings of 1981 Census have brought out that employment of women in this sector has remained almost constant around 10 to 11 per cent during the period from 1961 to 1981, though their number in absolute terms has gone up during this period. While the number of women employed in the public sector is increasing, their share in the private sector is on the decline. Employment of women in the public sector is provided by state governments, local bodies, and government undertakings. Their share of employment in the Central government services is not reported as satisfactory as it should have been. This is interesting because there is little scope for discrimination against them in government employment. Studies conducted by the National Committee on Status of Women in India (1971), covering a sample of 200 undertakings in the public and private sectors reveal that:

- At unskilled and semi-skilled level, women were concentrated in both public and private sector undertakings at lower levels of production processes;
- At skilled level, they were engaged in light and medium engineering, pharmaceutical, electronics and textile industries;

- At supervisory level, they were engaged in electrical, electronics and tele-communications in public sector undertakings and their presence in the private sector at this level was almost negligible;
- Restricting women to a few limited type of occupations arose because of prevailing social attitudes regarding their aptitude, resistance of employers, denial of training opportunities in higher skills and their ignorance regarding the opportunities open to them;
- Though wage-discrimination was not openly practised, it was seen existing, particularly in the private sector and labour-intensive industries like plantations and it was said to be on the basis of lower productivity without any scientific appraisal of their capacities and performance.

According to the survey conducted by the Directorate General of Employment and Training, Ministry of Labour and Rehabilitation (1978) in the Public Sector undertakings, covering about 0.94 million employees of which 10 per cent were women, the distibution of women was found to be:

- 19.5 per cent as professional, technical and related workers;
- 2.8 per cent as administrators, executives and managers;

- 6.3 per cent as clerical and related workers;
- 8.3 per cent as sales workers;
- 9.1 per cent as service workers; and
- 10.3 per cent as production and transport equipment operators.

Census 1981 held that the employment of women has been on the decline in textile, jute and mining industries and more or less remained constant in plantation industry. Adoption of capital-intensive technology in the on-going industries has been resulting in the reduction of labour force and displacement of women, rather than men, on grounds that they lack skills, are under-educated and unwilling to learn new practices.

Services and Professions

Employment of women in services and professions has been progressively increasing since 1960, although their proportion to the total employees has remained more or less constant. The number of women engaged as administrators, executives and managers is also showing an increasing trend in banking, advertising, market research, hotel management. However, teaching and medical professions are the ones which have attracted the highest number of women. It is not easy to give a comprehensive statistical profile of women in this sector of services and professions, because of their

spread to and dispersal in a variety of occupations. The statistics of a survey conducted (1978) in selected services and professions in each of which employment of women was more than 500 and also available from other sources present the following picture:

- Paramedical:

  Women account for more than 87 per cent of nurses (87.1%), midwives (38.0) and Ayahs (91.2). Women employed as nursing, sanitary and other medical health technicians constitute around 25 per cent. Discrimination against married women is generally practised, particularly in the army, which neither recruits them nor provides maternity benefits on getting married.

- Teaching:

  This is a profession approved by the society for women in view of its facilitating nature to combine work roles with home roles. Their concentration in this profession represents both opportunity and preference. Women account for more than 70 per cent of primary school teachers, 23 per cent of secondary and higher secondary teachers, 21.7 per cent craft teachers and 16.7 per cent university teachers in professional, technical and other disciplines.

- Medical:

  Women constitute about 18 per cent in medical profession. This percentage, when compared to their 25 per cent enrolment in medical education indicates under-utilisation. This may be partly due to migration to other countries for lucrative employment. Women doctors are found to be specialising in paediatrics, surgery, gynaecology, anasthesia, pathology and radiology. About 90 per cent of them are employed in urban areas.

- Social work:

  This is a profession which has recently emerged with a high potential for employment. The percentage of women engaged as social workers is about 30. They find employment in this area with greater ease than men and tend to concentrate in primary social work and community organisation. Men prefer to take to labour and industrial relations. Inspite of a large percentage of women in this area, onlya few of them are holding high positions.

- Secretarial services:

  There is a heavy concentration of women at this level. They account for 14.5 per cent of stenographers, 19.2 per cent of typists, 28.4 per cent of telephone operators, 34.1 per cent of

punch operators, 11.1 per cent of book keepers and accounts clerks and 10.8 per cent of calculating machine operators. Most of them possess secondary and higher secondary education and are employed in urban areas which is a reflection of the trend among middle class women.

- Banking:

  Women account for 12 per cent of about a million people employed in this area. They constitute about 25 per cent category of officers. It is a growing sector and women's participation is expected to rise two to three-fold in the next few years.

- Advertising:

  This is an area which is providing employment to women increasingly. They constitute about 65 per cent of the people engaged in this field. The top positions are, however, held by men and the share of women at the management level is around 3.5 per cent.

  Hotel management, tourism, jounalism, food preservation and canning, library and laboratory services, word processing, Department stores, public utilities, recreation, sports and entertainment are some of the areas where the employment of women is steadily increasing.

CONCLUSION

Participation of women in the labour force is not only low, but also declining. Illiteracy, ignorance of job alternatives, resistance to mobility and growing unemployment in the country are attributed as some of the reasons for this trend. However, employment of women in modern industries has been increasing several fold (6 to 10 times), particularly in electrical appliances,medical and scientific instruments, electronics, computers, public utilities, trade and banking.

Women are predominantly employed in consumption - linked services and have low participation in production-linked occupations. In the latter, they are engaged more in un-organised services requiring lower levels of skills, as compared to those in organised services. Their increasing participation in the organised sector is leading to decline in male employment in urban areas.

The wage differential between men and women continues to exist, despite legislation for "equal pay for equal work". It is more so in agriculture, home-based and construction industry in the un-organised sector.

Education has touched only a miniscule section of the female labour force, as a result of which a very high per centage of women is kept out of better-paid, high-skilled and high-status positions. Keeping large sections of economically active women uneducated is bound to result in lower productivity and occupational displacement on account of introduction of modern technology. This calls for more and more education and training to more and more number of women through formal and non-formal systems.

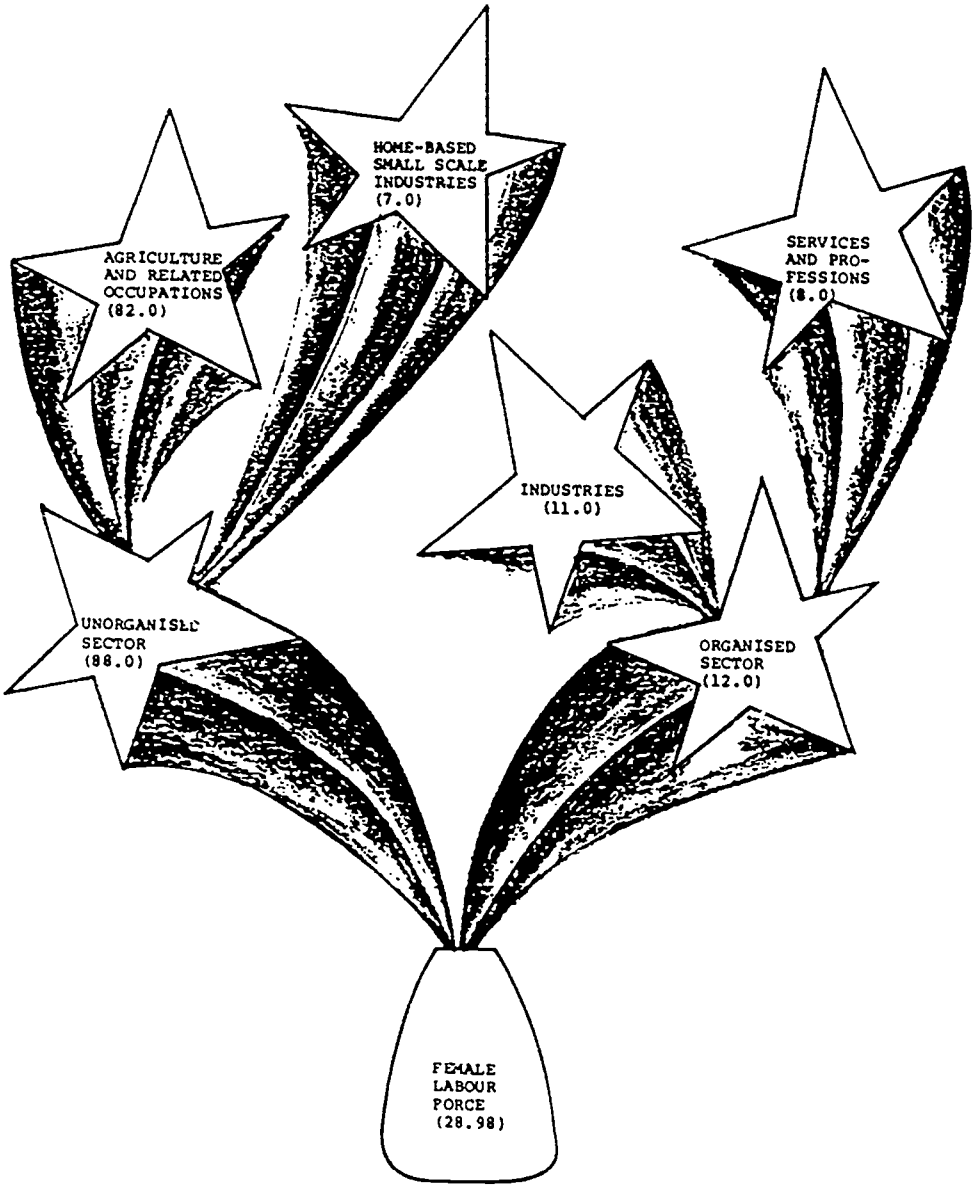


FIG.3 : PERCENTAGE DISTRIBUTION OF WOMEN IN EMPLOYMENT

CHAPTER 4

IMPLICATIONS OF EMERGING TECHNOLOGY ON EMPLOYMENT AND EDUCATION OF WOMEN - AN ANALYSIS

It is said that all education springs from images of future and all education creates images of future. Though it is difficult to say what follows what, one thing is clear that technological development has a definite bearing on industrial development and educational development. Technological innovations bring about changes, among other things, in the processes, products and services in the world of work. Consequently, the talents, techniques and temperaments of the on-going manpower are to be updated and upgraded or a new order of compatible manpower is to be produced, depending upon the dimensions of changes witnessed. It will then become the turn of the educational institutes to rearrange their programmes in terms of modifying the curricula of course offerings or introducing new programmes or organising retraining programmes for the affected manpower, depending upon the given situation. Inadequate considerations to this nexus between technology, employment and education will eventually lead to imbalances and mismatches between the products of education and manpower requirements in the world of work.

What are the directions of technological developments, what are their implications on different sectors of industry and services and what types of changes are to be brought about in education and training programmes particularly relating to women interests and concerns are discussed in this Chapter.

TECHNOLOGY PLURALISM

For the purpose of this study, technology may be categorised under high, medium and low; and industry under labour-intensive, capital-intensive and knowledge-intensive. In the Indian context, low technology or appropriate technology is generally seen finding place in labour-intensive industries and services, particularly in the un-organised sector. Medium technology is witnessed in capital-intensive industry accompanied by periodical modernisation and application of high technology components, where considered necessary. Knowledge-intensive industry is, in most of the cases, associated with high and modern technology. Though every situation does not lend itself to this type of simplistic classification, it, however, represents fairly the obtaining situation in many developing countries. What is more is that in a developing country like India all these technologies exist side by side and within each other for historical reasons and compulsions to keep pace with the fast changes taking place at the

global level. India is a classical example where this type of "technology pluralism" is actively and deliberately pursued.

The position that has emerged or is emerging due to interplay of the dynamics of the mix of these technologies concurrently in vogue and its implications on technical and vocational education, with particular reference to women, is presented as under:

Labour-intensive industry

As brought out in the preceding chapter, this is the sector which engages more than 80 percent of women in employment. It is mainly composed of agriculture and related occupations and home-based small-scale industries. Women employed in this sector are mostly at unskilled level with no or marginal education. The pressing problems in this sector are mainly associated with improving productivity and releasing women from drudgeryand monotony of the operations. For this purpose, technology interventions should come in the form of:

- Generation of technology appropriate to and compatible with the inputs, processes, products and services currently employed in this sector;

- Transfer of technology so generated in the form of methodologies, processes, tools, implements,

gadgets and management approaches towards mechanisation of operations;

- Promotion of principles and applications of science and technology in thought and action;
- Facilitation of use of alternate sources of energy through biogas plants, windmills, solar cookers and the like;
- Promotion of organisational mechanisms for purchase of raw materials, marketing of finished goods, credit facilities, co-operatives, trade unions and entrepreneurship development;
- Mechanisms for improving sanitation,health, housing, drinking water and other living conditions for integrated development of rural/ tribal villages and urban slums.

The implications of these interventions on education and training of women will then be in terms of:

- Conduct of non-formal programmes for the unskilled and semi-skilled workers to upgrade their skills and related knowledge for extensive deployment of technological principles, processes, modern tools, implements and equipment appropriate to the given occupations;
- Introduction/consolidation/expansion of programmes for preparing a large number of women at skilled

and technician levels with a focus on multi-skills, multi-functions and inter-disciplinary nature of training appropriate to agriculture and related activities and home-based industries.

The debatable point here is that introduction of technology aimed at mechanisation is feared to result in unemployment or displacement of women, as already witnessed in some cases. Therefore, a dilemma exists between introduction of appropriate technology on one hand and displacement of women from employment on the other. It is interesting to note the following conflicting views being expressed in this regard:

"Technology that causes unemployment or displacement of women must be resisted ... Modernisation of traditional employment sectors for women should be selective and mechanisation should be allowed only in cases, where work is hard, strenuous and injurious to health" -- says National Perspective Plan (NPP) Document for Women (1988).

"A shell-less cotton-pod planted in Gujarat killed employment of 30,000 home-based women cotton-pod shellers; ... The decision of public sector companies under the direct control of the government to use new jute bags instead of resewn ones put 10,000 bag-stitchers out of jobs..." -- reports Business India (A magazine) March 6-19, 1989.

"However, technology is vital to reduce the physical labour of women. The alternative is to let the new technology be managed by women themselves completely" -- says a social scientist who is a member of the government appointed Task Force that prepared a detailed status report on women in the unorganised sector.

"As a group, this section of poor women who are at the mercy of middlemen and contractors are the most politically, socially and culturally vulnerable ... But, as individuals, these women are really tough and very open to learning and acquiring skills ... The resultant thing is: how do we reach them" -- asks a representative of the Self-Employed Women's Association (SEWA) and strongly advocates the empowerment of Women's organisations to articulate the planning, development and technological needs of these women workers.

"Unless bold interventions are made to correct imbalances, we will be entering the twentyfirst century with our women left far behind - stresses Margaret Alwa, Union Minister of State for Women and Youth Affairs.

People-intensive service sector

This is the sector where the employment of women is the second largest. Most of them have secondary or post-secondary education and are employed at semi-

skilled and skilled level. The current and emerging trends indicate that this is the most promising sector for large scale employment of women now and in future. Some of the views expressed in this regard are as under:

- The recent book 'Mega Trends' emphasises the preponderance of the service and information sectors in future.
- Alwyn Tofler talks about 'prosuming', i.e. producing and consuming without getting into value-added activity - peculiarly applicable to the bulk of women's activities.
- Over the current decade so far, the Union Planning Commission has found 70 per cent additional employment generated in the service and information sectors as against 10 per cent in the traditional and manufacturing sectors.
- Out of the additional employment to be generated from the mid-80's to the mid 90's, 50 per cent is expected to be in the hospitality, marketing, food and beverages, house-keeping, accountancy, front office, tourism and hospital services.
- In the banking and finance profession as a whole, women are expected to grow from over 100,000 at present to 250,000 in the next few years.

Most of these and other services like advertising, entertainment, recreation, computer programming, telecommunications and other public utilities require manpower with skills and abilities such as - cordiality in interactions with the public; sensitivity to the customer's reactions; quality of services conforming to public expectations; rendering safe, faultless, comfortable, quick and timely services; skillful communication with the public and other agencies dealing with complaints, suggestions and criticisms. With naturally-endowed qualities like grace and elegance, patience and soft-spokenness, sympathy and empathy, concern and commitment and with further education and training in the relevant areas, women are eminently suited for taking up positions at entry, middle or top levels in this sector. The design and development of the programmes will then be in the form of:

- Retraining of women already in employment for effectively utilising modern machinery and equipment recently introduced or being introduced in their occupations;
- Part-time and week-end courses for employed women at un-skilled and skilled level for vertical and horizontal mobility;
- Consolidation/expansion of the on-going programmes and introduction of programmes in newer areas at skilled and technician level;

- Introduction of programmes at graduate and post-graduate level for preparing them for executive, managerial and other top positions which are currently held by a miniscule number of women.

Capital Intensive Industrial Sector

This sector is generally composed of light and medium engineering, cement, mining, metallurgy, textiles, chemical, plastics, pharmaceutical, plantation and other industries of this kind. Women employment in this sector is about 7 per cent. Many of them are employed at unskilled and semi-skilled level. A sizable number of them are also seen at skilled and technician levels. Their proportion at the senior and executive positions is however very low.

This sector is presently grappling with problems arising out of:

- Haphazard planning of plants, resulting in under-utilisation of space, equipment and manpower;
- Ineffective inventory and quality controls; excessive delays, scrap, waste and re-work; unproductive paper work and multiple layers of supervision;
- Incompatibility between increasing number of newer machines and older practices in layouts, structures, production and manufacturing processes;

- High cost of production due to overheads of non-value-adding nature ranging from 30 to 40 per cent of total manufacturing cost;
- Dependence on imported technology affecting creative and innovative abilities and also trade relations adversely;
- Frequent dislocations in work schedules due to breakdowns, ineffective repairs and maintenance and strained relationships between the work force and the management.

High technology interventions to these pressing problems and issues should be in the direction of enabling the people in this sector for:

- designing and developing products of smaller size, fewer parts, intrinsic quality and lower price;
- accelerating the process of automation, computerisation and sophistication through greater use of robots, computers, CNC machines, closed loop-in processing systems;
- stepping up R & D abilities for minimising dependence on imported technology and producing most of the equipment used in the plant by the plant itself;
- designing and developing devices for minimising and effective control of pollution.

The implications of these interventions, in so far as they relate to employment of women, should be reflected in their education and training in terms of

- Organising a number of on-the-job training programmes, with additional inputs from institutions where necessary, for the large number of women employed at un-skilled and semi-skilled level to acquire compatible knowledge and skills conforming to trade requirements specified under The Apprenticeship Act, 1961;
- Mounting part-time and week-end courses to women in employment at semi-skilled, skilled and technician levels to orient them to new industrial practices and enable them to improve their qualifications for their vertical and horizontal mobility;
- Offering training and retraining programmes in the form of short courses and workshops for upgrading and updating the knowledge and skills of women in service to cope with the changing requirements in their roles and functions;
- Revising curricula of the on-going programmes more frequently to meet the changing industrial needs; diversifying broad-based and discipline-oriented courses into clusters of functionally related areas; and developing specialised programmes in newly established areas.

Knowledge-Intensive Modern Sector

Inspite of the problems, imperfections, limitations and shortcomings in the other sectors of industry, India's achievements in high and modern technology are quite impressive. The efforts made and progress achieved in Nuclear technology, Rocketry, Missile technology, Satellite technology, Underground resource exploration, Oceanography, Aerospace technology, Computer hard and software technology speak of the advancements made in this direction. The country is determined to make further break-throughs in high and frontier technological areas to catch up with the rest of the developed world. It is, therefore, enriching and enlarging its technological know-how, do-how and use-how in areas like Micro-electronics, Telecommunications, Bio-technology, Material sciences, Fibre technology, Laser technology, Robotics and the like.

This sector is currently witnessing a number of shifts from maintenance functions to creative, innovative and R & D endeavours; from material handling to information processing; from man management to hardware development; from passive attitude to adaptative and adoptive temperament; from being controlled to controlling the situation.

This sector has, among others, a vast scope for knowledge-intensive higher level technicians to closely work with R & D specialists, facilities planners, production managers, manufacturing and industrial engineers. These technicians are required to exhibit creative, innovative, imaginative, adoptive and problem-solving skills and abilities. The scope for employment of women in this sector, particularly at technician level, is very high. In order to prepare them for such positions, programmes of the following type are required:

- Post-diploma courses in narrow specialisations;
- Advanced level technician courses with sound educational background, preferably at +2 level;
- Continuing education programmes in allied areas for those already in employment.

CONCLUSION

India is placed in a peculiar position to pursue the policy of 'technology pluralism'. It is required to concentrate concurrently on -- labour-intensive agriculture-related and home-based occupational sector; people-oriented services sector; Capital-intensive on-going traditional industrial sector; and knowledge-intensive high and modern technology sector. There is an imperative need to equip the large number of women employed in agriculture and home-based small scale

industrial sector for improving their productivity and reducing physical labour. There is an increasing scope for large scale employment of women in the people-intensive services sector. There is further scope for entry of women in the capital-intensive industrial sector, besides training those already in for orienting them towards changing production and manufacturing processes and products. Knowledge-intensive modern sector is ideally suited for a large number of women at technician level. Revising curricula of courses; introducing programmes in newer and diversified areas; organising retraining, part-time, week-end and continuing education programmes for women already in employment are some of the ways by means of which the rising trend in the employment of women can be sustained.

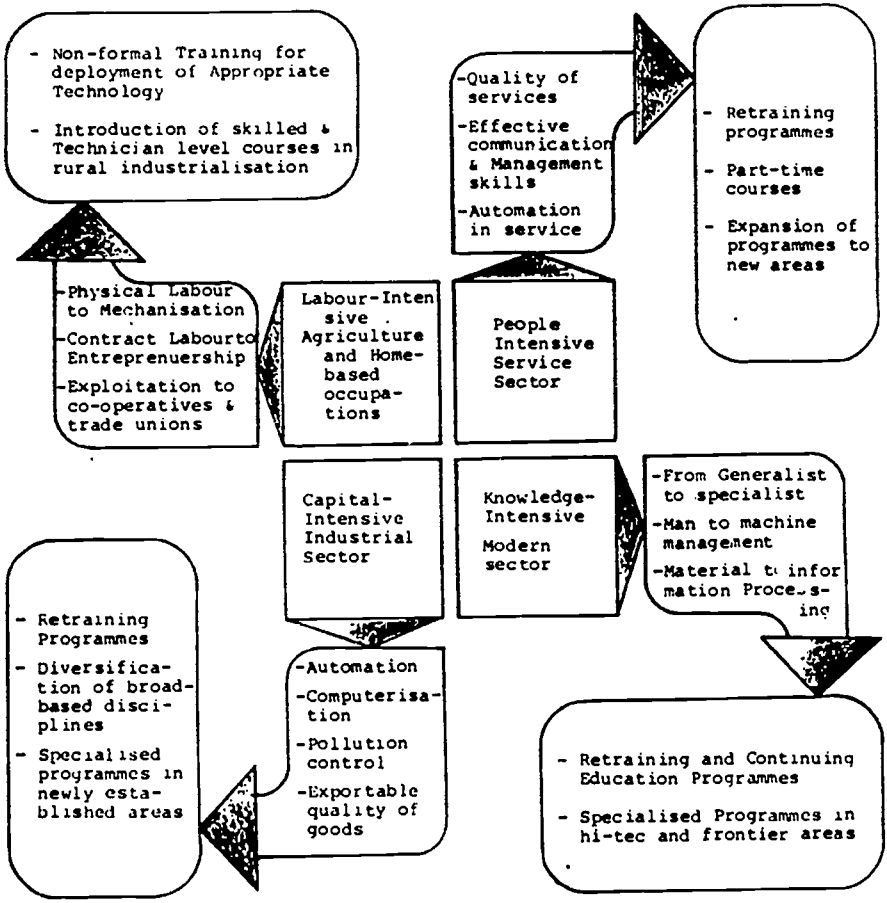


FIG. 4 : EMERGING TECHNOLOGY - SHIFTS IN FEMALE EMPLOYMENT, EDUCATION AND TRAINING

CHAPTER FIVE

CURRENT POLICIES, PROGRAMMES AND IMPLEMENTATION STRATEGIES - AN APPRAISAL

The world now stands on the threshhold of the twenty first century, influenced by accelerating pace of change in a continuing technological revolution. India, backed by its accrued strengths of huge industrial infrastructure and a large reservoir of manpower, is determined to usher into the new century, equipped with the necessary wherewithal for providing its people a better, fuller and more purposeful life. In order to move the country at a faster rate towards achieving technological and economic self-reliance and providing its millions of boys and girls, youth and adults productive skills and creative abilities, an extensive search was undertaken around 1986 to set new directions for further development of education and its subsystems through a series of debates, seminars, symposia and conferences at all levels throughout the country. The past experiences, contemporary practices and emerging trends relating to technical and vocational education of women, as brought out in the preceding chapters, were also given due consideration in this exercise. The resultant National Education Policy, 1986 (NPE 1986) and

the Programme of Action (POA) have, interalia, thrown open a wide range of new challenges and directions for enlarging and enriching the technical and vocational education of women. The relevant extracts of the policy directives are given as under:

SYSTEM RELATED

"In order to neutralise the accumulated distortions of the past, there will be a well-conceived edge in favour of women. The national education system will play a positive interventionist role in the empowerment of women. It will foster the development of new values through redesigned curricula, text books; training and orientation of teachers, decision-makers and administrators; and the active involvement of educational institutions. This will be an act of faith and social engineering. Women's studies will be promoted as a part of various courses and the educational institutions will be encouraged to take up active programmes to further women's development."

VOCATIONAL EDUCATION RELATED

"The removal of women's illiteracy and obstacles inhibiting their access to and retention in elementary education will receive over-riding priority through provision of special support services, setting of time targets, and effective monitoring. Major emphasis will be laid on women's participation in vocational, techni-

cal and professional education at different levels. The policy of non-discrimination will be pursued vigorously to eliminate sex stereo-typing in vocational and professional courses and to promote women's participation in non-traditional occupations as well as in the existing and emerging technologies."

TECHNICIAN EDUCATION RELATED

"Opportunities for technical education of women at all levels will be considerably increased. Women's access to technician education will be improved qualitatively and quantitatively. Additional women's polytechnics will be established by the state governments and residential polytechnics for women of a larger size will be set up under the central sector. The choice of trades/disciplines offered to women at certificate /diploma / degree levels in all types of technical institutions will be made, keeping in view the objective of bringing about women's equality. Identification of certain skills and occupations as 'suitable' or 'relevant' for women will no longer dictate the choice of subjects, either in the institutions meant exclusively for women or in the others. The selection of subjects will be based on the employment potential. Counselling services will be provided to enable them to opt for new subjects. All technical institutions will be encouraged to start new programmes for women. For increasing opportunities for entry, incentives such as hostel facilities,

freeships, stipends, scholarships etc. will be provided, particularly for courses in emerging technologies and programmes in which women's participation in the past has not been adequate. Formulation of guidelines for this purpose will be attended to by the AICTE."

A number of schemes, projects, mechanisms and strategies have been worked out for implementing the above policy directives along with several of those enumerated in the National Education Policy and Programme of Action documents for integrated development of technical, technician and vocational education in the country. Some of the prominent ones are discussed below:

TOWARDS INTEGRATED DEVELOPMENT

- Though technical and vocational education has been able to meet the manpower needs of the user systems in the organised sectors in a substantial measure, it has been mostly past and present-oriented. The system is therefore being moved from the hang-over of the past and present to have the future in its bones.
- The system is being reorganised taking into account the anticipated scenario by the turn of the century with specific reference to the likely changes in the economy, social environment, production and management processes, and the rapid advances in science and technology.

- Technology watch groups are being set up to constantly look out for new and emerging technologies, evaluate their relevance and feasibility in the national context, and arrange for development of appropriate courses and training programmes.

- Greater emphasis is being laid on training of manpower for the hitherto neglected unorganised, rural, infrastructure and service sectors which cover a wide variety of occupations and involve a large number of people.

- A National Technical Manpower Information System (NTMIS) has been set up with a Lead Centre at the Institute of Applied Manpower Research (IAMR), supported by a networkof 21 nodel centres in technical institutes and other concerned agencies for effective planning and monitoring of manpower requirements at all levels and for all sectors.

- The All India Council for Technical Education (AICTE), the apex body at the national level, has been vested with statutory authority to assume higher responsibilities for regulating quality and quantity of educational provisions, programmes, processes and products.

- A Board of Accreditation is being set up to recommend to AICTE on accreditation of programmes and institutions and formulation of guide-lines is nearing completion.

- New Boards of Studies such as Board for Vocational education, Continuing education, Distance education, Teacher training and Educational technology are being set up under the umbrella of AICTE for making concerted efforts for development in these areas.

- The AICTE and its regional bodies, the Bureau of Technical Education in the Ministry ofHuman Resource Development, State Boards and Directorates of Technical Education are being strengthened in terms of additional resources, and personnel with professional expertise for effectively translating the policy directives into action.

In all these measures, special attention is being given to the development of technical and vocational education of women, as envisaged in the policy directives referred to above.

TOWARDS INCREASING ACCESS AND COVERAGE

- A scheme for setting up residential polytechnics for women has been prepared and approval obtained. These polytechnics will have administrative and academic autonomy for designing, developing, implementing and reviewing courses of relevance to local needs. They will have freedom to offer multi-level courses leading to the award of Certificates/Diplomas/Advanced diplomas in the relevant areas of technology. They will be fully residential in nature.

- The intake of women in the institutions already set up exclusively for them is being increased, and co-educational facilities in other institutions are being strengthened.

- New hostels are being constructed for providing accommodation to a larger number of women students in all the technical institutions.

- Stipends, scholarships, freeships and transport facilities are being enhanced to enable a large number of women to take up courses in technical and vocational education.

- Diversification of courses in the traditional disciplines; introduction of broad-based courses in the newly established areas and specialised pro-

grammes in the emerging areas; and offering multi-level courses in the rural, informal and non-formal sectors are some of the approaches being adopted for increasing the access to and coverage of a greater number of women.

- Options are being increased by way of introducing flexible, modular, credit-based, multiple entry, part-time and distance education modes.

- Guidance and Counselling Centres are being set up in several educational institutions for providing assistance to choose the appropriate courses at the point of entry; solve personal, emotional and academic problems during the course; and secure post-institutional placement, education or employment.

TOWARDS QUALITY OF IMPROVEMENT

- State level Curriculum Development Cells are being established to cast and recast the curricula of courses periodically to meet the current and future needs of industry and other user systems, inclose collaboration with the Technical Manpower Information System (TMIS), Boards of Studies, and Professional Associations.

- Instructional Resource Centres are being set up in several institutions to design, develop and promote use of a variety of methods, media and materials in the teaching-learning processes.

- A scheme for modernisation and removal of obsolescence has been introduced to equip the laboratories, workshops, and libraries in such a way that they meet adequately the educational and training requirements in consonance with the up-dated and upgraded curricula of courses.

- Staff Development Cells are being set up at the state Directorates of Technical and Vocational Education to prepare comprehensive plans for training of teachers to update their competencies on a continuing basis.

- Comprehensive projects are being formulated for strengthening industry-institute interaction in a variety of areas such as curriculum development, resources sharing, undertaking joint projects, training of students and faculty.

- Apprenticeship Act, 1961 has been amended to enlarge its scope to provide placements for post-institutional training, particularly relating to newly introduced courses and programmes.

TOWARDS NON-FORMAL TRAINING

The Central Social Welfare Board (CSWB) has drawn up a scheme for Skill development of the deprived groups of women through Vocational Training Programmes on the basis of experience derived from its "Awareness Generation Programmes". These courses are meant for producing womanpower for rural, tribal and slum dwelling populations. The experiences of the Board have motivated other agencies for coming up with schemes for improving the professional competence of women in several areas. Some of them are as under:

- Socio-economic Programmes for women - A scheme sponsored by CSWB and implemented by voluntary agencies.

- Vocational training for adult women - A scheme sponsored by CSWB and implemented by voluntary agencies.

- Training Centres for rehabilitation of women in distress - implemented by voluntary agencies linking training with employment.

- Rural artisan programmes - A scheme of the Ministry of Industry and implemented by District Industries Centres.

- Short-term training courses in Handloom and Village Crafts - A scheme administered by Ministry of Commerce.

- Training of Women farmers - A scheme administered by Ministry of Agriculture through its Centres for agricultural sciences.

- Regional and National Vocational Training Institutes for women - set up by the Directorate General of Employment and Training, apart from 144 Industrial Training Institutes already set up exclusively for women.

- Support to Employment Programme of Women (STEP) - A scheme for providing women with technical skills in agriculture and home-based industries.

- Training for rural youth in self-employment - A scheme (women as one third of the beneficiaries) under which training is provided by ITIs and community polytechnics.

- Strengthening of Community polytechnics (110) and Centres for Development of Rural Technology (12) - A scheme for generating appropriate technology, transfer of technology and training of unemployed youth and adults in rural, tribal and slum areas.

TOWARDS CONTINUING EDUCATION

- A scheme for continuing education of working personnel was introduced for providing them opportunities for periodic training and retraining to update and upgrade their comptetncies for ensuring productivity in the context of changing technology and facilitating vertical and horizontal mobility. Under this scheme, theme, topic or module-based instructional packages are being developed at 12 centres chosen for the purpose. Selected technical and vocational institutions throughout the country are being equipped to mount these programmes to the working personnel in their neighbourhood using the packages developed.

- Some State Directorates of Technical and Vocational Education have started offering to personnel already employed at skilled and technician level, correspondence-cum-contact courses, leading to Diploma or Degree in engineering and technology.

CONCLUSION

The various aspects of technical and vocational education of women and their employment, as discussed in the preceding Chapters, have been given due consideration in the National Education Policy, 1986. A number of new directions and challenges have been thrown

up for furtherance of education and training of women in the form of policy directives, programmes of action and implementation strategies. These have been mainly addressed to heightening the sensitivity of the system to the felt-needs of women's education and training; enlarging the coverage of the programme areas and their access to wider sections of women; enriching the quality and standards of educational processes and products; removal of obsolescence and modernisation of infra-structural facilities and staff resources; and profes-sionalising management and administration of the system with particular reference to education and employment of women. With these interventions and with the forth-coming massive World Bank assistance at an opportune time for capacity expansion, quality development and efficiency improvement of technician education in the country, technical and vocational education of women is poised to register substantial growth and development in the years to come.

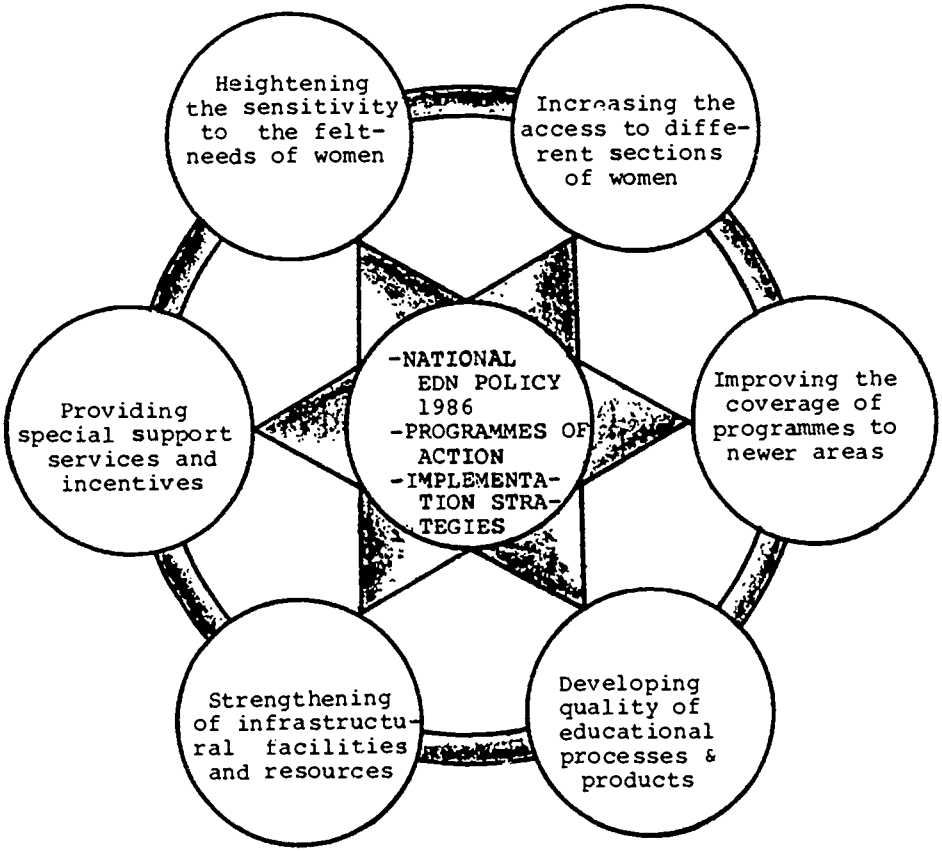


FIG.5 : NEW DIRECTIONS FOR FURTHERANCE OF TECHNICAL AND VOCATIONAL EDUCATION OF WOMEN

CHAPTER SIX

PROBLEMS, ISSUES AND FUTURE DIRECTIONS

All said and done, an investigator has described the matter of fact situation of women in these words: "While women represent nearly 50 percent of adult population and 1/3 of the labour force, they perform nearly 2/3 of all working hours and receive 1/10 of the world income and own less than 1 percent of the property." An ILO sponsored Asian Employment Programme Study by AV Jose has brought out that the rapid growth in the numbers of women entering the job markets of Asia is no indication of any substantial improvement in the socio-economic status of Asian women. Gender-based occupational seggregation, inequitous wage structures and discriminatory employment policies have prevented Asian women from participating as equal partners in the economic process.

The Indian experience is not much different from the above. This should not surprise any one because considerable amount of time is required to transform the dejure equality into a defacto one by overcoming the associated ideological conflicts, sociological barriers and the force of deeprooted habits. An attempt is made in this Chapter to identify the basic issues and

problems standing in the way of advancement of women and the new directions being contemplated for enabling them to reach their rightful place in the socio-economic transformation of the country.

IDEOLOGICAL CONFLICTS

It is being argued by some sections of the society that equality should not lead to creating situations where boys and girls jostle with each other to capture the same seats in educational institutions and the same posts in the employment market. They differ from each other not only in the physical appearance but in their thinking, temperament and physical abilities as well. Their biological, intellectual and personality traits indicate that boys and girls have been conceived by nature as complementary to each other and one is incomplete without the other.

Experience shows that jobs requiring endurence, sensitivity, compassion, accuracy, critical judgement, cool handling and understanding of human nature are aptly suitable to women. If opportunities are provided for training their minds in such intellectual and vocational pursuits which bring in the interplay of these personality traits, the education system can produce an independent work force which instead of jamming the same frequency, will carve out a frequency band of its own which will be much more melodious and useful to socio-

economic harmony. Women's education should not be based on a confrontation model; but it should be a complementary and self-reliant one, capable of providing the full flowering of their unique talents and personal qualities.

It is further argued that in Indian society, the husband and wife are the two wheels of a cart; and either wheel should not vie with the other to go faster; lest the rhythmic movement of the cart will be disturbed. The attainment of this rhythmic combination of man and woman in life should be the aim of all education. They plead that if the concept of equality is drawn to its extremes, as is being attempted by some overzealous sections of the society without regard to the realities of nature's conception, distortions are bound to take place in the productive and reproductive female roles and functions, and the man to woman relationships in the home, profession and society at large.

If this school of thought is acceptable, how far the policy of wiping out the male and female preferences in education and employment and measuring equality by the yardstick of proportionateness of representation in every sphere of activity is justifiable? If it is unacceptable, can this concept of equity by segregation be promoted in an atmosphere of hostility and rejection by those with whom women are inextricably inter-twined

in their day to day operations and transactions? Does it not then suggest that education and employment of women should be centred around such areas which are not likely to endanger their health, reproductive functions, quality and quantity of performance? If not, who will be the sufferers then? The first will be the women themselves, of course of lower strata, because the educated, employed and emancipated women will not hesitate to engage them as maid servants on the strength of their suitability to domestic chores and easy availability at lower rates of wages. Secondly, the care of children, peace of mind and harmonious relationships at home will be impaired which will in turn affect the productivity of both the sexes in all fronts. These issues are very complex and warrant greater understanding, wider enquiry and deeper analysis for safeguarding the larger and longer interests of nation and society.

SOCIOLOGICAL BARRIERS

Economically poorer sections of the society are not in a position to send their children to schools. Those who can afford would like to send their male children in order of priority and avail the services of female children for house-hold work or income generating activities. The middle class families look at education of their daughters as an instrument for raising the quality of family life, strengthening the bonds of tradition and the family as the chief unit of

social organisation. They do not consider education as an important means for raising the status of their daughters economically and socially and preparing them as individuals in their own right.

The upper middle class sections are however very conscious to provide education to their children without regard to sex, caste or creed. Most of the educated and employed women belong to this category. Among them also, discriminatory stances such as women's education has lower economic utility, and they can at best be a secondary wage earner, do exist in the back of their minds. Equality of sexes is only limited to the few previliged upper classes and they are not sensitive to the plight of a large number of deprived women at lower levels.

Against this back ground, new initiatives must be introduced to fix the responsibility and accountability on educated men and women for removing the social and structural barriers standing in the way of participation of majority of women in education, employment and other activities. The State also should come in a big way to promote secularisation in education by generously providing stipends, scholarships, freeships, soft loans, transport facilities, guidance and counselling services to all school and college going women, belonging to lower sections of the society.

TECHNOLOGICAL DILEMMAS

On one hand, it is being held that the process of industrialisation has bye-passed the interests of women and due consideration has not been given for developing appropriate technology for releasing them from excessive strain, disfigurement, sickness and high rates of fatalities. On the other, it is being pointed out that wherever such technology is developed and introduced, it has entailed in keeping male workers on rationalised machines, relegating female workers to traditional and non-automatic jobs, displacment of women from employment and abolition of temporary and part-time jobs hitherto held by them.

What is then the way out to over these dilemmas and harness the technology in such a way that it improves the productivity of women, raises their earning capacity, promotes their living and working conditions, enhances their status in the society and yet prevents employment displacement? In this context, promotion of self-employment is being considered as a viable solution. New approaches are being devised to enlarge the repertory of appropriate technology to many areas of women employment, upgrade their technical knowledge and skills for its utilisation in their areas of occupation, provide extension, credit, marketing and enterpreneurial support, turn them from labourers to semi-skilled and

skilled artisans and from employees to co-operative partners in the industry.

DISCRIMINATORY PRACTICES

Discrimination is still practised against women even in organised and State owned industries. They are confined to such areas and positions which do not require demonstration of higher order skills and abilities. They are not preferred on grounds such as they leave the job after getting married, their pregnency causes dislocation of work, and they are not suitable for posting during night shifts. They are the first to be terminated at times of recession, declining profits or sales, introduction of new products, processes or technology. They are not provided adequate opportunities for training and retraining to move them up horizontally or vertically.

In many cases, women themselves are responsible for holding back their progress on preconceived notations such as they are not capable of coping with the pressure of work at home and in office, they are supposed to confirm to socially induced images of feminity, mobility in employment causes psychological strains and interfers with domestic obligations, and they do not possess matching abilities to accept promotions coming in their way. Many of them at the top positions do not also seem to be interested in

encouraging or creating opportunities for employment of more women.

New ways must be thought of to help them become more effective career women. Schemes such as age relaxation for late entry into a career, break and re-entry points to meet their family obligations, part-time and week end jobs, security of service, maternity benefits, supporting net working systems such as transportation, creches, residential accommodation and effective enforcement of laws must be consolidated, strengthened or introduced to promote their participation in the world of work and employment.

To conclude, it may be said that the technical and vocational education of woemn is in for a bright future despite the onslughts itis facing from different directions. An integrated approach with vertical linkages amoang different levels of education and horizontal linkages between education and employment at multiple points will give a big boost and added momentum to the efforts being made for strengthening the education, training and employment of women.

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