

Level of Labour Use: Case Study of a Grass-root Rural Economy in a Backward Region of West Bengal

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The use of labour in the context of a grass-root rural economy has some important facets. First, a large section of the rural population uses labour as the only means to earn a livelihood. The lack of utilization of labour power means unemployment or underemployment for the landless labourers. Secondly, for the rural economy of India, labour is one of the cheapest resources of production. Numerous studies have revealed a strong association between levels of labour use and agricultural productivity.¹ Greater utilization of labour power not only achieves greater production at low cost but also improves the level of living of the rural poor. Thirdly, the resources at the lower economic levels of a large country like India can not all be seen from the top.² In order to obtain an accurate idea of the resources of production like labour and to estimate the scope of its greater utilization mainly at the local level, we would need to penetrate virtually every grass-root area economy.³ Finally, the level of labour use in a grass-root economy of West Bengal may be of some special interest. This is because since 1977 the ruling party in West Bengal has championed the cause of the rural poor, specially the sharecroppers and the land-less labourers. Furthermore West Bengal is also known for having an organized panchayati system which is likely to improve the level of labour use through planning decentralization at the grass-roots.

The present study is divided into five sections. Section I covers the area of study and the methodology. Section II offers an estimate of the potential labour resources and the pattern of employment. Section III covers the aspect of underemployment. Section IV analyses the role of irrigation as a factor determining the intensity of employment. Section V summarizes the findings and conclusion.

I

The Area of Study and Methodology

Two blocks, namely Chanchal-I and Chanchal-II, together constitute our grass-root area economy which falls within the district of Malda in West Bengal.⁴ Malda district not only has good soil that can be cultivated with ordinary farming methods but it also has a rich source of both surface and underground water. Despite this it remains one of the poorest districts of the state.⁵

The study covers 596 households of five sample *mouzas*⁶ drawn from the 194 *mouzas* of the two blocks of Chanchal. The selection of sample *mouzas* was based on official sources of information regarding the proportion of irrigated land in each *mouza*. Out of 194 *mouzas* we excluded the *mouzas* having a population of 300 or less. This left us with a remainder of 160 *mouzas*. These have been further grouped on the basis of the percentage of irrigated land to net cultivable land into five strata so that each strata contains an equal number of 32 *mouzas*. A random sample *mouza* was then drawn from each of the five strata. Thus the sample economy consists of five *mouzas*.

The total sample is divided into two sub-samples on the basis of irrigational coverage. The two less irrigated *mouzas* namely Sanjib and Sambhunagar together form sub-sample-1 and the remaining three *mouzas* namely Saktihar, Balidanga and Uttar Bhabanipur make up sub-sample-2. The irrigational coverage of the *mouzas* and sub-samples is shown in Table 1.1. We find that the percentage of irrigated land to net cultivable land is 55.92 for sub-sample-2 whereas for sub-sample-1 it is only 16.37. This grouping of sub-samples having a wide difference in irrigational coverage will have an important bearing upon our analysis.

The study was conducted in two consecutive reference periods. However, it would be in order if we regard the data as being obtained in the beginning of 1986 and the returns as relating to the preceding year.

II

Labour resource and the Employment Pattern

In estimating the employable labour force the definition adopted by the National Planning Commission of Nepal in their 'Survey of Employment Income Distribution and Consumption Patterns'

of 1977 has mainly been followed. The estimate is shown in detail in Table 2.1. In this estimate 1375 people, i.e., 42.6 per cent of the sample population, constitute the labour force. The number of persons employed for any number of days being 1238, the estimated rate of employment for the block economy stands at 90 per cent, and the rate of inactive persons 10 per cent.

An important measure of the extent of utilization of human labour is the rate of participation of population in work. The work participation rate of an economy like India depends upon various economic and social factors.⁷ A higher rate of work participation among adults, *ceteris-paribus*, means a lower degree of unemployment leading, thereby, to a higher stage of economic development. Table 2.2 shows that in our sample work, participation rate among children is nearly 7 per cent. The overall participation rate is 38.36 per cent. Table 2.3 presents census data of 1981 along with the sample estimate. The participation rate of our sample shows an improvement in this regard in West Bengal for both males and females. Compared to the all India figures, the female work participation rate of our area has been lower and the male work participation rate a little higher. The difference may be because the specific community or group culture of our region influenced the participation in work of the two sexes.

To find the occupational distribution of our area we have divided the various occupations into eight basic categories. These are, (1) farmers (cultivating mainly their own land), (2) tenant farmers (mainly), (3) mainly agricultural labourers, (4) mainly non-agricultural labourers, (5) service holders (company, Government and public institutions), (6) village traders and artisans (including petty traders, middlemen, potters, basketmakers, weavers, carpenters, blacksmiths and masons), (7) village professionals (including Muslim priests, quacks, teachers, barbers) and (8) persons dependent on social charity. Employment enjoyed by these different occupational groups in their respective primary occupations; subsidiary occupations; and the two taken together⁸ (all occupations) is shown in Tables 2.4 and 2.5.

We notice that around 70 per cent of the sample workers find activities related to farming as both their primary and secondary sources of employment. The remaining 30 per cent constitute the non-farming group. The non-farming group enjoys a greater mean mandays of employment than the farming group. Agricultural labourers appear as the single biggest occupation group.

The second biggest occupation group is that of farmers and the next is that of the village-traders and artisans. Because the average mandays of employment of the village traders and artisans is much more than that of the farmers, in its share to total mandays of employment through all occupations, the later group occupies a lower position compared to the former group. Of the total workers, 45 per cent have a subsidiary occupation along with their chief occupation. The service holders depend less upon secondary sources of employment. The subsidiary occupation plays the most vital role for the non-agricultural labourers. This is so because most of the non-agricultural labourers of our area are actually workers engaged in brick-making units. Since these units run only for six-months in a year, the workers have to find a secondary source of employment for the remaining half of the year.

III

Level of Underemployment: A Measure of Intensity of Employment

Measurement of intensity of employment is more important than that of unemployment especially in agriculture where the major problem of the labour force is underemployment rather than unemployment. We have computed intensity of employment from the distribution of gainfully employed persons by days of work per annum.⁹ Employment for a period equal to or exceeding 330 days per annum is considered full employment. The intensity value for the fully employed is taken as 1. Therefore intensity value for 50 days' employment is calculated at 0.15, that for 100 days' employment 0.30 and so on.

Intensity of employment in our total sample for employed adults is shown in Table 3.1. The percentage of employed adults who could use more than 60 per cent of their labour power is nearly 64. The percentage of adult males who could use more than 60 per cent of labour power is 76, which is more than three times the corresponding percentage for females. More than half of the employed female adults use no more than 30 percent of their labour power. This is mainly because the primary duty of virtually every adult member of the female population is to look after the house-keeping activities. The women of our area economy work outside the domestic field mainly in times of harvesting and sowing operations.

IV

Irrigational Coverage and Employment Intensity

There may be variations among the sample villages with respect to employment intensity depending upon the specific scopes and opportunities of employment offered by the regional village economy and its surroundings. Agriculture being the dominant sector of the sample economy a probe into the role of irrigation on employment intensity seems relevant. This is all the more important because cultivation of land all round the agricultural year is conditioned by the availability of the basic infrastructural facilities like arrangement of artificial irrigation, good drainage to remove excess water, easy credit facilities for the farmers and several other factors. Our sample villages do not differ much with respect to most of these facilities except for the availability of irrigation. Greater coverage of irrigation can raise village level intensity of employment in two ways. First, it increases the cropping intensity. Increase in the gross acreage of cultivation necessitates greater use of labour. Secondly, it enables the replacement of primitive methods of cultivation by the new agricultural technology characterised by the frequent use of fertilisers and irrigation which augment agricultural operations like watering, weeding, manuring and create scope for additional per acre employment.¹⁰

We have already stated about the wide variability in irrigational coverage of the sample *mouzas* on the basis of which we grouped them into two sub-samples. Therefore, comparison of employment intensity between two sub-samples can exhibit the influence of irrigation intensity-on employment intensity.

So far as the scope of employment in the non-agricultural sector is concerned Sambhunagar differs from the other four villages in that the people of Sambhunagar find an opportunity of employment in brick-making units in addition to usual non-farming activities. From Table 4.1 we get the impression that Sambhunagar gives to its inhabitants the scope to use their labour power more intensively than the other four villages. This impression is further strengthened as we see from Table 4.2 that Sambhunagar ranks first among all villages in terms of mean mandays of employment per employed adult. Since Sambhunagar belongs to sub-sample-1 which is less irrigated and backward in farming compared to sub-sample-2, on the whole in

terms of mean mandays of employment of employed adults the two sub-samples do not differ much. We are, therefore, interested in the comparison of employment intensity firstly between the two sub-samples and secondly between Sanjib and sub-sample-2 for each of the three categories of employed adults, employed male adults and employed female adults. Therefore, a null hypothesis that the percentage of people who could not make use of more than a certain level of labour power does not differ between the sub-samples is tested. It is obvious that employment for a minimum number of mandays per annum is guaranteed for a maximum number of employed people in all village economies through their usual farming and non-farming activities. Greater coverage of irrigation and improved farming and other related activities enable more and more under-employed people to attain higher levels of employment intensity. Therefore the null hypothesis is tested for three higher intensity levels 0.60, 0.76 and 0.91 only. The data required for testing the difference of two proportions is presented in Tables 4.6 to 4.8.

The values of the standard normal variable (Z) calculated¹¹ are presented in Tables 4.9 and 4.10. We find that out of nine values of Z for seven the null hypothesis that there is no difference in intensity of employment between sub-sample-1 and sub-sample-2 is rejected. The null hypothesis is rejected for eight values of Z out of nine while comparing Sanjib with sub-sample-2. On the whole we find that the percentage of people who could make use of more than 60%, 76% and 91% of their labour power is significantly greater for sub-sample-2 than both Sanjib and sub-sample-1. It is evident from Table 1.1 that the values of the per capita land holding in acres for Sanjib, sub-sample-1 and sub-sample-2 are 0.45, 0.38, 0.29 respectively. Hence sub-sample-2, having a relatively lower per capita land holding, commands greater use of labour power solely banking on the relative abundance of irrigation facilities.

V

Conclusion

The rate of employment as well as the work participation rate of our area economy do not differ much from the national and state aggregates. Farming being the main source of employment the agricultural labourers constitute the biggest occupation group. The

actual level of employment intensity in the area economy of Chanchal is much below the maximum attainable limit. This is because about half of the employed adults have not been able to employ more than 75 per cent of their labour power. Comparison of the level of underemployment of the people of our area economy with that of the national or state level is not possible because of non-availability of data. However, the finding that the absolute level of labour use in the sample is low is corroborated by the fact that the agricultural and the non-agricultural wage rates in our area are very low. In fact the rate of wage in agriculture is half that of the villages of Hooghly and Burdwan¹².

The employment intensity differs significantly in Sanjib, sub-sample-1 and sub-sample-2. Sub-sample-2 which has enjoyed greater coverage of irrigation has obtained a greater level of employment intensity than the less irrigated areas. Village level irrigation intensity has thus emerged as the factor explaining village level employment intensity.

Since 1977 the Government of West Bengal has taken steps to improve the level of living of the rural poor through a decentralised system of panchayati raj. The measures taken include, among others, programmes to boost employment for agricultural labourers. These programmes have been fairly successful.¹³ There were, in addition, schemes of the Central Government specially designed to increase rural employment. Even operating within this environment the huge labour resources of our grass-root economy have remained largely underutilized. Greater coverage agricultural land by irrigation facilities and consequential improved farming can significantly increase the level of employment intensity. Nevertheless, merely the addition in the stock of irrigation cannot by itself mobilize rural labour resources. The rural sector suffers from serious financial, commercial and marketing problems. Unless these are simultaneously addressed the task of increasing labour mobilization at the grass-roots will remain a rather difficult one.

TABLE 1.1
**Population, Cultivable Area & Irrigational Coverage
 By Villages & Sub-Samples**

Village	Total population	Net cultivable area (acres)	Percentage of irrigated area to net cultivable area	Per capita land holding (acres)
Sanjib	724	328.68	18.07	0.45
Saktihar	738	163.35	63.60	0.22
Uttar Bhabanipur	836	250.70	71.83	0.30
Sambhunagar	351	88.76	10.90	0.25
Balidanga	578	208.28	30.45	0.36
Sub-Sample-1	1075	417.44	16.37	0.38
Sub-Sample-2	2152	626.33	55.92	0.29
TotalSample	3227	1042.77	40.10	0.32

Source: Data of population and cultivable area have been obtained from the author's survey. The percentages of irrigated areas are collected from the offices of agricultural development officers of the two blocks of Chanchal.

TABLE 2.1

Employable Labour Force, Workers And The Rate of Employment By Village

Sl. No.	Category	Sanjib	Saktihar	Uttar Bhabani-	Shambhu nagar	Blidanga	Total sample
1.	Total Population	724	738	836	351	577	3227
2.	People not included in the labour force						
	(a) Population upto 10 years	240	225	267	116	163	1011
	(b) Students above 10 years fully engaged in studies	31	51	52	15	53	202
	(c) People above 10 years found perpetually sick or disabled or injured	11	9	12	6	5	43
	(d) One female member per family	131	131	150	66	118	596
3.	2(a) + 2(b) + 2(c) + 2(d)	413	416	481	203	339	1852
4.	Employable Labour force (1—3)	311	322	355	148	239	1375
5.	Number of employed persons	292	290	296	133	227	1238
6.	Percentage of workers to employable Labour force (5/4 x 100)	93.89	90.06	83.38	89.86	94.98	90.04
7.	Percentage of unused labour force	6.11	9.94	16.92	10.14	5.02	59.96

Note: We have excluded from the labour force one female member per family [2(d)] since according to the culture specific requirements of our region all female members may not be available for gainful employment due to engagement in housekeeping activities.

Source: Author's estimate using primary data.

TABLE 2.2

Work Participation Rate of our Total Sample by Sex & Age Groups

Age group	Male	Female	Both Sexes
Upto 15	8.03	5.65	6.86
Above 15	88.93	32.20	62.51
Total	54.86	20.31	38.36

Source: Author's estimate from primary data.

TABLE 2.3
Work Participation Rate of W.B., India and Chanchal By Sex
(Inclusive of main workers and marginal workers)

Work participation rate	Male	Female	Both sexes
India (Rural)	53.81	23.18	38.87
West Bengal (Rural)	49.94	8.89	30.10
Our Sample	54.86	20.31	38.36

Source: The data for W.B. & India are taken from Govt. of West Bengal (1988-89).

TABLE 2.4
Employment Enjoyed Through All Occupations

Sl. No.	Main Occupation group	Persons employed		Mean employment through all occupations in mandays	Total employment through all occupations	
		number	percentage		No of mandays	percentage to total
1.	Farmers	327	26.41	191	62518	23.76
2.	Tenant farmers	12	0.97	208	2500	0.95
3.	Agricultural labourers	539	43.54	194	104682	33.79
4.	Non-agricultural labourers	61	4.93	230	14007	5.32
5.	Service holders	40	3.23	335	13414	5.10
6.	Village traders & artisans	250	20.19	254	63616	24.18
7.	Village professionals	7	0.57	289	2025	0.77
8.	Persons dependent on social charity	2	0.16	175	350	0.13
9.	Farming group	878	70.92	193.28	169700	64.50
10.	Non-farming group	360	29.08	259.48	93412	35.50
Total		1238	100	212.53	263112	100

Note: The first three offupation groups constitute the 'Farming Group' and the rest five, the 'Non-farming Group'.

Source : Author's survey

TABLE 2.5
Share of Primary and Subsidiary Occupation in Employment

Sl. No.	Main Occupation group	Persons employed in main occupation		persons having subsidiary occupations		Percent of employment through primary occupation to employment through all occupations	Percent of employment through subsidiary occupation to employment through all occupations
		number	percentage to total	No.	Percentage to total		
1.	Farmers	327	26.41	136	41.6	80.25	19.75
2.	Tenant farmers	12	0.97	8	66.7	84.00	16.00
3.	Agricultural labourers	539	43.54	242	44.9	88.44	11.56
4.	Non-Agricultural labourers	61	4.93	35	57.4	77.34	22.66
5.	Service holders	40	3.23	11	27.5	97.96	20.04
6.	Village traders and artisans	250	20.19	124	49.6	85.54	14.46
7.	Village professionals	7	0.57	2	28.6	97.53	2.47
8.	Persons dependent on social charity	2	0.16	0	0	100	Nil
9.	Farming group	878	70.92	386	69.18	85.36	14.64
10.	Non-Farming group	360	29.08	172	30.82	86.40	13.60
Total		1238	100	558	100	85.73	14.27

Source : Author's survey

TABLE 3.1

Labour Use Index of Employed Adults in Total Sample by Sex

Percentage of Employed adults	Percentage of employed male adults	Percentage of employed female adults	Intensity of aue
10.07	1.15	38.32	0.15 or less
19.26	7.26	57.30	0.30 „
26.35	12.44	70.43	0.45 „
36.42	23.84	76.27	0.60 „
49.38	37.67	86.49	0.76 „
76.88	71.77	93.06	0.91 „
100	100	100	1.00 „

Source : Author's estimate using primary data.

TABLE 4.1

Labour Use Index of Five Sample Villages
Percentage of employed adults

Sanjib	Saktihar	Uttar Bhabanipur	Sambhunagar	Balidanga	Intensity of use
3.84	7.77	13.88	1.66	21.00	0.15 or Less
15.77	15.55	19.78	14.16	30.13	0.30 „
29.33	20.00	27.84	16.66	34.24	0.45 „
45.00	30.37	35.16	23.33	42.46	0.60 „
66.15	38.52	45.78	35.83	54.79	0.76 „
87.30	66.66	70.69	75.83	85.39	0.91 „
100	100	100	100	100	1.00 „

Source : Author's estimate using primary data

TABLE 4.2

Mean Mandays of Employment by Villages

Village Type of persons	Employed adults	Employed male adults	Employed female adults
Sanjib	202	207	142
Saktihar	237	260	159
Uttar Bhabanipur	220	262	72.5
Sambhunagar	243	276	159

Village Type of persons	Employed adults	Employed male adults	Employed female adults
Balidanga	193	239	43
Sub-sample-1	215	240	147
Sub-sample-2	211	255	94
Total Sample	212	250	114

Source : Author's estimate using primary data.

TABLE 4.3

Labour use Index of Employed Adults in Sub-Sample-1 by Sex

Percentage of Employed adults	Percentage of employed Male adults	Percentage of employed Female adults	Intensity of use
5.00	0.36	10.68	0.15 or less
15.26	7.58	35.92	0.30 ..
25.26	12.63	59.22	0.45 ..
38.16	27.44	66.99	0.60 ..
56.58	46.21	85.44	0.76 ..
83.68	78.70	97.09	0.91 ..
100	100	100	100 ..

Source : Author's estimate using primary data.

TABLE 4.4

Labour Use Index of Employed Adults in Sub-Sample-2 by sex

Percentage of Employed adults	Percentage of employed male adults	Percentage of employed female adults	Intensity of use
13.52	1.52	54.97	0.15 or less
21.26	7.11	70.17	0.30 ..
26.90	12.35	77.19	0.45 ..
35.56	22.17	81.89	0.60 ..
45.80	33.67	87.13	0.76 ..
73.49	68.53	90.64	0.91 ..
100	100	100	100 ..

Source : Author's estimate using primary data.

TABLE 4.5
Labour Use Index of Employed Adults in Sanjib by Sex

Percentage of Employed adults	Percentage of employed male adults	Percentage of employed female adults	Intensity of use
3.84	0.52	13.04	0.15 or less
15.77	9.42	33.33	0.30 or less
29.23	16.75	63.67	0.45 or less
45.00	36.12	69.56	0.60 or less
66.15	58.11	88.40	0.76 or less
87.30	83.24	98.55	0.91 or less
100	100	100	1.00 or less

Source : Author's estimate using primary data.

TABLE 4.6
Comparison of use of Labour Power at 60 Percent Intensity Level

	Number of Employed adults using more than 60 percent of labour power			Number of Employed adults using not more than 60 per cent of labour power		
	Male	Female	All	Male	Female	All
Sub-Sample-1	76	69	145	201	34	235
Sub-Sample-2	131	140	271	460	31	491
Sanjib	69	48	117	122	21	143

Source : Author's survey

TABLE 4.7
Comparison of use of Labour Power At 76 percent Intensity Level

	Number of Employed adults using more than 76 percent of labour power			Number of Employed adults using not more than 76 per cent of labour power		
	Male	Female	All	Male	Female	All
Sub-sample-1	128	88	216	149	15	164
Sub-sample-2	199	149	348	392	22	414
Sanjib	111	61	172	80	8	88

Source: Author's Survey

TABLE 4.8
Comparison of Use of Labour Power At 91 percent Intensity Level

	Number of Employed adults using more than 91 percent of labour power			Number of Employed adults using not more than 91 per cent of labour power		
	Male	Female	All	Male	Female	All
Sub-sample-1	218	100	318	59	3	62
Sub-sample-2	405	155	560	186	16	202
Sanjib	159	68	227	32	1	33

Source : Author's Survey

TABLE 4.9
Testing Difference of Two Proportions between
Sub-Sample-1 and Sub-Sample-2

Employment category	Z values for intensity levels		
	60%	76%	91%
Employed adults	0.66	3.66	4.23
Employed male adults	1.66	3.42	2.12
Employed female adults	3.00	0.5	2

Source: Author's estimate from primary data.

TABLE 4.10
Testing Difference of Two Proportions Between
Sanjib and Sub-sample-2

Employment category	Z values for intensity levels		
	60%	76%	91%
Employed adults	3.33	5.55	4.66
Employed male adults	3.88	6.00	2.00
Employed female adults	2.00	0.2	2.00

Source : Author's estimate from primary data.

NOTES & REFERENCES

1. See, for example, P. Bardhan, et. al., *Labour Absorption in Indian Agriculture An Exploratory Exercise*, (Bangkok: ILO, 1978); S. Ishikawa, 'Labour Absorption in Asian Agriculture—An Issue Paper'. (Bangkok: ILO, 1978); A. Vaidyanathan, 'Labour Use in Indian Agriculture' in Bardhan, et. al., op. cit.

2. See, P.C. Sarkar, 'Grass-root Rural area Planning: The means of Restructuring Indian Rural Planning', (Occasional Paper, Department of Economics, University of North Bengal, 1990)

3. The appropriate unit for local level planning is a much debated issue among planners. For agricultural planning, areas of a single agro-climatic zone with a similarity of heat, humidity, topography, rainfall, surface and underground water have been preferred as a unit. Such a zone might not be exactly a village, a block or a district but some geographical area which cuts across the boundary of each of such unit. We call such units of planning a grass-root economy. For a study of different dimensions of local planning see, R.P. Misra & R.N. Achyutha, *Micro-Level Rural Planning-Principles, Methods and Case Studies*, (New Delhi: Concept Publishing Company, 1990).

V.S. Vyas, A. Bhatt & M.S. Shah, *Decentralised Planning in India*, (New Delhi: Oxford & IBH Publishing Co., 1985).

4. For details regarding the selection of the grass-root area economy see, A. Munshi, 'Use of Labour in the Block Economy of Chanchal'. (Unpublished Ph.D dissertation, North Bengal University, 1990)

5. See, B. Dasgupta, 'Agricultural Labour under Colonial, Semicapitalist & Capitalist Condition: A Case Study of West Bengal', *Economic & Political Weekly*, Vol. 19, No. 39, 1987, pp. A-129 to 148; A.K. Maikap, 'Correcting Regional Imbalance in West Bengal and the Role of Market Towns and Centres', in Bhattacharyya, D. (Ed.), *Focus on West Bengal*, (Calcutta: Smatat Prakashan, 1972).

6. *Mouza* is the lowest unit of the administrative divisions of land.

7. See, A. Mathur, 'Work participation, Gender and Economic Development – A quantitative anatomy of the Indian scenario', *The Journal of Development Studies*, Vol. 30, No.2, 1994.

8. For an employed person having more than one occupation, the occupation which was the single biggest source of income during the last one year from the date of survey has been regarded as the primary-occupation and the second biggest occupation as the secondary occupation.

9. Our survey was a one point survey. So we had to depend on the memory of the respondents to know the number of days they worked. Since the reference period was the last year from the date of survey we had little difficulty in obtaining the data. We first asked them about the number of days worked during the last month, then the last season and then moved on to the different seasons that made up the last agricultural year. Utmost care was attached to ensure reliable data by cross-checking the sources available. However, a source of non-sampling errors has been the failure of the respondents to state the number of half-days' employment. This might have caused some inflation in our figures of use of labour.

10. See, V.T. Raju, *Impact of New Agricultural Technology On Farm Income And Employment*. (New Delhi: National Publishing House, 1982); R.S. Sidhu & S.S. Grewal, 'Factors Affecting Demand for Human Labour in Punjab

Agriculture : An Econometric-Analysis', Indian Journal of Agricultural Economics, No. 2, 1990, p. 125; A. Munshi, op. cit.

11. For the testing of difference of two proportions see, P.G. Hoel, *Introduction to Mathematical Statistics*, (New York: John Wiley & Sons, 1971).

12. See, *Economic Review Statistical Appendix*, (State Planning Board, Government of West Bengal, Calcutta, 1982-83).

13. Evaluations regarding the achievements of the West Bengal Government in agrarian reform are to be found in A. Cohli, *The State And Poverty In India: The Politics of Reforms*, (Bombay: Orient Longman, 1987); Ajit K. Ghosh, 'Agrarian Reform in West Bengal: Objectives, Achievements and Limitations', in Ajit K. Ghosh, (ed.), *Agrarian Reform in Contemporary Developing Countries*, (New Delhi: Select Book Service Syndicate, 1984), pp. 91-137; Arun Ghosh, *West Bengal Land Scapes: A travel diary*, (Calcutta: K.P. Bagchi & Company, 1989).