CHAPTER I
CHAPTER-I

Introduction

India's agrarian scene has witnessed vast changes since Independence. The trends of overall agricultural production, the role of technology as well as problem arising from regional and cropwise imbalances have received much attention. There is extensive literature on land distribution, modes of production, class differentiation arising from commercialisation, conditions of wage labour, efficacy of land reforms and various aspects of agrarian structure.

In India the development and diffusion of a new technological package using high yield varieties of seeds, once called the green revolution and was the result of new agro-technology. The technology perspective, there are two basic types of agricultural innovations: biochemical and mechanical. Biochemical innovations involve the development of new seeds which are very responsive to innovation in generally yield increasing and requires the increased application of labour to land, labour using and land saving. This types of innovation really a package of inputs; seeds fertiliser and irrigation. If any element is missing, productivity is significantly reduced (Grabowski, Richard, 1987).
Mechanical innovations generally involve the application of machinery to the production process i.e. tractors, threshers, irrigation pumps, harvester combine, electric tubewell etc. Some forms of mechanical technology, the use of irrigation pumps, results in increased yields. It does substitute for human labour and it thus labour saving and land using.

By the mid-sixties it was realised that there was no alternative to technological change in agriculture by achieving self-sufficiency in food grains. After the mid sixties, apart from the introduction of HYVs of seeds for wheat and rice, public investment in agriculture was stepped up significantly. The new agro-technology raised the profitability of investment for the farmers. In so far as large farmers have resumed land for self cultivation from share croppers because of the profitability of new technology, it has led to lower labour absorption and reduced incomes for erstwhile tenants. As a result of this and also because of improved extension service the use of new seed fertiliser technology among small farmers caught up with that among large farms (Bhalla and Chadha, 1983, Shergil, 1987).

The higher growth rate in agriculture in the last decade, ie. 1978-79 to 1988-89, was the encouraging performance, which was attributed to the spread of new technology
to the lagging crops and regions. The special programmes for rice and oilseeds and increasing attention to dry farming in the less developed states also started showing the results (Rao, Hanumantha, C.H.; 1989). He further argued that the gains in food grains output in the last decade come essentially from the improved utilisation of the available infrastructure and from the increased yield per hectare (p.387).

Perhaps the most widely debated issue about new technology in agriculture is the growing disparities in income between different regions and classes of farmer in India. Economists and Sociologists (Byres, 1972 Chambers, R & Farmer B.H.; 1977, Chadha, G.K.; 1978, Dasgupta Baplab, 1977, Chandan, Amarjit; 1979, Kahlon, A.S. : 1976 Rao, C.H. Hanumantha; 1975, Bhalla, G.S; 1972 Bapna; S.L 1973 Bardhan Pranab; 1976) argued that the experience after mid-seventies covering nearly a decade, the spread of new technology to new areas, the increasing adoption of new technology by small farmers, the decline in the prices of food grains and the rise in real wages in agriculture in the less developed regions where new technology is spreading.

However, labour input per acre continued to decline sharply with the increase in the size of holding (Rao, Hanumanta C.H. 1989).
Further it is argued that in quite a few places, cost sharing on new inputs between landowners and sharecroppers has become popular resulting in the sharing of benefits from new technology by the landowners as well as tenants (Rao, C.H.; 1975).

changing agrarian relations:

Agrarian relations in the narrowest sense would mean the relationship among various classes and persons working on and associated with agriculture. A study of the nature and type of this relationship would require, firstly, identification of the main agrarian classes, for example, landowners, employers and labourers. Secondly, it would demand on examination of the inter-relationship of the various classes.

The ownership, control and use of land are major factors in rural India. In a village, who owns the land who work on it, who controls its produce, all assume importance because various classes emerge from the agrarian system. Some people own the land while other merely work on it.

In simple term the agrarian structure is understood to mean institutional framework of agriculture, it includes the distribution of ownership in land; the forms of land tenure and the forms of agricultural employment. In other words, agrarian structure refer to the manner in which man
land relationships are governed. It includes the ways in which land is held and cultivated and rights and privileges enjoyed by the different categories of people who have access to land.

In agrarian societies, sociologists should seek to disclose the relations among different aspect of social life. The structure of Indian agriculture having in equal pattern of land ownership distribution discharge three basic agrarian production relations in Indian agriculture. The owner cultivator, lease holder, and share cropper (Mishra, 1977).

Agrarian relations considered as nature of relations among the various groups of persons who draw their livelihood from the soil. Agrarian structure in the sum total of agrarian relations in which each group operates in relation to other groups. All sections of the society are not equally interested in land, the three main categories of interest in land in rural India are the land owners, tenants and landless agricultural labourers (Thorner, 1956).

Agrarian social structure is basically in terms of relationship existing between the owner of land and the actual produces (Joshi, 1974). Agrarian structure we may state that the relationship of people to soil in terms of ownership, control and use gives rise to set of relations which we shall call agrarian relations. There are also important aspects de-
termining the character of agrarian structure. Ecology is one such aspect, not itself, but in as such as conditions the use of land and technology. The state or political power is another important element which everywhere determines the condition of land, ownership, control and use depend upon the manner in which lands is defined in a given political ideology (Andre Beteille, 1974).

The agrarian relation in India has been subjected to analysis by many serious scholar of rural society: Throner, 1962, Das, 1977, Bhaduri, 1973, Patnaik, 1972 and Rudra, 1971. Rudra has sought to establish a thesis that in the current agrarian situation, there are basically two distinct class groups; (a) Cluster of land owner (b) cluster of agricultural labourers.

It was generally expected that the economic growth and capitalistic development in agriculture would lead to the breaking down of the, patron client structure of dependencies. The traditional reciprocal ties were supposed to give way to the more formalised contractual types of associations. The weakening of close ties which had kept the landless family bonded to the land owning families would also lead to the emergence of mutually antagonistic attitudes. (Harris, 1977: 225).
In his study of the Green Revolution belt of the southern districts of Gujarat, Bremen did observe such a process. He found that as a consequence of the process of commercialisation of agriculture and technological change, the relations between agricultural labourers and their employer farmers were being reduced to business like agreement with a limited purpose. This, he argued, further deteriorated the condition of wage labourers. He described this process of depatronization (Bremen, 1974). In her study of new production relations in Haryana agriculture, Sheilla Bhalla also found a process of formalisation of production relations. She reported a shift in the practice of keeping attached labourers on share basis (Sajhis or Siris) to employing Naukars a formal contractual relationship where the attached labourers received an annual cash wage (Bhalla, 1976).

Similarly Brass strongly refutes the formulations that development of capitalism in Indian agriculture had led to "freedom of agricultural labourers.

In his study of attached labour in Punjab (1986) and Haryana (1990). Brass argues that instead of releasing the labour from bondage, development of capitalism in Indian agriculture has reinforced unfreedom of the attached labourers.
Another set of arguments on the nature of changes in dependency relations of agricultural labourers have been put forward by Rudra. Rudra contends that the prevalence of attached/semi-attached labour relations do not necessarily imply unfreedom of labourers (Rudra, 1987). It is argued that in Haryana, Punjab work for wages by member of cultivating households is undertaken because of the pull factor of attractively high wage rates, and the wage income adds to existing income levels from cultivation. Thus the classic pattern of pauperization leading to proletarisation is not operative here. It was found that annual earning of permanent labourer were higher than those of casual labourers. But the earning per day of permanent worker i.e their daily return to labour, was lower than casual labour wage rate. Term for the traditional farm servant and share cropping tenant is the same in Punjab & Haryana, Sanjhi/Siris: The new type of permanent labour, termed Naukar, and his wage is calculated in cash (Patnaik, Utsa, 1987).

It was reported that in Haryana gains due to the new technology have been reported by all categories irrespective of the size of the holdings. Rich farmers due to more resources at their command have been able to adopt and thus created disparity of income. Highest labour wage rates were earned in the central region. However, rural wage rates
were recorded the highest increase since 1961 in the north
followed by the centre, while these had shown a decline in
the Southern Region (Bhalla, G.S, 1972)

The new technology had undoubtedly improved the
inherent bargaining position of agricultural labourers in the
Green Revolution area of Haryana. In practice also there
was ample evidence that they were individually more self
assertive than they used to be. But given those fact viz. that
they could earn much more than they did, that their stand-
ard of living in rural terms had also improve, that even
casual labours enjoy much greater continuity of employ-
ment that before and that large member have shifted from
casual labourer to permanent labour status (Bhalla, G.S.,
1976). Further it was reported Punjab, Mahalwari system
land settlement conferring land rights to the village commu-
nities and prevalence of self cultivated holdings. Commer-
cialisation of agriculture was at fast rate (Bhalla, 1976).

A survey conducted of Punjab selected some 180 vil-
lages following the methodology of the 30 th round of the
National sample survey and collected valuable data from
1663 cultivating households. This is likely to create an im-
pression that green revolution measures/inputs have truly
benefited the small and marginal farmers more than the
rich. But this would be quite misleading. It was found that
small and marginal farmers are at a disadvantages position because very few of them can afford to incur expenditure on electricity connection and diesel. The marginal farmers were working much harder to supplement their income through non-farm sources such as dairying, poultry farming etc. (Bhalla and Chadha, 1983).

The comparison with pre-green revolution period revealed that real wages of landless labour in Punjab have recorded a rise. Because in the area of Green Revolution the bargaining power of landless labourers has improved as a consequence of greater demand for hired labour. Because the combination of HYV seeds use and higher cropping intensity increase the use of hired labour in general and (both casual and permanent labours) Thus most of the available evidence suggest that almost all the status of cultivations and landless labour have benefited from the new technology (Bhalla, S, 1979).

Haryana is one of those few regions where new agricultural technology has spread more widely than others and therefore the experience of its farmers should provide as a better picture of, how poverty among farmers changes with spread of new farming technology. There has been an increase in the level of poverty among farmers during the seventies. After 1979-80 poverty shows a downward trend.
Incidence of poverty is the highest among small farmers and the second highest among medium farmers. Poverty does not prevail among big farmers. Poverty is inversely related to the level of irrigation in the region. For instance poverty is found to prevail most in low irrigated zone and the least in well irrigated zones. This implies that an improvement in the irrigation facilities is likely to reduce poverty among farmers (Paul, Satya, 1989).

Labour absorption in Haryana rose rapidly until the mid seventy, but is now falling. The one year field survey covering 153 villages in all, was carried out in 1972-73, that is during the expansionary phase for labour absorption generally and in Haryana agriculture in particular. Impact of HYV technology on demand for women labour seen to have made remarkably little difference to the absorption of female labour. But entire impact of the irrigation based new technology was on male employment, which in some regions roughly doubled. Demanded for hired labour appeal to have gone up by as much three times in the most favoured regions. The major employment season in Haryana provides not only more work days for women in absolute terms, but also proportionately more work days (as compared with the work days reported for men) then in the secondary employment season. Women and children are called
upon to work generally when there is an absolute shortage of labourers, sufficient to push the wage rates up during peak activity period, as well as specifically for certain crop operation such as cotton picking for which women are preferred.

The introduction of mechanised threshers, and in some area, of combine harvesters, tended to remove the family terms of harvest labour from the scene. The substitution of chemical fertilisers for manure and the introduction of weedicides tended to narrow the range of operation formerly available to women. New operation involving the use of machinery such as the spraying of pesticides, were allocated to male workers. There developments tended to depress women's state directly, in a situation of virtually constant labour requirements. This labour saving mechanisation gave an unambiguous advantage to medium and large scale operation holding (Bhalla, S. 1989).

Statistics indicate that new technology package has spread in different parts of India. The process of rural development during the 1960-69 decade has benefited the upper middle and the richest sections more than middle, lower middle and poorest sections consequently socio economic inequalities in rural India have been steadily growing. It was
found that 45 percent of the total population to be below the poverty line at the 1960-61 (Dandekar and Rath, 1979).

A recent, fascinating account of Haryana which curiously contains no mention what ever of the nature of change in the forces of production confirms that the shift in question has taken place in that state, in those areas where the impact of the green revolution is most marked. Three region are studied, region (a) covering Karnal district and highly irrigated areas to which new technology come first, region (b) most of Hisar and parts of Rohtak distt; where the new technology has been far less widely adopted; and region (c) semi-desert tracts; where it has had virtually no impact. The permanent or attached labour in Haryana itself is experiencing transformation in its relation with rich peasant employers. A new kind permanent labourer known locally as the Naukar has arisen in Haryana to replace to an important degree, the traditional labour, the Sanjhi, who we have had occasion to mention already. The naukars are paid mainly in cash, but have, also a variety of in kind benefits such as free fodder, bidis, free meals, and that payment is a predetermined fixed amount which bears no relation to output, and which amount to rather more than the sanjhis earn. The sanjhis continue to be paid a share of the crop in kind, although the calculation of that too has changed out
of all recognition (Bhalla, 1976). She further observed that green revolution has led to replacement of paternalistic relations between capitalist farmers and employers and workers by formal contracts. It was found that attached labourers (Naukars) come from marginalised landowning households while the casual labourers come generally from the menial castes (Bhalla, 1976).

Bhaduri highlighted the elements of continuities in production relation in the green revolution region of Haryana and provided an opposite interpretation. He argued that the presence of attached labour and debt dependencies meant that the mode of production even in the green revolution belt of Haryana was semi-feudal. But Bardhan and Rudra, strongly refused the formulation that prevalence of attached labour necessarily meant semi-feudal mode of production (Bhaduri 1984).

The process of proletarisation, the improvement that the green revolution is expected to bring into the condition of wage labourers appeals to be a distant mirage. At least the position of the rural poor, particularly agriculture labour, as a class is not likely to be altered substantially vis-a-vis rich farmers who virtually monopolize economic resources and control credit institutions in the countryside. Mechanization of farm operation appeals to brighten the
employment opportunities and wages in green revolution areas, migration of workers from less favoured areas such as Bihar, East UP, Orissa, Rajasthan have tended to depress the bargaining power as well as wages (Palmer, 1976, Dhanagare, 1984, Bagchi, 1982).

The rural wages were rising due to the green revolution. There was higher rise in production than wage rates. Increasing price was one of the factor nullifying the effect of increased wages (Gough, K. 1971). Relationship between the farmers and labours had become more formal and commercial due to green revolution in Ludhina, Punjab. The traditional spei system (Jajmani system) under which labour were permanently attached to landowning households has nearly gone out of vogue. Consequently, employer, employee relations had become strictly economic and wage were controlled to a large extent by forces of demand and supply (Aggarwal, P.C. 1973).

New technology had generated demand for labourers in Punjab. Which helped the labourers in improving their economic conditions and also their capacity to bargain for wages with the employer. A very low proportion of workers working as attached labourers over the period. The introduction of machinery had improved the working condition of the labourers. The relationship between farmer and
labour was becoming business like and the practice of extracting forced labour had disappeared. Labour scarcity was not only by the demand of agricultural but also due to the employment opportunities outside agriculture factor. Income disparity had increased (Gerwal, S.S and Rangi, P.1981, Kahlon and Singh, 1973). Most other parts of the country attached labourers are simply being thrown out of work or are being converted into casual day labourers (Gough, 1977).

Comparing the income distribution and consumption units of both the rural rich peasants and agricultural labour households in 1955 and 1970, Epstein had concluded that rich have grown more affluent and poor have become poorer. Agricultural real wages had declined mainly because of increase in the number of labour households and steady price rise resulting in rises in cost of living. Wages, however have lagged behind (Epstein, 1973). Some other scholars, who have examined the impact of the green revolution on the weaker sections, have argued somewhat optimistically, that conditions of rural poor particularly agricultural labour do not necessarily deteriorate. On the contrary, general prosperity ushered in by modernisation of agriculture in the green revolution areas, percolates to the grass roots in the rural society. Where this percolation process is
asserted by the rich through manipulation and mechanisa-
tion, the agricultural labourers there tend to get better or-
organised and more militant to fight and thereby stand to ben-
efit through higher wages and improved working condition. On the other hand, the growing capitalist penetration of
countryside the process of depeasantrization has been accel-
erated and consequently large number of small and marginal
farmer or poor peasants have been pushed into the rank of

A study based on a sample survey of large farm
(above 20 acres) from 11 districts of Punjab (1968-69) had
attempted some interesting comparisons regarding the com-
position of labour use. Considering the relative frequency
distribution of the large farms by the number of farm serv-
ants (permanent labour) and number of mandays of casual
labour used for three mechanisation categories. (a) Farms
having tubewell pumps and tractors (b) those having
tubewell pumps but no tractors (c) those having none.
Hence, the tractor raised the demand for farm servants but
demand of casual labour unchanged. Presumably the pumps
and tubewells displaced the permanent farm servants; who
were used earlier for lifting water and maintaining the bul-
locks and created demand for casual labour. Tractor seem
to raise the demand for permanent farm servant and reduce
the demand for casual labour (Rudra, 1971). The introduction of tubewells creates demand for permanent workers as well as casual labour. The introduction of tractors increase further the demand for casual labour without adding to or displacing placement workers (Singh 1976).

With the advent of the new technology the scope for non-agricultural employment in the village has widened as shops are setup for selling fertilizers, seed, insecticides and farm equipment for repairing machinery and for various processing activities. As against this the use of tractors for carrying fertilisers, pesticides and crops displaced labour associated with bullock carts (Dasgupta 1977). Secondary the rich peasants could afford to purchased the new inputs both biochemical and mechanical. The institutional credit supplied by both cooperative society and commercial banks was made available at reasonable rate of interest rather than as previously. The high yielding varieties seeds, fertilizer etc. supplied through cooperatives or Govt. offices, rich peasants were for better place to acquire them. The price of land has gone up substantially more rapidly in Haryana particularly in those area where the new technology has the greatest impact. The distribution of operated land has shifted in favour of rich farmer under technology (Dasgupta, 1977 B).
The modernisation of agricultural technology increased the demand of attached labourers as they were seen to be useful in overseeing the work of casual labourers. He also claims that attached labourers employed superior status compared to their counterpart casual daily wages (Bardhan, 1984).

The new agricultural technology adopted in Punjab (as also some other parts of India) is a package of certain biochemical and mechanical inputs. Mechanisation the overall demand for labour per net cultivated area has increased but harvesting and threshing through combine harvesters and more intensive use of tractor for different operations may reduce the demand for labour. In such a situation small tenants will be put in a further disadvantageous (Singh, 1989). The decade of 1970s has brought remarkable change in the land relation in Punjab. Pure tenant holiday are almost completely eliminated. The other evidence suggested that the shift of land from the small and marginal farmers to medium and large farmers is on account of leasing out to land. Leasing-out is done by small owners and leasing-in is done by the big operators (Gill, 1986).

The development of capitalism in Punjab following the implementation of the green revolution, in the from of
access of HYVs, irrigation, marketing and transportation facilities, state sponsored credit schemes etc. is well documented. In the political area this finds expression in the Kulaks dominating the current state level ruling parties in Haryana, U.P. Punjab and Bihar (Brass, 1983, Prasad, 1991). Income disparities between the rural rich and rural poor have increased due to new technology. Mechanization tends to displace human labour but so far, double cropping resulting from adoption of modern technology have created more employment opportunities. Threshing wheat by mechanical threshers in also generally undertaken by hired labour. Mostly victims of threshers accidents were found hired labourers, resulting in loss of limbs or even life in recent years (Singh, 1990).

In the work of green revolution in Punjab farmers gained more than labourers in terms of income, overall literacy rate and living standards. The farm labourers were found conscious of such disparities and the resultant exploitation. The system of inequality prevailing at the pre green revolution time was socially legitimised from the Jajmani system. But now due to the newly emerge economic and political situation which changed their relations from obligatory to instrumental ones. In instrumental relations,
the occurrence of such tension between the employee and employer was natural (Aggarwal, B.K. et al, 1989). Green revolution the increase in yield and profitability from farming would affect owner tenant relations; the farmer would like to create conditions so as to evacuate the tenants and resume land for cultivations leading to the displacement in employment of the tenants and swelling the rank of labourers. While landowners would be substantially benefited from the green revolution, tenants would rather suffer. The demand of labour as also employment was likely to rise substantially (Dak, 1989).

A study in Orissa reported that due to new agricultural technology the labour arrangement were changing. The speed of change was more in the wet areas, as compare to the dry ones. The mode of payment for farm servant has under gone changes more in wet areas to cope with external intervention from the state and because of migration (Sarap, K, 1991). Traditional social organisation of agriculture in the form of jajmani system which worked as functional stratification with social inequalities, has been challenged and mutually satisfying contractual class relations has gained ground. Traditional relation among agrarian categories were changing towards more contractual, formal, conflicting and temporary (Punia et al 1992). A study in
Rajasthan found that the various strategies for development and new technology have been basketed by few at the top in the rural social and economic hierarchy. The affluent farmers have good education and have contacts with Govt. officials. The exploitation of labour was increasing with a fast increasing replacement of the system of temporary labour employment by the contract labour employment system (Mathur, 1981).

Mechanisation in Haryana has lightened the workload of men; for example, the use of the tractor which has replaced the plough and the oxen. But the women continue to load the tractor, as she had once loaded the cast significantly, the work load of women has only been recent not reduced due to technology (Chowdhary, 1993). Overall, the impact of mechanisation on the composition of labourer depends on the type of mechanisation (tubewell, tractor, thresher, etc.) Introduction of combine harvester however, is likely to have a major displacing effect for both females and male casual labour (Agarwal, 1981).

All types of irrigation and bio-chemical inputs are major contributors to an increase in labour input in total crop production mainly through increase in cropping intensity and cropping pattern shifts. The proportion of hired labour in total labour tends to increase and that of family
labour declines with the advent of the new technology (Basant, 1987).

Agrarian structure in Haryana is rapidly changing under the force of production growth, industrialization, urbanisation and technological developments, especially in the field of agriculture. Small and marginal farmers are not able to survive and they are converting into agricultural labourers. Self cultivation is most prevalent and leasing out increasing by marginal farmers rather large farmers. In secured areas the tenant want to payment in cash and in insecure areas share in crop (Sharma and Punia, 1985).

It can be concluded that the cropping developed region (i.e. Punjab, Haryana) has changed dramatically over the past two decades due to increased irrigation facilities and agro-technology. All these had positive impact in the high growth rate of output and increase in per capita income. It would be useful to specify the achievements in different fields of agriculture in the state in order to comprehend the rural transformation that has taken place in the state. In order to study the change brought in the Haryana's agrarian relation we have formulated some researchable question for the study.
Focus of the Study:

Agro-technology has been an important medium for agricultural growth and changing the agrarian relations in India. Though many studies point to the fact that the new agricultural technology has lead to the emergence of capitalism in Indian agriculture, there are very few systematic studies available on the nature of changing agrarian relations due to the new technology specifically in the context of agrarian changes experienced in the Green revolution regions of India.

The present study attempts to fill-up this crucial gap. This study intends to explore the changing nature of agro-technology and the changing socio-political structure of the rural society. The context for such a study is provided by the successful use of agro-technology which resulted in the emergence of the Green revolution and the consequent socio-economic changes in the agrarian social structure in 1990's, in the post green revolution era in the rural society.

In the present study the emphasis is on the nature of new agriculture technology and how it has been able to change the agrarian relation in Haryana. To understand this social phenomena in the context of agricultural development we have formulated the following objectives.
Objectives of the study:

1. What kind of shift being experienced in placement or displacement of the agricultural labour household.
2. How this shift from traditional jobs to new jobs affected the socio-economic conditions of agricultural labour.
3. How the change in the occupation structure due to agro-technology affected the agrarian population.
4. What is the impact of mechanization on wage structure, employment days, number of working hours per day, family structure, nature of employment of the agricultural labour household in different regions.

Design of Research:

Keeping in view the discovery of new ideas and insights in the agrarian sector, the exploratory type of research design has been employed. This would help us to analyse basic issues raised earlier on impact of new technology on agrarian relation in Haryana. Technology is viewed as neutral but when its application is down it create imbalance in the stratified society. The exploratory research design would help us to analyse the basic issues raised earlier; like employment pattern, man days, wages rates, agricultural labour force participation, incidence of accidents, and
benefits due to government policies for the upliftment of various sections of agrarian society. For the analytical sociological enquiry into the nature of change brought about by new agro technology, new issues were raised for carrying out research in changing agrarian relation in the rural setting.

**Sampling:**

To study the changes in socio-economic conditions due to agro-technology have considered the house hold as a unit for the present study. For the present study multi-stage sampling was employed

Leading district in production of the principal crops in Haryana have been considered because of two factors. (a) agricultural development of different (areas) district is not equal due to variations in the condition of different levels of development, (b) different types of crops require different types of agrarian settings the leading district in the production of each of the principal crops are as follows.

(a) Rice - Karnal, Panipat, Kurukshtetra, Ambala, Kaithal and parts of Hisar.

(b) Wheat - Karnal Panipat, Kurukshtetra, Kaithal, Hisar and Yamuna nagar.
(c) Sugar cane - Ambala, Rohtak, Karnal, Jind and Yamuna nagar.

(d) Gram - Hisar, Sirsa, Jind, Mahendargarh, Rewari and Bhiwani.

(e) Cotton - Hisar, Sirsa, Jind and Bhiwani

(f) Rapeseed and Mustrad - Hisar, Bhiwani, Jind, Rewari and Sirsa.

(g) Maize - Ambala, Panchkula, Kurukshetra, Karnal and Yamuna nagar.

(h) Jawar - Rohtak, Gurgaon and Faridabad.

All the seventeen district were clubbed into two (i) agricultural developed and (ii) agricultural less developed region on the basis of productivity of crops, consumption of fertilizer, use of new agriculture technology in agriculture for the various cropping patterns as per the Haryana statistical abstract 1993.

A. Gurgaon, Ambala, Panchkula, Rohtak, Faridabad, Mahendergarh, Rewari, Bhiwani, Sirsa and Hissar.

B. Kurukshetra, Karnal, Sonepat, Yamunanagar Jind and Panipat.

Region A is the less agriculturally developed area in comparison to region B. The principal cropping of pattern is dominated by wheat, sugarcane, maize, jawar, bajra, gram and mustard. Gross irrigated area is less then 60 percent of
the total cropped area and 46 percent of the total cropped area is under high yielding variety seeds. Region B is characterised as the most prosperous agricultural area of the state grows wheat, rice, maize in 76 percent of the cropped area and 83 percent of the total cropped area is under high yielding variety seeds. Total area irrigated is more than 85 percent by private tubewells and to a small extent by canal.

From these two regions of the state, demarcated somewhat arbitrarily, one district from each region was selected by a lottery method. At this stage Bhiwani and Karnal were selected in the sample. Karnal district is termed as agriculturally developed and Bhiwani as less developed. While selecting villages from these two districts all the villages of the districts individually were ranked on the basis of population of 1991. From this rank order first-half in hierarchy in the districts were called as large villages and second half as small villages. From each of these categories, one village was randomly selected. The villages selected from Karnal district were Uchana and Kheri neru, from Bhiwani district were Badesra and Pahladgarh.

The selection of the agricultural house holds both cultivators and agricultural labourers was done on a first phase of census of households. All the landed cultivators
and agricultural labour households were included in our sample from the small villages chosen from the two districts of each region. These two villages were Pahladgarh from Bhiwani district and Kheri neru from Karnal district. From the large villages, namely Badesra and Uchana, 50 percent of the agricultural labour and landed peasantry were drawn on the basis of simple random sampling.

**Techniques for data collection** :

Data for this study were collected using the following techniques:

(a) Census survey: Preliminary data was collected by taking a census of all the heads of the households in four villages. This data included caste, occupation, land ownership. Number of family member engaged in agricultural occupations, wage earners in agricultural and non-agricultural sector, type of house and family composition.

(b) Interview scheduled: Interview scheduled was used for collection of data, the interview scheduled was divided in three parts. Part one was structured, and it was mainly for collecting information regarding the head of the households, sex, age at which starting working and working pattern etc.
The second and third parts were both structured and unstructured questions. The second part of interview scheduled, question related to examine the impact of mechanization on agricultural labourers and landed cultivators.

And other information were gathered regarding education standard, number of earners, nature of employment, wage during of work, family engagement in various agricultural operation, availability of work in a year in agricultural as well as non agricultural occupation. The third part of interview scheduled was designed together information regarding expenditure of the households on consumption and non consumption in a year, earning of peasants from both agricultural and non agricultural in a years.

While interviewing the respondents stressed was laid on getting information regarding the nature of change in their work relations in employee and employers, occupational mobility, impact of migrant labour on the local labour force and agrarian relations. Apart from these information, an emphasis was laid on getting the insight building of the infrastructure by government policy towards rural development. The nature of government strategies for poverty alleviation and agrarian transformation in Haryana.
Historical Data:

Historical data were collected through the following sources.

(i) District Gazetteer
(ii) Census Reports
(iii) District Survey Reports
(iv) Patwari records of land consolidation and land revenues
(v) Statistical abstracts of Punjab and Haryana

The study is not planned as traditional community study with systematic ethnographic coverage. Rather, an attempt has been made to understand and raise certain issues regarding agrarian society with helped in investigating in depth the socio-economic condition of agricultural labourers and the landed agricultural households due to the adoption of new agro-technology in the developing rural economy of Haryana.

Apart from the introductory chapter, the study is being divided into four chapters. Chapter two deal with Haryana's agrarian structure discussing the landholding pattern, distribution and changes in the agricultural production. In the second part of the same chapter we have discussed the socio-economic profile of the agricultural house-
holds and the agricultural labour households in the selected regions. Chapter three deals with the impact of new agro-technology and changes with respect to employment pattern, mandays of employment, wage earnings and the new emerging pattern of employment in non-agricultural sector for the wage earners as well as of the cultivators. In the fourth chapter, government strategies and policies for rural poverty alleviation have been analysed.