

CHAPTER - 2

A P P R O A C H

Importance and Selection of the Topic :

The massive poverty in most of the densely populated regions of the country has been identified with the presence of undeveloped and underdeveloped human resources in both the rural and urban sectors of economy. Since agriculture forms the largest sector of the rural economy, it is the mainstay of the rural people, employing major portion of the work force. The rural human resources form the backbone of all round development of the nation. This situation is generally found in almost all the developing countries of the world.

The study area 'Dhanarua Block of Patna District, Bihar' is purely agricultural and endowed with an abundance of human resources; but the fundamental dilemma is that the majority of it remains undeveloped and underdeveloped. To be precise, approximately two - third of the human resources of this Block remains unutilized.

This area may, therefore, serve as the national representative of human resources situation and the way suggested for the balanced development and rational utilization of human resources in the area may be thought to be applicable to the nation as a whole. Human Resources Development (H.R.D.) has also been selected as one of the focal themes of the Country's Seventh Five Year Plan (1985 - 1990).

Selection of this topic has also been prompted by the fact that no geographer in India has carried out any work especially and exclusively on the utilization of human resources. Human resources development and utilization has been felt as of growing concern to geographers. This study may provide a new facet to the geographic discipline.

Objectives :

In the light of the importance of human resources and the problems of their utilization the present work has been accomplished with the following objectives in mind :

1. to assess the proportion of undeveloped, less developed and developed human resources in the area.
2. to measure the extent of spatio - temporal

variations that have occurred in the development and utilization of human resources in agricultural and non-agricultural sectors of the study area.

3. to find out the proportion of underutilized, adequately utilized and over utilized human resources which will pin-point the probability of further employment of human resources.

4. to find out the differences in the levels of utilization of human resources in the cultivator dominated villages and agricultural labourer dominated villages for further development and utilization of human resources.

5. to extend appropriate suggestions for the development of human resources and their appropriate, rational and efficient utilization in agricultural and non-agricultural sectors.

The present work is concerned with the spatio-temporal dimension of the human resources utilization in a rural segment of South Bihar Plain. This exercise pin-points the availability of different types of human resources, their present level of utilization and future prospects.

Review of Literature :

It is a remarkable and regrettable fact that only a few geographers have carried out any work on the utilization of human resources. They have mostly been concerned with the material resources. On the contrary, economists have done considerable work on this line because they have traditionally been concerned with labour and manpower as a factor of production in the economy of any nation or region. The following review of literature since 1950s will bring out this fact quite clearly.

Economists :

Jaffe and Charles (1951, p. preface and 141) have worked on manpower resources and utilization in which they studied the employment and unemployment aspects of labour force and tried to know the types of work they did, goods or services they produced, the knowledge they acquired in the process and the time they spent in their activities. They also studied the impact of scientific and technological development on manpower which affected the size, composition, nature of the work done or the product or services produced by manpower. They noted, a modern industrialized economy involves division of labour and a high degree of

specialization of work which include the class-of-worker composition, the occupational and industrial distribution of the workers. Thus they classified and categorised workers on the basis of works done by individuals.

Woytinsky and Woytinsky (1953, pp. 349 - 378) studied various aspects of human resources and laid emphasis on the development and utilization of human resources in gainful pursuits. They have stated that human resources should be distributed by industry and occupation in accordance with the abilities of each individual and the requirements of each job and that continuous employment be assured to each man and woman able and willing to work. They have made occupational categories like the categories made by the Census of India for the utilization of manpower.

Dandekar (1962, pp. 267 - 276) worked on utilization of rural manpower and laid emphasis on rural employment in agriculture. He found that lack of organization as the main problem of rural unemployment and suggested the creation of supplementary works programmes in areas with a high incidence of unemployment and he found that high incidence of unemployment and under-employment become especially acute during the slack period of agricultural seasons. He advocated the execution of employment programmes at village level. He

also found out that employment did not equally affect all section of the rural population and he distinguished rural manpower into four categories (i) Cultivators with large enough land holdings to keep themselves busy throughout the year, (ii) Cultivators holding not quite so large holding but never the less adequate to keep them busy more or less throughout the year, (iii) Cultivators who probably keep them busy during the peak period, and (iv) Landless labourers who are adequately employed during the peak agricultural season when enough wage employment is available in agriculture but under employed or unemployed during the rest of the year. He suggested only the ways to remove rural underemployment and unemployment but did not investigate into the quality of human resources and its levels of development, the types of works, hours worked, levels of education etc. that are the main basis for human resources utilization.

United Nations Conference (1967, p. 335) investigated into the rational utilization of rural manpower in the Soviet Union and found that the maximum utilization of rural manpower was in the agricultural activities and the rural manpower surplus were used in industry and other branches of the national economy. It also stated that there was no unemployment or agrarian

over population in the Soviet Union because of planned and organized distribution and redistribution between the different areas and branches of the national economy and the full and effective utilization of the working time of all workers. It has explained several aspects of rural manpower but suffers from the shortcoming that it does not dwell on the development of rural manpower through education, training etc., and does not consider its utilization economic activitywise.

Roy (1965, p. 37) explored the scope of employment into primary, secondary and tertiary sectors. He discussed also the problems and management of manpower. But he did not study in depth the levels of utilization of manpower in these three economic sectors.

Calder (1965, p. 148) studied the utilization of human resources in Java and Thailand and laid emphasis on the development of human resources through education and training and provision of facilities of health, nutritious food, medicines etc., and investment of capital on these facilities. Throughout his study he has discussed only the development of human resources but has not mentioned their utilization aspects. Nor has he suggested any way of utilizing human resources for the development of a region. Particularly, he

emphasized the role of clinical or other medical facilities in improving the health of manpower. This role has been proved through his story plotted around the life of a Thai child named Saward.

Jain and Agarwal (1967, p. 92) studied the utilization pattern of educated persons in different sectors in Maharashtra state during the Third Plan period. They adopted quantitative approach not qualitative approach. In different sectors they showed the utilization of engineering, technical, medical, agricultural, commercial, and other educated manpower in Maharashtra state. The main lacuna of their study was that they did not consider the utilization of uneducated manpower who were also contributing their physical and mental capacity in producing social goods for satisfying social needs.

Secretary General of the United Nations (1967-1968, p. 403) studied the problems of human resources development and its utilization in developing countries. He found the increasing number of unskilled persons in common with the problems of health, nutrition, housing drinking water supply, sanitation, recreation facilities etc. He laid emphasis particularly on the development of human resources and paid little attention towards the utilization of human resources in different economic activities.

Boaz (1972, p. 191) studied manpower utilization by subsidised family planning clinics in which he found that subsidised family planning had increased their demand for qualified personnel and stated that the quality and quantity of the clinic's manpower were crucial to the success of a family planning programme because such a programme, being partly educational and partly medical, requires a variety of personnel skills. From his studies it can be said that he selected a particular field of medical manpower in which only qualified professional manpower was required. He did not concern himself with other categories of manpower.

Harbison (1973, pp. 135 - 36) has written about an index of utilization of human resources in which he has suggested that the utilization index would be based upon easily identifiable employment and unemployment data and there would be two indicators, that is, labour utilization (number of people at work) and the number of hours worked. He did not mention any occupational category in which human resources may be employed and nor did he consider the rural and urban human resources separately from its utilization point of view.

Krishan and Chandan (1974, p. 56) have studied the Haryana working force and occupational structure in which they have shown the spatial pattern of working force and its distribution into various industrial categories. These categories were grouped into primary, secondary and tertiary activities. The major drawback of their study is that they have not taken the whole human resources starting from child to superannuated group. They have shown the utilization of working force between the ages of 15 and 59 years.

Aperyan (1979, pp. 93 - 100) has studied problems dealing with the reproduction and rational utilization of labour resources under socialism. In his study he has shown the utilization of labour resources in different industrial economic activities and included population of working age (capable of working), employed persons over working age and employed persons under working age. He has considered and shown distribution of non - working population also in making balance of manpower resources in the U. S. S. R. He has adopted quantitative approach in showing the distribution and utilization of manpower in the U. S. S. R.

Batra (1978, pp. 13 and 96) has shown the distribution of employed persons of Japan by employment,

status and occupation and the distribution of Indian manpower from 1951 to 1971 in different industrial categories made by the Census of India. He has also considered the quantitative aspect of the utilization of labour resources. But labour resources or human resources by their definition are qualities of human beings so qualitative aspect should also be considered in the utilization of human resources.

Kamble (1980, pp. 53 - 129), an Indian economist, has studied the utilization of manpower in Maharashtra state economic activitywise and found variation in the manpower utilization across space. He has also found the influences of landuse pattern on manpower utilization. He has gone indepth regarding the utilization of manpower and influences of natural resources on it. But he has also considered only the quantity aspect, not quality which is more appropriate in dealing with human resources utilization.

Geographers :

Kumar (1981, p. Chapter on Human Resources) has studied Resource Association Regions of Nagaland in which he has classified resources into - natural, human and cultural and shown the degree of association among

these resources. In the part of human resources he has chosen three parameters such as density of population and labour productivity. Density of population includes total population carrying capacity of a region and other socio-economic factors influencing the density. Working population has been considered as an important resource as it is responsible for maintaining the total population. Labour productivity has been considered as the quality of the working population. He has defined human resources as "those aspects of human world which directly or indirectly are involved in resource processing and transformation and are therefore part and parcel of the concept of resources".

The major shortcomings in his study are that he has not classified human resources either on the basis of age or education that represents the productive capacity of manpower, and he has not talked about the utilization of human resources.

Singh and Chauhan (1982, pp. 30 and 64) observed that "utilization of man as a resources or an estimation of working population is made convenient by the study of occupational structure in a region". From their statement it is clear that as a resource, they consider only the occupational structure of the population concerned. They have not included the people of

below working age group and over working age group. They have considered only the working people between 15 and 59 years as most of the economists have done. Secondly, they have not suggested any other aspect of human resources such as quality, their development etc., that are essential in the utilization of human resources.

Singh (1982, pp. 2 and 187) has considered man as an important resource with a variety of skills. He has also stated the investment in human resources for the development of skills. He has shown spatial distribution of human resources at district, police station and subdivisional level identifying four levels of human resources. He has tried to find out the association between human resources and amenities. His work is based on census data that do not suffice in depth study of the utilization of human resources. Secondly, he has not considered age groups of the working man power which affects in participation rate of workers in any concern. Thirdly, he has not considered the educational level (i.e. quality of human resources) which provides the proper perspective for the utilization of human resources. Fourthly, he has taken into accounts only of the quantitative aspect of human resources. Also, he has not shown the distribution of utilization of human resources industrial activitywise.

Thus, going through the works carried out by the economists and geographers it becomes clear that some of the economists have done considerable work on human resources but not on the line present work intends to make in depth study. Geographer's approach to this problem will naturally be quite different, emphasising, on spatial aspects. Even the geographers who took up this problem for study have taken a partial views and do not make a comprehensive study touching all the relevant aspects of the problem. Thus, the present research, though takes some guidelines from the earlier works of economists and geographers, strikes an independent line of approach for a comprehensive study of the utilization of human resources in a rural area of Bihar.

Methodology :

Methodology consists of two parts - methods related to the field and laboratory, and methods related to the categorisation of human resources.

A. Methods related to the field and laboratory :

(i) Reconnaissance :- The first step was a reconnaissance of the study area. The main aim of this was to know the spatial distribution and location

of the villages and to learn about various types of activities and situations under study area. The study area was visited thrice by the author himself.

(ii) Sampling :- A stratified random sampling was employed in the selection of the sample villages.

The study area is represented by the 122 villages with varying population size. Out of these six are uninhabited. So only 116 villages have been grouped into six categories or strata on the basis of their population size as follows :

Population size	Number of the villages	Name of the Villages	
		Cultivator dominated	Agricultural labourer dominated
1	2	3	4
I Below 300	15	Janakpur, <u>Basaurhi</u> *, Bazidpur, Baghbar, Parmanki, Mazuffarpur,	Sofipur, <u>Rasula</u> , Sikoha Barhampur, Kalianpur,

* Underlined are the sample villages.

1	2	3	4
		Hansopur, Manpur, Bhaipur and Mirzapur.	
II 300-600	31	Nawasichak, Dostmuhammadpur, Mustafapur, Daulatpur, <u>Nemrapali</u> , Balipur, Atarpur, Khurrampur, Gonpura, Binayaka, Shahopur, Jamalpur, Seodha, Asrafganj, <u>Tarwa</u> and Binakapali.	Mianchak, Pranpur, Ziaudinchak, Bhagwanpur, Abdhara, Anjani, Larha, <u>Thubha</u> , Kewali, Aurangapur, Lodipur, Raipura, Panditganj, Rupaspur, Telhara.
III 601-1000	31	Pabheri,	Sisauna,



1	2	3
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	Fatehpur,	Sahru,
	Manjhauli,	Govindpur,
	Sawai,	Khadiha,
	Phulpura,	Chhitrauli,
	Aurangpur,	Jalalpur,
	Kaili,	Armar,
	<u>Sakarpura,</u>	Muhammadpur,
	Satparsa,	Hulaschak,
	Milik Dewan,	Amarpur,
	Bara,	<u>Semhari -</u>
	Nasratpur,	<u>Buzurg,</u>
	Siria,	
	<u>Seoti,</u>	
	Deokli,	
	Hansapur,	
	Bhergawan,	
	Chistipur,	
	Pakaura and	
	Semhari -	
	Khurd.	
IV 1001-1500 15	Dhanarua,	<u>Dumra,</u>
	Gauspur and Dubhara,	Nadpura,
	<u>Keorha,</u>	Atarpura,

1	2	3	4
		Hansapur, Baribigha, Dewan, Neema, Bahrapur.	Chanaki, Nataul, Bijpura, Piperwan,
V 1501 - 2000	12	Nanauri, Kashinagar, Oiaara, Lawaich, <u>Niman</u> Mai, Bardiha and Dhamaul.	Bir, Rarha, Bhakhri, <u>Sain.</u>
VI Above 2000	12	Sonmai, Pabhera, <u>Deodha</u> , Baurhi, Barni, Kosut, Pathrahat and Chhati.	Moraiwan, Sanda, Nadwan and <u>Harla.</u>

Then each strata was divided into two groups - (i) Cultivator dominated villages and (ii) agricultural labourer dominated villages on the basis of proportion of the population in these occupations. Thus, villages with more than 50 % of the total workers as cultivators were considered as cultivator dominated villages, and the villages with more than 50 % of the total workers as agricultural labourers were considered as agricultural labourer dominated villages.

Further employing simple random sampling technique six agricultural labourer dominated villages, one from each strata, were selected. In the same way six cultivator dominated villages, one from each strata, were selected. But as the numbers of such villages in group II and III were larger, one more sample village from each of these two groups were selected to balance the distribution. Thus the number of sample villages became fourteen.

Thus, more than 12 % of the total number of villages were considered into sample design.

(iii) Construction of questionnaire :-

Questionnaire was developed on the basis of an intensive review of literature - books, journals, reports etc. From this standpoint author attended a foundation

course in "Survey Research in Rural Areas", conducted jointly by the Council for Social Development and Centre for the study of Developing Society (November 16 - December 9, 1983, New Delhi).

Questionnaire consists of both open-end and closed-end question to meet the requirements of the present study (Appendix - 1).

(iv) Data Collection (Primary) :- In each sample village more than 20 % households were selected randomly to interview at least one respondent in each household. However, in the selection of respondents it was seen that their level of education, mental and physical capacity and experience in household affairs are such as they could respond easily and reasonably. In this way information on 47 items were collected for each individual in the sample households . The question related to sex, age, education, occupation, types of work, hours worked, seeking jobs, income, potable water availability, cereals availability, caste, birth and death, etc.

Thus in all the fourteen sample villages the total number of respondents were 540 who furnished informations about 3634 individuals.

Data Collection (Secondary) : - Village-wise data on general population, literacy, scheduled caste and scheduled tribe, workers from industrial category number I to IX, non-workers, seeking jobs, cultivated lands and amenities were collected from the district Census Handbook of 1971 and 1981 for finding out the spatio - temporal variation and pattern of human resources utilization. But the census data were not adequate for fulfilling the study aim of the author and that is way primary data in details were collected from the sample villages.

(v) Statistical Method Used :- For processing the raw data collected from the primary and secondary sources some relevant statistical methods were employed.

Percentage statistical method has been used in converting the absolute figures of raw data into percentages and on the basis of this five levels of human resources utilization have been framed viz., very low, low, medium, high and very high.

Standard deviation method has been used for cartographic representation of the density of population of the area under study.

In examining the strength of functional

relationship between cultivated land and agricultural manpower, the Pearsonian Product Moment Correlation Coefficient method has been employed. Simple Linear Regression Analysis has been done to find out the nature of relationship between these two variables. Residual map has been based on this analysis.

The Contingency Coefficient, 'C' method has been employed to investigate the correlation between the micro-relief on the one hand and cultivated land and human resources utilization on the other.

To know precisely, whether the utilization of qualitatively undeveloped and developed human resources differ between cultivator dominated villages and agricultural labourer dominated villages. For this χ^2 (chi square) method as a test of independence has been employed.

(vi) Cartographic Stage :- After processing the data and arranging them in relevant tables mapping was done to show the spatio - temporal variation of human resources in each occupational category. In most cases choropleth technique of mapping was used selecting same shadings for all the maps of similar types.

B. Methods related to the categorisation of human resources (both sexes) :

(i) Based on educational attainment :-

Education is indeed an asset, wealth, capital, good input, etc. and is consumed or utilized by the individuals wherever they need its utility in the process of production. In this way education is of course a resource that is embodied in human beings.

To assess the quality of the human resources, individuals have been categorized under four levels of education : i. Illiterate, ii. Below matriculate, iii. Matriculate and Above, iv. Professional / Technical (including other skilled).

These categories are not useful only to rural sectors of economy where primary occupation is very significant but also to the urban sectors of economy where secondary and tertiary occupations are important.

(ii) Based on economic activities or occupations as suggested by Kamble (1980, p. 58).

Sr.No.	Categories of human resources
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A	<u>Agricultural Sector</u>
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I	cultivators.
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II	Agricultural Labourers.
III	Persons engaged in livestock and other allied activities.
IV	Persons engaged in mining and quarrying.
B	<u>Non-agricultural Sector</u>
V	Persons engaged in household industries and others.
VI	Persons engaged in construction.
VII	Persons engaged in trade and commerce.
VIII	Persons engaged in transport, storage and communication.
IX	Persons engaged in other services.
X	Unutilized human resources.

These categories have been made for showing the utilization of human resources in both the sectors of economy - rural and urban. These categories are more simple, clear and useful and cover primary, secondary and tertiary sectors of occupations.

(iii) Based on hours worked in a year :-
Human resources have been considered as an input of production which are utilized by man himself.
These inputs are measured in terms of hours worked by

man in different type of works in different occupational categories of economy. Upton (1976, pp. 233 - 234) also emphasized the labour input in terms of hours worked by man and observed "for most purposes labour inputs are measured in terms of man - hours (or man days or man years) and variations in work output per hour are ignored".

As it has been experienced in the study area, a high proportion of the agricultural force is made up of family members, the farmers themselves, their wives, their sons and daughters. Most family members are regular workers. Their services can not be hired when required by others and thus they are indivisible inputs of production. In fact, if human resources are inputs, then these must be measured in terms of hours worked by man. Taking this into account here three categories of human resources utilization have been delineated. These are :

Levels of Human Resources Utilization	Hours worked throughout the year
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I Under-Utilized	Below 6 hours
II Adequately Utilized	6 - 8 hours
III Over-Utilized	Above 8 hours

In making these categories the labour input has been considered in terms of hours worked by individuals throughout the year in an average in particular occupational category. The whole year was divided into three agricultural working seasons, such as Bhadai, Aghani and Rabi, and the hours worked by the individuals during these seasons separately were recorded. After aggregating the units of working hours of the three working seasons and dividing them by three the average of the hours worked throughout the year calculated. These figures served as the basis of classification.

The three fold classification has been made with reference to the nation wide six to eight hours standard working period.

(iv) Based on utilization of human resources :-

Sr.No.	Categories of human resources
I	Utilized human resources-producer and consumer.
II	Unutilized human resources-non-producer but consumer only.

These categories have been made because human resources play a very significant role in the production and consumption of resources and constitute the ultimate basis for the development of a region.

(v) Based on age composition :- Age is one of the most vital factors in the utilization of human resources because the development of human qualities depends primarily upon the structure of age. Age is an index of a person's capability and is a significant measure of a nation's vitality as well. The supply of manpower, crude activity rate, general activity rate, dependency ratio, replacement ratio, and rate of employment, unemployment and all socio-economic activities of a region are guided by the age composition. The age composition of a region's population, among other things, is a sensitive index of its fertility, mortality and mobility patterns.

It is, therefore, necessary to make group of ages in the study of human resources utilization. Age groups have been differently categorised by different scholars.

Diwan (1978, p. XXXII), Chandna (1980, p. 93), Agrawal (1982, p. 82), Datt and Sundharam (1983, p. 62) have classified the ages of human

resources into three categories on the basis of working force participation rate. These age groups were 0 - 14 years, 15 - 59 years and 60 and above.

Sunderburge (1982, p. 300) has a slightly different categorisation. He classified the age groups into three categories : upto 14 years which includes children, 15 - 50 years which includes working population, and above 50. He differs in respect of keeping the age group of working population from 15 - 50 as against 15 - 59, suggested by the above scholars.

But these classifications are not quite adequate while dealing with the utilization of human resources in rural or urban economic sectors.

They are concerned mainly with people of working age and their participation in the growth of economy. They did not lay emphasis on the people of under working and over working age groups while these two groups also contribute their mite in the growth of economy. And particularly in the rural primary sector of economy, their contribution is very much notable.

Considering and evaluating the importance of all people of a region, here, the ages have been

classified into five categories. These groups differ in their quality and characteristics.

Age Group	Categories of Human Resources	Quality	Characteristics
0 - 4	Infant	Pre School	Potential
5 - 14	Under working Age group Children	School Going (in the process of HRD).	Potential
15 - 34	Younger working Age group	More Active	More Mobile
35 - 59	Older working Age group	Less Active	Less Mobile
60 & +	Over working Age group	Superannuated	Less Utilizable

For showing the utilization of human resources at varied rates of their participation in the process of production these categories have been employed. This classification can also be useful in the study of utilization of child labour or old workers separately. Particularly for the utilization of workers

of working age groups, this classification is very helpful because working age groups are mainly based on the rate of activeness, and mobility.

On the basis of these categories the human resources in the area has been studied.

Organization of the Work :

The entire study has been broadly divided into eight chapters :

First chapter deals with the conceptual framework of human resources which includes definition, concepts, classification, role and problems of human resources in space and time.

Second chapter deals with the conceptual, technical and methodological aspects involved in the measurement of human resources utilization in the study area and makes a critical review of literature on the subject.

Third chapter deals with the geographical personality of the area and its influence on the development and utilization of human resources.

Fourth chapter deals with the quantitative dimension including other demographic characteristics

of human resources in the area under study to know the real picture for detailed study.

Fifth chapter deals with the qualitative dimension of human resources. It includes spatio-temporal pattern of literacy, levels of education, human capital formation and factors bearing on human resources development.

Sixth chapter deals with the quantitatively measured human resources utilization in different economic activities in space and time and this is primarily based on the secondary data collected from different sources.

Seventh chapter deals with the qualitatively measured human resources utilization in different sectors of rural economy in the study area for finding out the actual picture of the contribution of human resources in the growth of the economy.

Eighth chapter deals with the development and utilization of human resources and influence of its infrastructure or amenities available with future plan.

Summary and conclusion deals with the broad findings and concluding remarks of the utilization of human resources in the area under study.

Thus, the work throws new light on many conceptual, technical, methodological aspects of the problem of better organisation, fuller development and more efficient and rational utilization of human resources in a rural segment of Bihar and this would also be applicable in any developing region of a nation.