CHAPTER-I

Introduction

I.1 Statement of the Problem

Experience of the most third world countries reveals that growth in itself may not necessarily ensure that its benefits trickle down to the poorest. It is generally argued that development increases differentiation by class and gender. Of late there has been an emphasis on the overall improvement in the quality of life of the entire population on the basis of their full participation in the development process. However, the effort has failed, partly at least, because of the spatial separation of the home and the work world. The recognition of men as 'bread winners' and women as 'house keepers' prevent women being fully integrated into the development process.

With the progress of industrialization and urbanization, large number of women lost their jobs due to the lack of required skills to join the new occupations. Experience of Europe and U.S.A. also brings out that with the introduction of machines in agriculture, operated generally by men, female labour has largely been displaced. Efforts have also been made in India since Independence, to modernize the technological base of agriculture. The new
green revolution technology was introduced in mid-sixties which resulted in tremendous increase in the yield levels of some crops. Since then there has been a total transformation of agriculture in some parts of India. In fact, in these regions, the new agricultural technology has become a central factor in agricultural development. In what way it will affect the female employment structure is the main issue to which the present study addresses.

Technology is more than just techniques and normally it is not socially neutral. It may benefit or hurt some groups of people more than others. Depending upon the nature and extent of technological change, it may reduce poverty, unemployment, inequalities, etc., or may bring just the opposite. In addition to bringing changes in the production, organizational and distributional structures, it also changes the existing value-system. Thus it becomes necessary to analyse and assess the consequences of technological change. The fact that nearly two-thirds of the labourforce in India, is employed in agriculture and moreover the proportion of women agricultural workers in total women workers is even higher, further increases the importance of the inquiry.

The new agricultural technology adopted in certain parts of India is a package of some inputs such as
HYV seeds, assured water supply, chemical fertilizers, pesticides and a variety of mechanical inputs and farm practices. Assured water supply promotes the use of HYV seeds and fertilizers. Increasing intensity of irrigation and quickly maturing HYV crops, have paved the way for multiple cropping. But this increases tremendously the peak time demand for human and bullock labour. Now, harvesting must be completed quickly to leave time for seed bed preparation which again has to be completed in shorter period for the following crops. Large farmers deficient in family labour resort to mechanization to reduce this time constraint.

Thus, the adoption of new technology has brought some important changes in the Indian agriculture. First of all, the new technology has tremendously increased the role of capital vis-a-vis labour. Secondly, agriculture, both in terms of purchase of inputs and disposal of output, has become highly market oriented. Thirdly, agricultural operations are increasingly getting mechanized. The net result of these changes is expected to be that the large farmers will be in a more favourable position vis-a-vis small farmers. It may also hasten the process of differentiation of the peasantry and produce conditions in which, by a variety of means, the small peasants and tenants will be increasingly pushed out of self employment into wage
labour.

The changing agrarian structure and production basis of agriculture as a result of changes in agricultural technology is bound to have tremendous impact on labour demand and employment structure in general and of rural women in particular. Eviction of small family labour based tenants and depeasantisation of small and marginal owner cultivators and emergence of large capitalist (wage labour based) farmers in addition to other changes in the production process is going to influence the employment structure of rural women to a large extent.

Punjab being the state having considerably higher irrigated area, consolidated landholdings and relatively better institutional and infrastructural facilities, at the time of introduction of HYV seeds, experienced very rapid transformation of its agricultural economy. There has been a manifold increase in the consumption of fertilizer, electricity in agriculture, number of tubewells, tractors and other agricultural implements. Punjab took the lead over all other states in the use of almost all components of new technology. It is against this background that we propose to explore the various aspects of changing employment structure of rural women in Punjab. The main purpose of the present study is to assess the contribution of rural women in
workforce in the three different regions of the state at different levels of agricultural development.

1.1.1 Objectives
The objectives of the study are as follows:

(1) to assess the intensity of work participation of women in gainful and non-gainful work with a socio-economic and regional perspective;

(2) to examine the occupational structure of rural female workforce and to see how it is influenced by caste, class and agricultural development;

(3) to analyse the impact of class formation, technological level, cropping pattern and crop operations on female labour utilization in crop production in three regions at three different levels of agricultural development; and

(4) to determine the impact of socio-economic and demographic variables on female participation in gainful work.

1.1.2 Hypotheses
1. Women in general have lower occupational diversification vis-a-vis men;

2. female occupational diversification is likely to increase with agricultural development;

3. female occupational diversification is higher
(a) in case of lower castes; and
(b) in case of classes with smaller landholdings;

4. intensity of female participation in gainful work is
(a) inversely related with agricultural mechanization, income of the household, operated area, domestic work, number of adult males, number of children below 4 years, size of the family, ratio of hired labour to family labour in crop production, highest education of the household, highest distance of work place, the caste status of the household; and
(b) directly related with number of milch cattle, area under paddy, and area under cotton.

1.2 The Study Area

Punjab constitutes a significant part of the great plains of India. It roughly covers about 1.6 per cent of the total land of the country, having about 2.5 per cent of the entire country’s population. Broadly speaking the state presents a physically uniform character but underlying this homogeneity there exist regional differences, primarily due to affinity with Siwalik hills on the one side and the desert on the other. These differences are also because of differences in drainage, rain fall, soil and moreover in economic development.
Foot-hill area adjoining the Siwalik hills roughly comprising of Gurdaspur, Hoshiarpur and Ropar districts is characterized by a steep slope and drained by large number of chos. The banks of these chos are low. Owing to their incapacity to carry forward excessive load, they deposit large amounts of sands, gravel and boulders and thus rendered vast lands infertile. On the southern side adjoining the Thar desert of Rajasthan and semi-desert area of Haryana are the districts of Ferozepur, Faridkot Bathinda and Sangrur. The area is devoid of any surface drainage. Characteristic feature of this Banger tract is a light sand soil interrupted by sand dunes. But of late, due to the development of canal irrigation in this area, these sand-dunes are slowly sinking.

Central, districts (between the foot hill region and southern semi-arid plain) comprises of Amritsar, Jalandhar, Kapurthala, Ludhiana and Patiala. This region is characterized by most fertile alluvial soils of flood plains. All the three main rivers Satluj, Beas and Ravi pass through this region.

Temperature conditions are more or less uniform in the state. But it is not true in case of rainfall, which in general decreases from north-eastern foot-hill region to the south-western region. Foot-hill tract receives on an average
about 75 cm. of rainfall annually where as most parts of the south-western region receive only around 30 cm. Rainfall in central districts lies between these two extremes. Existing forests are mainly confined to the foot-hill region. Around 16 per cent of the geographical area of these three districts is under forests. Whereas in case of all other districts it is less than 3 per cent.

Even agricultural development is not uniform throughout the state. The central region, with most fertile land and higher area under irrigation (both tubewell and canal) has undergone tremendous changes in its agricultural technology since mid-sixties. The south-western Punjab comes next in order of agricultural development. Proportion of area under irrigation in this region though quite high is less than that of central districts. Moreover, the main source of irrigation being canals the intensity of irrigation is relatively low. The cho-infested foot-hill region with relatively infertile land and much lower area under-irrigation has lagged behind the other two regions in experiencing the change in agricultural technology.

I.2.1 Regions

Generally the state has been divided into three regions on the basis of agricultural development (Government of Punjab, 1972; Bhalla and Chadha, 1983; Gosal and Krishan,
The central Punjab with most fertile land and widespread tubewell irrigation has witnessed the most profound change in its agricultural technology and is the seed bed of the green revolution in the state. Amritsar, Jallandhar, Kapurthala, Ludhiana and Patiala districts come under this most developed region. Wheat and rice are the two main crops of this region. The south-western Punjab consisting of districts Ferozepur, Faridkot, Bathinda and Sangrur comes next in order of technological development. In this region the use of machines is quite extensive but the source of irrigation is mainly canals and the use of certain modern inputs like fertilizer, though quite widespread and intensive compared with foot hill region, is not as intensive as in central districts. This is also known as the cotton belt of Punjab. The region comprising of three cho-infested foot-hill districts of Ropar, Hoshiarpur and Gurdaspur adjoining Siwalik hills, has lagged behind the other two regions in the adoption of new agricultural technology. The use of modern inputs and machines is the lowest in this region. Landholdings in general are small in this area. Mixed cropping is quite common in more backward areas of this region. Wheat and Maize are grown in combination with some oil seeds and pulses. This foot hill area has been named as the North-Eastern region, south-western Punjab as the South-Western region and the most developed central Punjab as the Central region.
I.2.2 Changing Agrarian Scene of the Punjab

Roughly three-fourth of the population of Punjab live in rural areas. Agriculture dominates the economic scene in Punjab. As compared with other parts of India, agriculture in Punjab in general is highly capital intensive and is run on purely capitalistic lines. But this is a result of certain important changes introduced in agriculture after the achievement of Independence. An important change which had remarkable influence on agricultural development of the state was consolidation of landholdings. Before consolidation, landholdings in Punjab were extremely fragmented. Each ownership holding was divided into number of plots. It was a major constraint for the land owners to invest in land. Consolidation of holdings into compact blocks after Independence, had provided out-let for investment especially in tubewell irrigation.

Before 1947, organization of cultivation in Punjab was mainly family labour based. Though ownership of land was highly skewed and the large part of land was concentrated in the hands of few big owners yet inequalities at the

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1 In a village in Jallandar district, surveyed during 1920s it was found that 77 out of total 342 ownership holdings were divided into over 30 plots each and another 61 had more than 20 plots each. Source: Board of economic Inquiry, Punjab, (1937: XIX).
operational level were much less. In fact big owners were getting their land cultivated through the small owners and landless tenants. At the time of Independence around half of the cultivated area in Punjab was under tenant cultivation (National Sample Survey, 1962: 43-44).

A large number of these tenants were landless tenants. A survey undertaken by the NSS during 1950-51 to 1953-54 shows that in the Punjab 60 to 65 per cent of total leased-in area was under non-owning cultivators (landless tenants2). With the enactment of Tenancy Act (in 1953), providing security to the tenants, area under tenancy started declining. In 1961-62 it was around 35 per cent of the operated area and it further declined to around 26 per cent in 1971-72 (Punjab and Haryana combined). Technological changes since mid-sixties further accelerated the process. Landless tenants were the main victims of these changes. Purely rented holdings declined from 22 per cent of all operational holdings in 1953-54 to around 4 per cent in 1971-72.

A large majority of these landless tenants joined the ranks of agricultural labourers. The proportion of agricultural labourers to total agricultural workers

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2 For the data in this paragraph see Singh (1985: 144-46).
increased from around 12 per cent in 1951 to around 32 per cent in 1971. Their proportion further increased to 38.2 per cent in 1981 and 41.5 per cent in 1991. Moreover the number of operational holdings in the state has declined from 13.75 lakh to 10.27 lakh between 1971 and 1981. The decline was mainly in the landholdings below 1 hectare where it came down from 5.17 lakh to 1.87 lakh. In fact, the number has increased from 69 thousand to 74 thousand in the case of above 10 hectare landholdings (Govt. of Punjab, 1983: 151).

Thus a shift is taking place towards hired labour based highly capital intensive agriculture from family labour based medium and small owner and tenant cultivation. These changes in agrarian structure with increased investment in agriculture may have considerable impact on labour employment in general and female employment in particular.

3 (a) Census of India 1951, Vol. VIII, Punjab, PEPSU, Himachal Pradesh, Bilaspur and Delhi, Part II-B Economic Tables pp. 2-5.
(b) Census of India, 1971, Series 17-Punjab, Part II-B Economic Tables, pp. 22-25.

1.3 Data Base and Methodological Framework

In the present study, an attempt is made to examine the women’s work patterns at varying levels of agricultural development in Punjab on the basis of primary data gathered from three different regions representing diverse levels of technological development. The female work patterns of the backward region have been compared with that of other two regions at higher levels of agricultural development. It is hoped, this comparison would broadly capture the changes in the employment structure of women in rural Punjab.

1.3.1 Sampling Design

A sample of households was drawn from each region on the basis of stratified random sampling method. First step was to choose one tahsil from each region. We could have drawn it from each of the three regions, in a random fashion taking it as a representative of a specific development level. But within each of the three regions all the tahsils did not stand at the same level of agricultural development. In fact there were areas in the most backward North-Eastern region especially adjoining central districts, which were relatively less backward. Similarly in the most developed Central region the impact of new technology was not uniform throughout. It was quite possible that gap in agricultural development and other
characteristic distinctions between the randomly chosen tahsils of the North-Eastern region and the Central region would not clearly show themselves up. To make it sure that the tahsil selected from the Central region was really the best and the one chosen from the North-Eastern region was the most backward agriculturally, a purposive frame was developed for selecting the tahsils.

Since tahsil level data for number of agricultural inputs representing technological level, and crop yields is available in published form in district statistical handbooks, the choice of the most backward and the advanced tahsil was not a difficult task. On the input side the indicators taken were per hectare use of chemical fertilizers, percentage of net cultivated area irrigated, number of tubewells and tractors per thousand hectares of operated area and cropping intensity. Though cropping pattern differs in these regions, yet wheat is the main crop in all the regions. So we have taken wheat yields as an indicator from output side. Giving equal weight to each indicator a composite index of technological development was prepared for the North-Eastern region and the Central region with the help of these indicators. Anandpur Sahib tahsil of Ropar district from the North-Eastern region emerged as the most backward tahsil. The most developed tahsil from the Central region was Jagraon (district Ludhiana) closely
followed by Khanna tahsil of the same district. But we were advised by our local contacts to abandon Jagraon in favour of Khanna because of the problem of much higher terrorist activity in the rural areas of the former during the period of survey (1988-89).

The main crops grown in the most developed Central region are wheat and rice, in the backward North-Eastern region are wheat and maize. Area wise, cotton is the third most important crop in the state, after wheat and rice. Cotton picking is an important labour activity during kharif season and it provides quite a good amount of work during the months of November and December. Traditionally, it is a female specific activity. So proportion of area under cotton was one consideration while selecting the tahsil from the South-Western region.

In the backward North-Eastern region level of irrigation is low. In the advanced Central region per cent area irrigated is very high (above 95 per cent) and major part of it is irrigated by tubewells. Water table in this area is relatively high and energy requirement to pump out water are relatively lower. Thus the most advanced region has cheap and assured supply of water. On the other hand, in the cotton belt, the main source of irrigation is canals. Tubewell irrigation, wherever possible (in many parts of
cotton belt, underground water is not fit for irrigation), is relatively costly due to low water table. Although, the percentage area irrigated in this belt is quite high yet limited supply of canal water in this case restricts the choice of crops (especially cultivation of crops like rice) and also the intensive use of certain inputs like fertilizers. It was, therefore, decided that tahsil selected from the South-Western region should mainly be a canal irrigated tahsil with higher proportion of area under cotton. Bathinda tahsil emerged as our choice.

The next step was to select the sample villages. It was decided that two villages should be selected from each tahsil. The purpose of this exercise is to examine the rural female employment structure. One of the factors which influence the employment structure in a particular village is its distance from town. In order to capture urban influence on employment structure, one village from each tahsil was selected within the range of four kilometers from the town in the tahsil and the second one from the range of beyond 8 kilometers. Selection of villages was on random basis from these two sub-sets of villages. Map 1.1 shows the location of selected tahsils and villages in three regions.

Our attempt was to cover around 400 households from the sample of six villages. The number of households to
PUNJAB

LOCATION OF SAMPLE VILLAGES

BOUNDARIES

International
State
Region
District
Tahsil

SAMPLE VILLAGES

Nikkau Nangal 1
Nangali 2
Sibian 3
Deon 4
Ikohal 5
Isru 6

-MAP I.1-
be surveyed from each group of two villages was on the basis of proportion of population of particular region in the state. The proportion of population was roughly 24 per cent, 34 per cent, and 42 per cent in the North-Eastern region the South-Western region and the Central region respectively. The number of households allotted to each region were divided more or less equally between the villages. For selecting the sample, all the households were listed on the basis of caste groups and size of the operational holdings. Households were divided into four caste-groups i.e., scheduled castes, backward castes, Jats and other upper castes. In each caste group households were listed in ascending order on the basis of operated area of the household. From this exhaustive list, every nth household was picked up for extensive survey. Size of n for each village was calculated roughly by dividing the total number of households in the particular village by the number of households to be surveyed from that village. In case of respondent's refusal to respond to our questions, next household in the list was taken up. Of course, there were only few such cases. In total we surveyed 410 households out of which 100 were from the North-Eastern region, 140 from the South-Western region and 170 from the Central region.

I.3.2 Questionnaire

For collection of data, a comprehensive
questionnaire was canvassed through 'direct personal interview method'. Information collected was for year 1988-89. The following types of information were collected from each household:

(a) demographic features, caste and religious background, detailed information of each member of the household about his/her participation in economic activity and domestic work, work place, nature of work such as paid/unpaid, commercial/subsistence and remuneration etc;

(b) number and price of milch cattle, other animals, implements, machinery, owned house and other capital assets;

(c) land owned and operated, crops grown, irrigation, crop wise and operation wise labour use, wages paid etc.;

(d) output and expenditure of different productive household activities (including dairy) other than crop production;

(e) Information was also gathered about certain qualitative aspects like their freedom of movement in and outside the village, participation in the cultural activities and decision making etc.

I.3.3 Method of Survey

Method used in recording of time spent by each member in gainful activities and domestic work depended upon the nature of activity. For daily activities such as care of
animals, sale of milk, work in the kitchen, child care etc., the daily time spent by each member in each activity was recorded. Possible fluctuations in different seasons (such as differences in time required to collect same amount of fodder for cattle) on the time consumed in each activity was also taken care of. Time used in certain activities such as washing clothes and some kind of food processing etc. was recorded weekly whereas in some other activities like stitching, weaving, embroidery, house repair etc. it was month wise and season wise. In crop production, labour time utilized was recorded seasonally as well as crop wise and operation wise. Time use data of each member on all activities except on recreation, participation in cultural and religious activities/functions and on leisure etc., was recorded. Though in daily activities in certain cases, the time used was recorded through direct observation, but in general we depended upon respondent's recall method. Women themselves often view a wide range of productive activities performed inside or outside the house as 'housework'. Instead of posing direct questions like "what is your main activity? Are you working?", information was collected about their participation in wide range of activities (both domestic and gainful) and on the basis of time devoted to each activity we ourselves decided about their main activity.

About which we gathered information before starting the data collection in each area.
and nature of different activities i.e., whether gainful or domestic.

1.4 An Overview of Literature

With the declaration of women's decade in 1975, there has been an upsurge in the women studies. In contrast to the earlier period, when the subject matter of women studies mainly revolved around the socio-cultural problems of elite women, recently there has been an increasing stress on the analysis of women's contribution in the sphere of social production. In the present section an attempt is made to briefly review the main trends in the literature.

1.4.1 The Changing Perspective of Women Studies

The discrimination against women and their inferior status in society and home is widely accepted. Inequality between sexes, in fact, is in-built in the minds of men and women. Especially in developing countries, the boys and girls, from their childhood itself, are trained in such a way that these inequalities become deep-rooted and even women usually accept this as given and natural.

The first challenge to this discrimination and inequality of status came in the form of feminist movements. These movements originated in the Western Europe in 18th century, the Enlightenment period (Desai and Krishna Raj,
In this age of reason, wide range of questions were raised. It was demanded that women should be recognized first as human beings and not sexual beings.

Nevertheless, a systematic development of 'women studies' took place in U.S.A. The Civil Rights movement in the United States which led to the formation of Black Studies and Ethnic Studies played an important role in creating a foothold for women studies (Desai and Krishna Raj, 1987: 2). But issues concerning women have received global attention only in the recent decades, especially after 1975 when it was declared as International Women's Year.

1.4.2 Sexual Division of Labour and Subordination

Though existence of sexual division of labour and subordination of women is generally accepted, but universally acceptable theory of origin of such discrimination is yet to be established. One view is that biological differences are the root cause of women's subordination (Beauvoir: 1974 and Beneria: 1982). It is argued that certain physical weaknesses of women such as pregnancy, child birth, menstruation, reduce their capacity for work and make them at times wholly dependent upon the men for protection and food. This 'bondage of reproduction' restricts the possibility of women's role in productive
work. Confinement or restriction to a narrow round of uncreative and repetitious duties hinder their development. Beauvoir argues that women suffered a great loss through their exclusion from certain productive activities and consequently from the conquest of nature, entailed for the development of her personality. Fulfillment of one's human potential through children can not be achieved. It has to be through one's own activities and experiences. And it is this opportunity that has been historically denied to the women. She is, however, confident that the rapid development of technology, which is continuously devaluing muscular power and the increasing control that the woman is acquiring over her reproductive functions, indicate that women's liberation is a definite possibility.

However, the above argument of biological weakness is not accepted by most scholars. Actually physiology of human beings has developed over several epochs in response to their socially conditioned physical activities. Some scholars have emphasized that sexual division of labour and woman's subjugation are largely determined by the material circumstances confronted by men and women.

Engles (1948: 158) argued that origin of private property in herds and other new objects of wealth, brought about a revolution in the family. Since the herds were the
new means of gaining a livelihood, and their original domestication and subsequent tending was men's work, so they owned the cattle and the commodities and slaves obtained in exchange for them. The very cause that had formally made women supreme in the house, namely, her being confined to domestic work now assured supremacy in the house for the men; the women's housework lost its significance compared with the men's work in obtaining a livelihood. As wealth increased, it gave the man a more important status in the family than the woman. The reckoning of descent through the female line and the right of inheritance through the mother were hereby overthrown and male lineage and right of inheritance from the father instituted. "The overthrow of mother right" according to Engles, "was the world-historic defeat of female sex. The man seized the reins in the house also, the woman was degraded, enthralled, the slave of the man's lust, a mere instrument for bearing children" (Engles, 1948: 57). He visualized that the emancipation of women and their equality with men are impossible and must remain so as long as women are excluded from socially productive work and restricted to the house work which is private.

Boserup (1970), on the basis of empirical and

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8 Domestic work also included gathering of food articles from the forest. Men were engaged in hunting, a relatively risky source of food than gathering.
descriptive information regarding the sexual division of labour from many parts of the world, disproved the simplistic division of men as bread winners and women as housekeepers. She found that in most communities women too have been and are food providers in many parts of the world. She also noticed the impact of different agricultural methods, characteristics of different geographical areas, upon the determination of gender specific activities and spheres. Thus her study brings about that the sexual division of labour is not natural one, based on biological differences, but instead influenced by the material circumstances faced by the people.

Harriss and Watson (1987: 93) also observe that empirical evidence of massive spatio-temporal variation in the content of the division of labour discredits notions of naturalness and sexual complementarity. In fact, they argue that the sexual division of labour is rather seen to be specific historically, culturally and by class, and the point is often emphasized by referring to it as a 'gender division of labour'.

In a study based on the data collected from the three Andean peasant regions, Deere & Leon de Leal (1982) point out that although sexual division of labour is a central variable in the analysis of women's sub-ordination,
the theoretical links between the two remain both controversial and ambiguous. They have further substantiated that sexual division of labour in production varies with the particular agricultural task, with the form of labour procurement and most important in the case of familial agricultural labourforce, with the household's class position.

1.4.3 Third World Perspective

Development as well as nature and thrust of women's studies in the developing countries are strikingly different from the West. But unfortunately, considerable dependence is noticeable on Western ideas, models and methodologies. However there is a growing feeling among the scholars for an urgent need to develop a Third World focus to understand the gender issues. Such dependence, it is argued is in the long run counter productive (Desai and Krishna Raj, 1987: 3). It is necessary to develop a locally relevant concepts and theories taking into account of the specificity of social structures.

It is in this context that consensus is emerging among the scholars that Western definitions of work do not capture the large part of the work done by women in developing countries. It is felt that change in the definition of work has become absolutely necessary so as to
include women's substantial contribution in unorganized sectors of the economy and especially in rural areas. Boserup (1970: 163) was among the first few to note that subsistence activities usually omitted in the statistics of production and income are largely women's work. Their work continues to be under-reported and under-estimated, particularly in the area of domestic production, despite efforts made to include subsistence work in statistics of production and labourforce participation in peasant societies (Beneria & Sen 1981: 281).

One of the most pervasive themes discussed by various scholars is the extent to which women's economic activities are under-estimated in labourforce and national income statistics, and are under-valued in general. Specific case studies of women's work show that the degree of women's involvement in economic activity other than domestic work is high, even in case where women are secluded, but official statistics do not often capture the degree of their involvement (Deere & Leon de Leal, 1982; Mies, 1981). In addition, conventional statistics and the theoretical concepts that feed them are biased in the direction of excluding a good proportion of the activities in which women are involved. Dealing with these biases requires an effort to redefine the concept of economic activity so that it includes not only tasks directly related to commodity
production but also tasks that contribute to human welfare.

1.4.4 Women Studies in India: Changing Perspective

Desai & Krishna Raj (1987) have tried to trace out the historical evolution of women's studies in India. They have noticed that in the pre-independence period women studies highlighted and criticized in-human social practices or provided description of position of elite women in family, marriage and kinship network. It has been observed that these studies have by and large glamorized the position of women in the earlier period.

After Independence till sixties, sociological research was essentially concentrated on the problems of urban educated working women. Scholars have hardly paid attention to the large part of the women workforce which was in the agricultural sector, despite of their back breaking work.

Publication of the Report of the Committee on the Status of Women in India\(^7\) in 1974 represent the watershed in the field of women studies in the country. For the first time it brought out large body of data on various aspects of women's lives such as declining sex-ratio,

\(^7\) Government of India (1974).
declining participation rates in economic activity, growing
gaps in life expectancy and mortality rates between men and
women. The Report observed that after three decades of
Independence and planned development women’s position has
worsened considerably in every sphere of life. The only
exception to this is that middle class women achieved some
gains in terms of education and employment.

Since 1970 the research interest in women has not
only gained momentum but also has given rise to new
questions in the fields of employment, such as supply
characteristics of women workers, impact of technology on
women, conditions of work, female poverty, authority and
power in the family and nature of political participation.

Initially temporal variations in female
participation in economic activity received more attention.
Based on census data, studies tried to highlight the impact
of structural changes in economy on declining female
participation. However, regional dimension was largely
neglected. Boserup (1970) made a major contribution in this
direction when she drew attention to regional patterns in
the division of labour by gender. She argued that social
stratification, as reflected in land tenure systems and the
composition of the labour force, is of great importance in
determining the division of labour in agriculture. Recently,
spatial mosaic of gender relations received more attention. There have been an increasing realization on the part of researchers\(^8\) that conclusions drawn on the basis of aggregative data tend to obscure sub-regional variations resulting from socio-economic, cultural and historical heterogeneity in different regions.

I.4.5 Women and Development

The differential impact of development process hitherto was studied in the context of class structure of the society. Analysis of differential impact on gender is a relatively recent phenomenon. Boserup \((1970: 5)\) in her classic work has aptly remarked,

> Economic and social development unavoidably entails the disintegration of the division of labour among the two sexes traditionally established in the village. With modernization of agriculture and with migration to the towns, a new sex pattern of productive work must emerge, for better or worse. The obvious danger is, however, that in the course of this transition women will be deprived of their productive functions, and the whole process of growth will thereby be retarded. Whether this danger is more or less grave, depends upon the widely varying customs and other preconditions in different parts of the underdeveloped world.

As the experience of developed countries show, an

outcome of the economic development is increased importance of industry vis-a-vis agriculture. Another consequence is shift of population from rural to urban areas. Industrialization, and as a consequence development of agriculture, leads to the change in production structure and skill requirements of the economy. On the other hand, in regions of low socio-economic development, most men are engaged in unskilled jobs. The women do not find it difficult to join workforce in such kind of activities. But the changes from traditional unorganized production structure with labour intensive technology to modern organized production structure with capital intensive technology will have an impact on the employment situation. Women, as compared with men, having fewer avenues open to them for acquiring skill are generally affected more adversely. Thus as a result of economic development, large number of women usually withdraw from work because lack of education and skill does not permit them to join new occupations requiring higher skill.

Effect of economic development on female participation has been studied by several scholars. Dholakia and Dholakia (1978: 300-01) visualized that expansion of non-agricultural sector leads to major shifts in the pattern of employment towards more organized and disciplined jobs in modern industries. The requirement of relatively skilled
labour in the modern industrial sector and relatively low wages offered by the employers for unskilled labour are likely to reduce the scope of employment for females, and thereby induce the withdrawal of females from such areas of employment. Another study (Patel, 1979: 1551) found that as a result of the introduction of rice mills in Jawa, 12 million work hours of women were lost, depriving women of their only source of income. Similarly in Jammu and Kashmir, with the introduction of machines to spin yarn, the livelihood of 20,000 women was seriously affected. Further, because women having no or limited access to technological inputs at all levels, the output of their productive labour has either remained constant or has decreased in contrast to that of men. Patel (1979: 1552) recognized that the technological process has the dual effect of widening women's employment opportunities and at the same time pushing them into less skilled and less mechanized occupations. On the basis of an I.L.O report she remarked that whenever a new machine is installed in textile industry (which is a larger employer of women in many countries), the tendency on the whole is to substitute male workers for female workers.

The fruits of development are unevenly distributed between men and women. Programmes for women have been marginal in developmental activities initiated in
agriculture, animal husbandry, handicrafts and small scale industries etc. Nath (1968) pointed out that unless countervailing influences come into play, economic development with its accompanying urbanization, spread of education, and growth of industries, will be accompanied by a progressive decline in the participation rate of women.

In backward societies with a large agricultural sector and household industries, women can combine their domestic work with outside employment because of the flexibility in the work schedule. But once the factory industry emerge as the major sector, it becomes difficult for women to easily reconcile their household duties with factory employment where work schedule is generally much more rigid. Females work generally in those occupations in which household responsibilities can be adjusted with productive work. Gadgil (1965: 26) remarked that the availability of such jobs influences the extent of female participation in workforce.

In post-Independence period in India with the rapid increase in the modern and organized sector of industry the share of household industry declined. A Report (Government of India, 1974) noted that the women were the greatest victims of this process of economic transformation. Many of these household industries, where women used to get
employment, like hand weaving, oil pressing, rice pounding, leather and tobacco processing etc. had to face stiff competition from factory production.

In fact, this process of the decline of handicraft industries started much earlier. Till the middle of the 20th century, most of the present under-developed countries were the colonies and a large majority of them were ruled by the Britishers. With the setting of Industrial Revolution in Britain, especially from the starting of the 19th century, English industrial manufacturers started invading the market of these colonies with manufactured goods. This lead to the destruction of household artisan industries in these countries. In India the handloom and the spinning wheel were the pivots of the structure of the old society. But the invasion of English manufactures broke up the "Indian handloom and destroyed the spinning wheel" (Dutt, 1970: 90). British "steam and science" uprooted the "domestic union of agricultural and manufacturing pursuits" on which the village system had been built. This destruction of Indian handloom and other artisan industries (which R.P Dutt called "deindustrialisation") and relatively slow growth of industries affected the employment pattern in India.

Banerjee (1985b: 13-14) has pointed out that the decline in women's employment was a part of the general
process of loss of industrial employment that affected the entire Indian population during the nineteenth and the early twentieth century. The once flourishing cottage industries in India suffered a severe set-back through the loss of both foreign and domestic market because of stiff competition from British manufactured goods. The traditional textile industry of India was one of the worst affected by this process. Women textile workers suffered relatively more because the spinning yarn industry where they worked was almost entirely wiped out by competition from imported and mill made yarn.

As it has been remarked earlier, an important concomitant of economic development is growth of urbanization. In India between 1911 to 1961 there has been a growing tendency of (a) concentration of population in the large cities; (b) a lower and, for sometime, a falling sex-ratio in towns, especially in large cities; and (c) a marked decline overtime in work opportunities for women in the larger cities resulting in a clear trend showing that the larger the city, the lower the female work participation rate (Banerjee, 1985b:17).

Differences in the occupational pattern, variations in the educational requirements for entry into jobs, and differences in the levels of income, according to Reddy
(1979: 200), are the possible reasons responsible for lower urban female work participation rates in India. The relatively high wages offered to male workers in most of the activities located in urban areas, he says, may reduce the economic pressure on women to work. Wahan and Venkatadasappa (1978: 340-341) observed that as compared with rural areas, in the urban sector, opportunities to participate in the labourforce are limited not only because of the extreme competition for limited jobs but also because the nature of jobs available in these areas is such that women required to travel greater distances for work as well as to be away from home for longer period. Added to these factors the structure of the urban society is such that the mother has to bear the direct responsibility of the household as well as upbringing of the children.

Thus most scholars agree with the proposition that once economic development (accompanied with industrialization and urbanization) starts, it leads to a decline in the female work participation rates. Changed work patterns, relatively lower education and skill level of the women, and lack of mobility etc. has been considered as factors responsible for their lower participation rates. Rigidity in factory employment which makes it relatively difficult to be combined with motherhood and family life, results in the withdrawal of female labour. But on the other hand along
with industrialization, service sector of the economy also expands thus increasing opportunities for female employment. Moreover, after a time lag, economic development influences the whole socio-cultural milieu and creates favourable attitudes towards female education and employment. Furthermore, creation of certain institutions such as child care centers, increases the mobility of women and facilitate them to take part in productive work. This possibly explain the relatively higher rate of female work participation in developed countries. Thus female workforce participation rates may follow a widely recognized U-shaped pattern in relation to development. Female activity rates are expected to be highest in the backward regions, to be least in areas at a intermediate stages of development and to rise again in the most developed regions.

1.4.6 The New Agricultural Technology and Demand for Labour

As referred earlier, to modernize agriculture, the new agricultural technology has been introduced since mid-sixties, in certain parts of India. Though the core of this new Green Revolution technology is irrigation-HYV seeds-fertilizer combination, yet in most cases the adoption of this was followed by large scale mechanization of agricultural operations. So, as of now the new agricultural technology consists of two components that is: bio-chemical
and mechanical component.

Regarding the impact of new agricultural technology on labour demand there is a consensus among the scholars that the bio-chemical component of it is generally labour absorbing. Differences arise over the impact of mechanization. Several macro and micro level studies, in the Indian context, have estimated the impact of mechanization on farm employment. Two important among the macro level studies which estimate the effect of technology on employment are Billings and Singh (1970), and Krishna (1974). Some of the micro level studies are Rao (1975); Vashishta (1975); Acharya (1973); Sharma (1972); Lockwood (1972); Rudra (1971); Singh and Singh (1972); Bell (1971); Chopra (1974); and Agarwal (1983).

A study by Billings and Singh (1970) on the basis of certain assumptions regarding the level of mechanization, cropping pattern and cropping intensity etc., reached to the conclusion that over the period of 1968-69 to 1983-84 farm labour demand in Punjab would decline by 17 per cent. Another well known macro-level study by Krishna (1974) taking the same period and on the basis of certain projections concluded that though negative impact of mechanization will be out-weighed by the positive effect of new technology but growth in employment will be much slower
corresponding to the growth of agricultural production. He argues that even after taking into account the indirect employment effect of new technology its negative impact will not be fully compensated and growth in agricultural employment will remain slow.

Evidence available from micro level studies show that impact of mechanization (especially tractorisation) on employment is inconclusive. But most researchers agree that though tractors and other machines displace human labour in individual operations, yet as a result of increased cropping intensity, changes in cropping pattern, rising production and intensive use of material inputs, the overall impact of the new technology package is labour absorbing. However, the basic problem with these micro level studies is that the data used relate to the early 1970s. In the initial phase the use of tractors was confined mostly to seed bed preparations⁸ and the use of other mechanical inputs was also limited. But with more intensive use of tractor for different operations and further mechanization of harvesting and threshing through reapers and combine harvesters, negative impact on demand for labour is likely to be more

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⁸ Initially tractor owners buy only few implements with tractor and use it for limited operations such as ploughing. But with the increase in tractor accessories, its use for varied operations may replace more labour.
Because of the liberal official price policy for farm machinery and easily available cheap credit, the price of capital for an individual large farmer is much lower than its social opportunity cost thus inducing mechanization of labour displacing variety (Chaudhury, 1974: 168-69). Result of this policy has been that between 1966 and 1981, in the rapidly developing state of Punjab, number of tractors increased from 10636 to 120,000 (Kahlon, 1984: 150-51). Recent estimate shows that the number has further doubled since 1981, i.e. from 1.2 lakh in 1981 to 2.36 lakh in 1988 (Singh, 1988). The impact of such an extensive and intensive use of labour displacing mechanical inputs is going to be very high on labour demand. On the other hand, certain changes in the cropping pattern, increase in cropping intensity and more intensive pursuit of certain farm operations etc. may give rise to higher demand. But it seems that net increase in demand is likely to be very slow or may even fall. Ishikawa (1981: Ch.1) on the basis of experience of Japan and Taiwan, observed that the historical paths of change in per hectare labour input in rice production is such that there are two distinct phases with labour intensity increasing in the early phase and only declining in the latter phase. Even if there is a slight increase in the demand it may not be sufficient to absorb the increasing
number of working population in agriculture not to talk of the removal of backlog of unemployed and underemployed labourforce already existing.

Bhalla (1989: 67) is also of the same opinion that per hectare labour absorption followed inverted U-Shaped path. She observed in her study based on Haryana that initial response to the Green Revolution technology was a sustained rise in labour use per hectare, trend peaked mid seventies or shortly afterwards and subsequent increase in yield were associated with decline in per hectare labour absorption in case of most crops. An indirect evidence to this effect is provided by the data on real wages of agricultural labourers in Punjab. The data show an increase in the real wages up to early 1970s and after that till 1984-85 these levels have never been achieved. In fact the trend shows a slight fall in real wages in 1970s and early 80s compared with 1970-71 (Chadha, 1986: 295-96; and Jose, 1988: 55). Partly it is due to the impact of migrant labour but increasing use of labour displacing mechanization may also be the important cause of decreasing the labour demand thus reducing their real wages.

1.4.7 The New Agricultural Technology and Women Employment

While estimating the impact of agricultural
development as a result of adoption of new technology on labour demand, most of the studies ignore the gender aspect. The neglect according to Agarwal (1987: 334) reflects an uncritical acceptance of the assumption that the household is a unit of covering, that all its members will share equally in the benefits and burden of technological change. In fact there may be significant differences between men and women as far as their involvement in field and non-field work (such as processing, animal husbandry, poultry etc.) is concerned. Moreover, agricultural development leads to the changes in production process and skill requirements. The new technology implies new agricultural practices and increased role of inputs (including credit) distributing agencies. Access to these institutions and skills differ in case of men and women. Thus due to the differences in accessibility to these institutions and other socio-economic and cultural factors, it is likely that the impact of technological changes on employment structure and labour demand will be different for men and women.

Some studies have assessed, separately, the impact of agricultural modernization on female employment structure. But no uniform conclusion can be drawn from these studies. In fact the impact of new technology is influenced by many factors such as regional, cultural and class differences as well as the extent and nature of
Most of these studies conclude that women's role is higher in regions of low socio-economic development, where no new technology has been introduced and they are the first to be displaced from tasks that are mechanized. In one such study Pradhan (1985) noted that in Asia there has been increasing evidence of adverse affects of agricultural modernization projects on women. A large number of poor farmers have been displaced and first to be pushed off are the women. She argues that the introduction of modern technology and new inputs have created unequal status between men and women in terms of their technical know how by failing to incorporate women in the training and dissemination of information programmes. Women have been bypassed by modern technology. Similarly Tadesse (1979: 12) also observed that women's participation in the agricultural sector is inversely related to development. She pointed out that technological changes have led to the concentration of women in domestic roles, non-market productive work and labour intensive activities in general. On the basis of empirical data from third world countries, Ahmed (1985) discovers that women are displaced in certain activities in three principal ways:

(a) by mechanization of sectors using female wage labour;
(b) by men taking over activities traditionally performed
by women as soon as they are mechanized;

(c) by men taking over such activities following their commercialization.

Quite a few case studies from different parts of India, also reached similar conclusion. Sawant and Dewan (1979: 1091-99) on the basis of study of a sample of 150 villages from Thana district of Maharashtra, found that economic development leads to the progressive reduction in the size of the female workforce. They observed that though there is a general problem of increasing unemployment, female workers are worse sufferers in this respect than male workers. Similarly Mies (1987) on the basis of data gathered from West Godawari district of Andhara Pradesh, discovered that there is a direct causal relation between the new technology, capitalist relations of production and declining female participation in agriculture. According to Bhalla (1989: 76), in technologically advanced parts of Haryana, the Green Revolution technology has resulted in narrowing down of work opportunities for women. She pointed out that the introduction of mechanized threshers and combine harvesters, tended to remove the family teams of harvest labour from the scene. The substitution of chemical fertilizers for manure and the introduction of weedicides tended to narrow the range of operations formerly available to women. New operations involving the use of machinery,
such as the spraying of pesticides were allocated to male workers. These developments, she remarked, tended to depress women's share directly, in a situation of virtually constant labour requirement, during the last half of the decade. Similar conclusions emerge from the studies of Billings and Singh (1970), Chakravarty and Tiwari (1971), and Laxmidevi (1982).

It is far from a forgone conclusion that modernization of agriculture relieves women of a long hard day. According to Palmer (1977: 100) the present method of introducing commercial crops and technological improvements in agriculture frequently have the effect of increasing women's work burden and also reducing their ability to secure an equitable share of family produce and cash income. The study based on two samples from Andhara Pradesh and Tamil Nadu brings out that effect of the new technology on the total demand is positive and increase is most noticeable in terms of female and male casual labour time (Agarwal, 1985: 90). The positive impact of HYV technology on female labour is also observed by Chand et al. (1985) and Dak and Sharma (1988).

In another study Palmer (1978: 30) points out that HYV innovations affects all points of a crop cycle, which includes land preparation, pre-harvest, harvest and post-
harvest tasks, in which both men and women engage at various points. She observed that as a result of these innovations demand for women's work increased due to increased transplantation and weeding work; applying chemicals; increased harvesting and processing work. However, she argues that land preparation, harvesting and some processing are the easiest tasks to mechanize and that where mechanization is introduced, female tasks become male tasks. Rice milling employing male labour is replacing hand pounding in Sri Lanka, South India, Bangladesh and Java and is thus decreasing employment for landless women.

While analysing the impact of technological change women cannot be treated as undifferentiated category. The impact should be examined within the broader picture of class analysis. References have been made by some scholars regarding the differential effect of technological change depending upon their class position. Mencher (1985) on the basis of evidence gathered from the states of Tamil Nadu, Kerala and West Bengal observed the declining trends in overall number of days worked by landless women agricultural labourers during the period 1979 to 1982. Similar decline is also confirmed by Chakraverty and Tiwari (1979) in high productivity areas of Tamil Nadu and Andhara Pradesh. Whitehead (1985) while examining literature on women, pointed out that there is a tendency for labour displacing
innovations to occur in women's work activities performed as wage labourer, with a relative absence of adoption of technological innovations for the same activities performed as family labour. Likewise Duvvury (1989) noted that the impact of technological change and the process of capitalist agriculture has had unequivocally negative implications for women of agricultural labourer and marginal peasant households. On the other hand, a study by Agarwal (1984) indicates that the impact on the utilization of female family labour shows contradictory results. In Andhara Pradesh it decreases with increase in area under HYV but in Tamil Nadu the association is positive.

1.5 Significance of the Present Study

From the above discussion it emerges that though women invariably become victims of development, yet the agricultural development may arouse different responses in different physical, social and technological environment. It has been noted earlier that the technological changes have been most perceptible in Punjab. Moreover, influenced by the initial inequitable distribution of land, there has been excessive stress on mechanization in this state. Thus the impact of technological changes on employment structure is expected to be much wider in Punjab as compared with other areas. For Punjab, there exist a number of studies that have been conducted to capture the impact of technological
changes on cropping pattern, production efficiency of various farm sizes, income distribution, consumption pattern, mode of production in agriculture, employment, wages etc. These studies make a sporadic mention of the employment of women in rural areas. We are not aware of any study that deals directly with the impact of agricultural development on female employment structure. It is against this background that we propose to explore the impact of agricultural development on employment structure of women in rural Punjab.

Most of the studies relating to the women's contribution to the production process, especially those related with the spatial and temporal variations in female participation in economic activity, are based on official data. But official statistics, especially in less developed countries, invariably underestimate the female role in economic activity. The underestimation results mainly from inadequate definition of work as well as faulty enumeration procedure. It seems that in case of Punjab, underestimation in census data is much more serious. Very low proportion of female main workers to rural female population in Punjab, 0.7 per cent in 1971 and 1.72 percent in 1981, was one reason which tempted us to investigate it further. Actually our preliminary investigations from the field area militated us against accepting these results.
The present study tries to minimise these problems by modifying the census definition of work as well as adopting a technique of data collection so as to avoid the distortions of data by the respondents through their pre-conceived notions and socio-cultural biases (including those of women themselves) regarding women's participation in economic activity. The definition adopted in the study recognises as economic activity, not only the subsistence work outside the home which in fact is generally performed by men, but also the production of goods in the primary sector by women inside the home. This includes the labour employed on the care of milch cattle even if the product is used for home consumption. It is well known that much of the labour input in dairy in Punjab is by females due to inside outside dichotomy of work organization. To get the correct information from the respondents questions asked were specific rather than general. Instead of inquiring about their main activity etc., information was sought about their participation in different operations in agriculture, in animal husbandry, in stitching, weaving and host of other non-agricultural occupations, cooking and other household chores etc. on the basis of exhaustive list prepared for each region. Information regarding time spent on each activity for every women (and men) was collected which enabled us to determine their main activity and work out the intensity of female and male participation on the basis of
number of days.

The study examines the female occupational structure and intensity of work participation in the wider context of the spatial and socio-economic structures. The data have been analyzed at different levels of disaggregation; at the level of region, class, caste, occupational group, level of commercialization, technological level of each household in crop production, different field operations, cropping pattern etc. Female occupational structure and intensity of participation is studied in comparison with that of males in each group. Since one of the three regions is technologically backward, its employment patterns have been extensively compared with that of the other two regions. This comparison, it is hoped, would broadly capture the changes in the female employment structure caused by the agricultural development. On the basis of information relating to the large number of socio-economic and demographic variables of sample households, the study also tries to explain statistically the differences in the intensity of female participation.

1.6 Organization of the thesis

The study has been divided into seven chapters. The Chapter-II, which follows, highlights some socio-economic characteristics of sample households. Chapter-III
compares the occupational structure of both males and females of three different regions at varying levels of agricultural development. This has been done in the context of caste and class. Chapter-IV examines the variations in intensity of work participation of both men and women on the basis of caste, class, region and nature of work (i.e., gainful and non-gainful etc.). Chapter-V analyses the impact of class, technological level, cropping pattern and crop operations on female labour absorption in crop production. In Chapter-VI we have tried to explain the female participation in gainful work at the household level with the help of some socio-economic and demographic variables. Chapter-VII presents the summary and conclusions of the study.