CONDITIONS OF AGRICULTURAL LABOUR IN WEST BENGAL: WITH SPECIAL REFERENCE TO THE POST — INDEPENDENCE PERIOD.

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MASTER OF PHILOSOPHY

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CERTIFICATE

Certified that the dissertation entitled Condition of Agricultural Labour in West Bengal : with special Reference to post-independence Period submitted by SAMIRAN CHAKRABORTY in partial fulfilment for the award of degree of Master of Philosophy (M.Phil.) of this university, is his original work and may be placed before the examiners for evaluation. This dissertation has not been submitted for the award of any other degree of this university or of any other University.

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C O N T E N T S

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PRELUDE

This thesis attempts to sketch the condition of agricultural labourers in West Bengal. Agricultrual labourers constitute a very important component of the rural population in the state today, accounting for two-fifths of the agricultural population. The primary intention of this study is to explore, how the class of agricultural labourers has become preponderant in the agrarian society of the state, what are the basic factors behind this development both in the pre-independence and post-independence periods, and what are their present economic conditions. This study is entirely based on the data from secondary sources.

The discussion starts with the genesis of the agricultural labourers. The history of the growth, origin and evolution of this class in West Bengal would elucidate how a numerically insignificant class of agricultural labourers during the pre-British period grew substantially due to the colonial oppression of the British rule. This would further reveal the difference of the creation of the class of agricultural labourers in a typical le developed agrarian economy like West Bengal compared to the creation of agricultural proletariates in the advanced capitalist countries.

In Chapter II the growth of this class in the state during the post-independence period is analysed. Along with this

the demographic and some other features of agricultural labourers in the state is discussed. These features exhibit certain consequences of the growth of agricultural labourers on the composition of this class. In this context we would analyse the participation of men, women and children as agricultural labourers; participation of scheduled castes and scheduled tribes in the pool of agricultural labourers; land disposal by agriculrual labourers ; the proportion of agricultural labourers having secondary employment opportunities; proportion of agricultural labourers engaged inpatron-client relationship; and the educational level of agricultural labourers. A general overview of the economic conditions of West Bengal, particularly of its agricultural sector is given at the outset of this chapter as a backdrop.

The third chapter illustrates the economic conditions of the class of agricultural labourers of the state during the post-independence period, in terms of levels of wages, income, employment and consumption. It brings out the extent of poverty incidence among agricultural labourers in the state. A debate has been started from the seventies onwards whether the economic conditions of agricultrual labourers of India have improved or declined overtime, specially after the advent of green revolution. The main thrust of the discussion of this chapter is to look into

this question in the context of West Bengal.

However, the wage, employment and income of agricultural labourers depend upon the fact whether the growth of these labourers is accompanied by a commensurate growth of agriculture. This aspect is analysed in chapter IV. In this chapter we are basically concerned with analysing the pattern of labour absorption in the agriculture of the state. The pattern of labour utilisation in the agriculture of the state reveals the conditions of demand for labour. A large supply of agricultural labourers mediated by factors governing the level of demand for such labour, must ultimately reflect itself in the level of agricultural wages and the period of employment available per labourer in a given year. Hence, the discussion of the labour absorption phenomenon in agriculture of the state is extremely important.

In this fourth chapter we shall first, illustrate the prevalent situation relating to labour absorption in the agriculture of the state. This would reflect the present employment opportunities of labourers in agriculture of West Bengal. After that we shall attempt to isolate some of those factors which influence the labour utilisation in agriculture and whose proper and adequate application can augment the productive labour absorption. This will entail some policy recipes for the generation of additional employment opportunities in the agriculture

to absorb the reserve army of rural workers. The discussion in this context will focus the prospect of employment opportunities in agriculture.

The final chapter attempts to bring together all the various aspects that have crystalised and lying scattered in the course of our analysis on the conditions of agricultural labourers of West Bengal. In this chapter we also point out the limitations of our study.

C H A P T E R 1

Historical Evolution of Agricultural Labourers In West Bengal

The proportion of agricultural labourers among the rural workers has reached a new height in West Bengal today. This growth and evolution of agricultural labourers should be analysed historically. Otherwise, the sequence and basis of the discussion would be lost. The history of this class in the pre-independence period would certainly reveal some important facets of the prominence of agricultural labourers in the post-independent agrarian society of Bengal. In this chapter an attempt has been made to discuss the growth and evolution of this class in the pre-independence period. Here, we start with the discussion of pre-British situation, and then delineate the growth of agricultural labourers under the British colonial regime. This would illustrate, how the growth of agricultural labourers corresponded to the colonial economic policies of the Britishers.

1.1 PRE-BRITISH PERIOD

It is very diffcult to trace the possible size of the class of agricultural labourers in the pre-British period. The reason is easily comprehensible. We seldom find any source which can give any time series on cross-sectional quantitative idea about this class. Only few comments and occasional references on this subject are available. As a consequence of these limited data sources,

lot of confusions and controversies have come up.

1.1.1 Different Forms of Agricultural Labours.

It is not surprising that we may not succeed if we try to trace the existence of wage-labour system of the typical capitalist mode in the agriculture of Bengal during the pre-British period. The concept of labour in the pre-British period was different compared to subsequent periods. Hence, in the context of pre-British period very loosely we can say that agricultural labourers of that period implied those people who were working on another person's land on which they did not have any right, lease or contract.

This concept of agricultural labourers dates back to the late Mughal period. As Irfan Habib's study shows that there was a large area under the *"Khud—Kasht"* system where the production was organised by employing hired labour for the market in the later period of Mughal dynasty.[1] In Bengal also there were *"Khas"* lands of Jamindars and jagirdars and *"Khalisa"* lands owned directly

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1. "Potentialities of change in the Economy of Mughal India," Socialist Digest, September, 1972.

by the Emperor. In this lands production was carried out mostly by the *"begar"* (or forced) labour and hired labour. But the mere existence of these labourers does not prove that there was a substantial class of agricultural labourers during that period. There was also another kind of land system which was known as *"Pa-i-Kasht"*. In this type of land migrant tenants from outside the village were employed for cultivation. In *"Khud-Kasht"* lands also sometimes cultivation was performed by the tenants. So it is reasonably argued that people who were working on the Khas and Khalisa lands were mainly peasants who spent a fraction of their working time on such activities while the major part was probably taken up in cultivating their own land. A.K. Chattopadhyay enunciates that although agrestic slavery and bonded labour were very much prominent in the Northern and Southern parts of India, this was not in evidence in that part of the country which is now known as West Bengal.[2] But this does not mean that slavery was totally absent in Bengal. However, it was basically circumscribed, to the large and prosperous urban areas and among the very wealthy people. Unlike some other parts of India slave

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2. Amal Kumar Chattopadhyay, "Slavery in Bengal Presidency, 1772-1843", London, 1977.

labour in agriculture was non-existent in Bengal. Hence, the available evidence is not very much in favour of proving that there was a prominent class of agricultural labourers in the agrarian society of Bengal in the pre-British period.

1.1.2 Asiatic Mode of Production

An acrimonious debate continued for a long period regarding the relevance of Marxian concept of Asiatic mode of production based on the foundation of Oriental despotism in India. In accordance with Marx, the traditional and old Indian society was composed of small, simple and self-sufficient village communities. The village system had been built on the *'domestic union of agricultural and manufacturing pursuits'*. The society was based on the common possession of the land, on the blending of agriculture and handicrafts and on an unalterable division of labour, specified by the religious caste system. The simplistic organisation for production in these self-sufficient communities constantly reproduce themselves in the same form.[3] In that particular system it is most unlikely to exist a class of agricultural labourers as such. Earlier

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3. Marx, "Capital," Vol.I, Ch.XIV, Section 4.

exponents like Rajani Palme Dutt,[4] Ramkrishna Mukherjee,[5] etc. had accepted this concept. But afterwards different studies of Irfan Habib,[6] Ratnalekha Roy,[7] R.S. Sharma[8] etc. have denied the relevance of this concept in the context of pre-British India and as well as Bengal. At present, a common consensus among the historians prevails that the Marxian concept of Asiatic mode of production is not totally valid for pre-colonial India and so it should be modified accordingly. Actually, the situation in pre-British Bengal was far more complex and fluid than suggested by the *"Village Community"* model of Marx. In fact, Marx developed this concept on the basis of the commentaries of different British officials who had come from an entirely different system and so could not assess properly the socio economic scenario of India. These might have provided only rough impressions.

1.1.3 *Quantitative Estimates from Hunter's Study*

For a quantitative exercise we can refer to the study of B. Dasgupta based on the caste data given by

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4. India Today, 1970, Manisha, Calcutta.
5. "The Dynamics of a Rural Society-A study of the Economic Structure in Bengal Villages." 1957.
6. "The Agrarian System of Mughal India", 1963.
7. Change in Bengal Agrarian Society 1760-1850(Delhi, 1979).
8. "How feudal was Indian Feudalism?", Social Scientist, 1984 February, Vol. 12, Number 2.

W.W. Hunter.[9] This exercise is very restrictive but can suggest ~~expose~~ certain trends in the occupational structure of pre-British period Bengal. From the caste data of Hunter's estimates we extrapolate the occupational structure of pre-colonial Bengal. In this study only Hindu population is considered and the other two major components of the population, the Muslims and the tribals are not incorporated because they were free from caste system.[10] This exercise is based on various restrictive and heroic assumptions, but even then it has some relevance. The caste data were basically collected during the first Census in 1872. It has been assumed that between 1757 and 1872 the occupational structure might have changed but the caste affiliation of a person in 1872 would describe what his ancestors had been doing before the British regime.

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9. " Agricultural Labour under Colonial, Semi-Capitalist and Capitalist Conditions. A case study of West Bengal", EPW, Review of Agriculture Sept. 1984. pp. A.129 -A-148.

10. We may argue that the muslims were not entirely immune from the influence of caste, which they carried to their new religion after conversion, and a well ordered system of occupations did exist among them in many places. Regarding tribals it is very difficult to assess their occupational system during the pre-British period. However, we can say that the various sections of the tribals did get incorporated into the Hindu caste system overtime. In fact, as we shall see in section 1.2, the tribals play a very prominent part in the evolution of agricultural labourer class in West Bengal.Here, we propose to avoid those arguments, and in the analysis of the data attention has been focused only on the Hindu population.

1.1.4 *Caste Pattern and Occupational Work*

From Hunter's estimate[11] the table 1.1 has been made which includes all the districts of present-day West Bengal except Purulia, 24-Paraganas, and Calcutta, although boundaries and areas of few districts have changed since them. The percentages of various castes have been computed after substracting the Muslim and tribal populations from the total population. The total Hindu population is divided here into different categories in accordance with the hierarchial order.

In the top hierarchy there were superior castes like Brahmins, Rajputs and some North-Indian high castes, and intermediate and trading castes. The intermediate castes like Baidyas (traditional physicians) and Kayasthas (traditional writers of the Court), and trading castes (engaged in all kinds of trade and money lending) were in the low position of the caste hierarchy but they gained importance due to their financial strength. That is why, they are included in the top category of the hierarchy. The next category is composed of all those castes like Sadgope, Kaibartya, Aguri, Mahisya, Goala or Yadav, Bauri etc. who were engaged in the cultivation of crops and in the dairying and animal husbandry . The

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11. "A Statistical Account of Bengal", 1876. Various Volumes.

Table - 1.1
CASTE-COMPOSITION OF VARIOUS DISTRICTS : 1872

	Darjeeling	Jalpaiguri	Dinajpore	Murshi-dabad	Birbhum	Bankura	Burdwan	Midna-pore	Hoogly & Howrah	Nadia	Maldah
Superior Castes	20.72	1.02	1.15	7.48	8.72	12.52	10.34	6.07	9.62	7.92	3.34
Intermediate Castes	0.12	0.37	0.72	2.72	1.73	3.00	3.50	4.70	3.51	5.15	1.45
Trading Castes	1.01	0.35	0.51	2.38	2.88	2.66	3.71	1.05	1.40	1.95	0.86
Sub-Total	21.85	1.74	2.38	12.58	13.35	18.18	17.55	11.82	14.53	15.02	5.65
Agricultural Castes	2.38	2.46	6.60	22.20	23.10	11.34	19.93	45.30	31.79	19.65	14.25
Pastoral Castes	0.87	0.54	0.60	5.66	3.07	8.24	5.80	1.98	5.50	11.13	3.90
Sub-Total	3.25	3.00	7.20	27.86	26.17	19.58	25.73	47.28	37.29	30.78	18.15
Artisans	5.75	4.35	3.62	12.64	14.64	21.57	13.77	7.35	7.60	11.40	10.24
Weavers	3.55	3.20	3.41	3.48	3.63	3.69	3.34	6.31	4.48	4.63	5.50
Sub-Total	9.30	7.55	7.03	16.12	18.27	25.26	17.11	13.66	10.08	16.03	15.74
Personal Service Castes	1.29	2.46	2.90	4.27	2.21	2.14	3.51	4.01	5.52	4.67	6.11
Labour Castes	0.19	0.17	0.06	0.40	0.79	2.38	0.15	1.11	0.11	0.11	0.36
Boatmen/Fishermen	0.17	0.93	4.43	3.63	0.52	2.05	1.52	4.02	4.87	6.68	6.91
Sub-Total	1.65	2.56	7.39	8.30	3.52	6.57	5.18	9.14	10.50	11.46	13.38
Others	11.90	0.62	4.30	7.36	6.85	4.42	7.35	7.21	5.72	4.82	8.80
Semi - Hinduised Tribes	52.02	83.53	71.70	27.78	31.86	25.99	27.07	10.88	21.88	21.89	38.28
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

NOTE : Figures are Percentages of Total

SOURCE : W.W. Hunter : A statistical Account of Bengal.

artisans and weavers formed the third category. People of these castes had a wide range of professions in handicrafts and in handlooms and spinning-wheels. The lowest level of occupations are indicated in the fourth category. In this category we have included all those castes who were by occupations, barbers, washermen, sweepers, servants, agricultural labourers, fishermen, boatmen, palanquin-bearers, hand-cart and bullock-cart drivers etc. Apart from these four categories there are other two categories in the tabel 1.1. The item *"others"* includes mainly people of various Hindu sects such as Vaishnabas for whom caste system was not prevalent The *"semi-Hinduised tribes"* includes many tribal communities who were incorporated into Hinduism. These Communities which adopted Hinduism.had to start from the bottom of the caste hierarchy and by the process of sanskritisation they would be advanced in the upper categories. Now, the semi-Hinduised tribes of 1872 were most probably outside the pale of the Hindu society in 1750s.

As noted above for lack of direct statistics on agricultural labourers the estimates have to be based on rather restrictive and indirect inferences. For later periods we have used direct estimates as available from the Census.

1.1.5 Dependence on Agriculture and Rights on Land

From the caste composition of table 1.1 it could be observed that only around 25-30 per cent Hindu population was described as belonging to the agricultural castes. A reasonable interpretation of these figures would be that a much larger proportion of the population was in fact engaged in agriculture but as a secondary occupation Basically agriculture was a universal occupation and in varying degrees all the families in the village were engaged in cultivation. Land was not scarce in those days but a group of people had superior occupancy rights over the produce of the land. However, this right was not analogous to ownership right of land. In fact, in Mughal period the private ownership right of land was totally absent.[12] Even the emperor was not the proporietor or *"Milkeat"* of the soil, he was only entitled to *"Khiraj"* or *"Ushar"*, the revenue of the soil. Now, the superior occupancy rights were transferable and people who had this right could sublet other people.[13]

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12. M.A. Hugue : "Man Behind the Plough", 1939, Calcutta.

13. The Mughal land system was built on the basis of revenue system administered in early days of the Khilafat in the conquered lands of Iraq, Syria and Egypt. Omar, the second Khalifa was the forerunner of this system.

1.1.6 *Occupational Differentiation*

If we exclude the semi Hinduised tribes from the rest of the Hindu population we would observe from the table 1.1 that the middle strata consisting of agricultural -pastoral castes and artisan-weavers castes constituted two-thirds of the total Hindu population while the higher and lower categories accounted for one-sixth each. These approximate figures indicate that the degree of differentiation in terms of occupation could not have been considerable before the British came.

1.1.7 *Magnitude of Labour Class*

By the caste origin of the population of 1872, it is observed that the percentage of pure *"labour castes"* was less than one per cent for all the districts excepting only two. This figure was 2.38 for Bankura and 1.11 for Midnapore. Even if we add all the village servants of various personal service castes like barbers, washermen, sweepers etc. with the labour castes the proportion would not be very high. For all the districts the proportion was around five per cent. Here, one important aspect is worthwhile to be mentioned. The people of the personal

service castes were traditionally defrayed collectively by the village community as a proportion of their produce or by way of what was known as *"chakran"* land grant by the Zamindars. This system was terminated in the British rule and the mode of payment was personalised due to wide spread commercialisation in the economy.

Therefore, the exercise with all its limitations shows the numerical insignificance of the class of agricultural labourers in the pre-British period. Merely the existence of *"Khud-Kasht"* system does not indicate that there was a substantial class of agricultural labourers in that period. It is true that in the *"Khas and Khalisa"* lands hired labourers were employed for cultivation. But these farm servants were not in plenty as a considerable class. Perhaps this was their secondary occupation. However, we should not say that agricultural labourers were totally non-existent during that period. In fact. in the late Mughal period, hiring of labour for cultivation was started in a very limited extent. But in the British regime agricultural labourers became prominent as a substantial class mostly due to the colonial policies.

1.2 BRITISH PERIOD

Although during the pre-British period the proportion of labourers was very low, the proportion rose remarkably in the British period. From Hunter's estimate we have computed on table 1.2 the occupational distribution of adult males in various districts of West Bengal in 1872. This shows that in the colonial period till 1872 there was a rapid increase of labourers constituting around 20 to 30 per cents in various districts. We should trace the causes of this fact in terms of different colonial policies of the Britishers. The land mark of British rule in Bengal relevant here had three basic components:(i) Permanent Settlement,(ii) Commercialisation of agriculture, and (iii) De-industrialisation of handicrafts and artisan industries. These three factors crippled the entire agrarian society of Bengal.

1.2.1 *Permanent Settlement*

In Bengal the permanent settlement supplanted the old Zamindars who were basically the ex-officio revenue collectors in the pre-British period by a new moneyed class In this context James Mill commented that, 'in one generation

the ancient families ceased to exist, and other families, mostly the descendants of Calcutta moneylenders, now occupy their place, and live as useful drones upon the soil'.[14] Here B.B. Chowdhury makes an important observation that the permanent settlement did not attract the moneyed class at the very beginning of its introduction but only after 1830s when the fate of the traders of Bengal was shattered there was a tremendous demand for Zamindaris among the moneyed class.[15] The permanent settlement between the new zamindars and the British authority made for a formidable volatility in rent demands imposed on the peasants by the landlords. The pressure of rent on the peasant was intensified due to a tremendous rise of intermediaries on land. This huge pressure of rent and commercialisation of agriculture along with the forcible imposition of the cultivation of cash crops on the peasants paved the way for an immense expansion of usurious money lenders-class in the agrarian society of Bengal. By this permanent settlement system the Britishers made land an alienable commodity without

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14. "History of India".

15. "The Cambridge Economic History of India", Vol. II (eds.) Dharma Kumar and Tapan Raychandhuri, Orient Longman, 1984.

creating full private property in it. The operation of usurious capital after the establishment of operational property rights on land dispossessed a large sections of the traditional rayotes. Often they swelled into the rank of agricultural labourers.

1.2.2 *Displacement of Artisans and Weavers and Pressure on Land*

A long process of de-industrialisation started in Bengal with the catastrophic disappearence of cotton manufactures from the list of exports of Bengal and the meteroic rise and the steep ascent of cotton manufactures in the list of her imports, almost exclusively from Britain. Due to this de-industrialisation, the large section of weavers and artisans who had agriculture as their secondary occupation, were compelled to shift from handloom, spinning-wheel and handicrafts to agriculture as their primary occupation.

However, till the first world war the pressure on land was not felt as very heavy although there was a huge displacement of artisans and weavers from their traditional occupation to agriculture. Two factors importantly contributed to this fact. First, an increase in the area under cultivation, following the impetus offered by the permanent settlement. As B.B. Chowdhury enunciates, by 1790s more than one third of Bengal was covered by forests

and in the next eight decades a large of it was cleared for settled agriculture. By the time the British left only around one-tenth of the land area remained under forests.[16] Again, during this period the growth of population was virtually stagnant. In accordance with the estimate made by the Census of India in 1951, population of West Bengal excluding Purulia remained static at around 13.6 million between 1801 and 1871, and increased to only 13.8 million in 1881. Major reasons for this static population were frequent occurrences of famines[17] and fatal epidemics of different dreadful diseases like cholera, Malaria, Small-pox etc. As a consequence of these two factors the land-man ratio was still favourable even though a large number of artisans and weavers were deprived of their traditinal occupations and were forced to agriculture due to the de-industrialisation.

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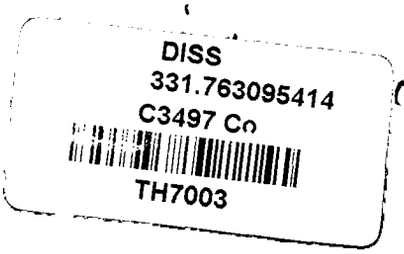
16. "Agricultural Production in Bengal : 1850-1900-Coexistence of decline and growth", 1969, Bengal Past and Present,Jan-June.

17. In Bengal after the dreadful *"Chhiattarer Manantar"* of 1770 famine occurred in 1837, 1860-61, 1865-66, 1874,1891 and 1896-97.

1.2.3. *Sources of Supply of Labourers*

In the British period till the first world war the demand for labour increased rapidly. The demand rose mainly due to.(i) increase in the cultivation of plantation crops like tea. poppy and other commercial crops like jute, indigo etc. which were very labour intensive; (ii) growth of mining industires; (iii) growth of towns and industries, including jute industry which necessitated a transfer of population from the villages to the towns; (iv) road and rail building; and (v) demand for labour outside India for work in other parts of the British Empire.

This demand for labour was met mostly from marginal tribal or semi-tribal population of both migrants and local origin. The settled agriculturists of Bengal were not interested in hiring out labour in the tea plantation, in mining or in clearing of forests. Thus, during this period two primary sources of the supply of agricultural labourers were the so called semi-Hinduised aborigine groups and the migrant labourers who came from outside Bengal. In clearing the forests and extending



cultivation, in cultivating indigo, in plantations and mines, mostly the tribals from the Chota Nagpur plateau were employed.

Here comes a fundamental question that while the local Bengali agriculturists were not willing to hire out labour in these works, why the tribals were offering themselves. The basic reason lies in the semi-arid agro-climatic environments of those areas from which these tribals originated where even in normal years crop production was very low and agriculture was vulnerable to regular draughts. So these tribals used to attack the plains frequently for robbery. The British found it difficult to control them militarily. So they bribed the leaders, the *"majhis"* and *"sardars"* to reach a settlement, *"Damin-i-Koh"*. By this settlement as Hunter observed 'did the British government change invasion into immigration'.[18]

Initially by low rent and relatively higher wages the tribals were attracted. *Hawladars* who used to employ

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18. "The Annals of Rural Bengal", 1897, Calcutta.

the tribal people for clearing forests were generally pledged to these people that they would be given land as under-raiyats in the extended arable land in quite reasonable terms. But those tribal people who began as under-raiyat in quite generous terms were very soon reduced to day labourers by way of extortion of moneylenders, breach of agreement by the lessors, who evicted them in order to settle other under-raiyats at higher rents.

1.2.4. A Quantitative Exercise

For a statistical exercise let us now concentrate on table 1.2. A comparison between tables 1.1 and 1.2 reveals some important aspects. In all the six districts as it is shown in table 1.2 the proportion of tenant-cultivators was very high in 1872. Around 50 per cent of the total adult males were engaged in agricultrue as tenants-cultivators excepting 24-Paraganas, Howrah and Hooghly which are nearer to Calcutta with greater opportunities for non-agricultural employment. In all the districts the proportion of tenants-cultivators exceeded the proportion of agricultural-pastoral castes. Again, the proportion of those who were employed in handicrafts was much less than the proportion of artisans and weavers castes. This shows that the de-industrialisation policies of the British transfered a large section of population from handicrafts to agriculture.

Table - 1.2

OCCUPATIONAL DISTRIBUTION OF ADULT MALES IN VARIOUS DISTRICTS, 1872 (PERCENTAGES).

OCCUPATION	BURDWAN	BANKURA	MIDNAPORE	HOWRAH & HOOGHLY	24-PARAGONAS	NADIA
Public Servant	1.96	1.10	1.06	1.45	1.57	1.08
Professionals	2.62	2.01	2.76	3.81	2.97	2.26
Zamindars	0.97	1.53	0.53	1.00	1.21	0.72
Servants of Zamindars	0.79	0.32	0.25	1.76	0.28	0.64
High level transport workers	0.04	—	—	0.09	0.07	0.03
Moneylenders and merchants	0.44	0.55	0.51	0.74	0.79	0.78
Clerks	0.24	0.12	0.26	0.84	2.26	0.62
Jotedars	1.01	—	—	—	0.68	—
Sub - Total	8.07	5.63	5.37	9.69	9.83	6.13
Tenants-Cultivators Sub-Total	47.67	43.96	57.55	37.72	26.82	44.75
Artisans	3.50	4.20	3.14	5.39	5.12	2.59
Weavers	3.72	4.05	3.29	3.65	0.61	2.55
Manufacturers	0.03	—	0.50	0.13	0.10	0.02
Construction workers	1.03	0.74	—	2.37	2.70	1.92
Sub - Total	8.28	8.99	6.93	11.54	8.53	7.08
Petty Traders	2.75	1.88	1.92	2.51	4.37	1.98
Dealers	4.84	5.55	3.03	6.58	9.75	10.85
Sub-Total	7.59	7.43	4.95	9.09	14.12	12.83
Personal Services	5.94	3.25	3.89	2.97	7.57	4.55
Labourers	15.44	24.81	14.42	16.54	15.00	18.61
Animal handlers	0.48	0.80	0.70	2.46	1.06	1.05
Low Level Transport Workers	1.77	1.52	1.55	3.20	7.13	2.75
Unemployed	2.20	3.61	1.98	3.88	8.31	1.90
Others	2.56	—	2.66	2.91	1.13	0.35
Sub-Total	28.39	33.99	25.20	31.96	40.70	29.21
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00

NOTE : " — " implies negligible

SOURCE : W.W. Hunter : A Statistical Account of Bengal.

Another major important component of table 1.2 is the labourers' class. Around one-third of the total adult males were labourers in 1872. However, this proportion is lower than the proportion of semi-Hinduised tribes given in table 1.1. The main explanation for this would be that the majority of the semi-Hinduised tribes involved into these occupations after being incorporated into the settled agricultural system; but, given their number as it is given by table 1.1, it is evident that a certain proportion of them also took up agriculture as full time occupation.

1.2.5 Land Inclination of Bengali Peasants

During this period apart from the tribes and semi-Hinduised castes, people of Bengal were very reluctant to take the occupation of labourers. In official reports there were repeated informations of labour scarcity in different districts of Bengal.[19] Two important factors were responsible for this incident. First, the landed class of Zamindars and jotedars was mostly interested in employing tenants and share-croppers in their lands instead of agricultural labourers, because for the former they did

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19. "The Annals of Rural Bengal", 1897, Calcutta.

not require supervision while their revenue was ensured, but for the latter they had to take the strain of supervision. Second, the average Bengali peasant was too much inclined to maintain his tie with land. This attachment on land was not simply a prejudice. It had a rational basis in the situation where getting employment for exactly the length of time and the wage rate which would ensure customary subsistence was totally uncertain. Whereas, possession of a piece of Land guarantees a certain minimum income which can be obtained, albeit with the most intensive application of labour and very low return per day worked.

Landlessness among the immigrants and tribals was very prominent while for the Bengali peasant the proportion of landless was quite small. Even the vast majority of the agricultural labourers possessed a certain amount of land.[20]

This situation prevailed till the priod of first World War. But a static population with expansion of cultivable land and expansion of cultivators although did not

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20. Ibid,

deteriorate the land-man ratio remarkably, even then it can not be stated that the peasants were well off during this period. The revenue burden on peasants in fact rose formidably. The staggering increase of rent due to the permanent settlement, the forcible commercialisation of agriculture and de-industrialisation certainly had their effects on the agrarian society of Bengal. The moneylenders, Zamindars and the British in alliance used to appropriate two thirds of the total produce of a peasant.[21] To describe the condition of a French peasant on the eve of French Revolution Carlyle commented, "The widow is gathering nettles for her children's dinner : a perfumed seigneur, delicately lounging in the *Oeil de Boeuf,* has an alchemy whereby he will extract from her the third nettle, and name it Rent and Law". 'A more mysterious alchemy has been achieved' in Bengal. 'One nettle is left for the peasant; two nettles are gathered for the seigneur'[22]

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21 Radhakanal Mukherjee : *"Land Problems in India"*, 1933.

22. R.P. Dutt : India Today, Manisha, Calcutta, 1970 p. 257.

1.2.6 *Labour Abundance after the 1920s.*

Till the 1920s a sharp increase in the proportion of agricultural labourers was observed. However, in that period labour abundance was not much prominent. But after 1921 the situation changed dramatically. After 1921 there was a tremendous rise in the population growth of West Bengal. Between 1871 and 1921 the population had grown at a compound rate of around 0.38 per cent per annum for a long period of 50 years, while between 1921 and 1941 the rate of growth increased to 1.44 percent per annum. This implies that after 1921 the rate of growth of population became four times faster than the earlier period. The primary reason for this was the sharp fall in death rates during this period due to massive improvement in public health following the development of effective measures against epidemics of different diseases. Thanks to the developments in health care, the infant mortality rates could also be reduced.

With this population increase the land-man ratio changed dramatically. The effect of de-industrialisation in destabilising the agrarian society of Bengal became evident. In the period between the two world wars the remarkable growth of population was also accompanied by

the world wide recession which cripped the employment opportunities outside agriculture. Along with this demographic pressure there was also another important factor to increase the agricultural labourers. In 1928 the *"Tenancy Bill"* was enacted to protect the rights of the tenants. This act appeared as a threat to the landowners vis-a-vis the tenants and led to massive ejection of tenants and sharecroppers from the soil. Table 1.3 gives an idea about this fact. Between 1921 and 1931 the number of cultivators of Bengal decreased by around 31 per cent while agricultural labourers increased by 61 per cent. 'It will be seen that,' as it is shown in Table 1.4,' about three millions of workers and earners, involving about 10 millions of people, have ceased to be cultivators in one decade. About two - thirds of these displaced people comprising a little over 6 millions, have increased the number of landless agricultural labourers, domestic servants, petty shop keepers etc.[23]

Compared to this fact another peculiar thing was observed in this period. The number of non-cultivating

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23. I.M.A. Hugue :Op cit p. 142.

Table - 1.3

CULTIVATOR AND AGRICULTURAL LABOURERS' CHANGE OF COMPOSITION BETWEEN 1921-1931.

	1921	1931
Cultivating Owners		5317973
Tenant Cultivators		873094
Jhum Cultivators		13318
Total	9020472	6204385
Decrease in 1931 - 2816087 or 31 per cent		
Agricultural Labourers	1789984	2874804
Increase in 1931 - 1084820 or 61 per cent		

Source : M.A. Hugue : Man Behind the Plough, 1939, p. 140.

Table - 1.4

DISPLACEMENT OF CULTIVATORS IN 1931.

	Workers	Workers & dependents
Displacement of Cultivators	2816087	9856304
Increase in Agricultural Labourers	1084820	3796870
Other Labourers, Workmen, etc.	671459	2350106
TOTAL	1755279	6146976

Source : M.A. Hugue : Man Behind the Plough, 1939, p. 141.

proprietors taking rent had doubled itself in ten years. This was basically due to the process of sub-infeudation. There was a mad craze for zamindaries in a situation where agriculture was yielding neither profit nor subsistence, the land system made landlordism and zamindary a profitable concern. The Floud Commission reported that during the Great Depression of the 1930s about 7 per cent of land was sold in Bengal of which a good proportion went to the hands of non-agriculturist families. Karunamoy Mukherjee's study shows that between 1920-44 there was a large scale of land transfer in Bengal[24] which was not always purchased by the class of *jotedars*.[25]

S.J. Patel made an estimate of the proportion of agricultural labourers and their dependents to the total agricultural population from the census data. According to him the proportion of agricultural labourers in Bengal was 4.8 per cent and 10.0 per cent in 1901 and 1911, and 17.7 per cent 33.2 per cent in 1921 and 1931.[26] He included all the unspecified labourers in agriculture in the category of agricultural labourers. Even then, after comparing all findings it could certainly be said that after 1921 the pro-

24. "The Problem of Land Transfer," 1957.

25. Chowdhury : "The Problem of Alienation of Peasant Holdings in Eastern India, 1890 -1945 : Some unsolved Problems,"1973.

26. "Agricultural Labourers in Modern India and Pakistan," 1952.

portion of agricultural labourers has risen remarkably. This process of expansion of the class of agricultural laboures which began after 1920s is still continuing even after independence.

This rise of agricultural labourers was accompanied by a change in the ethnic composition of labourers. As the data of 1872 show that in the earlier period, agricultural labourers were mostly composed of tribals, marginal and semi-Hinduised castes and migrants from outside Bengal. But after 1921 the growing landlessness and joblessness compelled a large number of non-tribal Bengali agriculturists who did not belong to so low castes to enter into the pool of agricultural labourers. Actually, after 1920s the substantial rise of agricultural labourers was the result of pauperisation of the poorer peasants under colonial oppression.

Hence, the effect of de-industrialisation arose after several decades which imbalanced the agrarian economy of Bengal creating a severe pressure on land. In the earlier phase the imbalance was not prominent due to expansion of cultivable land and static population. But this can not sustain for a longer period. However, in this context the Thorners make a different conclusion that the effect of de-industrialisation was not much because any loss in the handicraft sector was just compensated by the corresponding

rise in the modern manufacturing sector.[27] But the observation shows that at least in West Bengal the dying handicrafts and trades were not compensated by an equivalent rise of modern manufacturing industries.

1.2.7 *Conditions of Agricultural Labourers after the 1920s*

Due to huge rise of agricultural labourers the bargaining position of them worsened and in effect their wages and earnings reduced considerably. As M.A. Huque(1939) observed that in Bengal the average rate of daily wage decreased from 12 annas in 1929-30 to 6 annas in 1939. Whereas in 1880s they were earning something not much less than what the cultivators were earning. Another real wage index series of agricultural labourers in West Bengal are available for the period 1916 to 1946. The values are as follows : 1916-100; 1921-60; 1931-86; 1936-46; 1941-64; and 1946-119.[28]

As a consequence of these decreases in wage rates, the labourers were frequently weighed by debt and continue

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27. Daniel and Alice Thorner : "Land and Labour in India," 1962. New York, Asia Publishing House.

28. K.K. Ghosh, "Agricultural Labourers in India" (Calcutta, 1969), p.238.

in many cases as servants for life to their creditors. The servitude was hereditary. B.B. Chowdhury finds some cases where the labourers were actually forced to repay the debt by offering labour service.[29] However, after 1920s the proportion of attached or bonded labourers in the agriculture of West Bengal began to decline compared to the flourishing development of "*Kamiya*" system in Bihar and "*Hali*" system in Gujarat. An investigation in 1941 on the district Birbhum showed that casual labour (*Krishani*) was preferable to attached labour (*mahindari*), and the number of Krishans was four-and-a-half times larger than that of the mahindars, the Krishani system accounting for 37.1 per cent of the total cultivation and the mahindari system only for 7.1 per cent.[30] In the earlier period when there was a scarcity of labourers there was a prominent tendency to raise the patron-client relationship between the labourers and the employers. But in the later period due to the abundance of labourers this tendency was weakened and casualisation of labourers rose.

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29. Rural Credit Relations in Bengal, 1859-1885" , 1969. Indian Economic and Social History Review, Vol. VI, No.1

30. Sudhir Sen : Land and its Problems, I, Calcutta 1943, pp. 95-6.

Due to the low levels of wages and uncertainty in employment opportunities, the agricultural labourers of West Bengal during this period were subject to destitution. The level of destitution rose to its peak during the Great Bengal Famine in 1943-44. In that famine which caused a major economic catastrophe for Bengal, the worst affected group was agricultural labourers.[31] The estimate of T. Das showed that among the destitutes who had trekked to Calcutta at the height of the famine, the largest proportion of about 41 per cent was from agricultural labour families.[32] A.K. Sen's estimates revealed that during this famine agricultural wages within few months declined to half and sometimes one-third of the wage rates of the previous.[33] Moreover, the employment opportunities doomed severely. Hence, the impact was inevitable.

Thus, during the British rule the class of agricultural labourers attained their substantiality and the destitution of this class started. The colonial policies rooted and strengthened those elements in the countriside of Bengal

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31. Mahalanobis, Mukherjee and Ghosh : "A sample Survey of After-effects of the Bengal Famine of 1943," 1946, Sankhya, 7.

32. "Bengal Famine (1943)", 1949, Calcutta; University of Calcutta.

33. "Poverty and Famines : An Essay on Entitlement and Deprivation," 1986. p. 66.

which were primarily responsible for this development. Even in the post colonial period when the imperial yoke has been lifted, those elements are still deeply active. In the subsequent chapters where the post-independent millieu of agricultural labourers in West Bengal is analysed would certainly establish this fact.

CHAPTER - II

DEMOGRAPHIC & OTHER PERSPECTIVES OF AGRICULTURAL LABOURERS.

The substantial increase of the class of agricultural labourers which started during the British period has not ceased in the post-independence period. Instead the momentum has been maintained in this period in West Bengal. In this section we would mainly discuss the growth of agricultural labourers at different points of time of the post-independence period and their various demographic features. At the outset we briefly elucidate the general economic conditions of West Bengal, particularly of the agricultural sector.

2.1 GENERAL ECONOMIC CONDITIONS OF WEST BENGAL

2.1.1 *Demographic Pressure on Land*

According to the 1981 census estimates around 74 per cent of the total population of West Bengal lived in the rural areas. The proportion was 76 per cent and 75 per cent in 1961 and 1971 respectively. So over decades the proportion of rural population to total remained the same, more or less. Akin to rest of India, agriculture constitutes the principal way of living for the rural population in the state. Agricultural workers consisting of cultivators, agricultural labourers and plantation labourers together account for more than 75 per cent of the rural labour force

in West Bengal. For the total working population of the state the percentage of agricultural workers is around 60 per cent. However, there is a secular declining trend of the proportion of state gross domestic product generated from agriculture over the past few decades, from 41.45 per cent in 1970-71 to 35.22 per cent in 1985-86. These figures illustrate both the importance of agriculture in the economic life of the vast majority of people in West Bengal, and also the fact that compared to other activities, agriculture is less remunerative and is becoming increasingly less attractive as a source of income.[1]

Between 1951 and 1981 the population of West Bengal grew at a faster rate of 2.46 per cent compared to that of whole India at a rate of 2.15 per cent per annum. However, the decadal patterns were different. From table 2.1 it is observed that in 1951-61, 1961-71 and 1971-81 India's rates of decennial population growth were 21.63, 24.80 and 24.75 per cents respectively, while for West Bengal, the rate decreased from 32.79 per cent in 1951-61 to 26.87 per cent in 1961-71 and again to 22.96 per cent in 1971-81 decade. Hence, from these observations it is evident, through decades, the rate of growth of population of the state is declining while for India as a whole the rate increased between 1961 and

1. Bureau of Applied Economics and Statistics, West Bengal.

TABLE 2.1 DECENNIAL GROWTH OF POPULATION, PER CAPITA CULTIVABLE LAND IN WEST BENGAL AND INDIA, 1951 AND 1981

	1951		1961		1971		1981	
	India	West Bengal	India	West Bengal	India	West Bengal	India	West Bengal
Population (thousands)	361088	26300	439235	34926	548160	44312	683810	54581
Rate of growth of population (per cent)			21.63 (1951-61)	32.80 (1951-61)	24.80 (1961-71)	26.87 (1961-71)	24.75 (1971-81)	22.96 (1971-81)
Density of population (per sq. km.)	117	296	134	399	177	504	216	615
Percentage of rural population to total population			81.95	75.55	80.09	75.25	76.69	73.51
Per capita cultivable land (in hectare)			0.44	0.18	0.28	0.13		0.10
Annual percentage rate of growth of population 1951-81	=	WEST BENGAL : 2.46; INDIA : 2.15						

SOURCE: (1) Census Reports
(2) Statistical Abstract of India (C.S.O.)

1971 and that increased rate was almost maintained in 1971-81. Actually just after the independence there was a massive influx of refugees in West Bengal from East Pakistan which led to a huge increase of population in the state during the earlier period. But afterwards the situation has been stabilised gradually.

The impact of this large population is reflected by the very low per capita cultivable land. Both for India and West Bengal the per capita cultivable land is declining. However, the per capita cultivable land of West Bengal is smaller than that of India as a whole althrough the period after independence. This is due to the fact that population base of the state is very high. As table 2.1 shows, the density of population of this state in all the time points of the Population Census from 1951 is higher than that of India's average. The proportion of population engaged in agriculture of the state is also very high. As a consequence, per capita availability of cultivable land in the state has become very low and smaller than India as a whole.

The demographic pressure on land can also be indicated by the man-land ratio in agriculture. The man-land ratio, which would be a good indicator of demographic pressure on agriculture should be defined as the number of workers in agriculture per unit of cultivable land. Total number

of agricultural workers is the summation of cultivators, agricultural wage labourers and labourers in the plantation.[2] Arable land includes net sown area and land under temporary fallow. Table 2.2 shows that in West Bengal between 1961 and 1981 there was no growth of arable land, in fact compared

TABLE 2.2

NUMBER OF AGRICULTURAL WORKERS PER UNIT OF ARABLE LAND IN WEST BENGAL

	1961	1971	1978	1981
Arable land (thousand hectares)	5818	5825	5717	5692
Number of Workers in agriculture (thousands)	6440	7442	8649	9747
Agricultural Workers per hectare of arable land	1.11	1.28	1.51	1.71

Annual rate of growth of Arable land 1961-81 = NIL

Annual rate of growth of Agricultural Workers 1961-1981 = 2.09

SOURCE : (1) Census Reports

(2) Government of West Bengal, ECONOMIC REVIEW, STATISTICAL APPENDIX, 1977-78, 1980-81 ,1986-87.

to 1961, it has declined slightly in 1981, while number of agricultural workers increased sharply from 6.44 million to 9.75 million between 1961 and 1981, i.e. by 51.35 per cent at the rate of 2.09 per cent per annum. In effect, number of agricultural workers per hectare of arable land increased

2. Definitions of Cultivators and agricultural labourers are given in the latter part of this chapter.

by 54.05 per cent, from 1.11 to 1.71 between 1961 and 1981. This demographic pressure on agriculture is a natural consequence of the fact that industrial development has not taken place in the state sufficiently to absorb the reserve army of workers.

2.1.2 *Production conditions and Productivity of Agriculture in West Bengal*

Apart from the woeful aspect of the demographic pressure on land, West Bengal is located geographically in a better position of India with regard to river based fertility of its soil and rainfall. The state is characterised by abundant rainfall brought by the South-West and North-East Monsoons. The sub-Himalyan part of the state has an average annual rainfall exceeding 2000 m.m., while the Gangetic West Bengal has an average of 1500 m.m. But most of the Indian states do not get more than 1000 m.m. rainfall per annum.[3] Moreover, the rainfall distribution in the state is seasonally balanced.

Although, West Bengal agriculture is fed by plenty of rainfall, irrigation is needed and the irrigation facilities of the state are not adequate. In accordance with the report of Irrigation and Waterways Directorate, West Bengal, around 18 per cent of the total arable land was under the

3. Report of Irrigation Commission, 1972.

irrigation facility under Government cannals in 1980-81 This is the highest percentage achieved in West Bengal so far. Under Minor Irrigation Scheme of the Government of West Bengal numbers of Deep Tube wells, Riverlift Irrigation and Shallow Tubewells were 2332, 3155 and 3342 respectively in 1986, 31st March. (The figures were more or less same as in the 31st March of 1982).[4] On March 1981, the number of shallow tubewells and dug wells were only 155621 67309 respectively.[5] These figures in contrast with 38000 villages of the state show the inadequate and very low irrigation facilities available in the state. Hence in the state although rainfall is adequate even then it can be said that very little has been done to rescue the agricultural sector from the 'capricious gamble' of nature. However, across the districts of West Bengal the three districts, Birbhum, Burdwan and Hoogly have attained a distinctively higher level of irrigational development than the state average. The five districts 24-Paragana, Maldah, Coochbehar, West Dinajpur and Nadia have extremely low level of irrigation facilities.

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4. Directorate of Agricultural Engineering, West Bengal.

5. State Water Investigation Directorate, West Bengal.

As regards the consumption of fertiliser, West Bengal rates very low compared to many other states of India. As it is shown in table 2.3, the consumption of fertiliser has risen considerably in the state only in the decade of eighties. HYV seeds, the most essential element of Green Revolution technology package which has been introduced after mid-sixties were applied to a very low extent. From table 2.4 it is evident that for rice only around 40 per cent of the rice area has been covered by HYV seeds. Within rice. HYV seeds are applied less extensively for Aman and Aus quality. But for Boro quality, which has less coverage of rice area compared to Aman and Aus, HYV seeds are sown in almost cent per cent area.[6] For wheat also HYV covers total area under wheat cultivation. Now, since rice covers around 80 per cent of the total cropped area and since the celebrated green revolution is merely a wheat revolution, so far as HYV seeds are concerned in the context of quality and quantity, the performance of HYV seeds on the agriculture of West Bengal is limited. Only recently, some improvements have been achieved.

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6. Directorate of Agriculture, West Bengal.

Regarding seed, fertiliser and irrigation the three districts of the state, Birbhum, Burdwan and Hooghly have achieved a remarkable break through and have attained agricultural prosperity along modern lines. In other ditricts the irrigation-seed-fertiliser innovation has very limited impact. However, performance of agriculture in the state is not entirely dismal to some extent, so far as production is concerned. This is probably due to the fertility of the soil and adequate rainfall. As it can be observed from table 2.5[7] that before the Green Revolution, in 1960-61 both the productivities of land and of worker of West Bengal were much higher placed than those of many other states and India's average. After the introduction of Green Revolution its rank changed a little from the third position to the fourth. That means, output per worker in agriculture and output per hectare of net cultivated area were higher than many states and India as a whole (see table 2.5).

Again, from table 2.5(a), taken from the estimates of Bhalla and Tyagi (1989), it is observed that average yield rates in trienniums 1962-65, 1970-73 and 1980-83 of West Bengal were much ahead of many states and Indian

7. Taken from the estimate of A.V. Jose (1984 a,b).

average. As regards levels of male worker productivity it is observed that although in the trienniums 1962-65 and 1970-73 the figures for West Bengal were higher than many states and all India average. But, in the triennium 1980-83 the level of male worker productivity declined considerably compared to 1970-73 triennium and fell short of all India average.[8] Nevertheless, from the estimates of Bhalla and Tyagi it can also be stated that the overall performance of agriculture of West Bengal is fair between the trienniums 1962-65 and 1980-83.[9] This fact is also reflected from table 2.6. Through the period 1960-61 to 1984-85, yield rates for most of the important crops of West Bengal are much ahead of India's standard except Rapeseed and Mustard. For all these crops, the yield rates are growing. But for rice the rate of growth is much lower than that of wheat. The reasons are easily inferable.

2.1.3 *The Distribution of Land*

Comparing the data for West Bengal in the years 1940, 1953 and 1961-62, taken respectively from the Floud Commission, NSS 8th Round and NSS 17th Round N.K. Ghosh

8. This aspect would be discussed in detail in Chapter IV.

9. However Jose's estimate is overestimated compared to the estimate of Bhalla and Tyagi.

TABLE 2.7 PERCENTAGE DISTRIBUTION OF OPERATIONAL LAND HOLDINGS IN WEST BENGAL, 1960-61, 1970-71 AND 1976-77

Size of Holding (in Acres)	1960-61		1970-71		1976-77*	
	Holding (Percentage)	Area (Percentage)	Holding (Percentage)	Area (Percentage)	Holding (Percentage)	Area (Percentage)
Below 5.00	74.58	41.86	83.97	53.73	88.05	56.35
5 - 10.00	18.61	32.32	12.96	31.05	10.50	27.41
Above 10.00	6.81	25.82	3.07	15.22	1.45	16.24
All	100.00	100.00	100.00	100.00	100.00	100.00
Gini Coefficients	0.4586		0.4806		0.4770	

NOTE: *The 1976-77 data are given in terms of hectares. But 1960-61 and 1970-71 data are given in terms of acres. So to make a comparison, the data of 1976-77 are modified accordingly. There might be slight variation from real value due to this manipulation.

SOURCE: (1) A.K. Ghosh, Agrarian Reform in West Bengal : Objectives, Achievements and Limitations, WEP Research paper, ILO Geneva, 1980.

(2) National Sample Survey

(3) Agricultural Census

observed that the Lorenz ratio of concentration of land-ownership remained unchanged over the period as a whole.[10] The study of A.K. Ghosh reveals that the distribution of cultivated land in West Bengal is compatible with the general Indian pattern of inequalities in the distribution along with concentration of small and marginal holdings at the botton end of the distribution.[11] As it is shown by the Gini coefficients in table 2.7, the inequality of land distribution in the state remained the same betwen 1960-61 to 1970-71 and also betwen 1970-71 to 1976-77. But there has been a continuous increase in the number of tiny land holdings as well as area operated under such holdings. From table 2.7 it is clear that between 1960-61 and 1976-77 the percentage of operational holdings below 5 acres increased significantly in the context of both number of holdings and area operated. Hence,overtime as a consequence of demographic pressure on land a constant process of marginalisation of holding takes place in West Bengal. In effect, the average size of holding has decreased remarkably among the lower holding strata.

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10. "A study in the changing Pattern of size-class of Holding in West Bengal over the last three decades," 1973 (mimeo).

11. "Agrarian Reform in West Bengal : Objective, Achievements and Limitations", 1980, WEP Research Working Paper ILO.

Along with this marginalisation of land holding, cultivation by tenants becomes prominent in the state.[6] And in tenancy relation share cropping constitutes more than 90 per cent of the area under tenancy.[12] Kalyan Dutt estimated that in the recent period the number of share croppers in West Bengal is between 1.5 to 2.0 million.[13]

As a positive result of the celebrated programme of *"Operation Barga"* launched by the Left Front Government in the state, around 1.01 million share-croppers were recorded by the end of June 1981, to ensure the heritable rights for cultivation to the share croppers.[14]

2.1.4 Rise of Wage Labour

Apart from the process of marginalisation of land holding, there is another most important aspect of the demographic pressure remains unchanged and land holdings are becoming smaller in size, 'the peasants thus marginalised would take to wage employment in and outside agriculture, in order to supplement their household earnings'.[15]

12. 26th Round NSS.
13. "Operation Barga : Gains and Constraints," EPW, June 20-27, 1981.
14. Ibid
15. A.V. Jose : "Poverty and Income Distribution - The case of West Bengal", 1984. ARTEP, ILO Paper.

Table 2.8 elucidates that in 1970-71 male cultivators of the age group 14-44 spent 61 percent of their total man-days employed in agricultural wage employment. Analogously the cultivators of age group 45-59 also spent the highest share

TABLE - 2.8

PERCENTAGE DISTRIBUTION OF MAN-DAYS OF WORK OF MALE CULTIVATORS IN DIFFERENT OCCUPATIONS, WEST BENGAL 1970-71

Time Disposition	Age Group of Male Cultivators	
	14-44	45-59
1. Own Farm	11.23	10.58
2. Other's farm for salary/wages	61.00	35.45
3. Non-farm Occupation	10.60	21.70
4. Domestic work	1.21	2.12
5. Seeking and/or available for work	5.76	10.58
6. Others	10.20	19.57
7. TOTAL	100.00	100.00

SOURCE : Kalyan Dutt, "Operation Barga : Gains and Constraints" EPW, June 20-27, 1981

of 35 per cent of their labour time on wage employment. Table 2.8 also reveals another important fact. The new entrants into the cultivating labour force of West Bengal in the age group of 14-44 years are increasingly taking to agricultural wage employment. So, interestingly the

proportion of agricultural wage labourer among agricultural workers is increasing sharply.

2.1.5 *Definition of Agricultural Labourers*

Before starting with the discussion of the post-independent growth of the class of agricultural labourers in West Bengal we should be very clear about the term 'agricultural labourer'. In different decennial Population Censuses and National Sample Surveys the definition of agricultural labourers varies.[16] Hence, it is very important to define appropriately the term 'agricultural labourer.' Agricultural labourers are defined as those workers who earn their major portion of living by selling their labour power in agricultural work. The agricultural labourer sometimes owns a tiny plot of land and very few farm implements. But his maximum proportion of income is accrued from hiring out labour.

The existing Marxist literature, particularly the two pieces of Lenin and Mao Zedong explicitly enunciate three basic indices in identifying the class hierarchy of an agrarian society : (i) extent of possession of land and other means of production ; (ii) extent of employment of others' labour, or the extent of working for others, relative to self-employment of land possessed; and (iii) extent of satisfying consumption

16. Definitions of agricultural labourers in Censuses and NSS estimates are given in section 2.2.1.

needs and the production of a retained surplus available for investment. By these three criteria we can also distinguish the class of agricultural labourers.[17] Basically agricultural labourers are divorced from the means of production like land or implements. However, sometimes they may possess a small piece of land and very few farm implements which in no way ensure their livelihood in self-employment. As a consequence, they are primarily dependent on working for others as hired labourers. But since their employment is irregular and have very less alternative employment opportunities, their income is very low. In effect, they are unable to satisfy their level of customary subsistence. Hence, they are enmeshed in usurious indebtedness which in turn worsen their condition furthermore. In short, the class of agricultural labourers is composed of chronically deficit households whose income, averaged over 'good' and 'bad' years, continues persistently to fall short of the meagre subsistence.[18]

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17. Utsa Patnaik : "peasant class Differentiation," 1987 pp. 19-32.

18. Krishna Bharadwaj : "On the Formation of the Labour Market in Rural Asia", 1988 (mineo).

2.2. DEMOGRAPHIC PERSPECTIVES OF AGRICULTURAL LABOURERS.

In the post-independent period the proportion of agricultural wage labourers has risen considerably. This aspect can be focused from the demographic aspect of agricultural labourers in the state.

2.2.1 Data Sources and Definitions

The most important sources of data for the discussion of demographic perspectives of agricultural labourers are decennial Population Census and reports of various Agricultural Labourers' Enquiry Committees and Rural Labour Enquiry Committees.[19] But at the very beginning we should be very particular about the conceptual differences in the definitions used in these surveys. Actually for this very reason, the data given by the First and Second Agricultural Labourer's Enquiry Committees are not comparable. Therefore, we should have a general survey of the concepts and definitions used in different sources.

During the First Agricultural Labourer's Enquiry, agricultural labourers were defined as all those persons who were engaged in agricultural operations as hired labourers

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19. Conducted by the National Sample Survey Organisation.

for 50 per cent or more of the total number of days worked by them during the previous year. But in the Second Enquiry, a person was deemed to be an agricultural labourer if his major source of income during the previous year was agricultural wages on hire or in exchange, whether paid in cash, in kind, or partly in cash and partly in kind. Thus, for the first enquiry the criterion was quantum of hired employment, while for the second, the criterion adopted was income and not employment. In the first enqiury 'agricultural labourers' included only those persons who were employed for wages in the process of crop production. But in the second enquiry, agricultural labourers, consistent with the definition of agricultural employment contained in Part II of the schedule appended to the Minimum Wages Act, 1948, included hired employment in other agricultural occupations like dairy farming, horticulture, raising of livestock, bees and poultry, etc. besides cultivation of land for farming purposes.

For every census since 1951 there is considerable inter-censal change in definitions. Hence, only after adjustment they can be made comparable. For purposes of Population Censes, agricultural workers have been classified into two cateogories - Cultivators and Agricultural Labourers. A cultivator has been taken to be a person engaged, either as an employer, single worker or family worker, in cultivation of land or supervision or direction of cultivation of land :

(a) owned ; or (b) held from government; or (c) held from private persons or institutions for payment in money, kind or share. The term 'cultivation' has been taken to mean ploughing, sowing and harvesting but not fruits growing or keeping orchards or groves, or working for plantations. The agricultural labourer has been defined as a person who worked for wages in cash, kind or share, such as a share of produce, on another person's land (on which he did not have any right, lease or contract) only as a labourer without exercising any supervision or direction in cultivation.

After some manipulation we can make the censuses 1951, 1961, 1971 and 1981 comparable. The figures of 1961 and 1971 are not comparable directly due to their definitional differences. In 1961 census the emphasis was more on land holding status rather than employment and a person was classified according to his major source of income. In the 1971 census, however, the emphasis was on employment and a person was classified according to activity in which he spent the maximum time. It is believed that for these reasons some workers who were classified as cultivators in the 1961 census may have got reclassified as agricultural labourers in the 1971 census. Again, there is difference between censuses 1971 and 1981. In 1971 census, there were only two categories - Main worker and Non-worker.But the actual

meaning of main worker has been introduced only in 1981 census where there were three categories - main worker, marginal worker and non-worker. 'The main worker was defined as a person whose main activity was participation in any economically productive work by his physical or mental activities and who had worked for 183 days or more'[20] per annum. 'Marginal worker was defined as a person whose main activity was participation in any economically productive work by his physical or mental activity for less than 183 days'[21a] in a year. So far a comparison of 1971 and 1981 we should add main with marginal in our study of agricultural workers. That is why, we have added both main and marginal to get total number of agricultural labourers and cultivators for 1981 census data. For NSS estimates in different points of time the definitions of agricultural labourer conforms to the definition used in the Second Agricultural Labourers' Enquiry Committee, 1956-57.

2.2.2 *Growth of Agricultural Labourers*

Let us have a look on table 2.9. Regarding the trend of growth of agricultural labourers in West Bengal from 1951 onwards,

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20. Census of India, 1981.

21a. Ibid.

we find an interesting fact. Between 1951 and 1961 the proportion of agricultural labourers to total population remained more or less stagnant, as in 1951 the figure was 5.28 per cent while in 1961 it was 5.07 per cent. But between 1961 and 1971 the proportion of agricultural labourers increased singnificantly from 5.07 per cent to 7.38 per cent. Again, after 1971, this proportion has been stablised somewhat as in 1981 the proportion was 7.91 per cent. Now, as it is stated earlier the definitional differences between the censuses 1961 and 1971 may be a reason of the sharp rise in proportion of agricultural labourers between 1961 and 1971. Although it is true that some workers who were classified as cultivators in the 1961 census may have got reclassified as agricultural labourers in the 1971 census, but beside this definitional change the total rise of the proportion of agricultural labourers between 1961 and 1971 may be attributed to some change in real terms.

The possible explanation of the increase of the proportion of agricultural labourers between 1961 and 1971 can be raised from the informations about the cultivators during this period. In the period 1951 to 1961, the proportion of cultivators remained unaltered as in 1951 it was 12.28 per cent and in 1961 it was 12.68 per cent, while between

TABLE 2.9 PROPORTIONS OF AGRICULTURAL LABOURERS AND CULTIVATORS TO TOTAL POPULATION AND TO TOTAL AGRICULTURAL WORKERS : 1951-1981 IN WEST BENGAL

Year	Total Population ('000)	No. of Agricultural Labourers ('000)	Percentage of Agricultural Labourers to Total Population	No. of Cultivators ('000)	Percentage of Cultivators to Total Population	Percentage of Agricultural Labourers to Total Agricultural Workers	Percentage of Cultivators to Total Agricultural Workers	Percentage of Agricultural Labourers to Total Rural Workers
1951	26299	1389	5.28	3230	12.28	25.00	70.00	19.00
1961	34926	1772	5.07	4430	12.68	27.52	68.79	20.24
1971	44312	3272	7.38	3954	8.92	43.97	53.13	35.00
1981	54581	4318	7.91	4897	8.97	44.31	50.25	32.95

SOURCE: Population Census, 1951, 1961, 1971 and 1981.

1961 and 1971 it had fallen to 8.92 per cent. After 1971 the proportion of cultivators remained stagnant as in 1981 it was 8.97 per cent of the total population of West Bengal. If we consider the proportion of agricultural labourers in terms of rural workers then also the rise of the proportion of agricultural labourers is accountable.

The clear idea can be deduced from the proportions of agricultural labourers and cultivators to total agricultural workers.[21] As table 2.9 shows, the proportion of agricultural labourers was around one-fourth of the total agricultural workers in 1951, while that of cultivators was around 70 per cent. This proportions were more or less same in 1961 also. But between 1961 and 1971 the proportion changed remarkably. In 1971 the percentage of agricultural labourers to total agricultural workers was 43.97 while that of cultivators was 53.13 per cent. So the proportion of cultivators had fallen sharply between 1961 and 1971. Again, the proportion of 1981 were 44.31 per cent and 50.25 per cent respectively for agricultural labourers and cultivators.

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21. The definition is analogous to the definition given for man-land ratio.

Thus, it is empirically observed that the class of agricultural labourers which grew significantly during the British regime, maintained itself as a prominent class in the post- independence period. However, in the period between 1951 and 1961 the proportion of agricultural labourers remained stagnant and in the period 1971-81 there was a marginal rise in their proportion. But between 1961 and 1971 a considerable increase is noticed from the data. Though this increase was greatly influenced by definitional change in censuses (of 1961 and 1971), nevertheless, this may have also been influenced by the change in real terms in the agrarian economy of West Bengal.

2.2.2(i) Change in the proportion of tenant-Cultivators

The possible causes of the change in the proportion of agricultural labourers between 1961 and 1971 can be attributed to the explanations of Bandyopadhaya,[22] Rudra and Newaj,[23] and Kalpana Bardhan.[24] Basically the increase of the proportion of agricultural labourers was due to the proletarisation of a good proportion of cultivators

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22. "Tenancy in West Bengal", 1975, EPW

23. "Agrarian transformation in district of West Bengal," 1975 EPW, 29 March.

24. "Rural Employment, Wages and Labour Markets in India : A Survey of Research", 1977, June-July EPW.

consisting of mainly tenants and tiny landowners. Between 1961 and 1971 a good proportion of tenants had been evicted from their operational holding and they had been pushed into the reserve army of landless labourers. This was the consequence partially of the tenurial legislations and partially of the irrigation-seed-fertiliser innovation. In 1953-54 the number of share-croppers in West Bengal was 1773283 or 41.49 per cent of the total rural households while the number declined to 1695860 in 1971-72 (i.e. it became 30.63 per cent of total rural households). The number was 2069200 or around 27 per cent in 1981-82.[25] Hence, certainly the number or proportion of share croppers is decreasing in West Bengal, overtime.

After 1961 various legislations had been passed to protect the rights of the tenants. These,in effect, discouraged leasing out of land markedly. There is also another important result of these legislations, as it is pointed out by the Thorners.[26] There may be mis-identification in data, as observers have noted tenants-at-will being compelled by their landlords into reporting themselves

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25. 8th, 26th and 37th Rounds of NSS

26. "land and Labour in India," 1962, Asia Publishing House, Bombay,

as hired farm labourers. It is certainly very difficult to recognise this camonflage because the border-line between a share cropper and an attached labourer is often rendered very thin by the high turnover of tenants on oral contract and by the fact that the land - owner is now increasingly taking over the farm management decisions. It has also been cited in the previous chapter that due to tenancy legislations in 1928 number of agricultural labourers was observed to increase remarkably in 1931 as landowners tended to classify more tenants as labourers.

2.2.2.(ii) Technical Changes after mid sixties

The technical changes which has been taking place in agriculture after mid 60s may also have caused an increase in agricultural labourers. The government policy of subsidisation of inputs for Green Revolution combined with the large farmer's advantage in self-financing investment and in getting credit (since theoretically scale neutral irrigation-seed-fertiliser innovation does not imply neutrality in the access to credit) have encouraged landowners to take a more direct interest in farm management. Bandyopadhaya's study reveals that in West Bengal large farmers with tube wells lease in land from neighbouring small owners

for the Rabi season in order to raise an HYV of paddy. There may be incidents that many of the small landowners over the period sold out or leased out to the large farmers. The causes might be either their land base became too small to be viable for new irrigation-seed-fertiliser innovation, or increasing demand for wage labourers, or both. Rudra and Newaj's study on Birbhum district, a district of relatively better irrigated, focuses that share-cropping tenancy declines with agricultural development and owner-cultivation with hired wage labour increases. The technical change in agriculture entails polarisation within the agriculture. The sub-sector of medium and large farms is growing faster, generating much of the increasing supply of wage employment and the previously more self-employed land-poor households are now taking up employment along with landless labourer households.

2.2.3 *Male, female and child participation as Agricultural Labourers*

Table 2.10 renders the male-female proportion of agricultural labourers. It has been found that over-time the proportion of males in total agricultural labourers is very high, around 80 per cent. There is always a very low participation rate of female population in agricultural workers. This fact is historically consistant. Historically

female participation in the labour force is very low in India as whole and as well as in West Bengal. Only, recently, it has risen a little bit. Now,one important thing is observed from table 2.10. Between 1961 and 1971 the proportion of male agricultural labourers to total agricultural labourers rose more than proportionately from 81.66 per cent in 1961 to 87.42 per cent in 1971. But afterwards again, the proportion of male workers to total agricultural labourers has been stabilised in the range of 80 per cent (in 1981).

The number of male agricultural labourers is seen to have doubled within a ten years period, 1961 to 1971. The reason that can be provided is that, in this period, tenants were increasingly being deprieved of land holdings, resulting in the increase of the number of labourers, male in particular. Given the premise that male labourers are taken to be more useful than their female counterparts, they would be preferred if the wages to be given for such labourers do not vary due to the gender bias.

As regards children's participation as agricultural labourers, tables 2.11 and 2.12 show the situation.

TABLE 2.11 PERCENTAGE DISTRIBUTION OF AGRICULTURAL LABOURERS BY ADULTS - MEN, WOMEN; AND CHILDREN IN WEST BENGAL BETWEEN 1950-51 AND 1981

	ADULTS		CHILDREN.	TOTAL
	MEN	WOMEN		
1950-51	73.34	19.98	6.68	100.00
1961	77.10	17.38	5.52	100.00
1971	81.09	11.66	7.25	100.00
1981	75.38	18.45	6.17	100.00

SOURCE: (1) For 1950-51 First Agricultural Labourer's Enquiry Committee

(2) For 1961-1981 Population Census.

TABLE 2.12 PERCENTAGE DISTRIBUTION OF AGRICULTURAL LABOURERS BY ADULT - MEN, WOMEN; AND CHILDREN IN WEST BENGAL BETWEEN 1956-57 AND 1974-75

	ADULTS		CHILDREN	TOTAL
	MEN	WOMEN		
1956-57	82.24	14.47	3.29	100.00
1964-65	82.65	14.19	3.16	100.00
1974-75	76.27	19.02	4.71	100.00

SOURCE: (1) For 1956-57 Second Agricultural Labourer's Enquiry Committee.

(2) For 1964-65 and 1974-75 Rural Labour Enquiry, Labour Bureau.

For table 2.11 we have taken data from First Agricultural Labour's Enquiry[27] and Population Census.[28] Due to conformity of the definition of agricultural labourers in Second Agricultural Labourers Enquiry[29] and in Rural Labour Enquiries[30] another separate table 2.12 has been made. Actually, tables 2.11 and 2.12 give the parallel informations from the two sources of data. Now here we have defined children agricultural labourers as those labourers whose age is less than 14 years. In accordance with table 2.11 children's participation as agricultural labourers in West Bengal varies between 5.52 per cent[31] to 7.25 per cent.[32] Although in 1971 women's participation as agricultural labourers declined sharply but that of children rose. According to table 2.12 children agricultural labourers' proportions were 3.29 per cent in 1956-57, 3.16 per cent in 1964-65 and 4.71 per cent in 1974-75. Between 1964-65 and 1974-75 women's participation increased from 14.19 per cent to 19.02 per cent while children's participation also rose from 3.16 per cent to 4.71 per cent.

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27. 1950-51
28. 1961,1971 and 1981
29. 1956-57
30. 1964-65 and 1974-75
31. 1961
32. 1981.

The corresponding values of table 2.12 and 2.11 are different although they are of the same phenomena. The basic causes of this difference is probably the definitional difference of agricultural labourers in the sources of data used in the two tables. In table 2.12 agricultural labourers include all those wage labourers engaged in dairy farming, horticulture, raising of live-stock, bees or poultry, forestry and plantations along with cultivation. But in the first Agricultural Labourer's Enquiry and in different censuses agricultural labourers included only those wage labourers who were employed in cultivation only and the activities were not being considered. Therefore, there is a difference in the corresponding figures in tables 2.11 and 2.12.

For the district wise discussion of the overall men's women's and children's participation in the labour force of agriculture in the state, the latest informations can be obtained from the population Census, 1981. In this context tables 2.13 and 2.14 are useful. These tables are made on the basis of information given by Census, 1981. In the state as a whole the number of children agricultural labourers was 6.17 per cent of the total agricultural labourers in 1981, while the proportion varied from 3 per cent to 10 per cent in different districts. The percentage of children agricultural labourers to total agricultural labourers was lowest of 2.5 per cent in Howrah and it was highest of

of 10.25 per cent in West Dinajpur in 1981.

In all the districts and West Bengal as a whole the proportions of main agricultural labourers to total agricultural labourers are higher than the proportions of marginal labourers. The main agricultural labourers constitutes around 80 per cent or more than 80 per cent of the total agricultural labourers. But in only Purulia district the percentage of main agricultural labourers to total agricultural labourers of 69.05 per cent is much lower than that of other districts and of the state average. The higher percentage of around 31 per cent marginal agricultural labourers can be attributed to the fact that Purulia is located geographically in the semi-arid zone and is the worst affected district of the drought prone areas of the state. In this district the irrigation facilities are also not adequate, soil fertility is less compared to other districts and as a consequence in this tribal based district as intensity of cultivation is very low, the availability of wage employment throughout a year is also very less. In effect, the proportion of marginal agricultural labourers in the district is so high.

Women's participation in the category of main agricultural labourers is very low in all the districts and West

Bengal as a whole. It ranges from 3.42 per cent in Murshidabad to 37.55 per cent in Purulia. But in the category of Marginal agricultural labourers women' participation is higher than that of men in the state and in different districts except few districts like Howrah, where the proportion of female marginal agricultural labourers is 6.09 per cent, Nadia, where the proportion is 24.03 per cent and 24-Paraganas, where the percentage is 29.61. Basically the cause behind this is simple. Employment of female agricultural labourers is highly seasonal. There are some specific operations of cultivation for which female laborers are employed like sowing, crop-processing etc. But for male labourers all types of works are available. Female labourers are mostly required in the situation where there is huge demand of agricultural labourers particularly at the times of sowing and harvesting and there is shortage of male agricultural labourers. As a result female agricultural labourers are mostly marginal laboures in the sense that their duration of employment is very less.

The scenario is more or less same for child agricultural labourers. In the main category mostly male children labourers are engaged. Again, in the marginal category female

children labourers have the highest participation. The male children labourers mostly work as helpers of their adult male relatives like father, uncle or grand-father who are employed as main agricultural labourers. So the male children agricultural labourers get much work than their female counterparts.

2.2.4 *Participation of Scheduled Castes and Scheduled Tribes in Agricultural Labourers.*

In India's social castes structure the scheduled castes and scheduled tribes are supposed to be the most backward and down-trodden. Around half of the total agricultural labourers is composed of scheduled castes and scheduled tribes people in the state and as well as in India as a whole. In 1961 53.30 per cent of total agricultural labourers in the state was scheduled castes and scheduled tribes. The proportion decreased sharply to 39.23 per cent in 1971 and again increased to 49.43 per cent in 1981. For both scheduled castes and scheduled tribes, proportions of agricultural labouerers of these sections are higher than the proportions of population of these category to total population. As table 2.15 shows the percentage of scheduled tribe agricultural labourers to total scheduled tribes population is increasing over time. In 1961 the proportion was 14.24 per cent which

increased to 18.39 per cent in 1971 and further to 20.22 per cent in 1981 in the state. But according to table 2.15, the proportion of scheduled caste agricultural labourers to total scheduled caste population rose only between 1961 and 1971 from 9.46 per cent to 12.24 per cent while in 1981 it was 12.61 per cent which was more or less same as that of 1971. For scheduled castes agricultural labourers it is all male participation and female particiaption very low. But as table 2.15 describes, for scheduled tribes agricultural labourers, female participation is much higher, In 1961, 46.89 per cent of scheduled tribes agricultural labourers was female labourers in West Bengal. The proportions were 35.59 per cent in 1971 and 42.77 per cent in 1981. In India as a whole, for both scheduled caste and scheduled tribe agricultural labourers the female participations are very high.

Here one thing is worthwhile to be noted that till 1920s most of the agricultural labourers were either of lower castes or of semi-Hinduised or migrant tribals. But after that due to a process of pauperisation, marginalisation or proletarisation a large section of upper castes people are coming to this class. Although still now the lower castes & tribals constitute the largest proportion but the upper castes

are also coming faster. Hence, the ethnic composition of castes in the class of agricultural labourers is changing.

2.2.5 *Land disposal of Agricultural Labourers*

The landlessness of the majority of the rural households tends them to the pool of agricultural labourers. By definition, the agricultural labourers are either landless or have a very tiny plot of land. This fact is verified from the tabel 2.18. In this table the main sources of data are Second Agricultural Labourer's Enquiry and different Rural Labour Enquiries.

From table 2.18 it is observed that, as it is expected, the majority of the agricultural labour households of around 60 per cent is landless. Among the agricultural labour households having land, the average size of cultivated land is too little of only 0.62 acres per agricultural labour household with cultivated land in 1977-78. Again around 80 per cent of the agricultural labour household with cultivated land had less than one acre land at their disposal in 1977-78.[33]

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33. NSS, 37th Round.

2.2.6 *Secondary Employment Opportunities of the Agricultural Labourers*

Despite the fact that after the introduction of Green Revolution package in Indian agriculture, cropping intensity has increased a lot and at the same time wage employment as hired labour in Indian agriculture has increased, even then it is very difficult for the agricultural labourer households to depend entirely on agriculture for their livelihood. Still now, employment in agriculture is highly seasonal in nature. As a consequence, for agricultural labourers other secondary works for them are immensely important. Table 2.17 records the secondary jobs availability for the agricultural labourers.

In accordance with table 2.17 secondary work availability for the agricultural labourers is very low in both West Bengal and India as a whole. But agricultural labourers having secondary work in West Bengal constitute higher proportion than that of Indian standard. Overtime, the proportion of agricultural labourers having no secondary work is rising in the state and as well as in India.

Among the secondary works, most of the agricultural labourers are engaged as cultivators as their secondary occupation. Majority of the agricultural labourers having secondary employment is possibly consisted of those who

possess a tiny piece of land. Hence, apart from wage-employment in agriculture they have their secondary employment in the form of cultivation in their own plot of land which of course does not entail their major portion of income. After 1971 among the activities other than cultivation, secondary work at household industry lost its prominence and secondary work at non-household industry becomes slightly prominent.

However, in the overall scenario of secondary work for the agricultural labourers, after 1961 the situation is really woeful. This is due to the fact that overtime number of agricultural labourers is rising but the availability of secondary job for them is not increasing. In effect, the proportion of agricultural labourers engaged in secondary work to total agricultural labourers is declining sharply.

2.2.7 *Patron-client Relationship*

It has already been cited in chapter I section 1.2.7 that after 1920s alongwith the rapid rise of agricultural labourers in West Bengal the patron-client relationship between the agricultural labourer and his employer started weakening. That trend is observed during the post-independent period also. Among the agricultural labourers casualisation

has become very high. The tendency to attach labourer for farm operation decreased basically due to the fact that in the labour abundant situation there is no need to attach labourers for farm operations to ensure the supply of labour in peak season when there is generally a high demand for labourers. Moreover, the casualisation of labour has not initiated any threat to the surplus appropriation strategy of the rich peasants and landlords by increasing their wage rates.

However, to see the patron-client relationship after independence we have very limited data from the secondary sources. Only in the First and Second Agricultural Labourers Enquiry Committees the categories of attached and casual labourers were present. But afterwards that categorisation was dropped in the subsequent rounds of National Sample Surveys.

In accordance with NSS,attached labourers are those labourers who have continuous employment under contract and are working irregularly, seasonally and annually with or without debt bondage or with or without tie-in-allotment. Whereas a casual labourer is defined to be a worker without continuous employment irregularly, seasonally or annually. These workers are often without any assignment

and are generally employed on an ad hoc basis.

According to Second Agricultural Labourers' Enquiry Committee around 85 per cent of agricultural labourers of West Bengal are casual labourers. The study done by Pranab Bardhan (1977) basing on detailed data of NSS, 27th round,1972-73, reveals that only about 18 per cent of all agricultural labourers in the state were employed on long term contracts.[34] The study of Vaidyanathan (1986)[35] shows that among the rural wage labourer around 65 per cent of the total are casual labourers in 1977-78.[36] Hence, it has become evident that casualisation is very high among the agricultural labourers.

Recent NSS data also shows that in general, the rate of growth of rural casual wage labour has been higher than the rate of growth of rural wage labour as a whole (both in agriculture and in non-agriculture).[37]

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34. "Wages and unemployment in a poor Agrarian Economy : A Theoretical and Empirical Analysis." (mimeo)

35. "Labour use in Rural India : A Study of Spatial and Temporal variation", EPW, 27th Dec. . pp. A-130 - A-146.

36. In accordance with the study,71.4 per cent of total days of employment was provided by agriculture in 1977-78 to the rural workers. (p. A-133, table 7.).

37. Abhijit Sen : "A Note on employment and living standards in the unorganised sector." Social Scientist, Feb. 1988.

As it is expected, it has been observed from Second Agricultural Labourers' Enquiry that total employment available for casual agricultural labourers is much less than that of attached labourers. Furthermore, it has also been observed that average annual income of attached agricultural labour household is greater than that of casual labour household. Nevertheless, the debt burden of attached labour household is higher than that of casual labour. Hence,we can presume that this debt burden may be a cause of attachment of labourer to a particular farm. However, in case of attached labourers this debt burden has not influenced much as the proportion of attached labourers as such is very low.

The study of Sen (1988) reveals that in rural areas casual wage employees are the poorest class of workers. "They had the lowest per capita monthly consumption expenditure and the highest proportion of persons below any given poverty line among all workers."[38]

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38. A.Sen, 1988, Op.cit.

2.2.8 *Educational Level of Agricultural Labour :*

To complete our discussion on different demographic aspects of the agricultural labourers we should consider the educational level of them. In this regard also Population Census is the source of data. Here we have classified the entire population engaged as agricultural labourers into four groups, viz., Illiterates, who do not know even how to read and write; Literates without educational level, who can just write their names but do not have any school education; persons who have Primary or Junior basic education in the sense that they have studied in the school upto primary level or slightly above than that but have not appeared in the Board's examinations; and lastly persons who are educated as being passed at least Matriculate or above examinations.

Overtime the proportion of illiterate agricultural labourers to total agricultural labourers is declining slowly in India and as well as in West Bengal. But even then the largest proportion of agricultural labourers is still illiterate in both West Bengal and in India as whole. In 1981, 79.78 per cent of agricultural labourers were illiterate and for India the percentage was 81.93 (shown in table 2.16). Furthermore, for India as a whole, among the

illiterate labourers male female proportions are nearly fifty-fifty. But in the state among the illiterate agricultural labourers male percentage is much higher of 76.06 per cent than female proportion of 23.94 per cent in 1981. This is attributed to the fact that the female participation in the agricultural labourers of West Bengal is very low compared to male participation.[39] As regards literate without educational level , table 2.16 portrays that the proportion of agricultural labourers of this category is higher for West Bengal than for India as a whole. But for West Bengal and as well as for India the proportion is decreasing overtime. In 1961 the proportion were 7.40 per cent and 10.54 per cent respectively for India and West Bengal, while these figures declined to 6.87 per cent and 7.81 per cent in 1981. Here also the female proportion is much lower than the male proportion, but interestingly the female proportion is rising slightly. In the category of Primary or Junior basic, the performance of West Bengal is better than that of India as a whole. Here also, the proportion of agricultural labourers having primary or junior basic education is rising overtime in both West Bengal and India as a whole. In 1961 the proportions

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39. See table 2.10

were 1.90 per cent and 2.47 per cent for India and West Bengal respectively. In 1981 both the proportions rose to 10.16 per cent and 11.72 per cent.[40] In this category female proportion is very low. Lastly,in the category of educated agricultural labourers, the proportion of agricultural labourers in very low. This fact is highly plausible in the context that these labourers of India and as well as of West Bengal are basically all those persons whose position is in the lowest decile of income distribution. Hence, education is certainly a luxury to them. But interestingly the proportion of educated agricultural labourers to total agricultural labourers is rising in both West Bengal and India as a whole. But in this regard the performance of West Bengal is much lower than Indian standard.

The main thrust of our analysis so far is to show, to what extent in a state like West Bengal whose agriculture is characterised by a fair level of productivity of land and labour, in a favourable climatic and fertility situation, the largest proportion of workers are engaged in agriculture as agricultural wage labourers. The demographic pressure on land has ramified the process of marginalisation and pauperisation of a large proportion of rural population in the state and has entailed the substantiality of this

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40. See Table 2.16.

class. This landless and illiterate people of West Bengal are totally unorganised and hence have no power of bargain in the labour exchange. This aspect is reflected in their wage rates and income level as it is discussed in the next chapter.

TABLE 2.3 CONSUMPTION OF FERTILISER IN WEST BENGAL

(QUANTITY IN TONNES)

	1970-71	1975-76	1979-80	1980-81	1981-82	1983-84	1984-85	1985-86
Total Consumption	199292	130762	240716	282834	258457	369146	405729	408754

SOURCE: Government of West Bengal ECONOMIC REVIEW, Statistical Appendix 1982-83 and 1986-87.

TABLE 2.4 EXTENSION OF AREA UNDER HIGH-YIELDING VARIETIES IN WEST BENGAL

(AREA IN THOUSAND HECTARES)

	RICE		WHEAT		TOTAL RICE AND WHEAT	
	HYV area	Percentage of total area	HYV area	Percentage of total area	HYV area	Percentage of total area
1975-76	1052.1	19.39	561.7	9.36	1613.8	26.93
1976-77	1189.3	22.85	513.9	99.75	1703.2	29.78
1977-78	1393.0	25.68	484.1	99.94	1877.1	31.77
1978-79	1538.3	32.28	520.6	99.92	2058.9	38.95
1979-80	1256.2	25.61	505.6	99.94	1761.8	32.56
1980-81	1531.9	29.60	283.0	100.00	1814.9	33.24
1981-82	1586.8	30.46	214.0	100.00	1800.8	33.20
1982-83	1729.9	35.58	266.2	100.00	1996.1	38.93
1983-84	2010.0	37.41	329.1	100.00	2339.1	41.02
1984-85	1920.6	36.94	335.9	100.00	2256.5	40.76
1985-86	2001.0	39.40	305.1	100.00	2306.1	42.83

SOURCE: Government of West Bengal Economic Review, Statistical Appendix, 1986-87.

TABLE 2.5 VALUE OF AGRICULTURAL OUTPUT PER WORKER AND PER HECTARE IN VARIOUS INDIAN STATES, 1960-61 AND 1975-76

(RUPEES)

STATES		1960-61		1975-76	
		Output per worker in agriculture	Output per hectare of net cultivated area	Output per worker in agriculture	Output per hectare of net cultivated area
1.	Andhra Pradesh	365	388	1388	1758
2.	Assam	620	-860	2150	2750
3.	Bihar	302	400	1232	2240
4.	Gujarat	578	339	2174	1370
5.	Haryana	-	-	4824	2618
6.	Himachal Pradesh	214	336	2109	3772
7.	Jammu Kashmir	395	571	1258	2702
8.	Karnataka	476	341	1866	1411
9.	Kerala	1159	1100	3034	4395
10.	Madhya Pradesh	360	262	1323	971
11.	Maharashtra	467	326	1606	1183
12.	Orissa	480	447	1965	1880
13.	Punjab*	861	385	4979	3183
14.	Rajasthan	343	175	2167	945
15.	Tamil Nadu	530	699	1363	2344
16.	Uttar Pradesh	479	413	1563	2049
17.	West Bengal	824	733	2346	3083
	INDIA	477	398	1878	1782

NOTE : * The 1960-61 figures for Punjab also include those of Haryana.

SOURSE: Jose. A.V. article 'Poverty and Inequality - The Case of Kerala. in A.R. Khan and Eddy Lee (edited) Poverty in Rural Asia, ARTEP. 1984.

TABLE 2.5a LAND AND MALE LABOUR PRODUCTIVITIES IN DIFFERENT STATES OF INDIA.

STATE	AVERAGE VALUE YIELD (Rs./Hect.at Constant Prices)			LEVELS OF MALE MALW WORKER PRODUCTIVITY		
	1962-65	1970-73	1980-83	1962-65	1970-73	1980-83
1. Haryana	687.11	1038.61	1354.94	1968.32	2831.00	3332.17
2. Himachal Pradesh	717.14	882.36	945.69	929.31	1208.51	1257.36
3. Jammu & Kashmir	690.86	1046.24	1345.31	676.07	976.93	1215.13
4. Punjab	1047.78	1644.87	2269.68	2228.19	3291.14	4838.67
5. Uttar Pradesh	744.20	914.62	1214.81	1030.77	1201.63	1416.83
6. Assam	1433.27	1570.44	1714.12	1542.84	1600.79	1644.26
7. Bihar	795.93	901.30	920.63	834.81	786.69	679.70
8. Orissa	938.54	901.32	887.74	1322.97	1213.72	1287.07
9. West Bengal	1230.25	1376.51	1452.85	1385.29	1419.08	1323.49
10. Gujarat	632.11	790.80	1032.56	1526.96	1558.77	1793.61
11. Madhya Pradesh	513.00	555.97	604.05	1226.73	1239.36	1176.96
12. Maharashtra	505.15	418.49	693.66	1272.11	871.14	1479.44
13. Rajasthan	321.67	420.58	445.24	970.50	1237.74	1206.44
14. Andhra Pradesh	822.80	852.34	1266.26	1351.70	1238.85	1548.58
15. Karanataka	610.26	798.59	926.02	1304.01	1421.17	1476.44
16. Kerala	1865.50	2196.31	2145.79	2538.59	2648.80	2769.84
17. Tamil Nadu	1267.05	1523.18	1676.23	1463.48	1594.12	1359.30
ALL INDIA	729.49	857.35	1037.25	1252.35	1322.39	1462.13

SOURCE : G.S. Bhalla and D.S. Tyagi, Patterns in Indian Agricultural Development A District Level Study pp. 36 & 40.

TABLE 2.6 YIELD RATES OF SOME SELECTED CROPS IN WEST BENGAL AND INDIA (Kgs. per hectare)

CROP	1960-61		1970-71		1975-76		1980-81		1984-85	
	West Bengal	India	West Bengal	India	West Bengal	India	West Bengal	India	West Bengal	India
Rice	1184	1010	1239	1123	1265	1262	1442	1336	1557	1417
Wheat	743	850	2410	1307	2100	1410	1672	1630	2418	1870
Gram	581	670	666	663	796	707	578	657	795	660
Jute	1236	1180	1187	1136	1445	1367	1310	1245	1458	1411
Rapeseed & Mustard	396	470	330	594	412	580	605	487	670	771
Potato	9882	7250	14281	9976	14322	11738	17057	13258	21071	14806
Tea	986	961	1150	1182	1260	1341	1424	1491	1521	1607

SOURCE: Government of West Bengal, Economic Review, 1982-83, and 1986-87.

TABLE 2.10 SEX RATIO OF AGRICULTURAL LABOURERS IN WEST BENGAL, 1951-1981

	No. of male agricultural labourers ('000)	Percentage of male to total agri-cultural labourers	No. of female agricultural labourers ('000)	Percentage of female to total agri-cultural labourers
1951	1126	81.05	263	18.95
1961	1447	81.66	325	18.34
1971	2860	87.42	412	12.58
1981	3466	80.27	852	19.73

SOURCE: Population Census, 1951, 1961, 1971 and 1981

TABLE 2.10(a) INCREASE IN AGRICULTURAL LABOUR BETWEEN LABOUR ENQUIRIES

Number of agricultural labourers (in thousands)	1964/65	1974/75	Percentage increase
MEN	1520	2394	57.50
WOMEN	261	597	128.74
CHILDREN	57	148	159.65
TOTAL	1839	3139	70.69

SOURCE : RLE, 1st & 2nd

PERCENTAGE DISTRIBUTION OF MAIN AND MARGINAL AGRICULTURAL LABOURERS AND THEIR SEX RATIO IN DIFFERENT DISTRICTS OF WEST BENGAL IN 1981.

TABLE 2.13

	Main			Marginal		
	Men		Women	Men		Women
Koch Bihar	92.10	96.39	7.90	42.76	3.61	57.24
Jalpaiguri	87.18	90.56	12.82	40.56	9.44	59.44
Darjiling	77.23	91.64	22.77	38.03	8.36	61.97
West Dinajpur	84.18	89.51	15.82	27.84	10.49	72.16
Maldah	85.59	85.84	14.41	37.52	14.16	62.48
Murshidabad	96.58	94.37	3.42	52.16	5.63	47.84
Nadia	95.16	97.20	4.84	75.97	2.80	24.03
24-Taraganas	96.18	93.14	3.82	70.39	6.86	29.61
Calcutta	92.38	98.75	7.62	87.10	1.25	12.90
Howrah	98.49	93.47	1.51	93.91	6.53	6.09
Hooghly	76.26	94.51	23.74	50.49	5.49	49.51
Medinipur	77.46	87.55	22.54	38.55	12.45	61.45
Bankura	68.41	83.47	31.59	31.37	16.53	68.63
Puruliya	62.45	69.05	37.55	21.13	30.95	78.87
Barddhaman	78.26	94.30	21.74	46.35	5.70	53.65
Birbhum	84.64	87.21	15.36	26.06	12.79	73.94
West Bengal	84.69	90.13	15.31	40.06	9.87	59.94

SOURCE : 1981 Census.

TABLE - 2.14

PERCENTAGE DISTRIBUTION OF ADULTS - MEN AND WOMEN, AND CHILDREN AMONG AMIN AND MARGINAL GROUPS IN DIFFERENT DISTRICTS OF WEST BENGAL IN 1981.

	ADULTS						CHILDREN						
	MAIN		MARGINAL		TOTAL		MAIN		MARGINAL		TOTAL		TOTAL CHILDREN
	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
	(88.69)		(3.07)		(97.76)		(07.90)		(0.34)				
Koch Bihar	91.89	8.11	43.42	56.58	90.27	9.73	94.57	5.43	63.09	36.91	93.29	6.71	8.24
	(83.33)		(08.28)		(91.61)		(07.24)		(01.15)				
Jalpaigore	87.13	12.87	38.77	61.23	82.76	17.24	87.80	12.20	53.13	46.69	83.04	16.96	8.39
	(86.30)		(07.52)		(93.82)		(05.34)		(00.84)				
Darjiling	77.59	22.41	35.98	64.02	74.26	25.74	71.33	28.67	56.51	43.49	69.33	30.67	6.18
	(80.52)		(09.23)		(98.75)		(08.99)		(01.26)				
West Dinajpur	83.97	16.03	25.31	74.69	77.94	22.06	86.07	13.93	46.36	53.64	81.18	18.82	10.25
	(79.42)		(12.56)		(91.98)		(06.41)		(01.61)				
Maldah	85.80	14.20	37.30	62.70	79.17	20.83	82.95	17.05	39.06	60.94	74.19	25.81	8.02
	(88.88)		(05.17)		(94.05)		(05.49)		(00.46)				
Murshidabad	96.52	3.38	50.33	49.67	94.07	5.93	95.95	4.05	72.89	27.11	94.18	5.81	5.95
	(90.04)		(02.38)		(92.42)		(07.16)		(00.42)				
Nadia	95.14	4.86	73.87	26.13	94.58	5.42	95.45	4.55	88.02	11.98	95.05	4.95	7.58
	(88.59)		(06.38)		(24.97)		(04.55)		(00.48)				
24 - Paraganas	96.27	3.73	70.14	29.86	94.52	5.48	94.46	5.54	73.79	26.21	92.48	7.52	5.03
	(95.13)		(01.25)		(96.38)		(03.62)		(- -)				
Calcutta	92.56	7.44	87.09	12.91	92.48	7.52	87.78	12.22	-	-	87.78	12.22	3.62
	(91.27)		(06.22)		(97.49)		(02.20)						
Howrah	98.55	1.45	94.18	5.82	98.28	1.72	95.82	4.18	88.41	11.59	94.92	5.08	2.51
	(89.02)		(04.93)		(93.95)		(05.49)		(00.86)				
Hooghly	76,38	23.62	49.51	50.49	74.97	25.03	74.30	25.70	59.11	40.89	72.89	27.11	6.05
	(83.51)		(11.59)		(95.10)		(04.04)		(00.86)				
Medinipur	77.76	22.24	38.33	61.67	72.96	27.04	71.25	28.75	41.52	58.48	66.16	33.84	4.90
	(79.25)		(15.45)		(24.70)		(04.23)		(01.07)				
Bankura	68.05	31.93	30.70	69.30	61.96	38.04	75.18	24.82	40.95	59.05	68.22	31.78	5.30
	(64.53)		(28.57)		(23.10)		(04.52)		(02.38)				
Puruliya	62.69	37.31	20.65	79.35	49.79	50.21	58.88	41.12	26.80	73.20	47.82	52.18	6.90
	(88.90)		(05.34)		(94.24)		(05.40)		(00.36)				
Barddhaman	78.21	21.79	45.24	54.76	76.34	23.66	79.11	20.89	63.11	36.89	78.13	21.87	5.76
	(82.24)		(11.78)		(34.02)		(04.98)		(01.00)				
Birbhum	84.54	13.46	24.59	75.41	77.03	22.97	86.38	13.62	43.14	56.86	79.09	20.91	5.98
West Bengal	84.72	15.28	39.29	60.71	80.33	19.67	84.11	15.89	48.71	51.29	79.48	20.52	6.17

Source: Census 1981.

TABLE 2.15 PERCENTAGE DISTRIBUTION OF SCHEDULED TRIBES AND SCHEDULED CASTES AGRICULTURAL LABOURERS

		% of ST Agricultural Labourer to total ST Population	% of ST Agricultural Labourer to total Agricultural labour	% of ST Male (Agricultural Labourer)	% of ST Female Agricultural Labourer	% of ST Population to Total Population	% of SC Agricultural Labourer to total SC Population	% of SC Agricultural Labourer to total Agricultural Labourer	% of SC Male Agricultural Labourer	% of SC Female Agricultural Labourer	% of SC Population to total Population	% of SC & ST Agricultural Labourer to total Agricultural Labourers.
1961	INDIA	11.16	10.58	50.70	49.30	6.80	16.23	33.16	55.69	44.31	14.67	43.74
	WEST BENGAL	14.24	16.51	53.11	46.89	5.88	9.46	36.79	81.87	18.13	19.73	53.30
1971	INDIA		10.18	60.42	39.58			31.68	68.01	31.99		41.86
	WEST BENGAL	18.39	14.23	64.41	35.59	5.72	12.24	25.00	88.31	11.69	16.15	39.23
1981	INDIA								65.24	34.76	15.75	
	WEST BENGAL	20.22	14.38	57.23	42.77	5.63	12.61	35.05	84.98	15.02	22.99	49.43

SOURCE: Censuses of India.

TABLE 2.16 PERCENTAGE DISTRIBUTION OF AGRICULTURAL LABOURERS BY EDUCATIONAL LEVELS AND BY SEX RATIO WITHIN EDUCATIONAL LEVEL

		Illiterate			Literate without Educational level			Primary or Junior basic			Matriculate and above		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1961	INDIA	51.47	48.53	90.68	89.09	10.91	7.40	88.15	11.85	1.90	97.91	2.09	0.02
	WEST BENGAL	79.00	21.00	86.99	99.40	0.60	10.54	99.47	0.53	2.47	-	-	-
1971	INDIA	62.45	37.55	84.03	87.89	12.11	6.16	90.02	9.98	9.49	97.57	2.43	0.32
	WEST BENGAL	85.00	15.00	78.67	95.61	4.39	8.99	96.90	3.10	12.29	99.15	0.85	0.05
1981	INDIA	50.34	49.66	81.93	79.15	20.85	6.87	80.07	19.93	10.16	90.52	9.48	1.04
	WEST BENGAL	76.06	23.94	79.78	97.02	2.98	7.81	96.92	3.08	11.72	96.06	3.94	0.69

SOURCE: Population Census, 1981, 1971 and 1961.

TABLE 2.17 PERCENTAGE DISTRIBUTION OF WORKERS PRINCIPALLY AS AGRICULTURAL LABOURERS ENGAGED IN SECONDARY WORK IN OTHER CATEGORIES OF WORK IN WEST BENGAL BETWEEN 1951 AND 1981.

		Total agricultural workers	Total agricultural workers having no secondary work	Secondary work at household industry	Secondary work as cultivators	Secondary work as non-household industry	Total workers engaged in secondary work
1961	INDIA	100.00	85.81	1.28	12.91	-	14.19
	WEST BENGAL	100.00	84.53	0.95	14.52	-	15.47
1971	INDIA	100.00	98.55	0.29	0.61	0.55	1.45
	WEST BENGAL	100.00	96.79	0.45	2.59	0.17	3.21
1981*	INDIA	100.00	93.51	0.44	4.73	1.32	6.49
	WEST BENGAL	100.00	91.56	0.58	6.54	1.32	8.44

SOURCE: Census of India

NOTE : * For 1981 data are available only for the Main Category of Agricultural Labourers.

TABLE 2.18 PERCENTAGE DISTRIBUTION OF AGRICULTURAL LABOURERS OF WITH LAND AND WITHOUT LAND IN WEST BENGAL BETWEEN 1956-57 AND 1977-78

Year	Total Agricultural Workers	Agricultural Labourers With Land	Agricultural Labourers Without Land
1956-57	100.00	33.39	66.61
1964-65	100.00	41.86	58.14
1974-75	100.00	45.78	54.22
1977-78	100.00	45.24	54.76

SOURCE: (1) For 1956-57, National Sample Survey, 11th and 12th rounds.

(2) 1964-65 and 1974-75 Data are taken from Rural Labour Enquiry, 1974-75.

(3) For 1977-78, 37th round of National Sample Survey.

CHAPTER - III

WAGE RATES, INCOME, EMPLOYMENT AND LEVEL OF LIVING OF AGRICULTURAL LABOURERS

We shall now turn to the factors affecting the level of income and poverty incidence among agricultural labourers in West Bengal. The major factors involved here are the level of wages in relation to prices, the earning strength and family size of agricultural labour households and the period of employment available per earner in a given year. A rise in the supply of agricultural labourers is observed in the state. Hence, it is likely to adversely affect the period of employment of labourers, or their wage rates, or both if the growth of agriculture itself is not commensurate. An increasing supply of agricultural labourers, mediated by factors governing the level of demand for such labour, must ultimately reflect itself in the level of agricultural wages and the period of employment available per labourer in a given year. The rates of wages and the period of employment fix the level of income and which in turn determines the level of living in terms of consumption of the household. At present, we would discuss about the actual trends in wage rates, employment, income and consumption levels of the agricultural labour household of West Bengal.

3.1 SOURCE OF DATA & DEFINITIONS

Our main sources of data are *"Agricultural Wages in India"*(AWI) annually published by the Directorate of

Economics and Statistics, Ministry of Agriculture, Government of India, and the periodic surveys conducted by the National Sample Survey Organisation on behalf of the Labour Bureau. AWI is the only available source which gives a continuous wage rate series for each year. But NSS estimates are available only for few points.

However, several criticisms are raised against the reliability of AWI data. Actually, AWI data are collected in a completely unsystematic manner. Data are collected from one or more centres in each district without any proper sample design for selection of villages and the data are reported by minor village functionaries who have neither the required training, nor the appropriate instructions for collection of the data. As such, there is an unknown extent of bias in the series. Furthermore, the data are given in an entirely disaggregated manner; by operations in each month for each village selected in the district. The high frequency of missing data makes the aggregation difficult in a number of states like West Bengal.

V.M.Rao compares both NSS and AWI estimates and concludes that AWI wage data are overestimated.[1] The basic

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1. "Agricultural Wages in India: a reliability study", Indian Journal of Agricultural Economics, Conference number, July-September 1972.

reasons behind this are : (i) Most of the villages from which AWI data of wages are collected are big and semi-urban in size and structure like 'taluka' places and therefore are not representatives of the general pattern of villages in the district and as well as in the state. (ii) AWI scheme although does not specify the respondents from whom the wage data are collected but it is very likely that the data are supplied by the bigger farmers and other prominent persons in the village and not by the wage receivers. This is due to the fact that in the Indian millieu the bigger villages and better-off strata of rural society have better access to government departments, personnels and programmes. (iii) N.Krishnaji's study on the data of AWI shows that these data reflect only the peak period wages and hence, over-state the level.[2] According to him data of AWI are too crude to include the specific components of temporal and spatial variation in agricultural wages. Now, it has become evident among the researchers that AWI data are useless regarding the seasonal variations and cross-sectional studies, but it may be used for secular trend analysis.

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2. "Wages of Agricultural Labour", 1971, EPW, Vol.VI., No.39, September 25.

Compared to this AWI data NSS data are collected in accordance with a specifically designed sample which minimises estimation bias. The investigators for NSS data collection are specially trained and have considerable knowledge. But main disadvantage of NSS data is that we get only few observations from which we cannot draw any firm inferences about secular pattern. Here,it is worthwhile to be mentioned that NSS do not provide data of wage rates for agricultural operations prevailing in the region. In these estimates information on wage earnings, both in cash and kind, is recorded for a week for each of the activities in which usually occupied members of the household are engaged as agricultural labourers. The average daily earnings is arrived at by dividing the aggregate earnings for each activity by the corresponding number of days of employment with full intensity in that activity. Hence, NSS only reports average daily wage earnings of agricultural labourers based on the days of employment and the total wage income. Even then, this average is to some extent equivalent to state aggregate wage rate.

In the first (1950-51) and second (1956-57) Agricultural Labourers' Enquiries there were two categories

of labourers, casual and attached. But, later on, this division was dropped. However, for comparison we should consider only casual agricultural labourers. Now, the wage earnings collected in the two Agricultural Labourers' Enquiries are not comparable. In the first enquiry the kind payments of wages were converted into cash equivalents at retail prices while in the second enquiry the conversion was done at wholesale prices. If we assume reasonably that retail prices were higher than wholesale prices by 10-20 per cent in different areas along with the fact that about 50 per cent of the wage payment was in kind, then 10 per cent inflated wage rates of 1956 would be comparable with the 1951 wage earning averages.[3] NSS data of 1956-57, 1963-65 and 1974-75 are largely comparable. But data of 1977-78 are slightly different. In the Second Agricultural Labourers' Enquiry and first two Rural Labour Enquiries the usually occupied person was identified by his gainful occupation which he usually pursued irrespective of what he may be doing at the time of investigation or during the reference period of the preceding week. But in the Rural Labour Enquiry of 1977-78 the 'major item' criterion was

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3. N.Krishnaji, 1971. Op.Cit.

introduced. A person's usual occupation was identified as the occupation he pursued over the major time of the 365 days preceding the date of interview. This definitional change might have reduced the number of usually occupied persons included in the estimates of 1977-78. Again, regarding intensity of employment there is difference in concepts between the NSS estimates of 1956-57, 1964-65 and 1974-75 on the one hand and 1977-78 on the other. In the first three enquiries there were three categories of intensity of employment - 'Full day intensity,' which implied working of three-fourths or more of the normal working hours of a day; 'half day' intensity meant one-fourth or more but less than three-fourths of the normal working hours; and less than one fourth was implied as nominal with one-eighth intensity. However, in the Rural Labour Enquiry, 1977-78 the concept of nominal intensity was dropped and only full day and half day intensities were considered as full-day meant at least three-fourths of the normal working hours of a day and half-day implied less than that.

For deflating the money wage rates or average money wage earnings we have used the Consumer Price Index numbers for Agricultural Labourers (ALCPI) available for

West Bengal for each year. Here, the indices are resumed by taking 1956-57 as the base year. However, the validity of ALCPI as a good deflator for converting money wage rates to real terms is highly questionable. It is observed that this consumer price index numbers includes many consumer goods which actually do not belong to the consumption bundle of the agricultural labourers. Provision of two major meals a day is the main problem of agricultural labour households, and most of the time most of them are not able to provide for the same adequately. They seldom think of consuming different kinds of luxurious food items and other durable and non-durable goods.[4] As such use of ALCPI would seem to be fallacious. One can , of course, raise more fundamental objections against the use of index number for purposes of deflation as is done by Rudra in the following words:"Index numbering is an attempt at realizing an impossibility, like squaring a circle, like changing base metal into gold. While price movements of a number of commodities call for a vector representation, index numbering attempts a scalar representation. Such considerations as whether the use of national income deflator or that of wholesale price

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4. See section 3.6

index number is a better way of correcting for price changes hardly fall within the purview of scientific discourse."[5] In spite of this difficulty we have taken ALCPI because there is lack of alternatives. However, we have also sometimes considered the wholesale prices of rice, the major item that agricultural labour households generally consume, as a deflator.

Apart from all these data we have also taken the data of net domestic product of agriculture in West Bengal from Agricultural Situation in India, and some informations from Programme Evaluation Report of Planning Commission, Government of India.

3.2 DEBATE ON THE ECONOMIC CONDITION OF AGRICULTURAL LABOURERS

In the mid sixties a study had been done by Rath and Joshi to undertake an analysis of movements in wage rates of field labourers and prices of staple cereals in certain parts of India for the periods 1924-40 and

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5. "Consumption, Savings and Investment" in A survey of Research in Economics. Vol.II, Macroeconomics, ICSSR, Allied Publishers, New Delhi, 1976.

1956-57.[6] This study showed that money wage rates changed less from year to year than the prices of cereals. After that, from the seventies onwards an interesting debate has been started whether the economic condition of agricultural labourers of India has improved or declined overtime, specially after the advent of the Green Revolution. Bardhan's several studies show that real wages in almost all the states of India have declined between 1956-57 and 1974-75.[7] Only between 1956-57 and 1970-71 an increase was observed in Kerala. This fact was attributed to the incident that although in this state there is a large section of landless people even then due to peasant organisations a rising wage could be achieved. This view was also admitted by Krishnaji and A.V.Jose.[8] In accordance with them agricultural wages are poorly adjusted to and lag behind the rise in the cost of living. The idea that the Green Revolution would lift agricultural labourers above the

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6. "Relative Movements of Agricultural Wage Rates and Cereal Prices: Some Indian Evidence", Artha Vijnana, Vol.8,No.2,1966.

7. "Land Labour and Rural Poverty", 1984, Essays in Development Economics.

8. "Trends in Real Wage Rates of Agricultural Labourers", 1974, EPW, Vol.IX, March 30.

poverty line through increased pace of agricultural activity, greater demand for labour, and higher wages was totally denied by their studies. It has been cited that in those small prosperous pockets where the Green Revolution has penetrated significantly like Punjab, Haryana and Western U.P., wages are kept low through the import of migrant labourers from neighbouring states.

The opoosite view was propounded by Deepak Lall.[9] According to him, it is entirely wrong to conclude that real wages in agriculture have declined or stagnated. Furthermore, he postulated that wages do move within the interaction of demand and supply and respond to agricultural growth. The consumption pattern of rural poor households indicated that between 1956-57 and 1970-71 there was a considerable reduction in the proportion of households below the poverty line. Hence, Lall concluded that the Condition of Agricultural labourers have improved. Laxminarayan has also agreed with the view of Lall.[10] He argued that a

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9. "Agricultural Growth, Real wages and the Rural poor in India", EPW, Vol.XIII, No.12.

10. "Changing Conditions of Agricultural Labour", 1977, EPW, Vol. XIII, No.12.

major defect of the earlier studies is that in these discussions income of agricultural labourers was based on income earned from agricultural labour only. But other sources of income are also very prominent. In fact, agricultural labourers supplement their wage income with other sources to protect their real income. Laxminarayan has shown that non-wage income has increased in faster pace than wage income.

In another articles Jose gave the counter argument.[11] According to his argument the real earnings of agricultural labourers are dependent on not only the agricultural wage rates and the cost of living of agricultural labourers, but also on the quantum of employment per year available for each worker. He enunciated that there are indirect evidences of the deterioration of employment opportunities to agricultural labourers after 1964-65. Hence, he concluded that after 1964-65 the per capita income of agricultural labourers had declined. However, the study of Bardhan has been questioned by

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11. "Real wages, Employment and Income of Agricultural Labourers", EPW, 1978, Vol.XIII, No.1-2.

Parthasarathy.[12] In Bardhan's study the terminal year was 1974-75 which was a bad year for agriculture, so inevitably the wage earnings were bound to decline along with decline in employment opportunities. Therefore, a study based on the data of 1974-75 would not reveal any concrete conclusion.

Now, in the ensuing part of this section the main thrust of our discussion would be to study, whether the economic conditions of agricultural labourers in West Bengal in terms of wages, income, employment and consumption has improved or not. The entire analysis would not be based on firm inferences due to non-availability of data from the secondary sources. However, we would aim to point out some important facets.

3.3 TRENDS IN AGRICULTURAL WAGE RATES

3.3.1 Observations based on AWI data

Tables 3.1, 3.2 and 3.3 give the trends of money wage rates and real wage rates from 1956-57 to 1984-85

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12. "Changes in the Incidence of Rural Poverty," 1987, Indian Journal of Agricultural Economics, Vol XLII, No.1

of men, women and children agricultural labourers of West Bengal. The continuous series of data are taken from AWI. There is only one gap in the series on 1972-73 due to non-availability of data. The dissaggregated date of AWI are aggregated by ensuing the method of Krishnaji (1971) and Jose (1974). In estimating the wage rates of men, women and children agricultural labourers corresponding to each districts we have chosen the wage rate corresponding to one month of the peak agricultural season in West Bengal. In accordance with Indian Crop Calendar the mouth December is the peak period of agricultural production in the state. So we have chosen the wage rates of only that month for each year to analyse the intertemporal trend. This method would not be misleading in the sense that AWI data basically conform to peak season wages. As the AWI data fail to capture inter-seasonal variation in rates and that they leave no scope for any study on seasonal variation our method of estimation would not entail any significant bias.

From the district level data we have computed the state average wage rates by the method of weighted arithematic mean. The weights are assigned from the Census of 1981. For each district the weight of agricultural

labourers of each category of men, women and children is the proportion of the agricultural labourers of the district to the state total of each category. From these money wages we have calculated the real wage rates for each district and the state average for each year by the deflator of ALCPI.

3.3.1(i) *Trends in Money Wages*

First, let us consider the money wage rates which were obtained in different districts of the state during the period 1956-57 to 1984-85 as given in tables 3.1, 3.2 and 3.3. It is observed that among all the districts, three districts, Burdwan,Howrah and Hooghly have maintained persistently a high average level of money wages throughout the period under review. Initially, the districts Birbhum, Murshidabad, Bankura and Midnapore had low rates, but overtime money wages in these districts have increased at a faster pace. The three northern districts, Darjeeling, Cooch Behar and Jalpaiguri had moderate growth of money wage rates and their rates were almost equal to the state average. In Puruliya, Maldah, Bankura and West Dinajpur the money wages were less

TABLE: 3.1 MONEY WAGE RATES, CONSUMER PRICE INDEX NUMBERS AND REAL WAGE RATES WITH INDICES OF WAGES OF MEN AGRICULTURAL LABOURERS IN VARIOUS DISTRICTS DURING 1956-57 TO 1984-85

		1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
24-Paraganas	MW	1.62	2.12	1.59	1.60	1.60	1.74	1.65	1.99	2.25	2.80	3.05	3.10	2.75	3.00	2.85	2.90	3.83	4.37	5.25	5.86	5.85	9.00	7.72	6.33	8.43	9.50	8.25	-
	RW	1.62	2.02	1.45	1.45	1.60	1.66	1.34	1.53	1.65	1.65	1.55	1.29	1.38	1.52	1.38	1.38	1.39	1.29	1.72	1.79	1.82	2.73	2.75	1.58	1.88	1.90	1.57	
	IN	100	125	90	90	99	102	83	94	102	102	96	80	85	94	85	85	86	80	106	110	112	169	127	98	116	117	97	
Nadia	MW	1.62	1.56	1.37	1.50	1.43	1.74	1.75	2.00	2.00	2.70	2.75	3.19	-	-	-	4.00	3.88	4.25	4.75	4.50	-	-	4.63	6.75	5.75	5.87	8.00	-
	RW	1.62	1.49	1.25	1.36	1.43	1.66	1.42	1.54	1.47	1.59	1.40	1.32	-	-	-	1.90	1.41	1.26	1.56	1.38	-	-	1.23	1.69	1.28	1.18	1.52	
	IN	100	92	77	84	88	102	88	95	91	98	86	81	-	-	-	117	87	78	96	85	-	-	76	104	79	73	94	
Murshidabad	MW	1.62	1.62	1.20	1.31	1.53	1.65	1.75	2.04	1.87	2.37	2.81	2.81	2.50	2.77	2.82	2.75	3.25	3.87	4.50	5.00	6.67	6.67	8.44	7.25	7.10	8.39	13.00	10.5
	RW	1.62	1.54	1.09	1.19	1.53	1.57	1.42	1.57	1.38	1.39	1.43	1.17	1.25	1.40	1.37	1.31	1.18	1.14	1.48	1.53	2.08	2.02	2.24	1.81	1.58	1.68	2.48	2.0
	IN	100	95	67	73	94	97	88	97	85	86	88	72	77	86	85	81	73	70	91	94	128	125	138	112	98	104	153	125
Burdwan	MW	2.00	1.87	1.80	1.94	2.06	2.24	2.08	2.37	2.58	2.50	3.88	3.05	3.00	3.00	3.00	3.25	3.85	4.80	5.26	6.76	5.10	-	7.07	8.21	9.12	7.63	11.00	-
	RW	2.00	1.78	1.64	1.76	2.06	2.13	1.69	1.82	1.90	1.47	1.97	1.27	1.50	1.52	1.46	1.55	1.39	1.42	1.72	2.07	1.59	-	1.88	2.05	2.03	1.53	2.10	-
	IN	100	89	82	88	103	107	85	91	95	74	99	64	75	76	73	78	70	71	86	104	80	-	94	103	102	77	105	
Birbhum	MW	1.50	1.50	1.87	2.12	1.75	1.62	1.62	1.87	1.81	2.00	2.62	2.87	2.80	2.90	-	-	2.95	3.80	4.60	6.00	-	5.00	8.07	6.25	7.12	7.00	9.00	-
	RW	1.50	1.43	1.70	1.93	1.75	1.54	1.32	1.44	1.33	1.18	1.33	1.19	1.40	1.46	-	-	1.07	1.12	1.51	1.83	-	1.52	2.15	1.56	1.59	1.40	1.71	
	IN	100	95	113	129	117	103	88	96	89	79	89	79	93	97	-	-	71	75	101	122	-	101	143	104	106	93	114	
Bankura	MW	1.37	1.62	1.62	1.55	1.62	2.12	1.75	1.87	2.50	2.24	3.19	3.25	3.25	3.50	3.00	4.00	-	-	6.50	7.75	8.50	7.92	7.98	7.00	8.00	8.78	-	-
	RW	1.37	1.54	1.47	1.41	1.62	2.02	1.42	1.44	1.84	1.38	1.62	1.35	1.63	1.77	1.46	1.90	-	-	2.13	2.37	2.65	2.40	2.12	1.75	1.78	1.76		
	IN	100	112	107	103	118	147	104	105	134	96	118	99	119	129	107	139	-	-	155	173	193	175	155	128	130	128		
Midnapore	MW	1.66	1.87	1.56	1.80	1.58	1.77	1.69	1.87	2.17	2.55	2.84	3.60	3.68	3.06	3.15	3.87	4.50	4.00	5.50	5.33	6.60	7.01	7.34	8.14	8.00	9.13	8.50	-
	RW	1.66	1.78	1.42	1.64	1.58	1.69	1.37	1.44	1.60	1.50	1.44	1.49	1.54	1.55	1.53	1.84	1.63	1.18	1.80	1.63	2.06	2.12	1.95	2.04	1.78	1.83	1.62	
	IN	100	107	86	99	95	102	83	87	96	90	87	90	93	93	92	111	98	71	108	98	124	128	117	123	107	110	98	
Hooghly	MW	1.72	1.75	1.03	1.81	1.87	1.90	1.99	2.37	2.62	2.79	3.01	3.34	3.00	3.25	3.35	3.50	4.22	4.51	5.17	5.55	5.20	5.20	7.27	8.00	9.00	8.50	10.00	12.0
	RW	1.72	1.67	1.75	1.65	1.87	1.81	1.72	1.82	1.93	1.64	1.53	1.39	1.50	1.64	1.63	1.67	1.53	1.33	1.70	1.60	1.62	1.52	1.93	2.00	2.00	1.70	1.90	2.3
	IN	100	97	102	96	109	105	94	106	112	95	89	81	87	95	95	97	89	77	99	99	94	92	112	116	116	99	110	134
Howrah	MW	1.87	1.87	2.00	2.12	2.25	2.25	2.25	2.25	2.37	3.50	3.37	3.50	3.50	3.50	3.50	3.50	4.50	5.00	6.00	7.00	-	-	10.75	8.70	-	10.50	-	-
	RW	1.87	1.78	1.82	1.93	2.25	2.14	1.83	1.73	1.74	2.06	1.71	1.45	1.75	1.77	1.70	1.67	1.63	1.48	1.97	2.14	-	-	2.86	2.18	-	2.10		
	IN	100	95	97	103	120	114	98	93	93	110	91	78	94	95	91	89	87	79	105	114	-	-	153	116	-	113		
Jalpaiguri	MW	1.75	2.25	2.25	2.12	2.25	2.25	2.00	2.37	2.49	2.50	3.25	3.20	3.00	-	-	-	4.00	4.25	4.50	5.00	-	-	6.21	-	7.86	8.00	8.93	-
	RW	1.75	2.14	2.05	1.93	2.25	2.14	1.63	1.82	1.83	1.47	1.65	1.33	1.50	-	-	-	1.45	1.26	1.48	1.53	-	-	1.65	-	1.75	1.60	1.70	
	IN	100	122	117	110	129	122	93	104	105	84	94	76	86	-	-	-	83	72	85	87	-	-	94	-	100	91	97	
Darjeeling	MW	1.94	2.25	1.84	2.12	2.37	2.37	2.10	1.99	2.08	2.31	2.62	2.94	3.00	3.25	3.25	6.00	5.00	4.00	5.17	6.00	-	-	7.43	7.99	9.00	7.00	9.00	-
	RW	1.94	2.14	1.67	1.93	2.37	2.26	1.71	1.53	1.53	1.36	1.33	1.22	1.50	1.64	1.58	2.86	1.81	1.18	1.70	1.83	-	-	1.98	2.00	2.00	1.40	1.71	
	IN	100	110	86	99	122	116	88	79	79	70	69	63	77	85	81	147	93	61	88	94	-	-	102	103	103	72	88	
Maldah	MW	1.00	1.00	1.37	1.50	1.50	1.50	1.75	1.50	1.75	2.00	2.75	2.50	-	-	-	-	-	-	-	-	-	4.00	4.07	4.50	5.00	6.50	6.00	-
	RW	1.00	0.95	1.25	1.36	1.50	1.43	1.42	1.15	1.29	1.18	1.40	1.04	-	-	-	-	-	-	-	-	-	1.21	1.08	1.13	1.11	1.30	1.14	
	IN	100	95	125	136	150	143	142	115	129	118	140	104	-	-	-	-	-	-	-	-	-	121	108	113	111	130	114	
West Dinajpur	MW	1.44	1.49	1.87	1.74	1.57	2.03	2.11	1.68	1.21	2.37	2.65	2.67	2.75	3.00	3.00	3.00	3.75	3.00	3.75	6.00	-	6.00	5.50	5.25	5.25	6.83	7.00	-
	RW	1.44	1.42	1.70	1.58	1.57	1.93	1.72	1.29	0.89	1.39	1.35	1.11	1.38	1.52	1.46	1.43	1.36	0.89	1.23	1.83	-	1.82	1.46	1.31	1.17	1.37	1.33	
	IN	100	99	118	110	109	104	119	90	113	97	94	77	96	106	101	99	94	62	85	127	-	126	101	91	81	95	92	
Cooch Behar	MW	2.00	1.99	2.18	2.25	2.00	2.25	2.50	2.16	2.75	2.31	2.65	2.70	2.75	3.25	3.00	2.01	3.46	4.00	4.01	3.50	-	-	6.25	6.50	-	6.83	7.50	8.0
	RW	2.00	1.90	1.98	2.05	2.00	2.14	2.03	1.66	2.02	1.36	1.35	1.12	1.38	1.64	1.46	0.96	1.25	.18	1.31	1.07	-	-	1.66	1.63	-	1.37	1.43	1.5
	IN	100	95	99	103	100	95	102	83	101	68	68	56	69	82	73	48	63	59	66	54	-	-	83	82	-	69	72	77
Puruliya	MW	-	-	-	-	-	-	1.25	1.75	1.25	1.50	2.00	2.00	1.50	1.50	2.00	2.50	2.50	4.00	4.50	6.50	-	6.50	4.83	-	-	6.00	-	-
	RW	-	-	-	-	-	-	1.02	1.37	0.92	0.88	1.02	0.83	0.75	0.76	0.97	1.19	0.91	1.18	1.48	1.99	-	1.96	1.28	-	-	1.20	-	-
	IN	-	-	-	-	-	-	100	134	90	86	100	81	74	75	95	117	89	116	145	195	-	192	125	-	-	118	-	-
West Bengal	MW	1.64	1.78	1.65	1.73	1.71	1.87	1.82	2.00	2.20	2.50	2.90	3.06	2.85	3.01	2.99	3.27	3.82	4.17	5.04	5.74	6.17	6.90	7.09	7.00	7.63	8.16	9.06	10.5
	RW	1.64	1.70	1.50	1.57	1.71	1.78	1.48	1.54	1.62	1.47	1.47	1.27	1.43	1.52	1.45	1.56	1.38	1.23	1.65	1.75	1.92	2.09	1.89	1.75	1.70	1.64	1.73	2.0
	IN	100	104	91	96	104	109	90	94	99	90	90	77	87	93	88	95	84	75	101	106	117	127	115	106	104	100	105	124
Coefficient of variation among TEN Districts		10.4	12.5	16.4	15.5	17.2	12.7	13.2	10.0	11.9	13.0	12.7	10.0	-	-.	-	28.9	12.5	12.6	13.2	17.8	-	-	21.8	14.0	-	17.9	-	-
DEFLATOR		1.00	1.05	1.10	1.10	1.00	1.05	1.23	1.30	1.36	1.70	1.97	2.41	2.00	1.98	2.06	2.10	2.76	3.38	3.05	3.27	3.21	3.30	3.76	4.00	4.49	4.99	5.25	5.20

Compound growth rate of money wage rate between 1956-57 and 1984-85 is 6.62 per cent per annum.

SOURCE : (1) Agricultural Wages of India, 1956-57 to 1984-85. (2) Agricultural Labourers' consumer Price Index, Labour Bureau, 1956-57 to 1984-85

NOTE : MW = Money Wage, RW = Real Wage IN = Index number series of RW," - " means not available.

TABLE 3.2 MONEY WAGE RATES, CONSUMER PRICE INDEX NUMBERS AND REAL WAGE RATES WITH INDICES OF WAGES OF WOMEN AGRICULTURAL LABOURERS IN VARIOUS DISTRICTS DURING 1956-57 TO 1984-85

		1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
24-Para-ganas	MW	1.44	1.06	1.05	1.24	1.12	1.28	1.24	1.87	1.75	2.12	2.25	2.00	2.00	2.00	2.00	2.00	3.00	3.30	3.60	4.68	3.63	7.00	5.86	5.75	6.72	5.75	8.00	-
	RW	1.44	1.01	0.95	1.13	1.12	1.22	1.01	1.44	1.29	1.25	1.14	0.83	1.00	1.01	0.97	0.95	1.09	0.98	1.18	1.43	1.13	2.12	1.56	1.44	1.50	1.15	1.52	-
	IN	100	70	66	79	78	85	70	100	90	87	79	58	69	70	67	66	76	68	82	99	78	147	108	100	104	80	106	-
Nadia	MW	1.12	0.56	0.50	1.00	1.12	1.43	1.50	1.25	1.50	-	2.00	2.62	-	-	-	-	3.00	3.00	3.50	3.50	-	-	4.13	6.50	5.75	4.87	7.00	-
	RW	1.12	0.53	0.45	0.91	1.12	1.36	1.22	0.96	1.10		1.02	1.09					1.09	0.89	1.15	1.07			1.10	1.63	1.28	0.98	1.33	
	IN	100	47	40	81	100	121	109	86	98		91	97					97	79	103	96			98	146	114	88	119	
Murshida-bad	MW	1.25	0.87	0.87	1.28	1.17	1.45	1.45	1.74	1.50	2.00	2.50	2.58	2.12	2.00	2.00	-	2.78	3.14	4.15	4.75	-	-	6.33	-	-	7.25	10.00	-
	RW	1.25	0.83	0.79	1.16	1.17	1.38	1.18	1.34	1.10	1.18	1.27	1.07	1.06	1.01	0.97		1.01	0.93	1.36	1.45			1.68			1.45	1.90	-
	IN	100	66	63	93	94	110	94	107	88	94	102	86	85	81	78		81	74	109	116			134			116	152	
Burdwan	MW	1.75	1.81	1.55	1.69	1.74	2.06	1.75	2.12	1.83	2.25	3.50	2.92	2.75	2.75	2.75	2.50	3.77	3.80	4.71	5.77	5.10	-	7.00	7.85	8.17	7.50	11.00	8.00
	RW	1.75	1.72	1.41	1.54	1.74	1.96	1.42	1.63	1.35	1.32	1.78	1.21	1.36	1.39	1.33	1.19	1.37	1.12	1.54	1.76	1.59		1.86	1.96	1.82	1.50	2.10	1.54
	IN	100	98	81	88	99	112	81	93	77	75	101	69	78	79	76	68	78	64	88	101	91		106	112	104	86	120	88
Birbhum	MW	1.12	1.25	1.50	1.81	1.37	1.37	1.49	1.62	1.75	1.75	2.19	-	-	-	-	-	2.45	3.00	4.00	4.00	-	4.00	7.09	5.75	6.50	6.00	9.00	-
	RW	1.12	1.19	1.36	1.65	1.37	1.30	1.21	1.25	1.29	1.03	1.11						0.89	0.89	1.31	1.22		1.21	1.89	1.44	1.45	1.20	1.71	-
	IN	100	106	78	94	122	74	69	112	74	59	63						79	79	117	109		108	169	129	130	107	153	-
Bankura	MW	1.00	1.00	1.25	1.12	1.25	1.74	1.44	1.75	2.50	1.75	2.62	2.76	2.75	3.00	2.80	-	-	-	4.50	7.75	8.50	7.52	7.54	6.50	8.00	7.63	-	-
	RW	1.00	0.95	1.14	1.02	1.25	1.66	1.17	1.35	1.84	1.03	1.33	1.15	1.38	1.52	1.36				1.48	2.37	2.65	2.28	2.01	1.63	1.78	1.53		
	IN	100	95	114	102	125	166	117	135	184	103	133	115	138	152	136				148	237	265	228	201	163	178	153		
Midnapore	MW	1.31	1.18	1.03	1.37	1.27	1.50	1.49	1.56	1.77	2.06	2.41	2.75	2.37	2.40	2.50	3.62	3.00	3.50	4.58	4.55	6.60	5.70	5.97	7.25	7.00	9.00	8.50	-
	RW	1.31	1.12	0.94	1.25	1.27	1.43	1.21	1.20	1.30	1.21	1.22	1.14	1.19	1.21	1.21	1.72	1.09	1.04	1.51	1.39	2.06	1.73	1.59	1.81	1.56	1.80	1.62	
	IN	100	85	72	95	97	109	92	92	99	92	93	87	91	92	92	1.31	83	79	115	106	157	132	121	138	119	137	124	
Hooghly	MW	1.50	1.62	1.31	1.50	1.75	1.77	1.93	2.25	2.43	2.13	2.84	2.72	2.75	2.75	2.75	3.25	4.00	4.51	5.00	5.55	5.20	5.20	7.22	8.00	9.00	7.50	9.00	-
	RW	1.50	1.54	1.19	1.36	1.75	1.69	1.57	1.73	1.79	1.25	1.44	1.13	1.38	1.39	1.33	1.55	1.45	1.33	1.64	1.70	1.62	1.58	1.92	2.00	2.00	1.50	1.71	
	IN	100	103	79	91	117	113	105	115	119	83	96	95	92	93	89	103	97	89	109	113	108	105	128	133	133	100	114	
Howrah	MW	1.50	1.37	1.50	1.37	1.62	1.37	1.50	1.50	-	2.25	2.25	3.00	3.00	-	-	-	-	-	5.00	5.25	-	-	10.00	-	-	8.50	-	-
	RW	1.50	1.30	1.36	1.25	1.62	1.30	1.22	1.15		1.32	1.14	1.25	1.50						1.64	1.61			2.66			1.70		
	IN	100		50	99	100	104	89	112	80	107	93	89	101				93	81	84				104		118	95	120	
Jalpai-guri	MW	1.37	-	0.75	1.50	1.37	1.50	1.50	2.00	1.50	2.50	2.50	2.95	2.75	-	-	-	3.50	3.75	3.50	-	-	-	5.39	-	7.29	6.50	8.60	-
	RW	1.37		0.68	1.36	1.37	1.43	1.22	1.54	1.10	1.47	1.27	1.22	1.38				1.27	1.11	1.15				1.43		1.62	1.30	1.64	-
	IN	100		50	99	100	104	89	112	80	107	93	89	101				93	81	84				104		118	95	120	
Darjee-ling	MW	1.69	1.93	1.55	1.90	2.03	1.94	1.90	1.74	1.62	1.90	2.13	2.17	2.00	2.30	2.00	-	3.75	3.00	3.90	5.00	-	-	6.31	6.83	7.50	5.00	8.00	-
	RW	1.69	1.84	1.41	1.73	2.03	1.85	1.54	1.34	1.19	1.12	1.08	0.90	1.00	1.16	0.97		1.36	0.89	1.28	1.53			1.68	1.71	1.67	1.00	1.52	
	IN	100	109	83	102	120	109	91	79	70	66	64	53	59	69	57		80	53	76	91			99	101	99	59	90	
Maldah	MW	-	-	-	-	-	-	-	1.00	-	1.50	-	-	-	-	-	-	-	-	-	-	-	3.00	3.17	3.25	4.00	4.00	6.00	-
	RW								0.77		0.88												0.91	0.84	0.81	0.89	0.80	1.14	
	IN								100		114												118	109	105	116	104	148	
West Dinajpur	MW	1.12	1.12	1.62	1.50	1.24	1.62	1.66	1.44	1.64	1.75	1.91	1.67	2.00	2.25	2.25	-	2.75	2.25	2.50	5.25	-	3.00	3.50	5.07	-	6.50	7.00	-
	RW	1.12	1.07	1.47	1.36	1.24	1.54	1.35	1.11	1.21	1.03	0.60	0.69	1.00	1.14	1.09		1.00	0.67	0.82	1.61		0.91	0.93	1.23		1.30	1.33	-
	IN	100	96	131	121	111	138	121	99	108	92	54	62	89	102	97		89	60	73	144		81	83	110		116	119	
Cooch-Behar	MW	1.62	0.62	0.75	1.87	1.75	1.75	1.75	-	2.25	2.00	2.12	1.75	-	2.25	-	-	-	-	2.50	3.00	-	-	4.25	4.50	-	5.83	7.00	7.50
	RW	1.62	0.59	0.68	1.70	1.75	1.67	1.42		1.65	1.18	1.08	0.73		1.74					0.82	0.92			1.13	1.13		1.17	1.33	1.44
	IN	100	36	42	105	108	103	88		101	73	67	45		70					51	57			70	70		72	82	89
Puruliya	MW	-	-	-	-	-	-	0.75	1.50	1.00	1.25	1.50	1.75	1.25	1.00	1.50	1.50	1.50	4.00	3.00	5.50	-	6.50	4.67	-	-	6.00	-	-
	RW							0.61	1.15	0.74	0.74	0.76	0.73	0.63	0.51	0.73	0.71	0.54	1.18	0.98	1.68		1.97	1.24			1.20		
	IN							100	188	121	121	125	120	103	84	120	116	89	193	160	275		323	203			196		
West Bengal	MW	1.33	1.27	1.25	1.45	1.40	1.65	1.47	1.70	1.82	1.89	2.53	2.49	2.32	2.33	2.40	2.76	2.95	3.55	4.09	5.37	6.28	5.21	5.96	6.58	7.31	7.09	8.66	7.94
	RW	1.33	1.21	1.14	1.32	1.40	1.57	1.20	1.31	1.34	1.11	1.28	1.03	1.16	1.18	1.17	1.31	1.07	1.05	1.34	1.64	1.96	1.58	1.59	1.65	1.63	1.42	1.65	1.53
	IN	100	91	86	99	105	118	90	98	101	83	96	77	87	89	88	98	80	79	101	123	147	119	120	124	123	[illegible]	124	115
Deflator		1.00	1.05	1.10	1.10	1.00	1.05	1.23	1.30	1.36	1.70	1.97	2.41	2.00	1.98	2.06	2.10	2.76	3.38	3.05	3.27	3.21	3.30	3.76	4.00	4.49	4.99	5.25	5.20

Compound Growth Rate of Money Wage Rate between 1956-57 and 1984-85 is 6.5 per cent per annum.

SOURCE : (1) Agricultural Wages of India, 1956-57 to 1984-85. (2) Agricultural Labourers' consumer Price Index, Labour Bureau, 1956-57 to 1984-85.

NOTE : MW = Money Wage, RW = Real Wage IN = Index number series of RW," - " means not available.

TABLE 3.3 MONEY WAGE RATES, CONSUMER PRICE INDEX NUMBERS AND REAL WAGE RATES WITH INDICES OF WAGES OF CHILDREN AGRICULTURAL LABOURERS IN VARIOUS DISTRICTS DURING 1956-57 TO 1984-85

		1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
24-Para-ganas	MW	0.82	0.43	0.39	1.00	0.95	1.03	0.68	1.50	-	1.50	2.00	-	1.75	1.75	1.50	2.00	2.63	2.75	3.00	3.63	3.13	-	4.90	5.00	5.08	4.50	4.75	-
	RW	0.82	0.41	0.35	0.91	0.95	0.98	0.55	1.15		0.88	1.02		0.88	0.88	0.73	0.95	0.95	0.81	0.98	1.11	0.98		1.30	1.25	1.13	0.90	1.42	
	IN	100	50.00	42.68	100.98	115.85	119.51	67.07	140.24		107.31	124.39		107.31	107.31	89.02	115.85	115.85	98.78	119.51	135.36	119.51		158.54	152.44	137.80	109.76	173.17	
Nadia	MW	0.75	-	0.72	0.68	0.88	0.75	1.00	1.00	1.00	-	-	2.00	-	-	-	-	2.00	2.50	2.50	3.00	-	-	3.17	-	5.75	4.37	6.00	-
	RW	0.75		0.65	0.62	0.88	0.71	0.81	0.77	0.74			0.83					0.72	0.74	0.82	0.92			0.84		1.28	0.88	1.14	
	IN	100.00		86.67	82.67	117.33	94.67	108.0	102.67	98.67			110.67					96.00	98.67	109.33	122.67			112.00		170.67	117.33	152.00	
Murshidabad	MW	0.88	0.62	0.40	0.70	0.80	0.93	0.83	1.05	-	-	-	1.62	-	-	1.00	-	1.78	1.78	-	-	-	-	4.84	-	5.50	5.50	4.00	7.00
	RW	0.88	0.59	0.36	0.64	0.80	0.89	0.67	0.81				0.67			0.49		0.64	0.53					1.25		1.22	1.10	0.76	1.35
	IN	100.00	67.05	40.91	72.73	90.91	101.14	76.14	92.05				76.14			55.68		72.73	60.23					146.59		138.64	125.0	86.36	153.41
Burdwan	MW	1.12	0.81	0.75	1.06	1.12	1.13	1.25	1.00	-	-	-	2.00	1.75	-	1.50	-	-	-	4.44	5.25	-	-	4.67	6.50	7.00	7.00	11.00	-
	RW	1.12	0.77	0.68	0.96	1.12	1.08	1.02	0.77				0.83	0.88		0.73				1.45	1.61			1.24	1.63	1.56	1.40	2.10	
	IN	100.00	68.75	60.71	85.71	100.00	96.43	91.07	68.75				74.11	78.57		65.18				129.46	143.75			110.71	145.54	139.29	125.00	187.50	
Birbhum	MW	-	-	0.37	-	0.50	0.75	1.00	1.00	1.25	-	-	-	-	-	-	-	-	-	-	-	-	4.00	7.05	-	-	-	-	-
	RW			0.34		0.50	0.71	0.81	0.77	0.92													1.21	1.88					
	IN			100.00		147.06	208.82	238.24	226.47	270.59													355.88	552.94					
Bankura	MW	-	0.51	0.87	0.75	0.75	1.00	1.00	-	-	-	-	1.50	1.50	-	-	-	-	-	-	5.75	6.50	6.00	5.67	5.00	-	-	-	-
	RW		0.49	0.79	0.68	0.75	0.95	0.81					0.62	0.75							1.74	2.02	1.82	1.51	1.25				
	IN		100.00	161.22	138.78	153.06	193.88	165.31					126.53	153.06							355.10	412.24	371.43	308.16	255.10				
Midnapore	MW	0.88	0.37	0.36	0.93	0.87	1.00	1.00	0.87	1.00	1.00	1.62	2.25	-	1.30	1.30	2.50	2.50	-	4.50	4.00	5.00	5.62	5.31	4.87	5.25	7.25	8.50	-
	RW	0.88	0.35	0.33	0.85	0.87	0.95	0.81	0.67	0.74	0.59	0.82	0.93		0.66	0.63	1.19	0.91		1.48	1.22	1.56	1.70	1.41	1.22	1.17	1.45	1.62	
	IN	100.00	39.77	37.5	96.59	98.86	107.95	92.05	76.14	84.09	67.05	93.13	105.68		75.00	71.59	135.23	103.41		168.18	138.64	177.27	193.18	160.23	138.64	132.95	164.77	184.09	
Hooghly	MW	-	0.43	-	-	-	1.00	1.25	-	2.00	1.75	1.25	2.25	1.75	2.00	-	-	3.00	2.76	4.00	3.83	3.50	3.50	5.57	6.63	8.33	6.00	7.00	-
	RW		0.41				0.95	1.02		1.47	1.04	0.63	0.93	0.88	1.01			1.09	0.82	1.31	1.16	1.09	1.06	1.48	1.66	1.86	1.20	1.33	
	IN		100.00				231.71	248.78		358.54	253.66	153.66	226.83	214.63	246.34			265.85	200.00	319.51	282.93	265.85	258.54	360.98	404.88	453.66	292.68	324.39	
Howrah	MW	1.06	1.00	1.00	1.00	1.12	1.00	1.25	1.25	-	2.12	2.00	2.50	2.00	-	2.00	2.00	2.00	2.25	-	-	-	-	8.00	-	-	-	-	-
	RW	1.06	0.95	0.91	0.91	1.12	0.95	1.02	0.96		1.25	1.02	1.04	1.00		0.97	0.95	0.72	0.67				2.13						
	IN	100.00	89.62	85.85	85.85	105.66	89.62	96.23	90.57		117.92	96.23	98.11	94.34		91.51	89.62	67.92	63.21				200.94						
Jalpaiguri	MW	1.62	2.12	1.25	1.12	1.00	1.12	1.00	-	1.00	1.50	1.50	2.50	-	-	-	-	2.50	2.50	3.50	-	-	-	4.03	-	6.84	5.00	6.50	-
	RW	1.62	2.02	1.14	1.02	1.00	1.07	0.81		0.74	0.88	0.76	1.04					0.91	0.74	1.15				1.07		1.52	1.00	1.24	
	IN	100.00	124.69	70.37	62.96	61.73	66.05	50.00		45.68	54.32	46.91	64.20					56.17	45.68	70.99				66.04		93.83	61.73	76.54	
Darjeeling	MW	0.97	1.05	0.96	1.28	1.07	1.49	1.15	0.99	0.95	1.47	1.62	1.58	1.60	2.00	1.90	-	3.00	2.00	3.50	3.50	-	-	3.83	4.75	4.00	4.00	6.00	-
	RW	0.97	1.00	0.87	1.16	1.07	1.42	0.93	0.76	0.70	0.86	0.82	0.66	0.80	1.01	0.92		1.09	0.59	1.15	1.07			1.02	1.19	0.89	0.80	1.14	
	IN	100.00	103.09	89.69	119.59	110.31	146.39	95.88	78.35	72.16	88.66	84.54	68.04	82.47	104.12	94.85		112.37	60.82	118.56	110.31			105.15	122.68	91.75	82.47	117.53	
Maldah	MW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.00	2.38	1.50	2.25	3.50	5.00	-
	RW																						0.61	0.68	0.38	0.50	0.70	0.95	
	IN																						100.00	103.28	62.30	81.97	114.75	115.74	
West Dinajpur	MW	0.81	0.95	1.12	1.12	1.25	1.37	1.25	-	1.25	1.30	1.00	1.25	-	1.25	-	-	-	-	-	-	-	-	-	4.50	4.00	-	-	-
	RW	0.81	0.90	1.02	1.02	1.25	1.30	1.02		0.92	0.76	0.51	0.52		0.63										1.13	0.89			
	IN	100.00	111.11	125.93	125.93	154.32	160.49	125.93		113.58	93.83	62.96	64.20		77.78										139.51	109.88			
Cooch-Bihar	MW	1.50	0.50	0.50	1.50	1.25	1.50	2.00	1.31	1.12	1.12	2.12	1.37	1.75	1.92	1.75	-	1.75	-	2.00	2.50	-	-	3.00	4.00	-	5.50	-	-
	RW	1.50	0.48	0.45	1.36	1.25	1.43	1.63	1.01	0.82	0.66	1.08	0.57	0.88	0.97	0.85		0.64		0.66	0.76			0.80	1.00		1.10		
	IN	100.00	32.00	30.00	90.67	83.33	95.33	108.67	67.33	54.67	44.00	72.00	38.00	58.67	64.67	56.67		42.67		44.00	50.67			53.33	66.67		73.33		
Purulia	MW	-	-	-	-	-	-	-	-	0.62	1.00	-	-	-	0.75	1.00	1.00	1.00	2.50	-	-	-	-	-	-	-	-	-	-
	RW									0.46	0.59				0.38	0.49	0.48	0.36	0.74										
	IN									100.00	128.26				82.61	106.52	104.35	78.26	160.87										
West Bengal	MW	0.97	0.63	0.65	0.97	0.95	1.06	1.07	1.11	1.17	1.33	1.58	1.86	1.72	1.50	1.37	2.02	2.25	2.47	3.57	4.04	4.32	4.37	4.73	4.86	5.42	5.52	6.71	7.00
	RW	0.97	0.60	0.59	0.88	0.95	1.01	0.87	0.85	0.86	0.78	0.80	0.77	0.86	0.76	0.67	0.96	0.82	0.73	1.14	1.24	1.35	1.32	1.26	1.22	1.21	1.10	1.28	1.35
	IN	100.00	61.86	60.82	90.72	97.94	104.12	89.69	87.63	88.66	80.41	82.47	79.38	88.66	78.35	69.07	98.97	84.54	75.26	120.62	127.84	139.18	136.08	129.90	125.77	124.74	113.40	131.96	139.18
Deflator		1.00	1.05	1.10	1.10	1.00	1.05	1.23	1.30	1.36	1.70	1.97	2.41	2.00	1.98	2.06	2.10	2.76	3.38	3.05	3.27	3.21	3.30	3.76	4.00	4.49	4.99	5.25	5.20

Compound Growth Rate of Money Wage Rate between 1956-57 and 1984-85 is 7.05 per cent per annum.

Source : (1) Agricultural Wages of India, 1956-57 to 1984-85
(2) Agricultural Labourers' consumer Price Index, Labour Bureau, 1956-57 to 1984-85

NOTE : MW = Money Wage, RW = Real Wage IN = Index number series of RW
"-" means not available

than the state average and their growth rates excluding Bankura were also very low.

In all the districts money wages had grown at a slower pace till 1974-75 compared to the growth of ALCPI. After 1975-76 the growth rate of wages achieved some considerable momentum. Now these aspects are true for all categories of agricultural labourers - men, women and children. Figures 3.1, 3.2 and 3.3 show the movements of money wages, real wages and ALCPI for adult male, adult female And child agricultural labourers of West Bengal respectively. These figures establish the fact that till the mid seventies agricultural money wages lagged behind the general movements of prices. After 1975-76 some improvements in money wage rates were achieved in the sense that money wage rates crossed the level of ALCPI and has stayed slightly above the line showing ALCPI. From 1956-57 to 1984-85 money wage rate of adult male agricultural labourers grew at the compound rate of 6.62 per cent per annum. The respective figures for adult female and children agricultural labourers are 6.35 per cent and 7.05 per cent per annum respectively.

3.3.1(ii) Trends in Real Wages

Let us now proceed to the trends in real wage rates

FIGURE - 3.1

Trends of Money Wages and Real Wages for Men Agricultural Labourers in West Bengal and the Consumer Price Indices

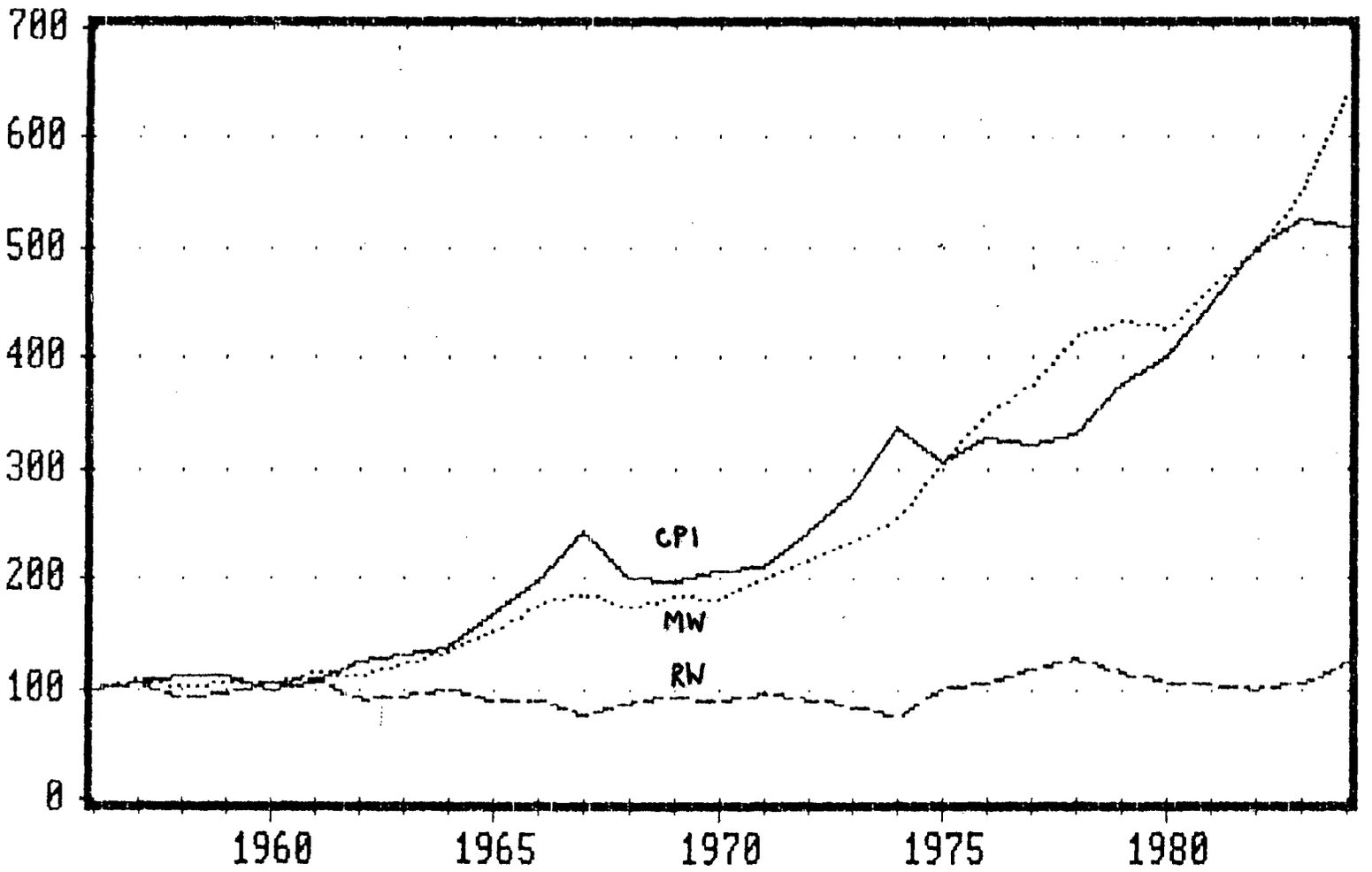


FIGURE - 3.2

Trends of Money Wages and Real Wages for Women Agricultural Labourers in West Bengal and the Consumer Price Indices

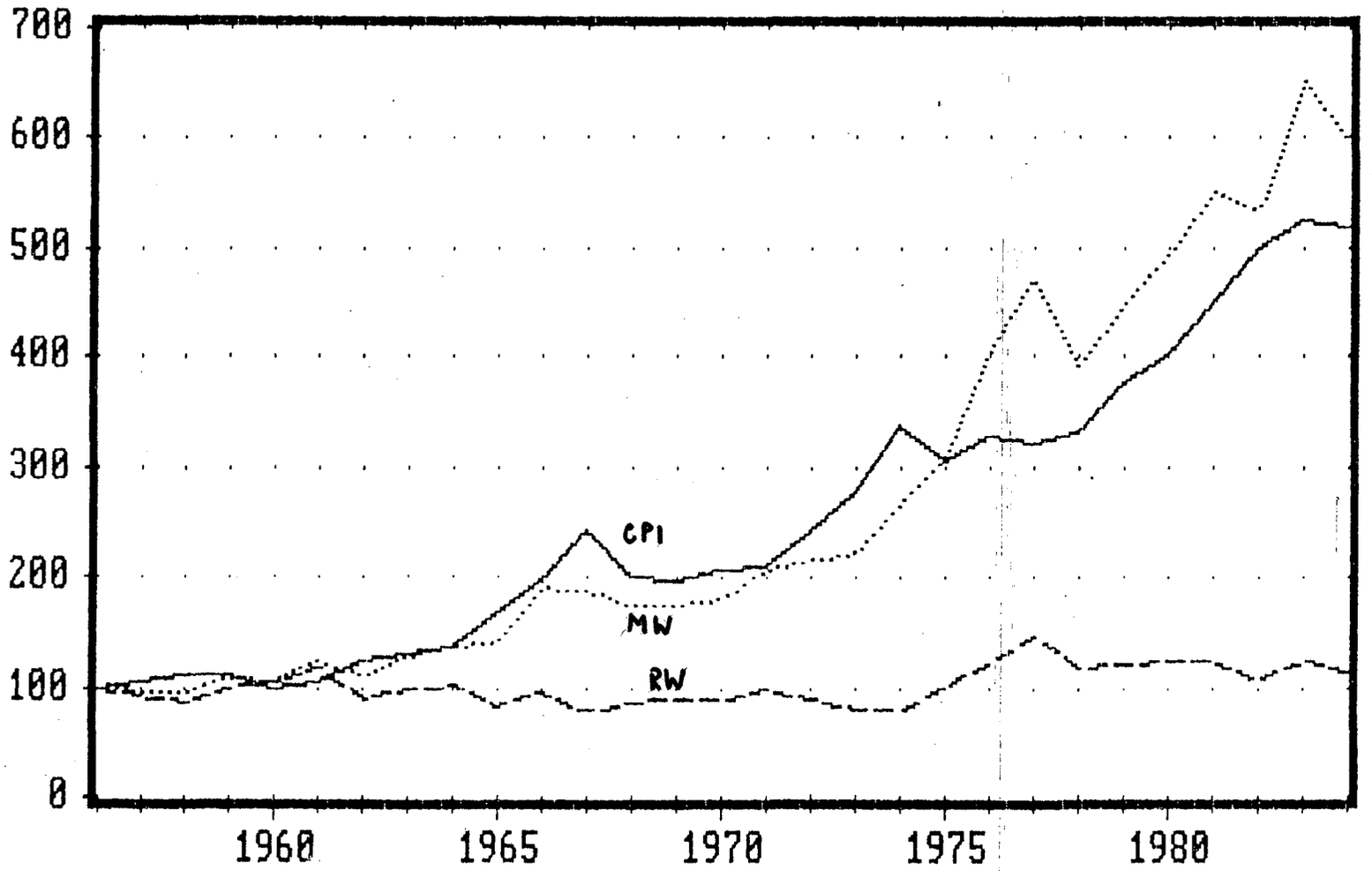
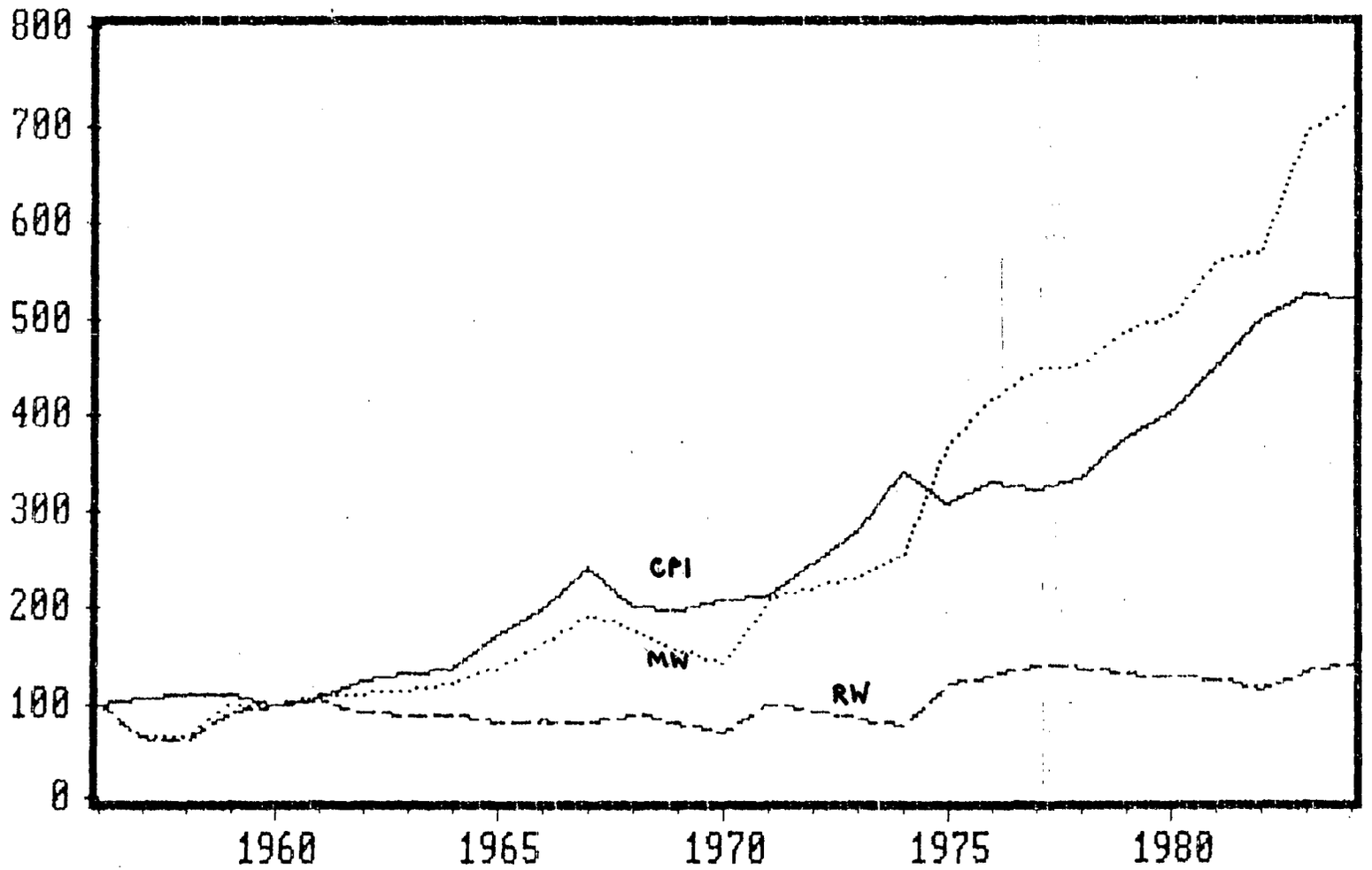


FIGURE - 3.3

Trends of Money Wages and Real Wages for Child Agricultural Labourers in West Bengal and the Consumer Price Indices



of different districts and West Bengal as a whole. The indices of adult male, adult female and child agricultural labourers' wage rates in real terms are given in table 3.1, 3.2 and 3.3. Here, we can observe two distinct phases of wage changes in the state. The first is between 1956-57 to 1974-75 and the next is mid seventies onwards. Between 1956-57 and 1974-75 the real wage rates for each category of men, women and children labourers in all the districts had either fallen or stagnated. The lowest level was reached in 1974-75 which was incidentally also one of the worst years affected by severe drought conditions and consequent fall in agricultural output levels. Furthermore, there was a sharp increase in the prices of foodgrains leading to disproportionate increase in the consumer price index of agricultural labourers.[13] After 1975-76 there was a rise although in a very slow rate in the wage rates in almost all districts of West Bengal excepting only few. In Nadia and Cooch Behar men's wage rates had not risen even after the mid 1970s. After 1974-75 the women's wage rates had not increased in Cooch Behar and Darjeeling while children's wage rates had not risen in Cooch Behar and Jalpaiguri.

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13. Nirmal Chandra: "Long Term Stagnation in The Indian Economy", 1982, Economic and Political Weekly, Vol.XVII, Annual Number.

The two phases of the movements of real wage rates for adult male, adult female and child agricultural labourers of the state can be shown by the figures 3.4, 3.5 and 3.6. However, the rise of wage rates after mid seventies was not a perfectly consistent phenomenon. There was wide oscillations of ups and downs in the change of wage rates. In aggregate, the real wages of men, women and children agricultural labourers grew at the compound rate of 0.74 per cent, 0.48 per cent and 1.15 per cent per annum in the 29 years from 1956-57 to 1984-85.

Hence, stagnation or decline in real wages during the greater part of our period of review appears to have been the characteristic feature of West Bengal, while only in the latter part a very slow and insignificant rise was observed.

In accordance with 'efficiency wage theories' of Leibenstien (1958) and Mazumdar (1959) it is postulated that there is a high degree of association between wages and the productivity of labour so that it would be profitable for the employer to pay the workers a more than subsistence wage. However, the movement of agricultural

real wage rates of West Bengal cannot be explained by the movement of labour productivities.[13a] In order to test the strength of this relationship we carried out regression exercise keeping product per worker in agriculture (PPWA) at constant price and real wage rates(RW) of the adult male labourers as the independent and dependent variables respectively. The result is given below:

$$RW = 1.0006899 + \underset{(0.8149255)}{0.0390757PPWA}$$

$$R^2 = 0.048602.$$

In fact, the strength of the relationship found to be non-existent between agricultural wage rates and the levels of output per worker.

The slight increase of agricultural real wage rates which is observed after the mid seventies in the state can be attributed to the fact that after 1975 the government control over the agricultural wages has become slightly more strict and fixation of minimum wage rates by the Minimum Wage Act has become regular.

From the overall situation it can be concluded that in West Bengal agricultural real wages has a secular trend of stagnation if not falling during the period under review. We observe that the movement of real wage rate

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13a. However, we are not actually testing the 'nuitrition based' efficiency wage theory. The basic intention here is to see whether there is any correspondence between labour productivities and wage rates.

FIGURE 3.4

Trend of Real Wages for Men Agricultural Labours in West Bengal

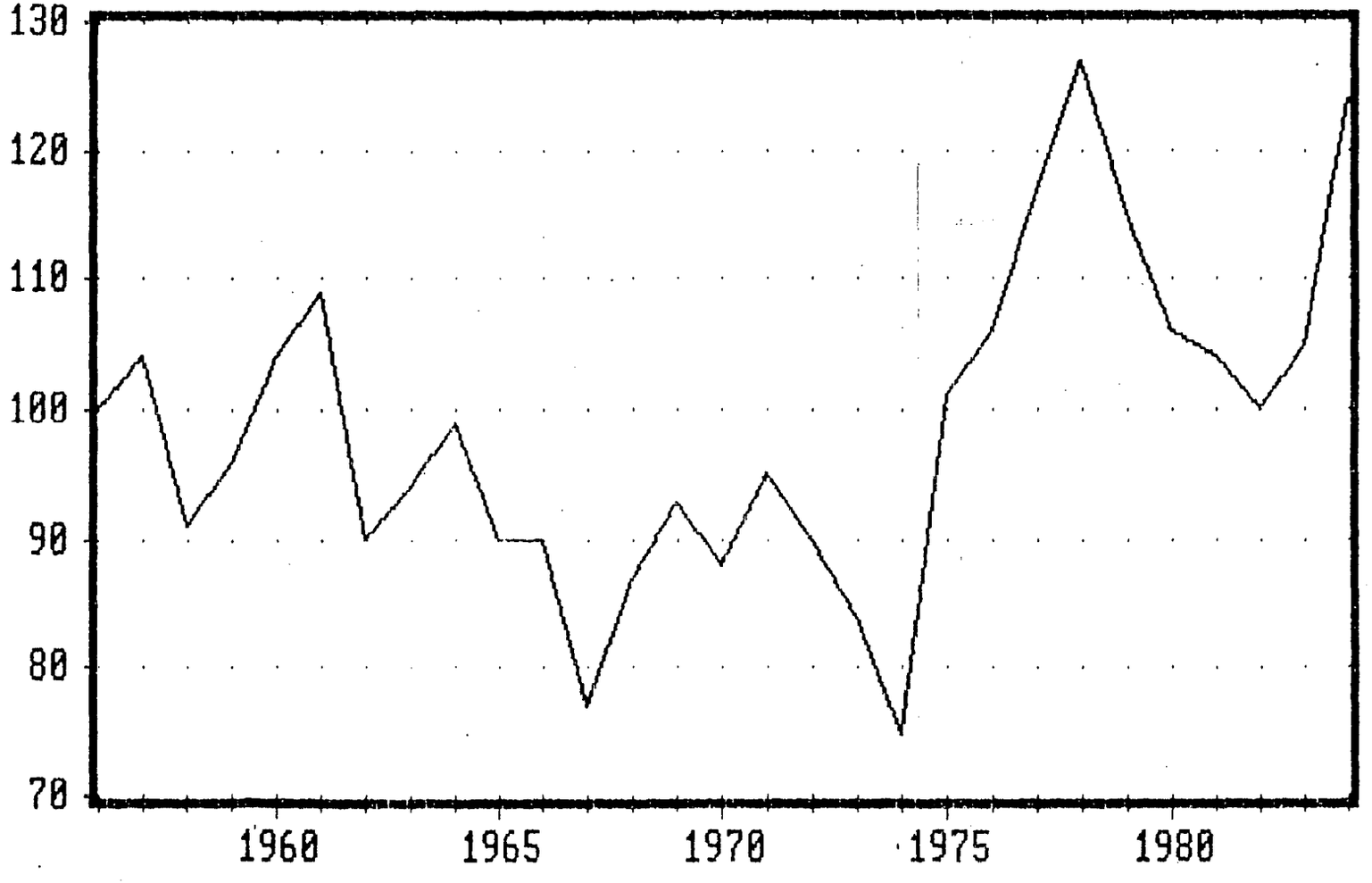


FIGURE 3.5

Trend of Real Wages for Women Agricultural Labourers in West Bengal

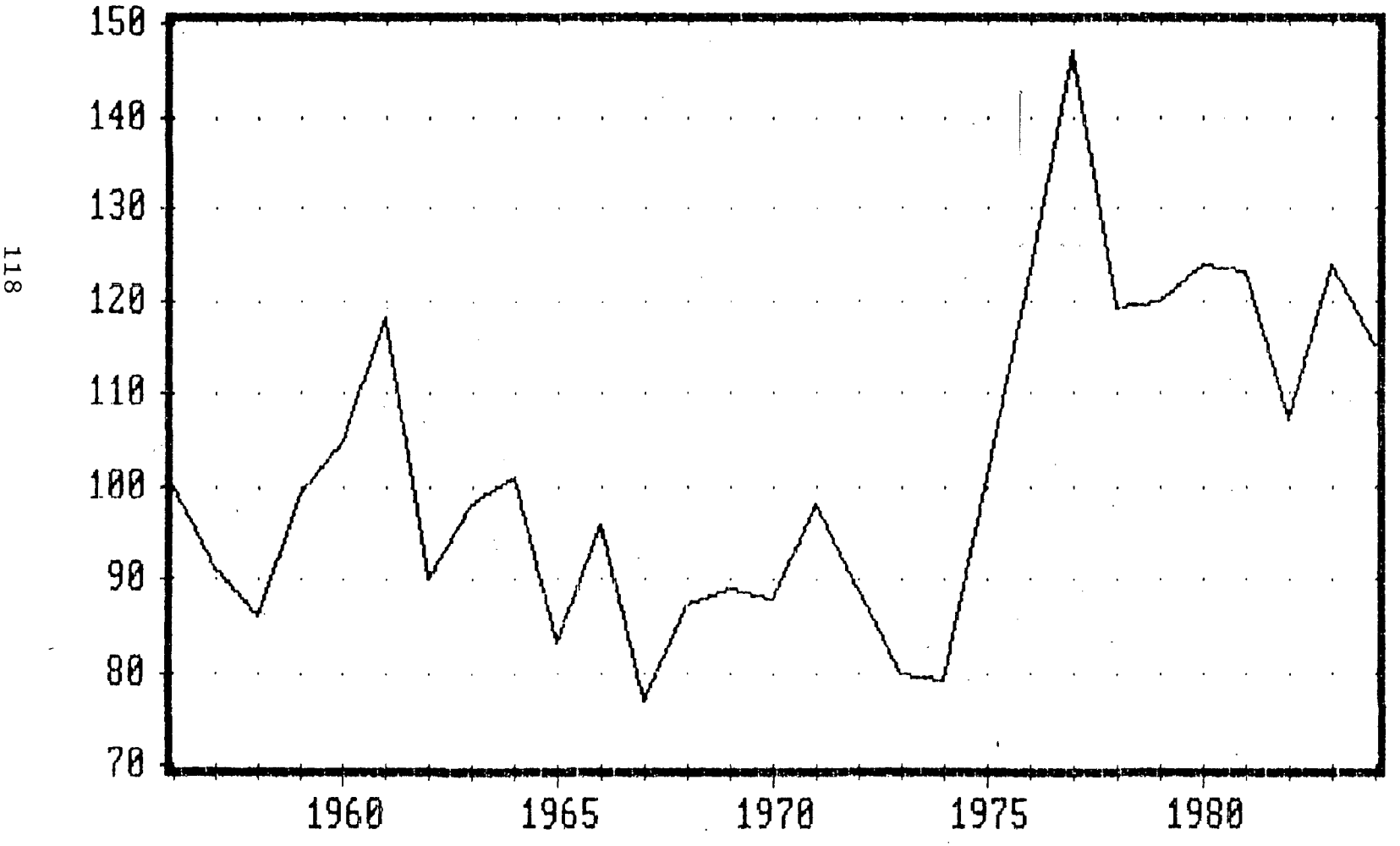
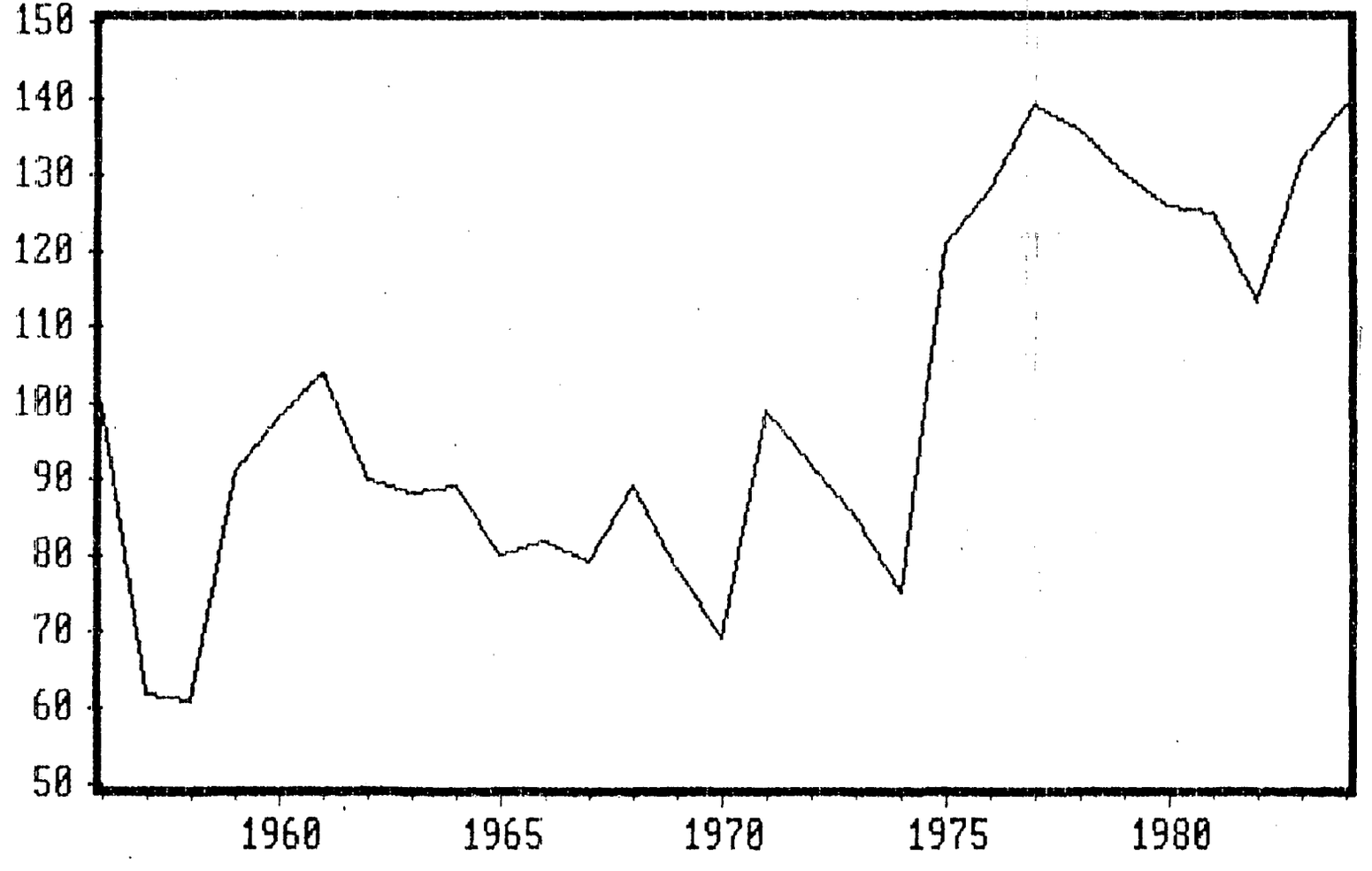


FIGURE 3.6

Trend of Real Wages for Child Agricultural Labourers in West Bengal



has two distinct phases. One is from 1956-57 to 1974-75 and the other is from 1975-76 to 1984-85. In these two phases it has been observed that for the first phase the straight line trend is a better fit compared to exponential or cubic curve, while for the latter phase a cubic curve is the best fit. The results for the two phases for all, male, female and child agricultural labourers are given below.

FIRST PHASE (1956-57 to 1974-75)

Equation : $Y = \alpha + \beta t$ where Y is real wage rate and t is time.

Category of Labourers	Variable	Coefficient	Level of Significance (per cent)
MALE	TIME	-1.0421053	0.1
	CONSTANT	102.84211	0
	R^2 = 0.46		F-Statistic=14.34416
FEMALE	TIME	-0.9105263	2.7
	CONSTANT	101.42105	0
	R^2 = 0.26		F-Statistic =5.857329
CHILD	TIME	-0.0929825	86.2
	CONSTANT	85.719298	0
	R^2 = 0.002		F-Statistic =0.031304

SECOND PHASE (1975-76 to 1984-85

Equation : $Y = \alpha + \beta t + \nu t^2 + \delta t^3$

Where Y is real wage rate and t is time .

Category of Labourers	Variable	Coefficient	Level of Significance (per cent)
MALE	TIME	754.21931	0
	$(TIME)^2$	-31.013986	0
	$(TIME)^3$	0.4217172	0
	CONSTANT	-5953.2494	0
	R^2 = 0.92		F-statistic=25.54631.

Category of Labourers	Variable	Coefficient	Level of Significance (per cent)
FEMALE	TIME	646.30186	2.4
	$(TIME)^2$	-25.977855	2.8
	$(TIME)^3$	0.3449883	3.3
	CONSTANT	-5189.1865	2.2
	R^2 = 0.75		F-statistic=6.773038
CHILD	TIME	923.81119	0
	$(TIME)^2$	-37.886946	0
	$(TIME)^3$	0.5139860	0
	CONSTANT	-7321.1305	0
	R^2 = 0.93		F-statistic = 30.34145.

For the first phase the results show that for both male and female agricultural labourers the fitted straight line trend have statistically significant negative slope. This implies that in the period 1956-57 to 1974-75 the trends of real wage rates for male and female labourers have declining trend. But for child agricultural labourers the declining trend is not satistically significant. Here the null hypothesis that the slope of the trend line is zero or in other words, stagnating real wage rate from 1956-57 to 1974-75 is satisfied. However, for the next phase from 1975-76 to 1984-85 it has been observed that a cubic curve explains the movement of real wage rates for all, male, female and child agricultural labourers. It is known that a cubic curve captures the fluctuating trend of the variable. Hence, it is proved that after mid seventies the wage rate in general have a fluctuating trend. Nevertheless, since it has been observed that from 1956-57 to 1984-85 the growth rates of the wage rates of male, female and child agricultural labourers are very low, it can be stated that the wage rate have a general tendency of stagnation during the period under review. Stagnation or deterioration of agricultural

wages extending over a prolonged period of time is not a very unusual phenomenon in the setting of densely populated agrarian societies.

A more prolonged trend of deterioration of agricultural wages in West Bengal could be observed. At various points of time from the 1830s to the 1930s rice equivalent of the daily wages of agricultural labourers in Bengal was around 6 kgs.[14] Again, according to Huque (1939) in 1938-39 the coarse rice equivalent of daily wage of agricultural labourers of Bengal ranged between 5.68 and 5.95 kgs. Compared to this as table 3.41 shows, in 1956-57 the rice equivalent of agricultural wage became 3.15 kgs. and afterwards deteriorated further to around 2.5 - 3.0 kgs. From this observation we should have an agreement with the view of Nirmal Chandra (1982) that there was a possible decline of agricultural wages in India from 1900 onwards due to general impoverishment in the Indian economy resulting from rapid demographic growth along with long run stagnation in agricultural output levels.

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14. A.R.Khan(1984): "Real Wages of Agricultural Workers in Bangladesh" in Khan and Lee (ed), Poverty in Rural Asia, ILO , Asian Employment Programme, Bangkok.

3.3.1 (iii) Wage differential among adult male, female and Child Agricultural Labourers.

There are considerable wage differentials among the men, women and children agricultural labourers. This is a customary feature of the agrarian economy of West Bengal where the wage differentials are prevalent due to gender based and age based specialisation of specific farm operations. Furthermore, it is commonly presumed that the productivity of an adult male agricultural labourer is higher than that of a women or child labourer which entails a higher rate of wage for the adult male labourer.[15]

As table 3.4 shows, wage rates for the women labourers were around 80 per cent of the adult male labourers throughout the period while after 1976-77 women's wage rates approached closer to the men's wage rates. For the children agricultural labourers, the wage rates were less than 60 per cent of the adult males' wage rates till 1974-75 and only after 1975-76 the ratios increased to around 70 per cent levels. Therefore, after the mid 1970s there has been a distinct trend for wage

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15. In fact in the Study of Cost of Production and Farm Management of Socio-Economic Evaluation Branch, West Bengal it is assumed that one Man-day labour is equivalent to 4/3 woman-day labour(see chapter IV section 4.2)

FIGURE - 3.7

Comparative Trends of Real Wages for Men Women and Children Agricultural Labourers in West Bengal

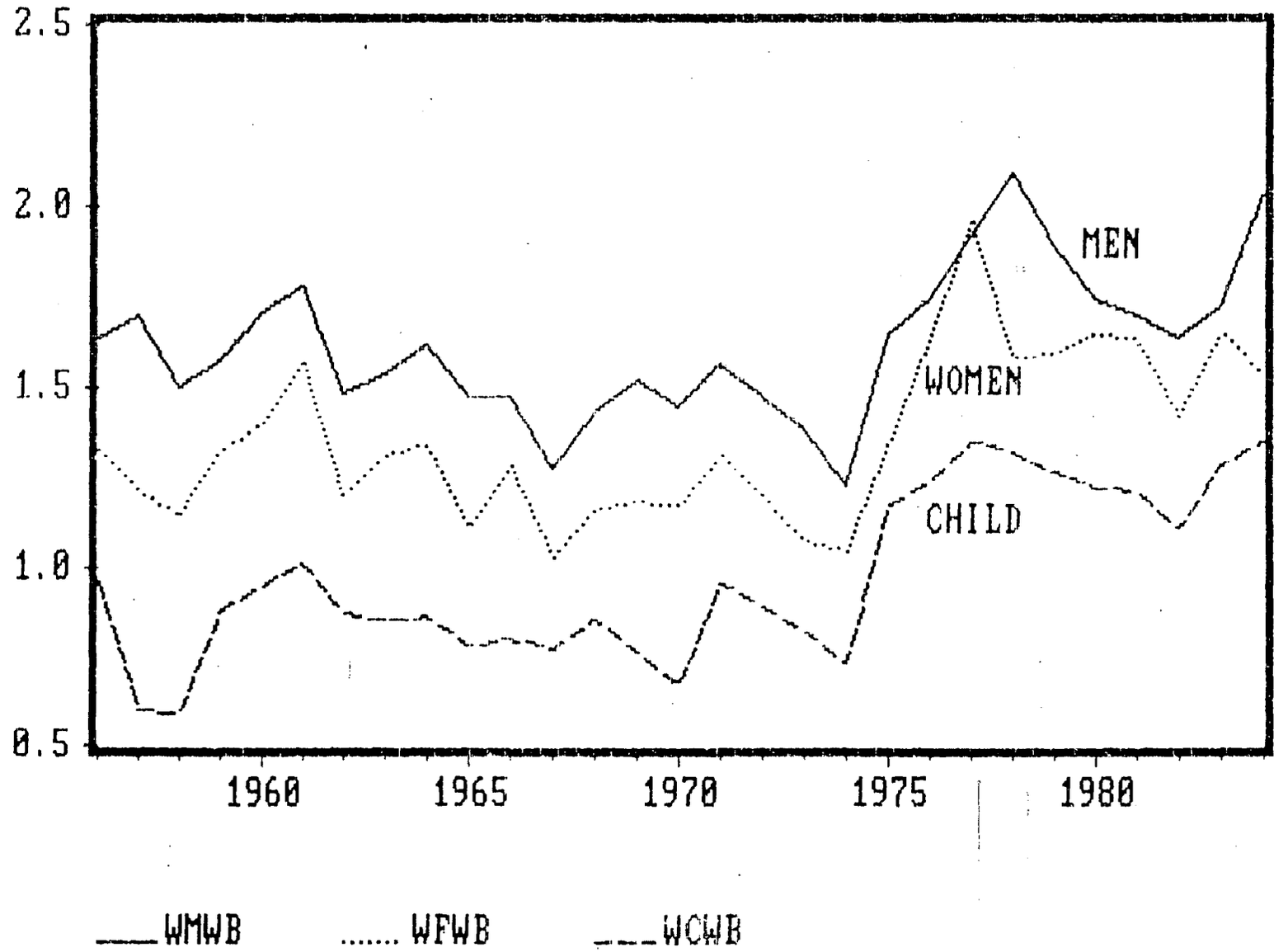

TABLE 3.4 RATIOS OF WOMEN AND CHILDREN TO MEN AGRICULTURAL MONEY WAGES IN WEST BENGAL

YEAR	Ratio of Women Wage to Men	Ratio of Children Wage to Men
1956-57	81.10	59.15
1957-58	71.35	35.39
1958-59	75.76	39.39
1959-60	83.82	56.07
1960-61	81.87	55.56
1961-62	88.24	56.68
1962-63	80.77	58.79
1963-64	85.00	55.50
1964-65	82.73	53.18
1965-66	75.60	53.20
1966-67	87.24	54.48
1967-68	81.37	60.78
1968-69	81.40	60.35
1969-70	77.41	49.83
1970-71	80.27	45.82
1971-72	84.40	61.77
1973-74	77.23	58.90
1974-75	85.13	59.23
1975-76	81.15	70.83
1976-77	93.55	70.38
1977-78	101.78	70.02
1978-79	75.51	63.33
1979-80	84.06	66.71
1980-81	94.00	69.43
1981-82	95.81	71.03
1982-83	86.89	67.65
1983-84	95.58	74.06
1984-85	75.40	66.48

SOURCE : AWI, 1956-57 to 1984-85.

disparties to narrow down overtime in the state. Figure 3.7 shows comparative movements of real wages for men, women and children agricultural labourers. From this figure it is evident that women's wages lie between men and children's wages throughout the period of analysis and after mid seventies a shrinkage of wage variation among adult male, adult female and children agricultural labourers has taken place.

3.3.1(iv) Wage Variation across districts

It would be interesting to see whether there is any decline of wage variation among the districts of West Bengal. Decrease of regional disparities in agricultural wages for one thing would imply increased mobility of labour and thereby greater integration of labour markets among the districts of the state. For this purpose we worked out the coefficients of variation of money wage rates for different years. Here we have considered only 10 districts for which continuous series of data are available for 20 years. Some years and districts are left out because of missing data and we should compute the coefficients of variation for the same districts, otherwise it would not be meaningful. In

this exercise we have only considered the money wage rates of adult male labourers. The values of coefficients of variation are given in table 3.1. It could be observed that there has been no discernible trend towards increase or decline of inter district variation in wage rates. The coefficients of variation tend to fluctuate around a wide margin. In 1971-72 its value reached the highest level of 28.88 per cent while in other years it oscillated between 10 and 20 per cent levels.

It has been observed that the wage variations across the districts of West Bengal can be explained roughly by the variations in irrigation facilities of the districts. The districts like Burdwan, Birbhum, Hooghly are better irrigated and there the money wage rates of agricultural labourers are higher than that of other districts and the average of West Bengal. Although in Howrah the irrigation facility is moderate but since its industrial employment opportunity is very high it being very near to Calcutta its money wage rate of agricultural labourer is very high. In the districts like Bankura, Murshidabad, Midnapore, etc. have medium irrigation facilities and also have the money wage rates

very close to the average of West Bengal, Malda, Coochbehar, West Dinajpur, Nadia have very low irrigation facilities and in these districts the agricultural money wage rates are very low.

3.3.2 *Observations from NSS Estimates*

The different aspects which we observed from the AWI data should be verified from the NSS estimates as the latter source is more reliable.

3.3.2(i) *Trends in Wage Earnings*

From table 3.5 it has been observed that the average daily money wage earnings for all agricultural operations by agricultural labourers increased steadily and sharply between 1956-57 and 1977-78 for all men, women and children labourers in the state. But between 1950-51 and 1956-57 the money wage earnings had in fact fallen, even if we inflate the 1956-57 rates for required adjustment.[16] During 1964-65 to 1974-75 the rate of increase of money wage earnings was slower compared to the entire period. However, the wage rates of women and children increased little bit faster than men wage rates.

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16. Reasons are stated earlier in 3.1.

TABLE 3.5 WAGE RATES OF AGRICULTURAL LABOURERS -- MEN, WOMEN AND CHILDREN.

		Money wage earnings (Rs.)	ALCPI	Real wage earnings (1956-57 as above)
MEN				
	1950 - 51*	1.66	-	-
	1956 - 57*	1.43	1.00	1.43
	1964 - 65	1.81	1.36	1.33
	1974 - 75	3.49	3.38	1.03
	1977 - 78	4.26	3.21	1.33
WOMEN				
	1950 - 51*	1.04	-	-
	1956 - 57*	0.98	1.00	0.98
	1964 - 65	1.36	1.36	1.00
	1974 - 75	2.83	3.38	0.84
	1977 - 78	3.73	3.21	1.16
CHILDREN				
	1950 - 51*	1.30	-	-
	1956 - 57*	0.89	1.00	0.89
	1964 - 65	1.03	1.36	0.76
	1974 - 75	2.83	3.38	0.62
	1977 - 78	2.87	3.21	0.89

* Data re related to only ~~casual agricultural~~ labourers.

SOURCE : Agricultural labourers' Enquiry (ALE),1st & 2nd. & Rural Labourers' Enquiry (RLE),1st, 2nd & 3rd.

The sharp rise in money wage earnings during the period of review does not entirely reflect the price changes. The magnitude of the increase shrinks considerably when the wage figures are deflated by ALCPI. ALCPI rose between 1956-57 and 1977-78 with a formidable rise between 1964-65 and 1974-75 and then dropped slightly in 1977-78. Barring the general inflationary factors affecting this rise in prices, the sharp rise in 1974-75 and the decline in 1977-78 can be attributed partially to the variations in total agricultural production during these years. In a year of declining agricultural output prices increased markedly, whereas in 1977-78 with a good agricultural production the prices reduced.

From table 3.5 it is evident that there is no tendency of rise in real wage earnings for adult male labourers. Between 1956-57 and 1964-65 the real wage decreased from 1.43 to 1.33 and again between 1964-65 and 1974-75 it had declined to 1.03, while after 1974-75 in 1977-78 it rose to again in the level of 1964-65 of 1.33. In case of adult female real wage earnings, the rate slightly increased between 1956-57 and 1977-78 from 0.98 to 1.16 but between 1964-65 and 1974-75 the rate decreased sharply. Again, for children

real wages, the rate remained stagnant with the fall in 1964-65 to 1974-75, from 1956-57 to 1977-78 in West Bengal. Here, we have only five observations taken from NSS estimates which are not enough clearly to draw a firm inference about the trend of real wage movements. But, at least from these data it is clear that there is no evidence to suggest that agricultural wage rates in the state have been rising. Taken together with the earlier cited time series estimates based on AWI data, the trend that seems to emerge, therefore, is one of real wage rates in West Bengal either declining or fluctuating about a more or less constant level.

3.3.2(ii) Operation wise wage variation

Our discussion of agricultural wage rates so far has been confined to daily earnings averaged over all operations. Table 3.6 gives information on agricultural wages by major operations as per the NSS survey estimates. From this table it appears that the conclusion of stagnant or declining real wages is maintained when we move beyond the average to the decomposition of wage rates by major operations. Between 1956-57 and 1964-65 real wages of adult males decreased for all operations excepting

TABLE : 3.6

WAGE RATES OF AGRICULTURAL LABOURERS OF VARIOUS OPERATIONS WEST BENGAL.

Type of Operations	MONEY WAGE RATE (Rupees per day)				REAL WAGE RATE keeping 1956 - 57 as base			
	1956-57	1964-65	1974-75	1977-78	1956-57	1964-65	1974-75	1977-78
MEN								
1. Ploughing	1.43*	1.84	3.62	4.62	1.43	1.35	1.07	1.44
2. Souring	1.50	1.75	3.69	4.81	1.50	1.29	1.09	1.50
3. Transplanting	1.60	2.32	3.84	4.32	1.60	1.71	1.14	1.35
4. Weeding	1.41	1.77	3.68	3.82	1.41	1.30	1.09	1.19
5. Harvesting	1.35	1.86	3.44	4.56	1.35	1.37	1.02	1.42
6. Others	1.39	2.09	3.38	4.07	1.39	1.54	1.00	1.27
7. Average of all operations	1.43	1.81	3.49	4.26	1.43	1.33	1.03	1.33
C.V.	5.68	10.49	4.32	7.75				
WOMEN								
1. Ploughing	0.67	0.94	2.28	3.27	0.67	0.69	0.67	1.02
2. Souring	1.15	1.14	2.70	3.32	1.15	0.84	0.80	1.03
3. Transplanting	1.16	1.77	3.47	3.45	1.16	1.30	1.03	1.07
4. Weeding	1.14	1.29	2.86	2.60	1.14	0.95	0.85	0.81
5. Harvesting	0.68	1.37	2.71	4.39	0.68	1.01	0.80	1.37
6. Others	1.01	1.30	2.74	3.73	1.01	0.96	0.81	1.16
7. Average of all operations	0.98	1.36	2.83	3.73	0.98	1.00	0.84	1.16
C.V.	22.03	19.36	12.61	15.53				

* 1956 - 57 data are only related to casual agricultural labourers.

SOURCE : ALE, 2nd & RLE 1st , 2nd & 3rd.

'transplanting' where it rose from 1.60 to 1.71 and 'harvesting' where it stagnated around the level of 1.35. In 1974-75 real wages for all operations decreased compared to 1964-65 and 1956-57. But in 1977-78 the rates increased to around the level of 1964-65. Now, for adult female labourers the real wage rates between 1956-57 and 1964-65 remained stagnant for almost all operations while in 1974-75 they decreased for all operations. Again, in 1977-78 the real wage rates increased for all operations. The rates of 1977-78 were slightly higher than the rates of 1956-57.

From table 3.6 it is discernible that among the different operations of cultivation, for transplanting higher rates of wage are paid for both men and women agricultural labourers. For transplanting the women's wage is very close to that of men. Here, one thing is perceptible that the wage variation among different agricultural operations does not depend upon the toil or exertion of the work. Perhaps it is determined historically. For women labourers the wage variation among different agricultural operations has decreased slightly but for men there is no discernible trend. However, it

has been observed that in 1974-75 the wage variation among different agricultural operations reached the lowest level. This is quite comprehensible in the situation where there is a general tendency of wages to fall as in this situation fall of wages was higher for that operation whose wage earning was higher and decline of wage was less for that case where it was lower.

3.3.2(iii) Mode of Wage Payment

Mode of wage payment is another important aspect of labour exchange system in the agrarian economy of West Bengal. In this regard we have three intersting findings from table 3.7. (i) For adult male cash payment is prominent both for agricultural and non-agricultural operations. (ii) For adult female labourers, cash payment is prominent only for agricultural operations but kind payment is equally important for non-agricultural operations. (iii) For children labourers kind payment is mostly prominent for both agricultural and non-agricultural operations.

From this observations from table 3.7, based on NSS estimates it is evident that a considerable amount of kind payment is present in the wage payment of agricultural

labourers. This is due to the fact that provision of mid-day meals and some other things like *muri*, *bidi* etc. is the custom in the process of labour exchange in the agriculture of West Bengal. The adult female labourers are mostly employed as part time maid-servants apart from agricultural operations where this kind payments are mostly prevalent. In case of children labourers, providing just frugal mid-day meal they are being engaged in all types of work.

3.4 EMPLOYMENT SITUATION OF AGRICULTURAL LABOURERS

Wage rates alone can not reveal the pattern of the economic conditions of agricultural labourers. For this analysis, the discussion of employment situation is very important because even in stagnant wage rates the condition may improve if there is an improvement in employment situation.

3.4.1 *Wage Earners Ratio*

In this discussion we should start with the labour participation rates of the agricultural labour households

which can be measured in terms of wage earners ratio(WER). Although we have informations from 1950-51 to 1977-78 from NSS estimates but data of 1950-51 and 1977-78 are not comparable with the rest of the figures.[17] Anyway, it is observed that during this period the proportion of wage earners in the agricultural labour households remained within the range of two-fifth as it is shown in table 3.8. But from table 3.8 it is discernible that there is no clear cut long term increase in WERs. Barring the increase in proportion of agricultural labour households in the state, there appear to be some factors Which influence year to year variation in labour participation. One probable explanation for this phenomenon of fluctuating labour participation in different years in spite of a large increase in the proportion of agricultural labour households could be due to the link that exists between agricultural output and the income levels of agricultural labourers. This fact can be assigned for the year 1974-75 when the wage earners ratio reached the highest level along with increased participation of women and Children in the pool of wage earners. The fact is that in that

17. Reasons are stated earlier.

year of severe drought the agricultural output declined leading to a decline in the general level of living. The effect of such a decline in the general level of living was felt sharply by labour households which had no reserve of resources to support themselves. It had forced a large number of otherwise non-workers, such as women and children, into the work force. Actually ' in times of severe economic need women will enter the labour force as agricultural labourers in other capacities, but when conditions improve, they withdraw to their home'.[18] This fact was also revealed in 1977-78 which was a good harvest year and so women's participation in the labour force declined (see table 3.8). Hence, the fluctuations of WERs in different years could certainly be linked with fluctuations in agricultural production and their effect on household income.

3.4.2 *Intensity of Employment in Agriculture*

Labour participation alone is not a very efficient measure of the employment available to labour households since it only indicates the proportion of persons who were working during an agricultural year. The intensity of work or the number of days of employment available to each worker during the year is required to obtain a more complete picture of the employment situation. Tables 3.9 and 3.10 present the days of employment

18. R.B. Dixon : "Rural Women at Work Strategies for Development in South Asia", 1978, John Hopkins University.

and unemployment for each category of agricultural labourers, men, women and children.

Days of agricultural employment per agricultural labourer in a particular year would be the net result of changes in the demand and supply of labour. One would expect that in a year of low total agricultural output the demand for labour would be much less, thus reducing the total available days of agricultural employment. On the contrary, as observed earlier the supply of labour in terms of wage-earners ratio, increased in such a year of agricultural scarcity. The days of employment per agricultural labourer would be expected to fall.

This fact is reflected in the data. For adult males, adult females and children labourers number of days of employment per labourer in agriculture rose between 1956-57 and 1964-65, and declined in 1974-75, the year of poor agricultural output and increased wage-earners ratio. In this year general participation in the labour force from the agricultural labour households increased. This reduced the wages and days of employment for each labourer as increase in participation had distributed employment over man-days among the agricultural labourers. Again, in 1977-78,a year of good harvest, the number of days of employment per

agricultural labourer increased in the state for all types of labourers. As it is expected, unemployment was highest in 1974-75. Number of days of employment for the adult female labourers is much less than that of men while children labourers had highest number of days of employment at full intensity. Hence, it is interestingly observed that the children agricultural labourers, although they constitute a very small percentage of total agricultural labourers, are being used very intensively possibly due to their low wage rates and their ability to do the same amount of work as it is done by the adult labourer.

3.4.3 *Secondary employment opportunities*

Agricultural labourers although spend the major proportion of their time in wage-paid agricultural employement, they are also engaged in non-agricultural labour and self-employment. As it is shown in table 3.10 employment in these secondary occupations are declining overtime in terms of number of days of employment per labourer. The decline is persistent for adult male labourers. But for adult females and children labourers the rates of secondary employment fluctuated. However, the declining trend of secondary occupation is also observed in chapter - II in table 2.17. As table 3.10 shows, for adult male labourers, both the

opportunities in wage employment of non-agricultural operations and in self-employment are declining. Furthermore, as table 3.9 illustrates, the wage earning from non-agricultural operations is much lower than that of agricultural operations. This is true for all categories of agricultural labourers, adult males, adult females and children.

In the aggregate, regarding the employment scenario of agricultural labourers in West Bengal, it has been observed that employment in non-agricultural operations or in self-employment category is declining whereas wage employment in agricultural operations is increasing excepting in the draught affected year, 1974-75. However, overall, the average number of days of employment per agricultural labourer has risen during this period although at a very slow pace.

3.5 *INCOME LEVEL OF AGRICULTURAL LABOURERS.*

It has been pointed out earlier that the impact of a rapidly increasing population of agricultural labourers, mediated by demand conditions, would reflect itself in wage trends as well as employment such that the final impact on incomes of agricultural labourers would be a combination of both. But data on average annual income of agricultural labour households from all sources are not available for all the years of NSS estimates for West Bengal. As in

table 3.11 it is shown that only for three years 1950-51, 1956-57 and 1974-75 these data are available from which we can not draw any possible inference. Hence, as a proxy of that we can use the data of annual wage earnings per adult males and females, and children labourers in agricultural operations to see the pattern of income of agricultural labourers. This way of discussion would not be very much misleading because it has been observed that non-agricultural occupations and other secondary occupations for these labourers are not very significant and decreasing overtime.[19] Here, one important point should be analysed. Laximarayan opined that although in 1974-75 agricultural employment declined severely due to extensive drought in that year, the income of the agricultural labourers did not decrease to that extent as some of the reduction of wage incomes from agriculture in real terms in that year was compensated by other sources such as non-wage and non-agricultural activities.[20] But as tables 3.9 and 3.10 show, in West Bengal non-agricultural employment and self-employment in terms of average number of days per agricultural labourer did not rise in 1974-75. Hence, in this period, unemployment

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19. See 3.4.3.

20. "Changing condition of Agricultural Labour," 1977, Vol. XII, No. 43, EPW.

TABLE 3.12

ANNUAL WAGE EARINGS PER ADULT MALE AND FEMALE AND CHILDREN AGRICULTURAL LABOURER IN AGRICULTURAL OPERATIONS IN WEST BENGAL.

	Annual Mongey Wage Earings				Annual Real Wage Earnings			
	1956-57	1964-65	1974-75	1977-78	1956-57	1964-65	1974-75	1977-78
MEN	267	487	735	1031	267	358	217	321
WOMEN	135	294	412	753	135	216	122	235
CHILDREN	190	312	515	881	190	229	152	275

SOURCE : ALE, 2nd & RLE, 1st,2nd & 3rd.

Note: Base 1956 -57 = 100 for the Price index.

of these labourers in terms of average number of days per labourer increased remarkably. In throughout the period of analysis non-agricultural employment opportunities and self-employment of agricultural labourers of the state has a declining tendency. Therefore, the observed features show that at least in West Bengal there is no empirical basis to justify the hypothesis of Laxminarayan.

From table 3.12 it could be observed that between 1956-57 and 1964-65 annual wage earnings in real terms increased while in 1974-75 it decreased remarkably. Again, in a good harvest year of 1977-78 it rose. This pattern is true for all agricultural labourers, men, women and children. But for adult females and children labourers the rise of annual wage earnings was much higher than that of adult male labourers. This fact could be attributed to the reasons that after mid seventies for both adult female and children labourers the rate of wages in real terms increased considerably and specially for children the days of employment became the highest.[21]

Now, from table 3.13 one very interesting point is noticed. Among the agricultural labour households, both landed and landless, average annual income per household is

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21. See tables 3.2, 3.3 and 3.9

higher for those who do not possess any land compared to those who possess land. A possible explanation of this fact would be that, the landed agricultural labourers can not earn the higher rates of wages in the peak season by hiring out their labour because at that time they are engaged in their own tiny plot of land. But the landless labourers can take the advantage of higher rates of wages in the peak season. If, here, we assume that the wage earnings are much higher than the income earned from the tiny plot of land then the entire argument would be complete.[22] The question that can naturally come up in this context is that then why the landed agricultural labourers do not leave their land disposal and join in the pool of landless labourers. The answer lies in the fact that the agricultural workers are too much attached to land and to them land is an asset to provide the security against the uncertainty of the labour market.[23]

Hence, in West Bengal regarding the overall trend of real income of the agricultural labour households it can be enunciated that till mid seventies there is no evidence to suggest that there was an improvement of the condition of agricultural labourers. In fact, in 1974-75 both the household income and per capita income in real

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22. From the data of 1974-75 we should be wary about the generalisation because this was a draught affected year. The draught also might have played a role in keeping the average annual income of landed labour household to be lower than that of landless labour household.

23. This aspect is discussed in Chapter I.

terms decreased sharply. But after mid seventies the condition improved little bit due to improvement in employment and wage rates.

3.6 CONSUMPTION PATTERN OF AGRICULTURAL LABOUR HOUSEHOLD

The low levels of income of the agricultural labour households is also reflected in their consumption pattern. The consumption standard would focus the poverty incidents of the class of agricultural labourers. But akin to income levels of this class, it is also very difficult to infer any discermible trend about the level of living of the agricultural labourers in West Bengal in terms of consumption. We have only three sets of data from NSS estimates for 1956-57, 1964-65 and 1974-75. We do not have any data after 1974-75 from which we can show the consumption patterns after mid seventies when a rise in wages and income levels of the agricultural labourers in the state was observed.

Despite this difficulty it is observed from table 3.14 that between 1956-57 and 1963-64 average annual consumption expenditure per household of agricultural labourers in the constant prices of 1956-57 increased marginally (by 2 per cent) while between 1963-64 and 1974-75 it decreased by around 21 per cent. But per capita annual consumption

expenditure has a declining trend. Between 1956-57 and 1963-64 the decline was moderate whereas in 1974-75 the fall was very high. The basic reasons for this can be stated as follows. The decline of per capita annual consumption expenditure between 1956-57 and 1963-64 was brought about by the rise in family size during this period (see table 3.8), while the fall of per capita annual consumption expenditure in 1974-75 was greatly caused by the fall of income of the household in that year due to drought.[24]

As table 3.14 shows, average annual consumption expenditures of households with land and without land tally with the general trend of average annual consumption expenditure of agricultural labour households as a whole. But for the agricultural labour houdeholds with land the average annual consumption expenditure is much higher than that of the labour households who do not possess any land. THis is an important observation in the context that as table 3.13 shows, annual average income from landed agricultural labour households is lower than that of the landless households. The explanation lies in the fact that the landed households are in a better position regarding receipts from other sources apart from their income than the landless

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24. Here the rise in family size was negligible (see table 3.8)

agricultural labour households.[25] Moreover, the most important thing is that the landed households have greater access to credit than the landless households as the former possess the required security for the loan in terms of land.[26] Hence, the landed agricultural labour houdeholds can compensate their incomes required for consumption expenditures from other sources, while the consumption levels of landless agricultural labour households are more vulnerable to fall in income due to their limited sources of receipt from other sources.

As regards the consumption bundle of agricultural labourers, expenditure on food items covers the highest proportion of total consumption. Agricultural labour household constitute the most oppressed and poverty stricken class of the agrarian society. Since their average income is very low, food items become the most essential in their consumption goods for their survival. Among the food items, as table 3.16 shows cereals and pulses constitute the highest proportion of expenditure. Rice is the chief food item of agricultural labour households, but overtime from 1956-57

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25. See table 3.13.

26. The point is discussed in detail in the next part of this chapter

to 1974-75 consumption of wheat increased.[27] As table 3.16 shows per capita daily consumption of cereals and pulses by weight in grams remained almost same in between 1956-57 and 1963-64 while this decreased by 26 per cent in 1974-75 This was inevitable because in this year (1974-75) incomes of agricultural labour household of West Bengal declined remarkably due to drought and poverty incidents and destitution among them rose immensely. Table 3.16 reveals that among the non-food items the proportion of expenditure on essential commodities like cloth, footwear, fuel and light etc. is very low and declining.

We have very limited amount of data till 1974-75. From this data it is observed from the consumption pattern of agricultural labour households that poverty incidence and destitution is very prominent in this class. Due to low levels of income their consumption standard is very low. The destitution of agricultural labour households which started in the pre-independence period has not changed even after the independence, at least till 1974-75. Till mid seventies there is no sign of prosperity for this class in West Bengal. Since we do not have any information on consumption pattern of agricultural labour households

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27. See table 3.15

after mid seventies we can not focus that the moderate rise in agricultural wages which has been observed in the states has really entailed an improvement of standard of living of this class.

3.7 *INDEBTEDNESS OF AGRICULTURAL LABOUR HOUSEHOLDS*

It is commonly acknowledged that the peasant of India is born in debt, lives in debt and dies in debt. For an agricultural labour household the burden of debt is an obvious phenomenon. This is due to the fact that there is always a sharp gap between the income of the household and the consumption expenditure required for the survival of the members of the household. Furthermore, the income levels of the agricultural labour household fluctuate in response to the fluctuation of agricultural production. As a consequence, in the years of severe fall in agricultural output, due to either flood or drought, the debt burden of the household increases. But that burden does not reduce in the good harvest years as the rate of interest charged for this debt ranges between 100 per cent to 700 per cent of the principal amount per annum in West Bengal where the debt is mostly taken by agricultural labour household from the village money-lenders.[28]

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28. A. Biswas and N. Bandhyopadhyay : "Problems of Labour and Enterprise in West Bengal agriculture - A regional study," 1978, Social Scientist, Jan/Feb. Vol 6 No. 6/7.

Table 3.17 shows the indebtedness of agricultural labour households of West Bengal. The proportion of indebted agricultural labour households to total agricultural labour households is more than half throughout the period under review. Average debt in terms of both agricultural labour households and indebted agricultural labour houdeholds is increasing remarkably. From the all NSS estimates it is observed that both the average debt and percentage of indebted households are higher for those agricultural labour households who possess land than the landless agricultural labour households. This feature can be explained by the fact that average annual income of landed labour houdehold is less than that of landless household and furthermore, the landed households have greater access to credit as they possess the required security for the loan in terms of land.

As regards the sources of debt, it is observed from 3.17 that institutional credit for agricultural labour households in the state is rising very slowly. Only in 1977-78 its proportion attained somewhat a considerable amount of 17.21 per cent whereas in 1950-51 the proportion was zero. Therefore, still non-institutional credit comprises more than four-fifth of the credit for agricultural labour households of West Bengal. Non-institutional credit certainly implies huge rate of interest burden for

the debtors.[29] This is also reflected in the inheritance of debt burden (see table 3.17).

As it is expected, these debts are not taken for productive purposes. More than two-thirds of the loan are taken for basically to meet the household consumption. As the table 3.17 shows around 90 per cent of the loan is spent on unproductive purposes like consumption, marriage, social ceremonies etc. So, basically the agricultural labour households lend money to bridge the gap between their incomes and consumption requirements. From table 3.17 it is seen that indebtedness of agricultural labour households of West Bengal was not decreasing during the period under consideration. This is a reflection of the fact that income levels in real terms of these households is not increasing in the state.

3.8. STATE INTERVENTION FOR THE IMPROVEMENTS OF AGRICULTURAL LABOURERS.

In West Bengal there were many glorious peasant movements in the past like *"Tebhaga", "Naxalbari"* etc. But almost all the movement were associated with the interest

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29. In NSS estimates a large section of non-institutional creditors had been reported as friends and relatives. But there is every possibility that these people were actually village moneylenders in disguise.

of tenants and share croppers. Although the class of agricultural labourers has now reached a new height in the state, this force was hardly assimilated in the mainstream of peasant movement. This was possibly due to their lack of political awareness. Therefore, on the part of the government very little interest has been shown to improve their conditions.[30]

As early as in 1948 the Minimum Wage Act for the agricultural labourers was legislated but that act was never properly implemented. Very few agricultural labourers of West Bengal are aware of this act also. A survey had been conducted in 1974-75 by the NSSO. It was found that in the state only 0.61 per cent of agricultural labourers were members of trade unions, only 0.46 per cent were aware of minimum wages act and 0.30 per cent were aware of the current minimum wages fixed under the act in 1974-75. Some measures and legislations were initiated after 1975 to improve the situation. In 1975 the Homestead Act was passed and after this year fixation of minimum wage rates by the Minimum Wage Act was regularised. But the effect of these measures was meager. Even

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30. This is true for both earlier Congress governments and later Left Front Governments.

in 1979-80, from the AWI series it is found that only in two districts of West Bengal the prevailing wage rates were compatible with the minimum wage rate fixed by the Minimum Wage Act, 1977 at the rate of Rs. 8.10 per day (8 hours).[31] That was also only for the adult male agricultural labourers. Hence, the general influence of state control over the agricultural wages in West Bengal is readily discernible in the context that AWI data are upward biased.

Time to time different Community Development Programmes are being launched whose one of the objectives is to improve the condition of agricultural labourers by providing adequate employment and wages. But these programmes have done very little for the agricultural labourers as such. An example can be cited in this regard. In 1987, the Programme Evaluation Organisation of the Planning Commission has produced an extensive evaluation of the National Rural Employment Programme (NREP) based on a survey of 11 states including West Bengal, which has been represented by two districts, Howrah and Purulia.

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31. See table 3.1., 3.2 and 3.3

Tables 3.18, 3.19 and 3.20 provide the findings of this survey for West Bengal. In the state more than three quarters of the employment generated benefits the agricultural and non-agricultural labourers, but they are followed by the 'other occupations' way ahead of the 'small and marginal farmers.' The 'other occupations' mainly represent the poor artisans. For the country as a whole, while the labourers Continue to dominate in terms of employment, the other two groups appear to be equally important. However, the number of mandays per family generated by this programme in West Bengal appears to be less than that for the whole country.

Table 3.19 reveals the results of NREP (1982-83). This programme constituted a very small proportion of the total demand - about 8.61 per cent of mandays and 6.83 per cent of wage income. It is interestingly observed from table 3.19 that even after the introduction of NREP the wage rates did not rise in the state, instead decreased. This provides an important evidence to show the futility of this type of programme. Although it is true that 1982-83 was a drought affected year and in this year agricultural production fell sharply. But these programmes are initiated basically to work as a shock absorber in the agrarian economy such that the poorest section of the population

would not be affected by the shocks. Actually, the agrarian structure of West Bengal (and also of India) entails the inevitable nugacity of government policies to increase the wage and employment of agricultural labourers. This is inexorably obvious in the situation where the substantial surplus class composed of landlords, moneylenders and rich peasants, is politically stronger in the rural hierarchy. They would not allow the proper functioning of these policies because otherwise their surplus appropriation strategy would be threatened.

Through this analysis it has become evident that it can not be stated that the economic conditions of agricultural labourers in West Bengal in terms of wages, income, employment or consumption pattern has improved considerably during the last three decades. Only after the mid seventies, a slight improvement was observed. But this improvement was also not a persistent phenomenon. Severe fluctuations of agricultural production results severe up-swing and down-swing in the prospect of employments and earnings. As a consequence, the fate of the agricultural labourers fluctuates accordingly. The government policies to improve the rate of wages and employment situations are yet to take their proper functioning.

TABLE 3.5a NET DOMESTIC PRODUCT PER WORKER IN AGRICULTURE AT CURRENT PRICES IN WEST BENGAL

Year	Net Domestic Producer per Women
1970-71	1817
1971-72	1979
1972-73	1836
1973-74	2544
1974-75	2785
1975-76	2650
1976-77	2809
1977-78	3066
1978-79	3064
1979-80	3067
1980-81	3623
1981-82	3505
1982-83	4002
1983-84	5211
1984-85	6133

SOURCE : Statistical Abstract of India, Government of India.

TABLE : 3.7

MODE OF WAGE PAYMENT AMONG MEN, WOMEN AND CHILDREN AGRICULTURAL LABOURERS IN WEST BENGAL.

	Agricultural Operations			Non - agricultural Operations		
1964 - 65						
MEN	1.33	0.48	1.81	1.50	0.17	1.67
	(73.48)	(26.52)	(100.00)	(89.82)	(10.18)	(100.00)
WOMEN	0.92	0.44	1.36	0.56	0.42	0.98
	(67.65)	(32.35)	(100.00)	(57.14)	(42.86)	(100.00)
CHILDREN	0.43	0.60	1.03	0.27	0.60	0.87
	(41.75)	(58.25)	(100.00)	(31.03)	(68.97)	(100.00)
1974 - 75						
MEN	2.06	1.43	3.49	2.58	0.69	3.27
	(59.03)	(40.97)	(100.00)	(78.90)	(21.10)	(100.00)
WOMEN	1.57	1.26	2.83	1.06	0.80	1.86
	(55.48)	(44.52)	(100.00)	(56.99)	(43.01)	(100.00)
CHILDREN	0.51	1.59	2.10	0.95	0.85	1.80
	(24.29)	(75.71)	(100.00)	(52.78)	(47.22)	(100.00)
1977 - 78						
MEN	3.00	1.26	4.26	-	-	-
	(70.42)	(29.58)	(100.00)			
WOMEN	2.97	0.76	3.73	-	-	-
	(79.62)	(20.38)	(100.00)			
CHILDREN	1.06	1.81	2.87	-	-	-
	(36.93)	(63.07)	(100.00)			

SOURCE : RLE, 1st, 2nd & 3rd.

TABLE: 3.8

AVERAGE SIZE OF AND NUMBER OF WAGE EARNERS IN AGRICULTURAL LABOUR HOUSEHOLDS OF WEST BENGAL.

YEAR	Average size of the hh	Wage Earners in the hh	Percentage of wage earners in the hh	Percentage of male wage earners to total wage earners in the hh	%age of female wage earners to total wage earners in the hh	%age of children wage earners to toal wage earners in the hh
1950 - 51	4.00	1.50	37.50	73.33	20.00	6.67
1956 - 57	4.30	1.52	35.35	82.24	14.47	3.29
1964 - 65	4.85	1.56	32.16	80.77	16.03	3.20
1974 - 75	4.90	1.84	37.55	70.96	22.83	6.52
1977 - 78	4.86	1.69	34.80	74.96	18.44	6.60

SOURCE : ALE, 1st, 2nd, & RLE, 1st,2nd & 3rd

TABLE : 3.9

AVERAGE DAILY EARNINGS (IN Rs.) AND DAYS OF WAGE EMPLOYMENT AT FULL INTENSITY OF MEN, WOMEN AND CHILDREN AGRICULTURAL LABOURERS IN THE YEAR FOR AGRICULTURAL AND NON - AGRICULTURAL OPERATIONS AND FOR ALL OPERATIONS.

YEAR	AGRICULTURAL OPERATION			NON-AGRICULTURAL OPERATIONS			ALL OPERATIONS		
	MEN	WOMEN	CHILDREN	MEN	WOMEN	CHILDREN	MEN	WOMEN	CHILDREN
1950 - 51 Wage	1.66	1.04	1.30	1.53	0.83	1.57	1.64	1.00	1.32
Days of Employment	194	144	196	45	35	13	239	179	209
1956 - 57 Wage	1.43	0.98	0.89	1.27	0.90	0.66	1.39	0.97	0.83
Days of Employment	187	138	213	55	30	69	242	168	282
1964 - 65 Wage	1.81	1.36	1.03	1.67	0.98	0.87	1.80	1.31	1.02
Days of Employment	269	216	303	28	30	20	297	246	323
1974 - 75 Wage	3.50	2.80	2.10	3.27	1.86	1.80	3.47	2.60	2.06
Days of Employment	210	147	245	24	10	19	234	157	264
1977 - 78	4.26	3.73	2.87	-	-	-	-	-	-
Days of Employment	242	202	307	15	21	8	257	223	315

SOURCE : ALE,1st, 2nd, & RLE, 1st, 2nd & 3rd

TABLE : 3.10

EMPLOYMENT AND UNEMPLOYMENT IN TERMS OF AVERAGE NUMBER OF DAYS

	EMPLOYED IN				UNEMPLOYED DUE TO		
	Wage employment						
	agricultural	non-agricultural	self-employment	TOTAL	want of	other	TOTAL
1950 - 51	194 (53.15)	45 (12.33)	41 (11.23)	280 (76.71)	-	-	85 (23.29)
1956 - 57	187 (51.23)	55 (15.07)	23 (6.30)	265 (72.60)	72 (19.73)	28 (7.67)	100 (27.40)
1964 - 65	269 (73.70)	28 (7.67)	16 (4.38)	313 (85.75)	-	-	52
1974 - 75	210 (57.53)	24 (6.58)	23 (70.74)	257	88 (24.11)	20 (5.48)	108 (29.59)
1977 - 78	242 (66.30)	15 (4.11)	35 (9.59)	292 (80.00)	56 (15.34)	17 (4.66)	73 (20.00)

SOURCE : ALE, 1st, 2nd & RLE, 1st, 2nd & 3rd

TABLE : 3.11

AVERAGE ANNUAL INCOME OF AGRICULTURAL LABOUR HOUSEHOLDS AND PER CAPITA INCOME OF AGRICULTURAL LABOUR HOUSEHOLDS OF WEST BENGAL.

	Income per household in Rs.	Per capita income in Rs.	Per capita income in real terms taking 1956 - 57 as above	Real income per household
1950 - 51	608	152.o		
1950 - 56	657	152.8	152.8	657
1974 - 75	1758	358.78	106.2	520

SOURCE : ALE, 1st, 2nd & RLE, 2nd.

TABLE : 3.13

AVERAGE ANNUAL INCOME(Rs.)PER AGRICULTURAL LABOUR HOUSEHOLD BY SOURCE OF INCOME AND AVERAGE ANNUAL RECEIPTS FROM SALE OF ASSETS AND INCREASE IN LIABILITIES IN WEST BENGAL IN 1974-75.

SOURCE OF INCOME/RECEIPTS		WITH LAND		WITHOUT LAND		ALL HOUSEHOLD	
Income	1. Wage paid manual Labour	(Rs)	(%)	(Rs)	(%)	(Rs)	(%)
	(a) Agricultural	956	55.16	13.33	75.02	1170	66.55
	(b) Non-agricultural	166	9.58	127	7.20	144	8.19
	(c) All manual Labour	1122	64.74	1461	82.22	1314	74.74
	2. Wage paid non-manual	16	0.92	6	0.34	10	0.57
	3. Self- cultivation	260	15.00	1	0.06	113	6.43
	4. Raising and Main tenance of live stock & Poultry	91	5.25	22	1,24	52	2.96
	5. Other household enterprise	52	3.01	100	5.63	79	4.49
	6. Other sources	192	11.08	186	10.47	189	10.75
	All Sources	1733	100.00	1777	100.00	1758	100.00
Receipts	1. Sale of live stock	13	10.40	9	12.86	11	11.70
	2. Sale of land	11	8.80	9	12.86	10	10.64
	3. Sale of House	3	2.40	-	-	1	1.06
	4.Sale of Ornaments	3	2.40	2	2.86	3	3.19
	5.Sale of Impliments and Machinery	-	-	*	*	*	*
	6.Loan taken	93	74.40	49	70.00	68	72.34
	7. Others	2	1.60	1	1.43	2	2.13
	Total	125	100.00	70	100.00	94	100.00

SOURCE : RLE, 2nd

TABLE : 3.14

CONSUMPTION EXPENDITURE OF AGRICULTURAL LABOUR HOUSEHOLDS AND PER CAPITA IN WEST BENGAL.

	1956-57	1963-64	Values of items of 1963 - 64 in terms of 1956 - 57 prices.	1974-75	Values of items of 1974 - 75 in terms of 1956 - 57 prices.
1. Average annual consumption expenditure of household.	725	961	739	1988	588
2. Per capita annual consumption expenditure.	171	210	162	406	120
3. Average annual consumption expenditure of household with land.	785	1092	840	2323	687
4. Average annual consuption expenditure of household without land.	671	840	646	1731	512
5. Average annual expenditure on food per household.	571 (78.76)	798 (83.04)	614	1659 (83.45)	491
6. Average annual expenditure	133	175	135	339	100

SOURCE : Second Agricultural labourers' Enquiry and First and Second Rural Labourers' Enquiries.

NOTE : Values in the paranthesis are the percentages to total expendutre.

TABLE : 3.15

PER CAPITA DAILY CONSUMPTION OF CEREALS AND PULSES BY WEIGHT IN GRAMS OF AGRICULTURAL LABOUR HOUSEHOLDS.

	Rice	Wheat	other cereals	Total cereals	Pulses
1956 - 57	440	10	10	460	20
1963 - 64	390	40	10	440	20
1974 - 75	224	78	24	326	7

SOURCE : ALE, 2nd & RLE, 1st & 2nd

TABLE 3.16

AVERAGE ANNUAL EXPENDITURE ON DIFFERENT FOOD ITEMS PER AGRICULTURAL LABOUR HOUSEHOLD IN Rs.

	Average annual expen-diture	Percentage to total expendi-ture	Average annual expen-diture	Percentage to total expendi-ture	Average annual expen-diture	Percentage to total expendi-ture
	1956 - 57		1963 - 64		1974 - 75	
1. Food	571.0	78.76	798.0	83.04	1659	83.46
1.1 Cereals	392.8	68.60	569.40	71.40	1216.70	73.36
1.2 Pulses	17.6	3.10	26.57	3.30	31.32	1.88
1.3 Gur & Sugar	8.0	1.40	10.50	1.30	22.80	1.38
1.4 Spices	14.5	2.50	20.91	2.60	39.61	2.39
1.5 Edible oil	24.6	4.30	31.75	4.00	65.05	3.93
1.6 Vegetables	40.4	7.10	48.56	6.10	98.00	5.91
1.7 Salt	3.4	0.60	3.80	0.50	12.54	0.77
1.8 Milk & milk	8.3	1.50	14.65	1.80	13.32	0.81
1.9 Meat Fish & Egg.	40.4	7.10	47.40	5.90	79.45	4.79
1.10 Others	21.1	3.8	23.82	3.10	80.24	4.78
		100.00		100.00		100.00
2. Clothing, bedding & footwear	37.70	5.20	31.71	3.30	64	3.22
3. Fuel and light	58.73	8.10	62.47	6.50	122	6.15
4. Services & miscellaneous items	58.00	8.00	69.19	7.20	143	7.16
Total Consumptuion Expenditure	725	100.00	961	100.00	1988	100.00

Note : Due to round up of figures the total may not tally exactly.

SOURCE : ALE, & RLE 1st & 2nd

TABLE 3.17 DEBT, PURPOSE OF DEBT AND SOURCES OF DEBT OF AGRICULTURAL LABOUR HOUSEHOLDS OF WEST BENGAL

	1950-51	1956-57	1964-65	1974-75	1977-78
DEBT					
Percentage of indebted households to total households	32.9	69.2	52.0	53.2	50.23
Average debt per labour (Rs.)	15	39	51.26	125	123
Average debt per indebted household	44	56	98.59	231	244
PURPOSE					
Household consumption	40 (90.9)	40 (71.5)	76.88 (78.0)	151 (65.37)	162 (66.39)
Marriage, Social ceremonies and other purposes	3 (6.8)	10 (17.8)	16.11 (16.3)	60 25.97	44 (18.03)
Productive expense	1 (2.3)	6 (10.7)	5.60 (5.7)	20 8.66	38 (15.57)
SOURCES					
Institutional	-	1 (1.8)	8.14 (8.3)	17 (8.25)	42 (17.21)
Non-institutional	44 (100.00)	55 (98.2)	90.45 (91.7)	189 (91.75)	202 (82.79)
NATURE OF DEBT					
Outstanding	-	-	98.59	206	244
Heriditory	-	-	4.95	7	10

SOURCE : ALE, 1st & 2nd & RLE,1st, 2nd & 3rd

TABLE : 3.18

EXPENDITURE AND EMPLOYMENT CREATED UNDER NREP (IN LAKH)

YEAR	EXPENDITURE	MANDAYS CREATED
1980-81	979.14	127.15
1981-82	1933.09	195.38
1982-83	3423.69	360.22
1983-84	2418.74	287.78
1984-85	2285.61	211.87
1985-86	2839.42	130.95

SOURCE : Government of India, Planning Commission, Programme Evaluation Organisation, Evaluation Report of National Rural Employment Programme, Delhi, 1987.

TABLE 3.19

EMPLOYMENT, WAGES, INCOME AND WAGE RATE PER HOUSEHOLD UNDER NREP. (MANDAYS PER YEAR AND RUPEES PER DAY) IN 1982-83

	WEST BENGAL			INDIA
	Howrah	Purulia	Total	Total
Average wage employment in the year before NREP	200.42	619.35	424.88	274.87
Wage employment in 1982-83 Total	329.18	735.10	487.14	320.20
Under NREP	32.10	60.82	42.96	69.08
Percentage increase	19.34	13.21	14.65	16.70
Proportion of NREP to total	9.66	8.27	8.61	22.57
Wage income in the year before NREP	1579.00	5076.93	3327.97	2418.14
Wage income during 1982-83 Total	2444.82	5503.27	3974.04	3248.43
Under non- NREP	2289.93	5115.33	3702.58	2507.32
Under NREP	155.48	387.43	271.46	741.11
Percentage increase	55.83	8.40	19.41	34.34
Proportion of NREP to total	6.36	7.04	6.83	22.81
Average wage rate during the year prior to NREP during 1982-83	7.88	7.82	7.83	8.81
Total	10.22	7.49	8.16	10.15
Under non - NREP	10.59	7.59	8.32	9.98
Under NREP	6.73	6.37	6.47	10.70

SOURCE : Government of India, Planning Commission, Programme Evaluation Organisation, Evaluation Report of National Rural Employment Programme, Delhi, 1987.

TABLE : 3.20

NREP EMPLOYMENT : OCCUPATION WISE DISTRIBUTION: 1982-83 (AVERAGE EMPLOYMENT PER FAMILY)

	WEST BENGAL			INDIA
	Howrah	Purulia	Total	Total
Agricultural and non-agricultural Labourers:				
Mandays	22.8	60.7	39.4	75.2
Percentage	90.3	71.5	76.7	79.4
Small & Marginal farmers:				
Mandays	-	48.7	48.7	53.5
Percentage	-	4.0	2.9	10.6
Other Occupations:				
Mandays	26.8	63.8	54.1	51.8
Percentage	9.7	24.5	20.4	10.0
Total : Mandays	23.1	60.8	42.0	69.1

SOURCE : Government of India, Planning Commission, Programme Evaluation Organisation, Evaluation Report on National Rural Employment Programme, Delhi, 1987.

CHAPTER - IV

LABOUR ABSORPTION IN AGRICULTURE

It has already been discussed in the previous chapters that during the last few decades the class of agricultural labourers in West Bengal has increased substantially and the wages and employment available per labourers have remained more or less stagnant. The large supply of labourers, mediated by the factors governing the level of demand for such labourers, must ultimately reflect itself in the level of employment and wages available for them. Hence, it is important to analyse the labour absorption phenomenon in agriculture from which the patterns of demand for labour in agriculture would be reflected. In this chapter the labour absorption phenomenon in agriculture of the state will be discussed.

4.1 REVIEW OF STUDIES ON LABOUR ABSORPTION IN AGRICULTURE

After the seminal paper of Shigeru Ishikawa, *"Labour Absorption in Asian Agriculture,"*[1] a series of studies have emerged mainly from Asian Regional Team for Employment Promotion projects (under the auspices of International Labour Organisation) to analyse the labour absorption phenomenon of South and Southeast Asian countries in comparison with the Far - East Asian countries. These studies analyse in comparative perspective the historical and contemporary experience of some East Asian countries in

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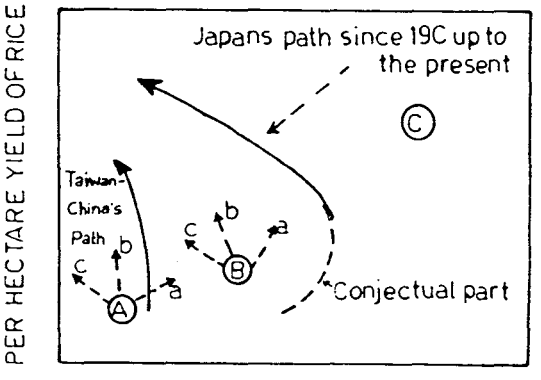
1. ARTEP, ILO, June, 1978.

successfully augmenting employment with increased productivity in agriculture. A careful review of this experience was considered to be of immense importance in the endeavours towards finding ways of productively absorbing more laboure in agriculture in the South and Southeast Asian countries.

In accordance with these studies, till 1960, the agriculture of some East Asian countries, particularly of Japan, experience a forward rising phase in labour absorption. After the 1960s due to a technological break through of labour saving devices the phase changed into backward bending labour absorption phase.[2] Human labour applied in agriculture in Japan is reported to have been nearly 210 mandays per acre in 1956 and well over 240 mandays in some areas, compared to one - third as much or lower in most of the South and Southeast Asian countries. It has also been observed that there are wide differences in

2. This feature is presented by the following figure given by Ishikawa(1978).

Paths of Change in Per Hectare Labour Input in Rice Production— An Illustration of Various types



Remarks: A and B illustrate the present locations of some of the Asian countries

source: Ishikawa, S. (1978)

agricultural productivity between Far - East Asian countries and South and Southeast Asian countries.

In this context we would like to discuss whether the rate of labour absorption in the agriculture of West Bengal is analogous to the standard South and Southeast Asian experience. After the advent of green revolution a hypothesis was advanced that this new technology would increase labour absorption in agriculture by changing the cropping pattern and increasing the cropping intensity. The basic intention in this context is to investigate whether those types of changes have taken place in the state to augment the labour absorption in agriculture. In otherwards, we would try to find out whether a rising phase of labour absorption is achieved in West Bengal, particularly after the introduction of green revolution.

However, some recent studies suggest that the labour absorptive capacity of Indian agriculture with respect to total output growth and to yields per unit of land was relatively high and possibly rising from the mid - sixties to the mid - seventies but that it declined rapidly thereafter.[3] The

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3. See among other, D.S.Tyagi (1981), Bhalla & Tyagi (1988), Sheila Bhalla (1987), T.S.Papola (1988), Vaidyanathan (1986).

expansionary phase in labour absorption in Indian agriculture upto the mid-seventies is attributed to the introduction of a bio-chemical technology characterised by the extension of irrigation, the use of HYV seeds and fertilisers. The contraction of labour absorption in the next phase (in the mid-seventies onwards) is ascribed to a shift from "labour using" techniques to "labour saving" techniques. Now, in this perspective it would be worthwhile to look into the experience of West Bengal.

Another aspect to be discussed is the labour absorption in different size classes. In this regard we can refer to the debate of 'Farm Size and Productivity'.[4] An interesting finding of the Farm Management Surveys in different parts of India since the early 1960s was that total input per unit of land decreases as the size of farm increases. Associated with this decrease in input, there is a decrease in labour input per unit of land as the farm size increases. A.K.Sen, the first and one of the most prominent participants in the debate elucidated

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4. A serious debate has raged in India about the relationship between farm size and productivity for the last two decades. The list of participants in the debate is rather long. However, the important contributors are: A.K.Sen, Ashok Rudra, A.M.Khusro. C H Hanumantha Rao. Krishna Bharadwaj. G.R.Saini, A.P.Rao, Usha Rani and Deepak Mazumdar.

his observation of an inverse relation between farm size and productivity in terms of 'Cheap Labour Based Explanation'.[5] According to him small farms use higher amount of labour per unit of land for intensive cultivation, and this higher amount of labour use on small farms is associated with the greater availability of family labour relative to land size.

Other studies also pointed out higher degrees of labour use on smaller farms with reference to greater availability of family labour relative to land on smaller holdings.[6] Hence, we should analyse the aspect of labour utilisation patterns among different size classes of farms. On the basis of the data of West Bengal it would be investigated that is there any significant evidence in the state to suggest that smaller farms with high incidence of family labour are using more labour compared to larger farms.

Along with the discussion of the prevalent patterns of labour use in the agriculture of the state, we should also

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5.(a) "An aspect of Indian Agriculture", Economic Weekly, Annual Number, Feb. 1962.

(b) "Size of Holdings and Productivity", Economic Weekly, Annual Number, Feb. 1964.

6. See particularly, Mazumdar (1963), Desai and Mazumdar(1970), Mellor (1963), Mellor and Stevens (1965).

isolate some of those factors which influence the per acre labour absorption in agriculture. This is important for policy recipes. In this regard observations of some other studies should also be mentioned. In the ARTEP studies it is pointed out that in smaller farms an application of a proper technological package composed of high-yielding varieties of seeds, irrigation and fertiliser increases the cropping intensity and in turn a forward rising phase of labour absorption could be achieved. In Bardhan's study it is being emphasised that within a given"climatic-cultural-institutional context" labour input is likely to be higher in farms that have adopted techniques which raise the productivity of land.[7] Here also Bardhan considers that the package of high-yielding varieties of seeds, irrigation and fertiliser increases the productivity of land and in turn raises the labour absorption. Furthermore, he postulates that larger land holdings and higher proportion of area under tenancy create constraint for higher labour absorption.

In another study Vaidyanathan[8] explains the inter-farm variations in the labour input per hectare by

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7. "On Labour Absorption in South Asian Rice Cultivation with Particular Reference to India," ARTEP,ILO, Nov.1978.

8. Labour use in Indian Agriculture: An analysis based on Farm Management Survey Data", ARTEP, ILO, Nov. 1978.

variations in the productivity of land, the quantum of animal and/or mechanical power used and the relative costs of the three alternative sources of energy. According to him, variations in the productivity of land in terms of the value of the yield per hectare are brought about by the differences in physical-biological factors.

As regards the effect of farm implements, both in ARTEP literature and in other studies it is focussed that farm equipments have negative effect on labour absorption. An increase of farm equipments entails mechanisation of cultivation operation and it leads to labour displacement. On account of interest cost on capital, another important factor, it can be reasonably presumed that its effect on labour use would be negative. The reason may be that if interest charges on capital (both fixed and circulating) rise the profitability of intensive use of non-labour inputs like irrigation, fertiliser etc. would decrease because expenditure on these inputs would increase interest costs. Now, any decrease of these inputs would decrease labour absorption. Again, the profitability of using higher proportion of hired labour would also decrease with increasing interest charges on capital because here also expenditure on hired labour would increase interest costs. Hence, in cumulative effects there would be a

contraction of labour absorption with a rise in interest on capital.

In the light of above discussion, it would be interesting to see the impact of these factors on the per acre labour use in agriculture in West Bengal. Here our explanatory variables would be size of farms in acreage; the package of high-yielding varieties of seeds, irrigation and fertiliser; tenancy; farm implements; and interest on capital. In the existing literature on labour use it is emphasised that proper and adequate applications of high-yielding varieties of seeds, irrigation and fertiliser augment the rate of labour absorption on smaller farms while tenancy, farm implements and interest on capital have deterrent impact. In the context of West Bengal we would look into the validity of this hypothesis. Here it is important to note that this exercise is useful for policy recipes to increase the per acre labour absorption in agriculture of the state. But how far those policies would be applicable to generate additional employment opportunities in agriculture is highly questionable.

In the earlier studies on labour absorption of

ARTEP literature it has been emphasised that since the expansion of non-agricultural sector is not adequate to absorb the rapidly growing labour force in the South and South-East Asian countries, the additional employment opportunities required has to be generated within agriculture itself.[9] However, some recent studies have raised serious doubt against this argument. In one of the earliest studies of ARTEP, Alagh, Bhalla and Bhaduri (1978) also raised this question.[10] In accordance with them there is a "suction process" which leads to an acceleration in the rate of absorption of human labour in agriculture at a faster rate in districts where yield of land increases rapidly. In those districts higher rate of labour absorption takes place with increasing productivity per worker as growth rate of yield per unit of land exceeds the growth rate of agricultural workers. However, the reverse situation is not true for those districts where yield rates are retarding. In those districts where yield rates are declining, the pressure on agriculture is not

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9. Wickramasekara, Piyasiri (1987): "Labour Absorption in Asian Agriculture: A Review", ARTEP/ILO, New Delhi.

10. "Agricultural Growth and Manpower Absorption in India", ARTEP, ILO, Nov. 1978.

decreasing and in effect productivity of workers engaged in agriculture declines. On this particular conjuncture Alagh, Bhalla and Bhaduri raise a fundamental question, whether briskly rising yield levels can be depended on in the future for the productive labour absorption in agriculture, and whether the investment costs required for rising yield rates at the necessary direction may not be higher than if the growing labour force is sought to be absorbed in non-agricultural sector.

In recent study Vaidyanathan (1986)[11] points out that at the first stage of agricultural development land augmenting technical change takes place which raises the output per unit of land and thereby facilitates greater use of labour. But in the second stage to augment both land and labour productivities labour saving technical changes become inevitable, leading eventually to a decline in labour intensity. In some other studies also it is suggested that the labour absorptive capacity of agriculture with respect to output growth and to yields, was relatively high and possibly rising from the mid-sixties to the mid-seventies but that it declined rapidly thereafter.

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11. "Labour use in Rural India: A Study of Spatial and Temporal Variations", 1986, EPW, 27th December, Review of Agriculture , pp. A-130-A-146.

Hence, in this context it would be interesting to see how far additional employment opportunities can be generated from the agriculture of West Bengal. This would reveal the prospect of employment in agriculture of the state.

4.2 THE NATURE OF THE DATA

Our main source of data is the Study on Farm Management and Cost of Production of Crops : West Bengal (briefly, the Study), published by the Directorate of Agriculture, West Bengal, Socio -Economic Evaluation Branch. The basic purpose of the Study is to estimate for each year the costs of production of various crops, yields of different crops and farm income from crops enterprise. The Study started from 1962-63. Initially it concentrated on the irrigated zones, along both sides of Bhagirathi. But afterwards some villages are also included from the non-irrigated and arid zones. The number of villages chosen in the Study for different years are not the same (and therefore the data are not comparable). For each village 8 farms of different sizes are chosen and there is no hard and fast rule of the selection of farms

from different size classes. Normally the villages and the farms which are once chosen in the sample are maintained for four consecutive years of the Study although there are in practices many departures in this respect.

The villages are selected on the consideration that they represent a particular region in terms of soil quality, climate and kind of crops grown. Furthermore, the willingness of the village people to co-operate and accessibility of the village throughout the year are also taken into account. The method of collecting data however is highly rigorous. A regional centre with an agronomist at its head is responsible for every group of 8 or 6 villages. In each village there is a well-trained and experienced investigator who stays within the village and pays daily visits to the responding farms. However, in the study the principle of random sampling is not applied at any stage to make the data representative either of the region or of the village or of the size-classes within the villages. Therefore, we should be wary of generalisation.

We are mainly concerned with the cost of production data of the Study. Here the total cost includes the costs due to human labour, family as well as hired; bullock labour;

seeds; manures and fertilisers; plant protection chemicals; irrigation; land revenue, cesses and taxes; depreciation; interest and repair of implement and machinery; rent paid to landlords; and market charges, i.e. the cost incurred by the producer in transporting the produce and selling it to any agent. Apart from these, some petty expenses termed as miscellaneous costs have also been included in total costs. In these costs some portion is paid out cost and some portion is imputed on the basis of market rates where the producer supplies the input from his own resources.[12] The following cost components are important for our study whose definitions are noted:

1. Human Labour: There are two types of human labour, viz. (i) family labour - the actual labour given by the members of the family; and (ii) hired labour - the actual labour engaged from outside the family for which payment has to be made, either in cash or in kind. There are four types of hired labour viz. attached or permanent labour, casual labour, contract labour and kisan labour. The cost incurred towards labour need both hired and family to be worked out both on the basis of actual payment as well as

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12. Here the concerned items are mainly family labours, management etc.

separately on the basis of statutory wage rate in order to find out the effect of this single cost component on the total cost of production. But for hired labour actual wages paid for a particular day for the total operation are to be taken into consideration. In some cases where food, tobacco and other consumables are provided by the land-owners against engagement of hired labour, the money value for such payments in kind needs to be added to the cash paid during computation of actual wage payment of hired labour. Permanent labour is considered to have been employed on a long term basis without any specification of job. The other type of hired labour, mentioned above, is considered to have been employed for only specific jobs, as and when needed.

A day of employment is regarded as constituting by four variable quarters, i.e., counting is made in respect of 1 or ½ day or ¼ day. On the basis of this assumption a full working day is limited to 8 hours, every 2 hours demarcating the 4 quarters. A full working day of an adult male labour is shown as 1 Man day(MD), of a woman labour as 1 Woman day (WD), of a child labour as 1 Child day (CD). The ratio of man, woman and child labour are 1 MD = 4/3 WD = 2 CD or 6 CD = 4 WD = 3 MD.

2. Cost of Irrigation: The irrigation rates include water tax paid for canal and deep tubewells and river-lifts irrigation and in case of owned pump, the depreciated value of the machine, repairing charges of machines, cost towards lubricant and fuel, labour charges for carrying and handling of machine, hours of actual utilisation of the machine both in agricultural and non-agricultural charges, receipts from hiring out of pumps etc. are taken into account. If the irrigation is done from the nearest tanks, jheels etc. human labour required for irrigating the field is included under the item as human labour.

3. Rent of land : This includes, (i) the actual cash payable towards rent for leased-in land and land revenue, cesses and taxes; and (ii) the share-croppers' rent payable in kind for the area taken on lease. The value of the crops thus handed over to the land owner is the rent in kind for the entire farm. Normally for (i) the value of rent per acre is very low, while for (ii) the value of rent per acre becomes very high. Hence, very high rent per acre implies leasing operation on the farm.

4. Interest on Capital: Capital is taken to include land which in turn is calculated on the basis of original acquisition cost(market value in case of inherited land).

It also includes live and dead stock. Interest is worked out on the basis of 11 per cent per annum normally. For land, live and dead stock as well as rent paid for the land full one year's interest has been calculated while for such items as hired labour, seed, fertiliser feed, irrigation rates etc., only half year's interest is charged.

5. Cost of Fertilisers : For both types of fertilisers, chemical and organic actual paid out costs are taken into account at the prevailing rate. In case of manures a fixed rate is charged for each year.

6. Implement cost : This includes costs of different farm equipments and the rate of depreciation.

Apart from these costs items there are few other cost items. But those items are not taken into consideration for our discussion. For intertemporal discussion we have actually taken a period from 1964-65 to 1984-85. But data on few years could not be collected because of non-availability. Till 1976-77 the data were published in totally disaggregated form from which we have estimated the state aggregates but after 1977-78 the state aggregate data are being published.

Although the Study provides large number of observations and are very useful, there are some limitations in the data as in the following:

(i) Principle of random sampling is not applied to make the data representative either of the region or of the village or of the size classes within the villages.

(ii) The data are concentrated on input-output or technical relations in agriculture, and other aspects of production receive much less emphasis.

(iii) While there are many tenanted farms in the sample there is considerable under representation of this group as compared to the overall situation in the state. Moreover, the proportion of area under tenancy of a farm is not mentioned. Only the cost of rent in kind per acre is given to show that certain proportion of the area of the farm is under share-cropping.

(iv) In the cost of production data some cost items are not well defined. For instance in case of interest on capital a certain percentage is fixed on all live and dead stocks. Hence, actually interest differentials among farms show asset or wealth differentials among them.

Apart from these data of Study on Farm Management and Cost of Production of Crops: West Bengal some other informations have also been taken from Directorate of Agriculture, West Bengal; Bureau of Applied Economics and Statistics, West Bengal, and Department of Agriculture, West Bengal.

4.3 PATTERN OF LABOUR ABSORPTION IN THE AGRICULTURE OF WEST BENGAL

4.3.1 Cropwise Labour Absorption

The Study on Farm Management and Cost of Production of Crops: West Bengal provides informations on major 12 or 13 crops for each year which covers almost 95 per cent of total cropped area of the state.[13] Table 4.1 gives an extensive cropwise information on labour absorption in agriculture of the state. But the study does not furnish any data on vegetables which are also important for labour utilisation. So our analysis excludes those crops.

It can be observed from table 4.1 that in terms of share of labour cost in total cost of production, jute

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13. Directorate of Agriculture, West Bengal

is the most labour intensive crop while potato is the most capital intensive crop. However, both the crops potato and sugarcane which are highly capital intensive absorb much higher labour in terms of man days per acre compared to other crops. Barring jute, it has been observed that across the crops the higher intensity of capital is accompanied by higher labour absorption in terms of mandays per acre. Hence, from this feature it may be discernible that there is some sort of complimentarity of labour input and other inputs in the production techniques of crop cultivation in the state. This presumption is not wrong in the context of the fact that in West Bengal mechanisation of farms has not taken place remarkably in the line of labour saving devices.[14]

As regards the distinction between traditional (or local) varieties and high yielding varieties, data for only different qualities of rice are available. From tables 4.2, 4.3, 4.4, 4.5 and 4.6, informations on the labour absorption phenomenon of Aman, both local and HYV, Aus , both local and HYV, and Boro, totally HYV are available. It can be observed from these tables and figure 4.1 that

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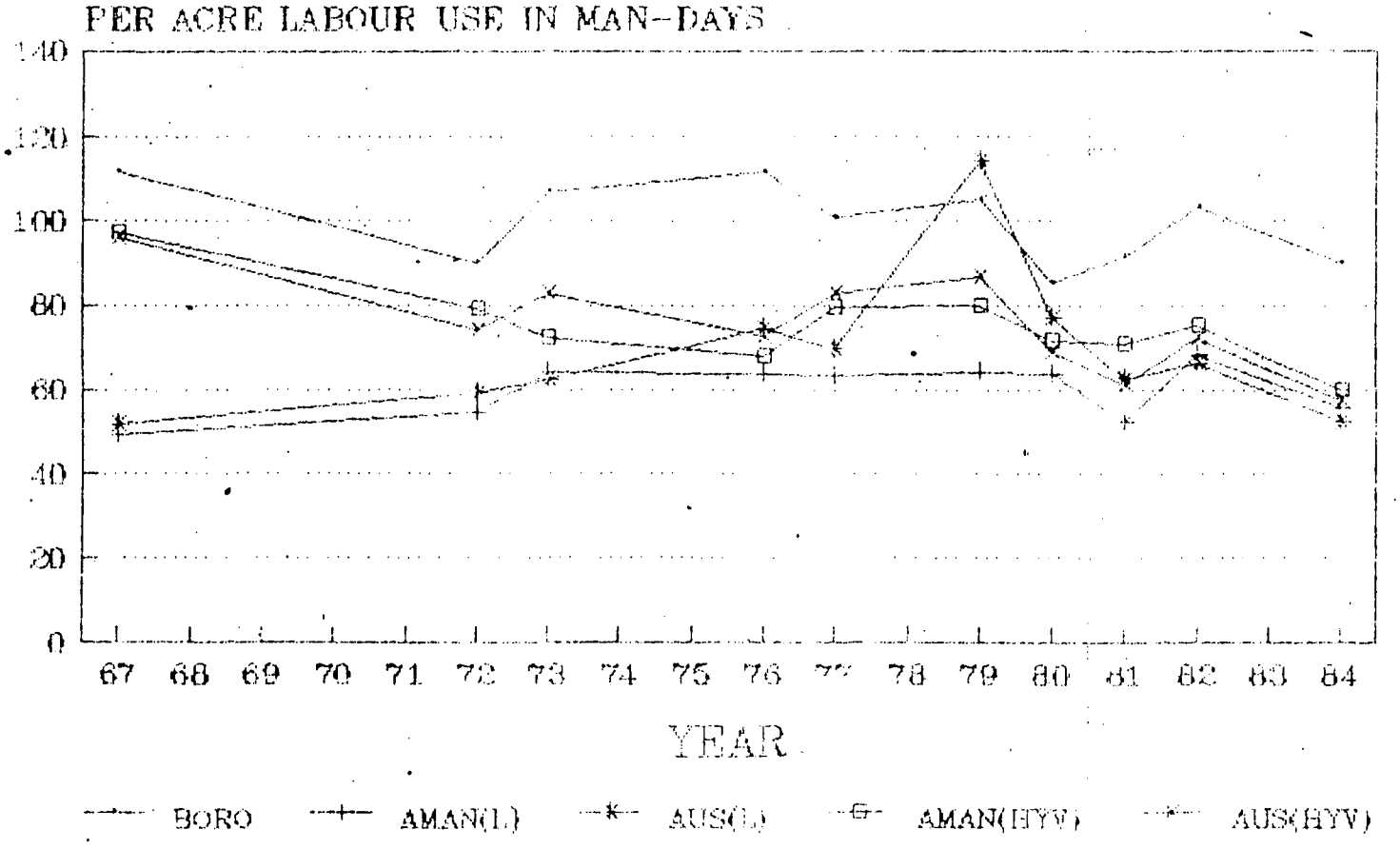
14. This aspect would be discussed in the later part.

FIGURE - 4.1

LABOUR USE IN DIFFERENT QUALITIES OF RICE

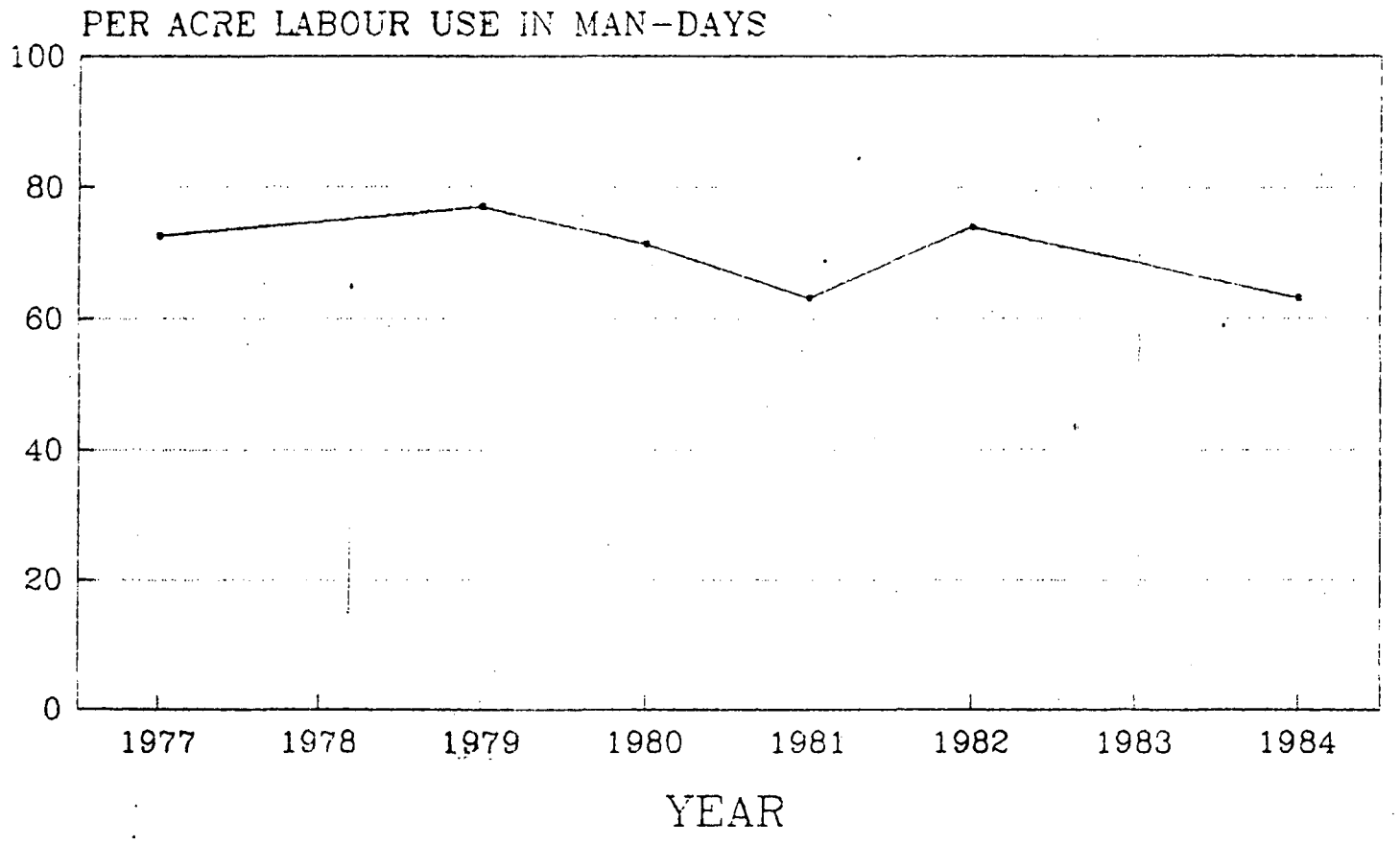


in majority of the cases the high yielding varieties absorbed more labour per unit of land compared to their traditional counterparts. It is commonly argued that the high yielding varieties absorb more labour per unit of land due to the intensive use of some inputs like pesticides, weedicides, controlled irrigation etc. so far as mechanisation of farms does not take place to displace labour. Whereas for traditional varieties these inputs are used less intensively and so labour absorption rate for these varieties are less. This feature also unfolds the complimentary relation between labour and other inputs in the state.

The time series informations on labour absorption for different crops are given in table 4.1. From this we can compute the average labour absorption per acre in agriculture of the state by weighted arithmatic mean. The weight for each crop is assigned by the proportion of sown area under that crop. The average labour absorptions in agriculture of the state from 1977-78 to 1984-85 are given in table 4.7 and plotted in figure 4.2. From figure 4.2 it is evident that there is no discernible evidence to show a secular trend of labour absorption in terms of mandays per acre. Fluctuations of labour absorption are observed within

FIGURE 4.2

PER ACRE LABOUR USE IN AGRICULTURE OF WEST BENGAL



60-80 mandays per acre. But, it is obvious from table 4.7 that the labour absorption rate in the agriculture of the state is compatible with the standard of South and Southeast Asian Countries. That is, the labour absorption rate is around one-third or sometimes less than that of the rate observed in Far-East Asian countries before 1960s.

However, in table 4.7 and figure 4.2 the time span is very small, from 1977-78 to 1984-85. From this it is not possible to show the effect of green revolution package on the rate of labour absorption in the agriculture of the state. For this purpose we require a longer time series informations starting from mid-sixties. Only for rice cultivations we can get these informations from 1964-65 to 1984-85. The story of rice cultivation for this period would reveal whether the introduction of green revolution package in the agriculture of the state has increased the labour sbsorption in agriculture. Rice may be taken as a proxy of total agricultural crop production as it is the most important crop of the state accounting for around 80 per cent of the total area under cultivation.[15]

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15. Department of Agriculture, West Bengal.

4.3.2 *Cropping Pattern and Labour Absorption*

In West Bengal the most important crop is paddy. There are three varieties of paddy in the state, Aman the winter paddy ; Ans, the autumn paddy; and Boro, the summer paddy. But among these varieties Aman is the most important crop so far as its coverage of net sown area under cultivation is concerned. In fact, Aman covers the highest proportion of area under cultivation among all crops. The next important crop is Aus. As table 4.8 exhibits, after mid sixties the cultivation of Boro has attained an accelerated momentum. This expansion has taken place with the introduction of green revolution package. Furthermore, as table 4.10 reveals, the yield rate per acre of Boro is much higher than that of Aman or Aus.

As table 4.1 shows, among different varieties of paddy labour absorption in per unit of land is highest for Boro. One of the important-reasons for this high incidence of labour absorption is that the Boro crop is almost entirely of high yielding variety. In case of Aus and Aman the proportion of HYV seeds is much lower (see table 4.11). But for both of these crops the proportion of HYV seeds is rising, although very slowly. Thus, as the table 4.11 exhibits, in case of rice cultivation it is observed that the proportion

of HYV is increasing along with sharp rise of Boro cultivation. Hence, we may infer that there may be an increase in labour absorption per unit of land for overall rice cultivation.[16]

Allotment of land under wheat cultivation has increases after mid sixties. It has increased sharply in the 70s and then in the 80s land allocation under wheat cultivation has declined. In the state wheat was initially cultivated in the best irrigated and most fertile soil. Its yield rate per unit of land was consequently very high (see table 4.10). But during the last part of 70s decade the extension of wheat cultivation in less fovourable lands entailed a decrease in the yield rates. As a consequence, in the 80s decade a contraction of wheat area has taken place. Both boro and wheat are summer crops. From the observations of tables 4.8 & 4.9 we can infer that a substitution of wheat by boro cultivation has arisen in the state in the 80s decade. From table 4.9 we observe that in 70s the proportion of area under wheat cultivation increased to around 8 per cent of the total area under cultivation while for Boro, the proportion of area under cultivation was around 5 per cent . But during the 80s the proportion of area under wheat has declined to around 5 per cent

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16. See section 4.3.7.

and proportion of area under Boro has increased to around 8 per cent. From table 4.8 we observe that, in 1975-76, area under wheat cultivation was 565.3 thousand hectares and area under Boro crop was 320.7 thousand hectares. In 1984-85 the wheat area decreased to 335.9 thousand hectares and area under Boro increased to 470.7 thousand hectares. On the consideration of labour absorption this substitution of wheat by boro cultivation is highly interesting because as table4.1 shows wheat is capital intensive crop compared to boro and the rate of labour absorption in boro is much higher than that of wheat.

The most important cash crop of west Bengal is Jute. Despite the severe crisis of the jute industry, land allocation under jute cultivation has remained more or less the same with some fluctuations(see tables 4.8 & 4.9). In case of potato an impressive increase is observed during 1960-61 to 1984-85. As tables 4.8 and 4.9 exhibit, the area under potato cultivation has been augumented by about 160 per cent in this period. Although potato is highly capital intensive, but its labour absorption rate is very high. However, the total effect on labour absorption in agriculture as a whole due to this increase in potato cultivation is very small because in 1984-85 this crop covers only 2.27 per cent of total area under cultivation (see table 4.9). For sugarcane, land

allocation has decreased, while an increase of land allocation has appeared in case of Mustard and Rapeseed. Labour absorption in the cultivation of sugarcane is very high but the rate is very low for Mustard and Rapeseed. All these crops constitute very small proportions of total area under cultivation. In case of other crops like Gram, Lentil, Barley etc., very minor changes have taken place.[17]

Hence, from the above discussion it is evident that no drastic change has been observed regarding the cropping pattern of the state to bring about a major change in the labour absorption phenomenon in agriculture. Still Aman covers the maximum proportion of land (more than 60 per cent) and rice (including Aman, Aus and Boro) covers around 80 per cent of total land under cultivation. A marginal change has been observed in cropping pattern with regard to boro, potato and sugarcane which has however very small impact on the aggregate labour absorption because these crops account for very small proportion of area under cultivation.

Let us now turn to the situation of cropping intensity of the state. As the following table 4.12 exhibits, alongwith

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17. These crops also constitute very small proportion of total area under cultivation (see table 4.9).

TABLE 4.11 : EXTENSION OF AREA UNDER HIGH-YIELDING VARIETIES IN WEST BENGAL

YEAR	Percentage of HYV area to total area			
	AUS	AMAN	BORO	TOTAL RICE
1975-76	21.93	13.23	94.04	19.30
1976-77	30.33	17.23	95.17	22.85
1977-78	31.33	19.50	97.08	25.68
1978-79	34.33	23.97	97.19	32.28
1979-80	29.24	20.57	96.49	25.61
1980-81	35.75	22.91	100.00	29.60
1981-82	33.37	25.05	100.00	30.46
1982-83	35.25	30.00	100.00	35.58
1983-84	34.93	29.97	99.94	37.41
1984-85	35.00	30.00	100.00	36.94
1985-86	37.88	31.98	99.94	39.40

Source: Department of Agriculture, West Bengal.

TABLE 4.12 : INDEX NUMBER OF CROPPING PATTERN AND CROPPING INTENSITY (BASE: TRIENNIUM ENDING CROP YEAR 1969-70 = 100)

YEAR	1965-66	1970-71	1975-76	1980-81	1981-82	1982-83	1983-84	1984-85
Cropping Pattern	100.4	102.3	104.8	107.6	107.0	109.0	112.2	111.7
Cropping Intensity	96.2	105.6	112.1	107.4	105.9	102.1	109.8	107.2

Source: Bureau of Applied Economics and Statistics, West Bengal.

marginally changed cropping pattern, the cropping intensity of the state has increased marginally between 1965-66 and 1984-85.[18] Hence, we can not state that the seed-fertiliser-irrigation innovation of the green revolution package has ushered a drastic break through in the agriculture of West Bengal by augmenting the cropping intensity and changing the cropping pattern.

However, we should look into the total effect of changes in cropping pattern and cropping intensity on employment generation. Moreover, another major source of increase in labour absorption is increase of labour intensity in the crop production. Here labour intensity is defined as the number of labour in mandays applied per acre for a crop cultivation. As table 4.11 shows that the proportion of HYV seeds in the agriculture of the state is increasing and as it is stated earlier that HYV crops are more labour absorbing compared to traditional crops, there must be some increase of labour intensity in the crop production in the state.[19] Hence, all the three factors, cropping pattern, cropping intensity and

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18. Between 1975-76 and 1984-85 the cropping intensity has in fact decreased marginally.

19. Increase of labour intensity is not totally caused by HYV seeds. HYV is one reason for increase of labour intensity.

labour intensity must have contributed in the generation of additional employment in the agriculture of the state. As regards cropping intensity, it is worthwhile to be mentioned that this is the prime source of the change in gross cropped area. It is already explained in the section 2.1.1 that total arable land of the state has remained stagnant after 1961. So any change of gross cropped area of the state is caused by change in cropping intensity.

Table 4.13 has been taken from the Report of Indian Institute of Public Opinion, July - December, 1988. This table gives effects of the changes in cropping pattern, cropping intensity and labour intensity on employment generation. In West Bengal it appears that labour intensity changes are the dominant source of employment growth, that changes in cropping pattern have made a positive contribution of a much lower order, and that changes in gross cropped area have negative contribution.[20] From table 4.13 it is observed that from triennium 1971-74 to triennium 1981-84 total additional employment generated in the agriculture of the state is 177471380 mandays.

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20 Changes in gross cropped area have negative contribution on employment generation because between the trienniums 1971-74 and 1981-84 the cropping intensity has decreased marginally, resulting marginal contraction of gross corpped area.

TABLE 4.13 : DECOMPOSITION OF TOTAL EMPLOYMENT CHANGE INTO LABOUR CHANGE, CHANGE DUE TO CROPPING PATTERN SHIFTS, AND THE IMPACT OF CHANGES IN THE GROSS CROPPED AREA; BY STATE - TRIENNIUM 1971-74 TO TRIENNIUM 1981-84

	State	Total Employment Change (000 man-days)	Due to Labour Intensity Change (000 man-days)	Due to Cropping Shifts (000 man-days)	Due to Change Gross Cropped Area (000 man-days)
1.	Punjab	+ 41,732.31	- 55,838.33	+ 27,384.09	+ 70,186.55
2.	Haryana	+ 4,198.56	- 31,603.43	+ 1,793.67	+ 34,008.62
3.	Uttar Pradesh	+106,752.44	- 86,793.13	+ 47,492.65	+146,052.92
4.	Andhra Pradesh	+321,018.44	+202,669.08	+ 61,498.15	+ 56,851.21
5.	Gujrat	+214,747.83	+220,768.06	- 34,870.00	+ 28,849.71
6.	Maharashtra	+418,414.31	+187,630.87	+ 16,725.73	+214,057.71
7.	Karnataka	+189,380.53	+ 88,192.81	+ 38,045.81	+ 63,141.91
8.	Rajasthan	+ 77,399.97	+ 22,369.77	+ 18,580.09	+ 36,450.11
9.	Madhya Pradesh	+ 6,202.42	- 84,297.00	- 1,893.51	+ 92,392.93
10.	Orissa	+ 82,613.31	+ 87,782.15	- 36,401.52	+ 31,232.68
11.	Tamil Nadu	- 17,667.53	+ 77,338.96	- 2,956.97	- 92,049.52
12.	West Bengal	+177,471.38	+176,200.40	+ 9,852.72	- 8,581.74
13.	Bihar	+ 6,415.19	+ 46,894.68	- 1,410.75	- 39,068.74

Source : Quarterly Economic Report of the Indian Institute of Public Opinion (124 & 125) Vol.XXXI Nos.2-3 July-Dec 1988.

Out of this only 9852720 or 5.55 per cent of the total mandays were generated by cropping pattern shift, while due to change in gross cropoed area 8581740 mandays were reduced. The highest proportion of employment of 99.28 per cent or 176200400 mandays has been generated by labour intensity changes in the crop production. Hence, it becomes evident that change in labour intensity is the major source of labour absorption in the state. Now, at this conjuncture the question that would arise is whether the increase of labour intensity what has taken place in the agriculture of the state is "productive" or "unproductive".[21] In the following section we would discuss this aspect.

4.3.4. *Yield per unit of Land & Labour Productivity*

Tables 4.14 and 4.15 are quoted from Quarterly Economic Report of the Indian Institute of Public Opinion. These tables show that in West Bengal although employment per hectare grew at the rate of 2.037 per cent per annum in 1971-72 to 1983-84; and in person days, employment increased by 10 per cent from 1972-73 to 1977-78, but labour productivity in the

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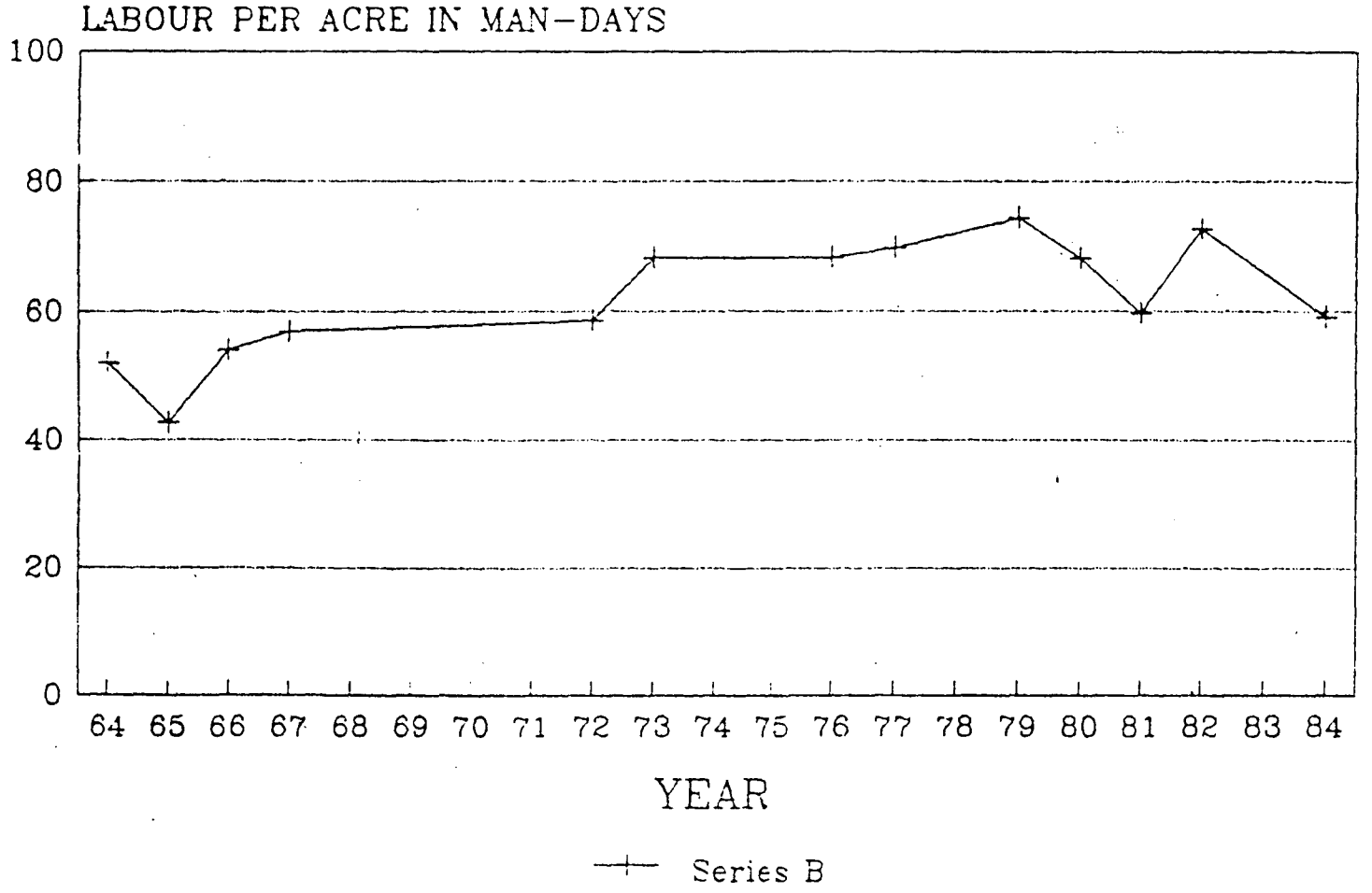
21. By Unproductive we mean increase of labour intensity is not accompanied by increase in output.

FIGURE - 4.3

LABOUR ABSORPTION IN RICE CULTIVATION OF WEST BENGAL



state decreased between 1971-72 and 1983-84 at the rate of 0.59 per cent per annum. Moreover, as table 4.15 exhibits the state is placed in the category of "agricultural involution"[22] as its employment per unit of Land elasticities with respect to yield is very high of 5.599 but its yield growth rate is very low of 0.47 per cent per annum between 1971-72 and 1983-84.

From these observations it is evident that although labour intensity in the agriculture of the state has increased somewhat but labour productivity has decreased. Or in otherwords, increase of labour intensity is not accompanied by comparable increase in per acre output. From the comparison of figures 4.3 and 4.4 it is observed that in rice cultivation labour inputs per unit of land has increased from mid sixties onwards but this increase entitled a fall in labour productivity. As figure 4.5 exhibits, yield per acre of rice cultivation rose between 1966 and 1971. After that the yield rate fluctuated explosively. This fact may be explained by the fact that after the introduction of high yielding varieties the agricultural production has become subject to wider fluctuations compared to traditional varieties.

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22. The term was first used by Clifford Geertz. See, C. Geertz, "Agricultural Involution, the process of Ecological changes in Indonesia", In (eds.) Richard Jolly et al. Third World Employment Problems & Strategy, Penguin 1973.

FIGURE - 4.4

LABOUR PRODUCTIVITY IN RICE CULTIVATION

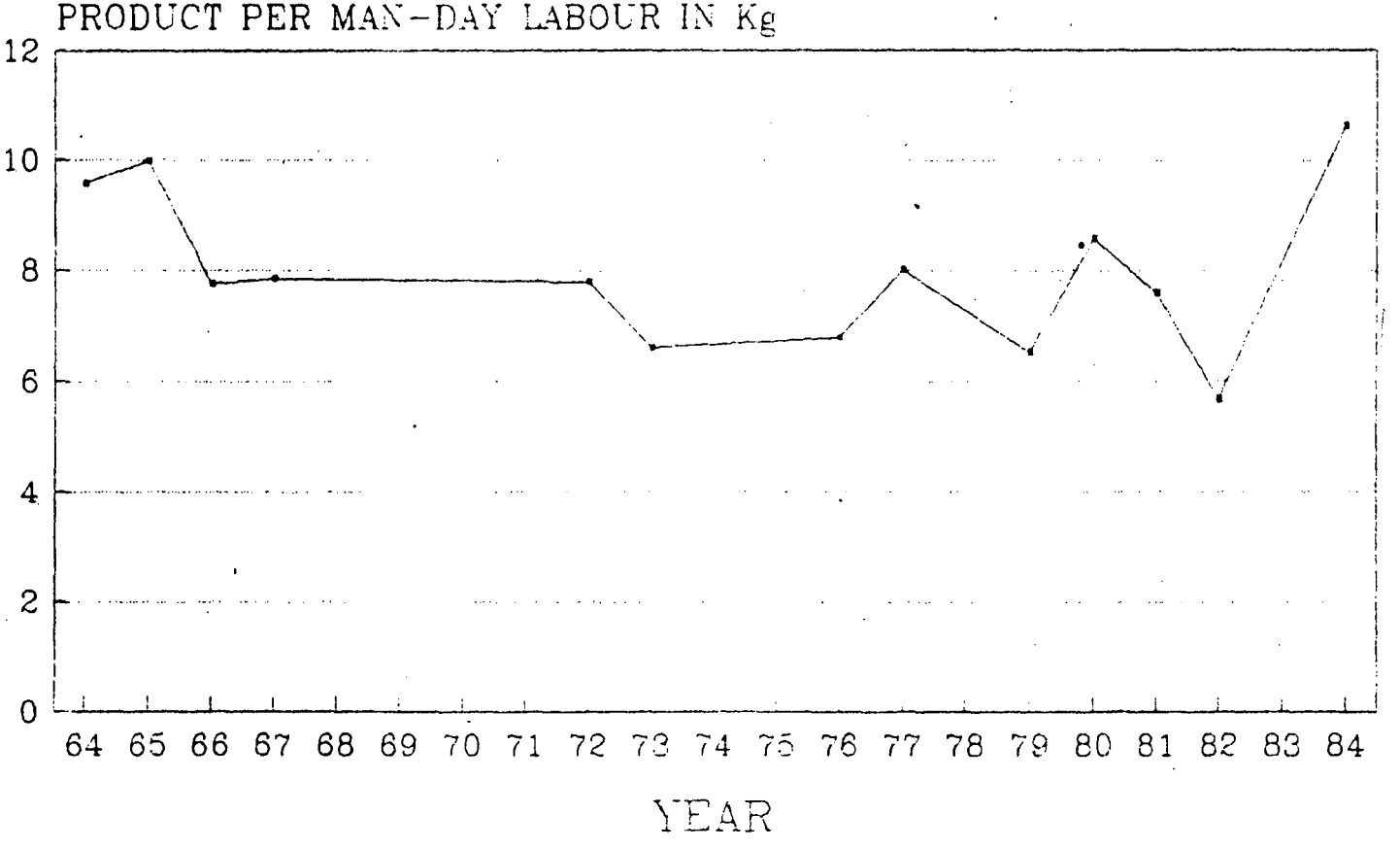


FIGURE - 4.5

YIELD PER ACRE IN RICE CULTIVATION, 1964-65 to 1984-85

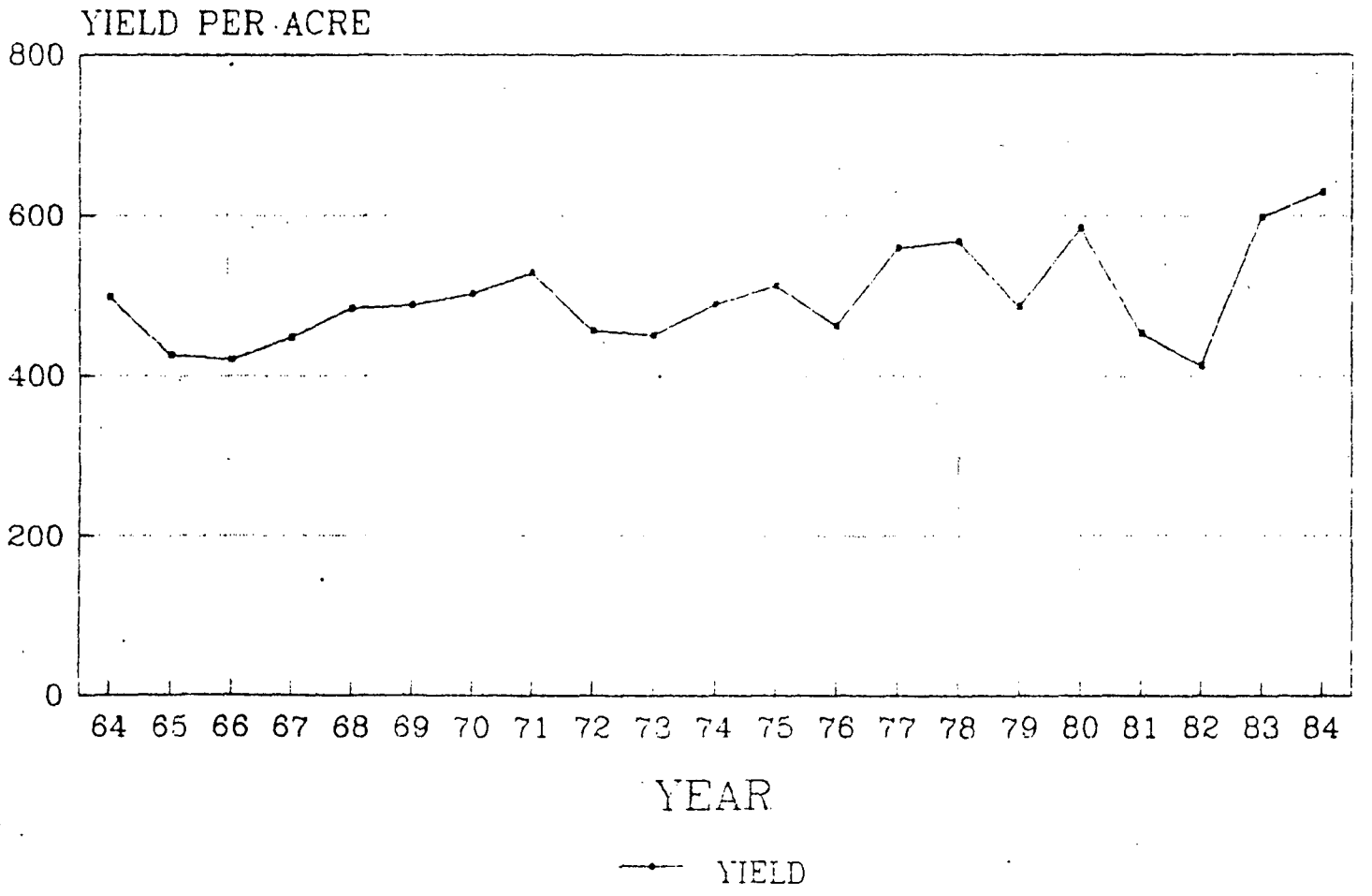
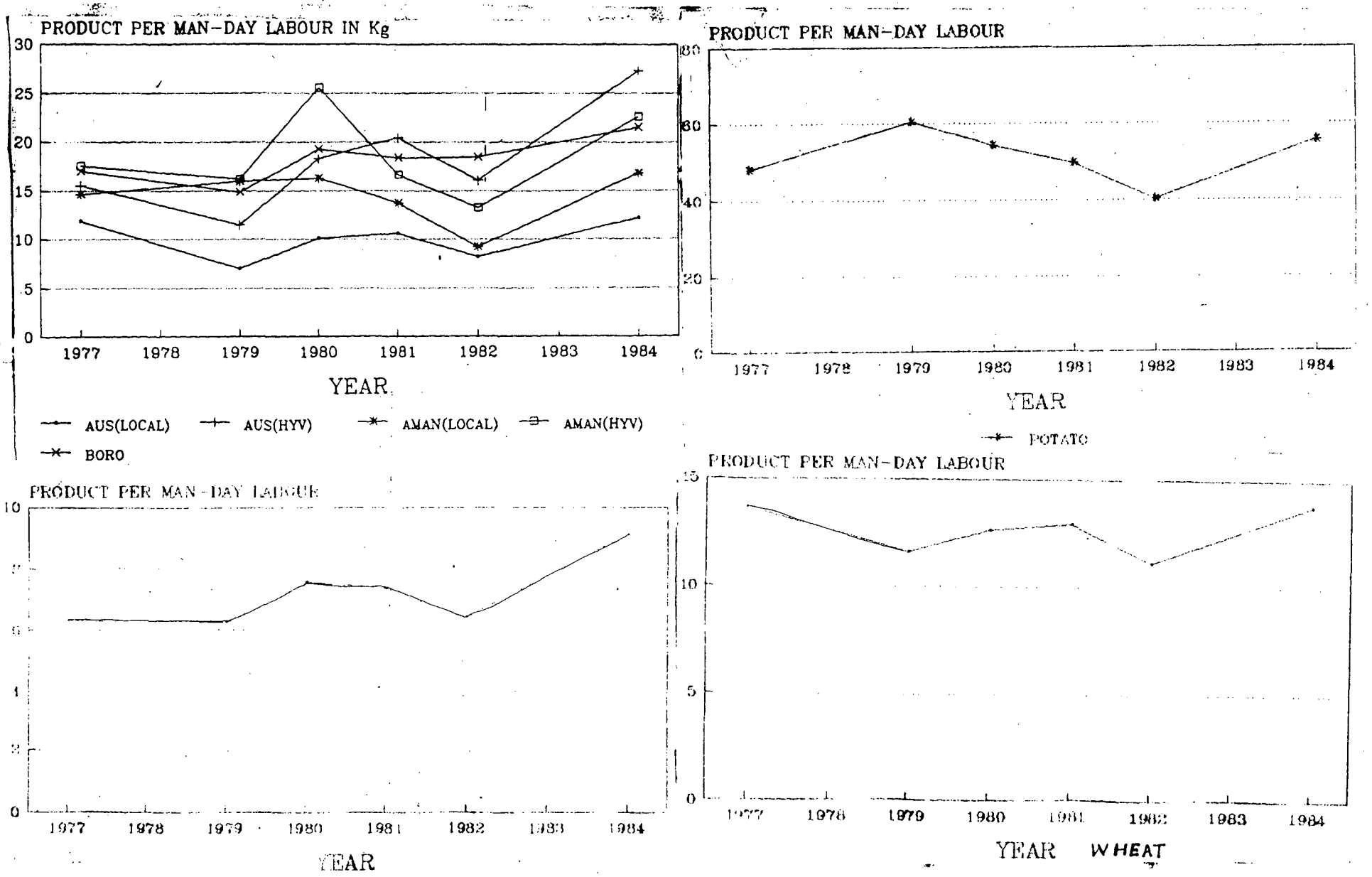


FIGURE - 4.6

LABOUR PRODUCTIVITIES IN DIFFERENT CROPS IN Kg.



A comparison of figures 4.2 and 4.6 reveals that both the labour absorption in the agriculture of the state and labour productivities of different crops fluctuated between 1977-78 and 1984-85. However, one can observe from these figures that in majority of the cases a rise in labour absorption of a year was accompanied by a decline in the labour productivities of different crops and vice versa. This aspect is very interesting in that it reveals the unproductive increase of labour intensity in the agriculture of the state. This means in West Bengal the increase of labour intensity is not accompanied by the proportionate increase in output per acre.

4.3.5 *Labour Absorption among Different Size Classes.*

In the 'Farm Size and Productivity' debate and in ARTEP studies one of the interesting notion was that smaller farms use higher degrees of labour with greater availability of family labour relative to land on smaller holdings. Hence, it is important to look into the labour absorption phenomenon among different size classes. In this discussion we have considered four size classes———marginal, holding size below 2.5 acres of land ; small, holding size 2.5 acres to 5.0 acres ; medium, holding size above 5.0 acres and upto 10.0 acres; and large, holding size above 10.0 acres.[23]

23. These categories are taken from the study on Farm Management Cost of Production of Crops, West Bengal.

Table 4.16 exhibits the labour absorption patterns of different size classes. It is observed that marginal and smaller farms use higher amount of labour per acre compared to that of larger farms. In tables 4.19,4.20,4.21 and 4.22 where the values of different coefficients of multiple regression, done on the cross-section data of 1976-77 are given, we also observe a statistically significant inverse relation between labour absorption and farm size. Again, a recent study based on the same line as those carried out by Rudra(1968)[24] also ensures the negative relation between farm size and labour use in the state. The results of the rank correlation coefficient between farm size and labour use of West Bengal are given below.

TABLE : 4.18[25] RANK CORRELATION COEFFICIENTS BETWEEN FARM SIZE AND LABOUR USE (days).

	Year	Correlation Coefficients	Significant at Percent Level
WEST BENGAL	1970-71	-0.81	5
(HOOGHLY)	1971-72	-0.79	5
	1972-73	-0.83	5

24. "More on Returns to Scale in Indian Agriculture", EPW, Review Agriculture, October 26, 1968.

25. Manabendu Chattopadhyaya, "Conditions of Labour in Indian Agriculture", 1985. Calcutta. p. 97.

However. this phenomenon of inverse relation between farm size and labour use is not strictly consistent in all cases as it is shown in table 4.16. There are few cases where this phenomenon does not prevail although in majority of the cases the inverse relation holds. This inconsistency is more prominent if we consider the share of labour cost including both paid out cost for hired labour and imputed cost of family labour in total cost of production. There is no discernible trend about the share of labour cost in total cost of production among different size classes.

As it is expected, it is observed from table 4.16 that small and marginal farms use family labour more intensively than the medium and large farms. But in case of sugarcane cultivation it is found that even the small and marginal farms are using hired labour in greater proportion than the family labour. The reason may be partly technological. In harvesting periods, farm operations have to be conducted within a very short period by both specialised and ordinary labourers. This urgency to complete the certain volume of work may necessitate the hiring in of labour in greater extent even on marginal and small farms for sugarcane.

Here one interesting thing revealed in some past studies may be mentioned : while the inverse relation between farm size and amount of labour utilisation appears

not to hold for individual crops, in the case of total crop production, total labour days per acre show a consistent decline with increase in the size of holdings. The intensity of cropping and cropping pattern, to a large extent, explain the differences in input use over holding size. More specificially, greater labour utilisation per acre on smaller farms may arise mainly due to multiple cropping and choice of labour absorbing crops.[26] However, we do not have sufficient data to test this hypothesis in our context.

Furthermore, from table 4.16 it is obtained that the proportion of family and hired labour use among different size classes does not provide any evidence to prove that family and hired labour are totally substitutive categories. On the contrary, the absence of any discermible trend of average cost per unit of labour disparities among different size classes of farms negates the presumption. We would discuss this aspect in detail in the next section of this chapter.[27]

As regards labour productivities among different size classes, it has been argued in the debate of "Farm size and productivity" that since smaller farms use more labour

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26. See among others, K. Bharadwaj (1974) and A. Rudra (1968)

27. See Section 4.3.6.

to maximise their output per unit of land, the labour productivities in smaller farms would be lower than that of larger farms owing to law of diminishing returns. But as table 4.17 reveals, there is no discernible evidence to prove this hypothesis. In this regard we can refer to the synthesis put forward by the two main opponents of the debate of "Farm Size and Productivity", A.K. Sen and A. Rudra.[28] According to them, 'the totality of empirical research on the relationship between farm size and productivity has yielded a far from uniform picture'. Furthermore, they emphasised that, 'the negative relation may hold in certain parts of the country at certain times but not everywhere and not at all times'. They have also pointed out that 'even when the inverse relationship holds, it may hold in certain ranges but not in others, and in many cases it is particularly noticeable only for small size classes.' Here, in our analysis we have only three sets of data for the years 1981-82, 1982-83 and 1984-85. From these informations no such evidence is observed to prove the inverse relation between farm size and labour productivity. However, we observed from table 4.17 that in some cases the inverse relation is exhibited between marginal, small and medium size farms. Nevertheless, the results of table 4.17

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22. Farm Size and Labour use Analysis and Policy , EPW, Annual Number, February, 1980.

confirm the conclusion of A.K. Sen and A. Rudra that the inverse relation between farm size and productivity can not be taken as an empirical generalisation for Indian agriculture as a whole.[29]

4.3.6 *Family and Hired Labour*

In a typical less developed agrarian economy like West Bengal, agriculture is characterised by dual labour system, i.e. the prevalence of both family and hired labour. This aspect can be verified from table 4.7 and figure 4.7 which illustrate that both family and hired labours have been contributed significantly in the total labour use in the agriculture of the state.

As tables 4.1, 4.2, 4.3, 4.4, 4.5, and 4.6 show till 1980-81 the proportion of family labour was higher for the traditional variety than the high yielding variety. But after 1980-81 the proportion of family labour has increased in the high yielding variety. This fact is reflected in table 4.7 and figure 4.7 which show that in the aggregate labour absorption in the agriculture of the state the proportion of family labour was low till 1980-81 whereas after 1980-81 its proportion has increased considerably. Here it is important to be noted that the aggregate labour absorption has been

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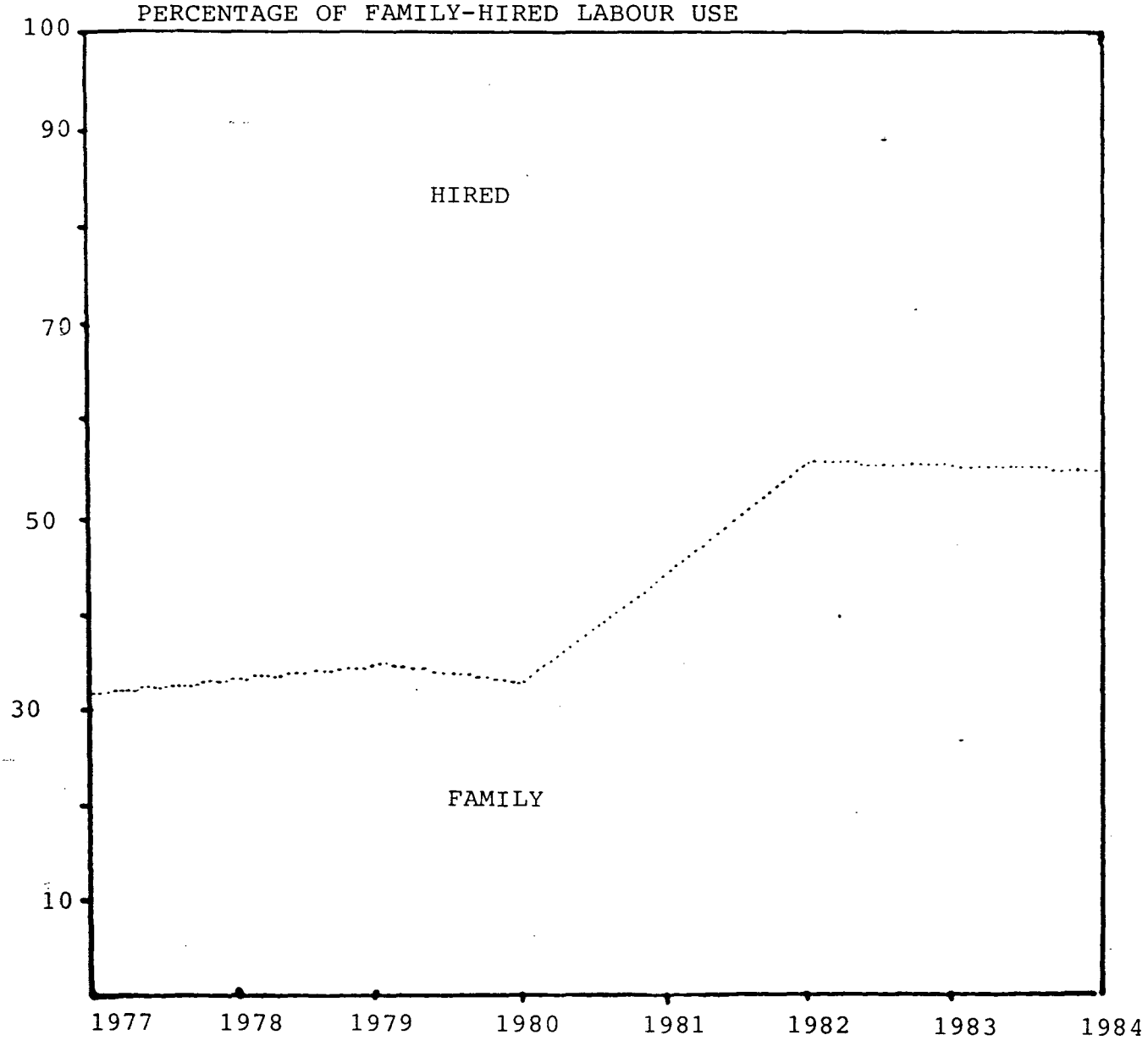
29. Ibid, p. 393

FIGURE - 4.7

PROPORTION OF FAMILY & HIRED LABOUR IN TOTAL LABOUR USE



computed by weighted arithmatic mean where the weight assigned is the proportion of net sown area allocated under each crop.

The possible reason for this feature may be illustrated in the line of Biplab Dasgupta[30] that smaller farms who use family labour more intensively than the larger farms most probably concentrated on traditional variety till 1980-81. This presumption is not peculiar in the sense that cultivation of HYV crops require higher cost for non-labour inputs which the smaller farms can not afford. The larger farms have greater access in the credit availabilities and so they can provide the cost for biological, chemical and mechanical inputs required for the HYV crops. Furthermore, the high yielding varieties are subject to high risk of crop failure due to either natural calamities or inadequate use of inputs. In these regard traditional varieties are less prone to crop failure. As a consequence, it is highly plausible on the part of smaller farms to go for the cultivation of traditional varieities. The fact that smaller farms use family labour more intensively than the larger farms is verified from table 4.16 also. However, after 1980-81 the situation somehow

30. "Agrarian Change and New Technology", UNIRSD. 1977.

changed and the smaller farms became interested in high yielding varieties. Hence, the proportion of family labour has increased in the HYV crop.

Now, the family labour and the hired labour are not perfect substitutes for each other so that the prevailing wage rate for hired labour can not measure the opportunity cost of family labour. Sometimes, it is argued that a small or marginal farm hires labour only in the peak season when the family labour can not meet the total labour requirement. Whereas for larger farms since the disposal of family labour is smaller, hiring in of labour is prevalent throughout the season. If that is so then average wage cost per man-day of hired labour would be higher for small and marginal farms than that for larger farms, because in the peak season the wage rate becomes higher compared to lean season. But from table 4.16 it is evident that the average wage cost disparities among different size classes of the farms do not exhibit that type of phenomenon. It might be true that in the peak season the smaller farms hire in labour to a greater extent compared to other periods. But it is not true that only in the peak season due to inadequacy of family labour to meet the total labour requirement the smaller farms hire labour when the family labour is in full employment.

Krishna Bharadwaj provides an interesting example in this regard, which shows that in Madhya Pradesh the proportion of casual labour employed during the peak and lean seasons were almost same during 1955-56 and 1956-57.[31] Basically the fact is that there are certain types of operations which require specialised skills or are traditionally done by a certain class or even caste of labourers. In those cases family labour and hired labour are not of substitutive categories. Also on smaller farms where there is a deficiency of farm equipments, hire of these is often accompanied by hire of labour. Hence, 'neither of the two extreme hypothesis is justified : that family labour and hired labour are exclusively separable categories so that family labour is a datum for cultivating household, or that they are substitutes so that the prevailing wage rate for hired labour measure the opportunity cost of family labour'.[31a]

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31. Production Conditions in Indian Agriculture A study Based on Farm Management Surveys , 1974, Cambridge University Press, London. p. 27.

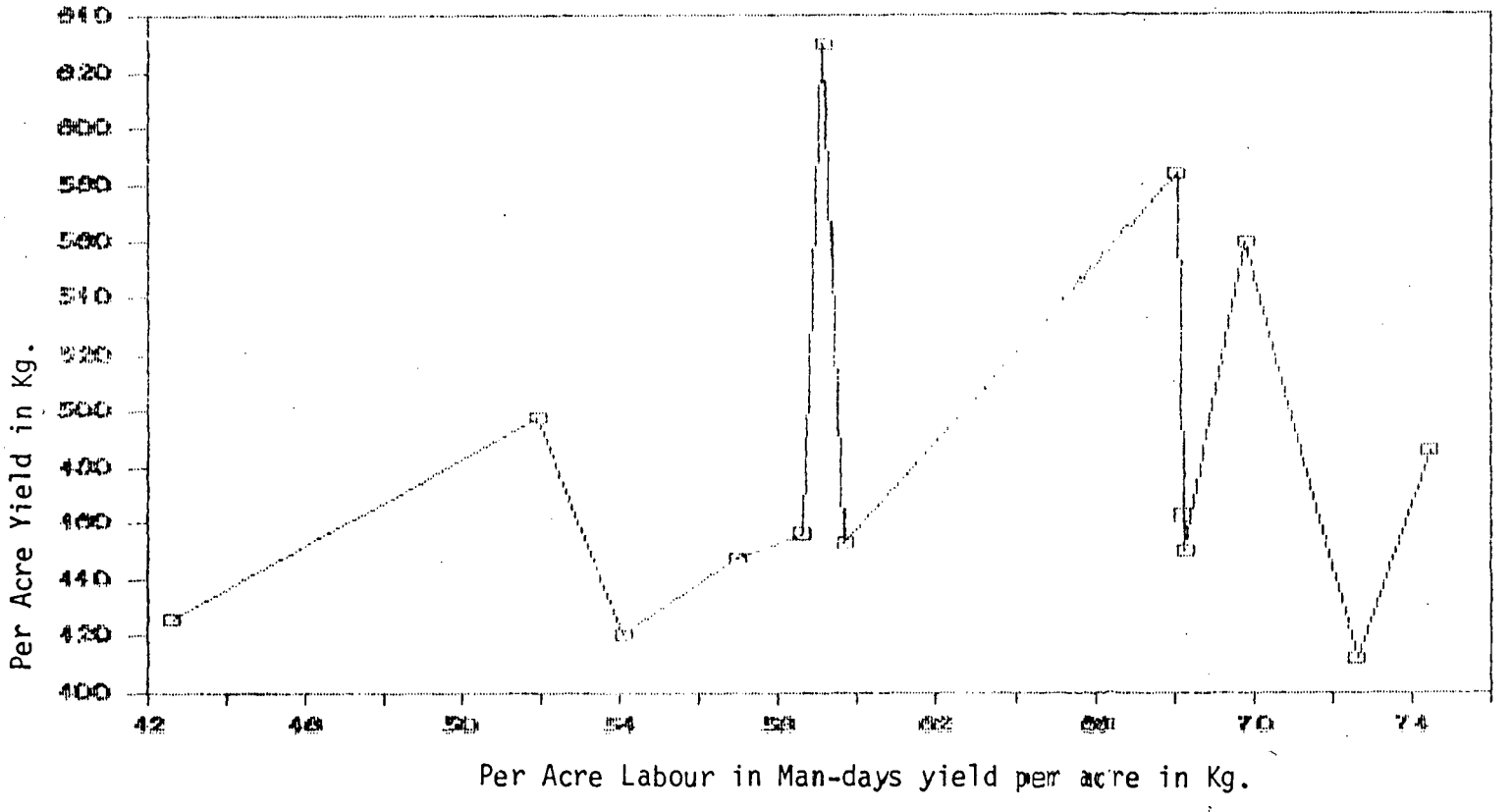
31a. Ibid, p. 27

4.3.7 *Labour Absorption in Rice Cultivation of West Bengal*

We have so far analysed some features of labour absorption in the agriculture of the state considering all crops for which the Study provides informations. But the state aggregate informations for those crops are available for the period, 1977-78 to 1984-85. However, to analyse some other interesting aspects of labour absorption we require a longer period under review. For this reason we would now consider the pattern of labour absorption in rice cultivation of West Bengal. Here, the disaggregated data of different varieities of rice from 1964-65 to 1976-77 are aggregated. The analysis of the labour absorption in rice cultivation of the state would illustrate approximately the overall scenario of labour absorption in agriculture of the state. This approximation is not entirely misleading because rice covers around 80 per cent of the total area under cultivation. To calculate the per acre labour absorption in rice cultivation we estimate the weighted average of per acre labour applied in all qualities of rice, Aman, local and HYV; Aus, local and HYV ; and Boro. The weights are the proportion of area under each variety.

Table 4.18 exhibits the per acre labour absorption in man-days for rice cultivation in the state. If we plot the

Fig. 4.8 YIELD PER ACRE IN RICE CULTIVATION IN WEST BENGAL



time series data of labour absorption, as it is done in figure 4.3, it is evident from the graph that labour absorption in rice cultivation of the state has increased moderately after mid sixties. Althoug, the rate of increase is low and there are some fluctuations, the increase is maintained throughout the period under review. This increase of labour absorption may be due to the introduction of seed-fertiliser-irrigation innovation of green revolution. As it is already shown that the HYV crops are more labour absorbing particularly the boro quality of rice absorbes more labour compared to Aman and Aus qualities, and as it is shown in tables 4.11 and 4.9 that proportion of HYV crops and boro are rising, it is most likely that labour absorption in rice cultivation is also rising. This rise of labour absorption in rice cultivation of the state focuses the increasing trend of labour absorption in the agriculture of the state during the period 1964-65 to 1984 -85.

In a recent study it has been shown that the trend of labour absorption in the three states, Punjab, Haryana and Uttar Pradesh, the pioneers in the adoption of green revolution technology in India, followed an inverted-U shaped path.[32]

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32. Sheila Bhalla, "Employment in Indian Agriculture: Retrospect and Prospect,"1988, Quarterly Economic Report of the IIPO, Vol. XXXI, Nos.2-3, July - Dec.

'The initial response to the Green Revolution technology was a sustained rise in labour use per hectare. This trend characteristically peaked in mid-seventies or shortly afterwards, and subsequent increases in yield were associated with a contraction in man days employment per hectare'[33] . The contraction of labour use per unit of land after mid-seventies has been caused by the shift over to "labour saving" technologies from "labour using" technologies of the earlier phase. This mechanisation of farms has taken place in the three states to increase both land and labour productivities.

However, in the case of West Bengal as it is observed from figure 4.3, there is no evidence to show that after mid-seventies or afterwards, there is a contraction of man days employment per unit of land. This figure 4.3 reveals that although some fluctuations are there, there is no discernible evidence to infer that after mid-seventies labour use per unit of land in rice cultivation of the state has declined. On the contrary, it is observed that even after mid seventies the increase of labour absorption is maintained in the state. Hence, it may be concluded that in West Bengal mechanisation of farms has not taken place after mid-seventies to displace labour.

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33. Ibid, p.23.

The increase of labour use which has been observed in the rice cultivation of the state may be reasonably explained as unproductive because this rise of labour absorption has not taken place with a corresponding rise in yield rates. The figure 4.8 has been drawn in the line of Ishikawa's method considering per acre yield in the vertical axis and per acre labour applied in horizontal axis. This figure reveals that we would not get a consistent forward rising curve as it is obtained by Ishikawa in case of Japan till 1960s. Moreover, the wide fluctuations observed in the curve of figure 4.8 does not entail any strong correspondence between labour use and yield rates. From figure 4.4 it is observed that between 1964-65 and 1984-85 the labour productivity in rice cultivation of the state was either stagnating or declining. This feature may be explained by the fact that during this period labour use in rice cultivation has increased but as figure 4.5 shows yield rates have not increased proportionately. The yield rates have fluctuated widely. Therefore, it can be said that the labour intensity which has been increased in rice cultivation of the state is not a productive increase as it has not brought about corresponding rise in yield rates. Hence, this increase of labour intensity in rice cultivation may be termed as unproductive increase.

4.4 THE FACTORS INFLUENCING LABOUR ABSORPTION IN AGRICULTURE: A CROSS-SECTIONAL ANALYSIS

Now, we will try to identify some factors which influence per acre labour absorption. Our basic intention is to isolate those factors whose application in the required direction may stimulate labour absorption in agriculture. In this respect we would proceed to a cross-sectional analysis for the year 1976-77. This year is taken due to the fact that this is the latest year for which disaggregated data are available. After 1976-77 the study has started publishing only aggregate state level data.

It has already been pointed out that we would basically consider the influence of farm size, irrigation, fertilizer, farm equipment, interest on capital, and tenancy on labour absorption. Here it should be noted that in the cost of production data of the Study, farm size is measured in acreage and for irrigation, fertiliser, farm equipment and interest on capital values are given in terms of cost of the respective factor in Rs. in per acre land. For exactly tenancy the study does not provide any information on the proportion of area under tenancy of a farm. So to include tenancy in our analysis we can taken rent cost as a proxy

variable of tenancy where high rent charges per acre implies leasing operation on the farm.

Now, to see the influence of all these factors on labour absorption we can specify a logarithmic linear multiple regression equation of the following form:

$$\text{Log } L = A + \alpha \text{ Log } S + \beta \text{ Log } I + \nu \text{ Log } F + \delta \text{ Log } C + \psi \text{ Log } K + \emptyset \text{ Log } R.$$

Here : L = Per acre labour applied in Man-days;
S = Size of the farm in acres;
I = Irrigation cost per acre;
F = Fertiliser cost per acre;
C = Implement charges per acre;
K = Interest on capital per acre;
R = Rent paid per acre;

and A is an intercept term while α ,β, ν, δ, ψ and ϕ are regression coefficients.

Here, we have done the regressions on Aman crop of both traditional and high yielding varieties for our purpose since Aman is the most important crop of West Bengal. For each variety the exercise is carried out for West Bengal as a whole and for the district Burdwan. Burdwan is taken not only for the reason that this district is very progressive in agricultural development compared to many districts of the

state but also due to the fact that only for this district proper breakup of all cost variables are available. The results of the regressions are given in tables 4.19, 4.20, 4.21 and 4.22.

4.4.1 Results for Aman, traditional Variety

From the results of table 4.19 it is evident that in the case of Aman, traditional variety the inverse relation between size of the farm and labour absorption is supported This result is compatible with the postulate of 'Farm Size and Productivity' debate and ARTEP studies. As regards irrigation and fertiliser, we expect that the impact of these inputs on labour absorption is positive since intensive use of these inputs entails intensive cultivation which in turn increases the labour use and furthermore application of these inputs also necessitates additional labour requirements. From table 4.19 it is observed that there is a positive association between irrigation and labour absorption for the crop in the state. But regarding fertiliser we expect the sign of the coefficient to be positive whereas we get a negative sign. This negative sign is possibly due to an increase of chemical fertiliser reducing the use of organic fertilisers

and farmyard manure. The use of farmyard manure increases the labour use because of its process of application, whereas chemical fertilisers are available ready-made and can be applied by small amount of labour. To test the presumption that substitution of organic fertilisers and farm-yard manure by chemical fertilisers reduces labour use, we can not get a proper break-up of organic and chemical fertilisers for all the observations of the state. Only in the observations of Burdwan district this break up is explictly specified. From the results of table 4.20 we observe that in case of Burdwan we find a positive association between manure and organic fertiliser and labour absorption, while for chemical fertiliser the relation is negative. However, this negative association is not very strong as it is observed from the level of significance.

Regarding rent charges per acre the relation is observed to be positive for West Bengal as a whole but for Burdwan district the relation is negative. This inconsistency of the association between rent charges and labour absorption does not provide evidence to prove the hypothesis of Pranab Bardhan (1978) that higher proportion of area under tenancy reduces labour absorption because of tenurial insecurity and

TABLE 4.19

REGRESSION ANALYSIS ON DETERMINANTS OF LABOUR INPUT IN THE CROP AMAN (TRADITIONAL) : WEST BENGAL, 1976-77.

Dependent Variable : Log of per acre man-days applied.

Explanatory Variables	Regression coefficients	t-value	Significant at percent Level
1. Log of Area of cultivated Land	-0.1631710	-5.7932120	0
2. Log of irrigation cost per acre	0.0252518	1.6769647	9
3. Log of fertiliser cost per acre	-0.0225154	-1.3699482	17
4. Log of rent charge per acre	0.0175683	1.3461023	17
5. Log of interest cost per acre	0.0787803	2.1715386	3
6. Log of implement cost per acre	-0.0180028	-0.7038424	48
7. Constant term	3.8964065	14.952859	0

R^2 = 0.170

F = 14.54318

No. of observations : 438

TABLE 4.20

REGRESSION ANALYSIS ON DETERMINANTS OF LABOUR INPUT IN THE CROUP AMAN (TRADITIONAL): BURDWAN, 1976-77.

Dependent Variable : Log of per acre man-days applied

Expanatory variables	Regression Coefficients	t- value	significant at per cent Level
1. Log of Area of cultivated Land	-0.0983192	-10.181450	0
2. Log of irrigation cost per acre	0.00029900	0.5367799	59
3. Log of chemical fertiliser cost per acre	-0.0053905	-0.5468075	59
4. Log of manuare and organic fertiliser cost per acre	0.0133527	2.0710396	4
5. Log of rent charges per acre	-0.0066094	-1.7140451	9
6. Log of interest cost per acre	-0.0655916	-3.2388926	2
7. Log of implement cost per acre	0.0257960	2.9604064	4
8. Constant term	4.5171091	41.097763	0

R^2 = 0.744550

F = 31.33256 No. of observations : 96

TABLE 4.21

REGRESSION ANALYSIS ON DETERMINATS OF LABOUR INPUT IN THE CROP AMAN (HYV) : WEST BENGAL, 1976-77

Dependent Variable : Log of per acre man-days applied.

Explanatory Variables	Regression coefficient	t-value	Significant at per cent level
1. Log of Area of cultivated land	-0.1105937	-5.87937	0
2. Log of irrigation cost per acre	0.0113686	3.4640767	0
3. Log of fertiliser cost per acre	0.0868753	4.7205317	0
4. Log of rent charge per acre	0.011799	0.8217345	41
5. Log of interest cost per acre	-0.0239897	-0.6118059	54
6. Log of implement cost per acre	-0.0563849	-2.8106925	0
7. Constant term	4.16322435	17.918399	0

R^2 = .330

F = 19.90594 No. of observations : 293.

TABLE 4.22

REGRESSION ANALYSIS ON DETERMINANTS OF LABOUR INPUT IN THE CROP AMAN (HYV): BURDWAN, 1976-77.

Dependent Variable : Log of per acre mandays applied

Explantory Variables	Regression coefficient	t-value	Significant at per cent level
1. Log of Area of cultivated land	-0.0.794950	-3.0757236	0
2. Log of irrigation cost per acre	0.0125760	0.8685936	39
3. Log of fertiliser cost per acre	0.0759448	2.1289068	4
4. Log of rent charge per acre	0.0465411	3.10114158	0
5. Log of interest cost per acre	-0.1297686	-1.8811559	6
6. Log of implement cost per acre	-0.0484880	-1.7856588	8
7. Constant term	4.6225687	11.310968	0

R^2 = 0.547

F = 11.20852 No. of observations: 74

share-cropping have significant disincentive effect.[34] However, in our study we have inferred tenancy from high rent charges.

The relation between implements and labour absorption is expected to be negative because increasing expenditure on farm equipments entails mechanisation of operations and it leads to labour displacement. From table 4.19 we get a negative association between farm implement cost and labour absorption for the state as a whole, but the strength of the relation is very weak.[35] However, in case of Burdwan we observed a positive relation between these two. From this inconsistency of the relation it may be stated that for the traditional variety the impact of farm implements on labour displacement is very weak and there might be some sort of complimentarity of farm equipments used with labour absorption.

In respect of interest on capital it is already stated in section 4.1 that we expect the impact of this

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34. On Labour Absorption in South Asian Rice Agriculture with Particular Reference to India, ARTEP, ILO, Nov. 1978.

35. It is observed from the significant level in table 4.19.

factor on labour absorption to be detrimental. But, at the state level, we get positive association between interest charges on capital and labour absorption whereas for Burdwan district we observe a negative relation. This inconsistency is perhaps caused by the definition used for the interest on capital in the Study. In the Study 'Capital' is taken to include land which in turn is calculated on the basis of original acquisition cost(market value in case of inherited land); live and dead stock; and rent paid for the land. Interest is worked out on the basis of 11 per cent per annum. Hence, the differential of interest charges on capital among different farms actually reflects asset differential among them. Since, in capital many different things are included and each of these components has different impact on labour use of the farm, we get inconsistent result.

4.4.2 *Results of Aman, High Yielding Variety*

Tables 4.21 and 4.22 show the results for high yielding variety Aman. It is observed from these tables that the results of the state level are consistent with the results of Burdwan in case of Aman, HYV unlike its traditional counterpart.

In the case of high yielding variety also, the inverse relation between farm size and per acre labour applied is confirmed. The coefficients of irrigation and fertiliser turn out to be positive. As regards the rent charge per acre, a positive association is observed, although the level of significance reveals that the strength of this relation is not very strong. The coefficient of interest charges on capital is negative, but the strength of the relation between interest cost and labour absorption is very weak as it is shown by the level of significance. The coefficient of implement costs is observed to be negative, as it was expected.

Apart from all these factors, the HYV seed may be considered as a useful factor of increasing labour absorption. As tables 4.1, 4.2, 4.3, 4.4, 4.5 show and it is already stated, the HYV crops are more labour absorbing compared to their traditional varieties.

4.4.3 Implication of the Regression Results

The regression analysis done so far exhibits the fact that small farms with appropriate application of high yielding

varieties of seeds, fertiliser and irrigation can augment the rate of labour absorption in cultivation of a crop.[36] This inference is compatible with the conclusion of ARTEP studies.

However, as regards tenancy, we are not quite sure about its impact on labour absorption as we could not find out any signficant or systematic relation between the two. The same thing is true for interest charges on capital. But we note that we could not see the proper impact of interest cost on labour absorption in our analysis because in the Study, interest charges on capital do not consider what the farms are actually paying as interest. To work out, interest charges on capital a certain percentage is fixed on all live and dead stocks.

As regards farm equipments, the impact on labour absorption of this factor for traditional variety is not discernible but its impact in case of high yielding variety is negative. This is possibly due to the reason that mechanisation of farms to displace labour in case of

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36. Here the fertiliser should be manure and organic, rather than chemical fertiliser.

traditional variety is non-existent whereas for high yielding variety there is a possibility of mechanisation displacing labour.

4.5 *PROSPECT OF LABOUR ABSORPTION IN AGRICULTURE*

The exercise done in the last section reveals that small farms with seed-irrigation-fertiliser package augment labour use in crop production so far as the mechanisation of farms does not take place. But as it is already stated in section 4.1, there is a serious question how far the rate of labour absorption in agriculture can be augmented. The discussion on West Bengal in this regard for the period under consideration (1970-71 to 1984-85) would exhibit the prospect of employment in agriculture of the state.

It has already been observed that after mid-sixties the labour absorption rate in the agriculture of West Bengal increased moderately after the advent of green revolution. But this rate has not declined after mid-seventies unlike some other states of India. It is stated earlier that the main source of increase in labour absorption of the state is increase of labour intensity in the crop production rather than changes

TABLE 4.14 : TREND RATES OF GROWTH IN PRODUCTION, LABOUR PRODUCTIVITY AND EMPLOYMENT BY STATE : 1971-78 TO 1983-84

State	Trends Rates of Growth in					
	Production (49 crops)	Gross Cropped Area under all crops	Labour Productivity	Employment (Man-days) Per Hectre	Total	Percent change in person days Employment 1977-78 over 72-73 (NSS)
Punjab	3.92	2.002	2.63	-0.887	1.079	- 2
Haryana	3.31	0.589	1.47	-0.357	0.230	-11
Uttar Pradesh	3.09	0.743	1.72	-0.145	0.598	6
Andhra Pradesh	3.31	0.571	1.78	-2.779	3.663	12
Gujrat	3.92	0.371	2.38	-3.191	3.574	14
Maharashtra	5.60	1.676	4.44	-1.730	3.435	30
Karnataka	2.44	1.114	0.75	1.483	2.614	9
Rajasthan	2.47	0.659	0.97	0.737	1.393	- 9
Madhya Pradesh	1.65	0.972	0.03	-0.976	-0.014	- 1
Orissa	2.26	0.531	1.15	0.795	1.331	4
Tamil Nadu	1.12	-1.457	0.26	0.960	-0.510	-13
West Bengal	0.91	0.057	-0.59	2.096	2.037	10
Bihar	0.49	-0.954	-0.68	1.037	0.074	8

Source : Quarterly Economic Report of the Indian Institute of Public Opinion (124 & 125) Vol.XXXI Nos.2-3 July-Dec 1988.

in cropping pattern or cropping intensity. However, this increase of labour intensity of the state in crop production is not accompanied by proportionate increase in yield per unit of land. In fact, the increase of labour absorption in the state has brought about a decline in labour productivity.

Compared to this feature of West Bengal the scenario of highly productive states like Punjab, Haryana and Uttar Pradesh is totally different. It is observed from table 4.13 that the main sources of employment growth of these states are changes in gross cropped area and changes of cropping pattern in favour of more labour using crops. Whereas the effect of the change in labour intensity on employment growth is negative in these states because after mid-seventies labour saving technical changes has taken place to augment labour and land productivities. From table 4.14 we can see that compared to negative growth rate of the labour productivity of West Bengal these states experience positive and considerably high labour productivity.

Hence, it may be stated that for increasing productive labour absorption in agriculture of the state reliance should be on the extension of gross cropped area rather than on unproductive increase of labour intensity in crop production.

TABLE 4.15 : PER HECTRE EMPLOYMENT ELASTICITIES WITH RESPECT TO YIELD FOR PADDY AND WHEAT BY STATE 1971-72 TO 1983-84 (Trend growth rate in man-days per hectre : trend growth rate in yield)

Crop	Ranked Negative Elasticities		Low Positive Elasticities		High Positive Elasticities		Involution Elasticities	
	State	Elasticity (yield growth rate)	State	Elasticity (yield growth rate)	State	Elasticity (yield growth rate)	State	Elasticity (yield growth rate)
Paddy	Haryana	-0.393 (5.04)	Karnataka	0.251 (1.14)	Tamilnadu	0.904 (1.73)	West Bengal	5.599 (0.47)
	Punjab	-0.390 (6.04)	Gujrat	0.273 (4.63)	A.P.	0.310 (2.60)	Orissa	23.722 (0.09)
	U.P.	-0.368 (2.23)	Maharashtra	0.329 (3.84)			Bihar	28.049 (0.04)
Wheat	Rajasthan	1.194 (2.78)	None	None	Bihar	0.809 (1.89)	West Bengal	1.372 (0.33)
	Haryana	-0.953 (1.97)						
	Punjab	-0.890 (2.50)						
	M.P.	-0.592 (1.97)						
	U.P.	-0.488 (2.42)						
	Gujrat	-0.431 (3.04)						

Source : Quarterly Economic Report of the Indian Institute of Public Opinion (124 & 125) Vol.XXXI Nos.2-3 July-Dec 1988.

It is commonly acknowledged that in physical term the total cropped area can not be increased. So extension of gross cropped area would be totally dependent on increase in cropping intensity. It has been observed from table 4.12 that in West Bengal cropping intensity has not risen significantly from 1970-71 to 1984-85. That means, still there is huge scope to increase cropping intensity of the state which in turn would increase the gross cropped area. However, such increase in gross cropped area may be achieved only by accelerated investment, in irrigation in particular, and related institutional change.

Nevertheless, there is certain limit of increasing gross cropped area by raising cropping intensity. Therefore, we may assert that 'since the outlook is for declining elasticities of employment with respect to production in Indian agriculture generally, the importance of investment in the creation of productive jobs outside agriculture, will also become *increasingly urgent*'[37] (emphasis added).

The analysis so far on the labour absorption phenomenon of the agriculture of West Bengal reveals that after the advent

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37. Sheila Bhalla, 1988 Op.Cit. p.25

of green revolution, employment in agriculture of the state has increased. Unlike some other states, the increase of labour use in agriculture of the state is maintained even after mid-seventies. However, in this increase of labour absorption, changes in cropping pattern and changes in cropping intensity have not contributed significantly. Most of the contribution of increasing labour absorption in the agriculture of the state has come from increase in per acre labour applied (in mandays) for a crop cultivation. On this increase of labour intensity seed, irrigation, fertiliser have influenced positively. But this increase in labour intensity is not such a sustainable development since this increase has been accompanied by a decline in labour productivity. Finally, the conclusion that emerges from the analysis of this chapter is, to increase productive employment opportunities in agriculture of West Bengal increase of gross cropped area by raising cropping intensity is required. However, this route for generating additional employment opportunities has certain narrow limits.

TABLE 4.1 : LABOUR ABSORPTION IN DIFFERENT CROPS

	1977-78	AUS LOCAL	AUS HYV	AMAN LOCAL	AMAN HYV	BORO HYV	JUTE	WHEAT	POTATO	SUGAR-CANE	GRAM	MUSTARD	KHESARI
1.	Per acre Labour Requirement (in man days)	69.75	83	63.58	79.76	100.65	114	58.84	128.51	165.72	29.65	39.17	20.21
2.	Proportion of Family labour (% in per acre)	45.02	18.70	31.66	21.58	24.63	28.47	36.79	30.77	38.15	54.40	61.17	64.77
3.	Proportion of Hired labour (% in per acre)	54.98	81.30	68.34	78.42	75.37	71.53	63.21	69.23	61.85	45.60	38.83	35.23
4.	Share of labour cost in total cost of production (%)	35.46	33.50	32.85	33.29	30.45	45.86	24.83	18.35	38.04	24.79	25.26	20.23
5.	Cost per unit of labour (in Rupees)	4.29	4.68	4.66	4.7	4.78	4.45	4.61	4.70	4.91	4.84	4.49	4.12
6.	Product per manday labour in kgs.	11.83	15.54	14.63	17.59	17.05	6.31	13.65	48.10	142.69	10.49	5.97	13.06

	1979-80	AUS LOCAL	AUS HYV	AMAN LOCAL	AMAN MYV	BORO MYV	JUTE	WHEAT HYV	POTATO	SUGAR-CANE	GRAM	MUSTARD	LENTIL
1.	Per acre Labour Requirement (in man days)	114.36	86.9	64.22	80.11	105.03	125.07	63.86	99.5	152.14	33.3	39.91	63.78
2.	Proportion of Family labour (% in per acre)	51.06	24.71	32.12	19.75	31.67	37.91	43.06	33.85	30.49	68.02	60.91	59.38
3.	Proportion of Hired labour (% in per acre)	48.94	75.29	67.88	80.25	68.33	62.09	56.94	66.15	69.51	31.98	39.09	40.62
4.	Share of labour cost in total cost of production (%)	39.55	40.35	33.28	37.14	33.08	44.97	29.06	23.28	38.89	23.40	26.35	18.40
5.	Cost per unit of Labour (in Rupees	3.58	5.44	5.53	6.34	5.58	4.93	5.70	7.03	6.14	4.13	5.13	2.10
6.	Product per manday labour in kgs.	6.98	11.45	15.98	16.24	14.85	6.24	11.60	60.41	102.79	7.60	6.46	3.39

TABLE 4.1 (CONTD.)

	1980-81	AUS LOCAL	AUS HYV	AMAN LOCAL	AMAN HYV	BORO HYV	JUTE	WHEAT HYV	POTATO	SUGAR-CANE	GRAM	MUSTARD	LENTIL	GUR
1.	Per acre Labour Requirement (in man days)	77.03	69.36	63.95	71.84	85.32	106.04	59.01	127.49	194.43	30.27	40.95	30.15	-
2.	Proportion of Family labour (% in per acre)	52.49	22.46	32.38	17.34	22.47	33.27	43.11	33.58	15.03	96.27	56.73	54.46	-
3.	Proportion of Hired labour (% in per acre)	47.51	77.54	67.62	82.66	77.53	66.73	56.89	66.42	84.97	3.73	43.27	45.54	
4.	Share of labour cost in total cost of production (%)	41.21	33.36	34.13	41.14	30.47	45.46	27.81	21.99	38.21	29.09	25.98	22.20	39.83
5.	Cost per unit of labour (in Rupees)	5.67	6.03	5.98	8.56	5.66	5.95	6.01	6.75	6.78	6.86	6.18	7.29	-
6.	Product per manday labour in kgs.	10.06	18.35	16.34	25.60	19.28	7.53	12.62	54.25	90.40	6.61	7.52	6.23	

	1981-82	AUS LOCAL	AUS HYV	AMAN LOCAL	AMAN HYV	BORO	JUTE	WHEAT	POTATO	SUGAR-CANE	GRAM	MUSTARD	LENTIL
1.	Per acre Labour Requirement (in man days)	62.79	61.21	52.39	70.82	91.52	96.53	59.47	99.66	204.04	38.56	40.32	42.53
2.	Proportion of Family labour (% in per acre)	64.91	37.77	40.48	33.08	48.71	58.62	53.72	44.72	47.60	52.59	55.95	58.74
3.	Proportion of Hired labour (% in per acre)	35.09	62.23	59.52	66.92	51.29	41.38	46.28	55.28	52.40	47.41	44.05	41.26
4.	Share of labour cost in total cost of production (%)	31.57	22.51	28.21	24.52	26.15	37.75	23.55	16.97	27.74	21.52	20.71	25.03
5.	Cost per unit of labour (in Rupees)	6.52	6.65	8.26	7.38	7.18	6.80	6.82	7.26	7.58	6	6.77	6.58
6.	Product per manday labour in kgs.	10.57	20.42	13.70	16.68	18.42	7.38	12.91	49.68	138.88	9.93	8.46	5.36

TABLE 4.1 (CONTD.)

	1982-83	AUS LOCAL	AUS HYV	AMAN LOCAL	AMAN HYV	BORO	JUTE	WHEAT	POTATO	SUGAR-CANE	GRAM	MUS-TARD	LENTIL	TIL	TOBACCO	GUR
1.	Per acre Labour Requirement (in man days)	66.22	72.49	68.63	75.22	103.12	102.98	57.65	122	136.58	33.08	39.67	47.07	21.25	137.83	266.07
2.	Proportion of Family labour (% in per acre)	71.91	62.70	54.77	40	56.61	61.98	69.56	67.26	29.81	34.31	73.25	78.39	1	90.91	71.92
3.	Proportion of Hired labour (% in per acre)	28.09	37.30	45.23	60	43.49	38.02	30.44	32.74	70.19	65.69	26.75	21.61	-	9.09	28.08
4.	Share of labour cost in total cost of production (%)	39.76	28.80	31.61	27.57	27.37	42.67	25.80	22.62	21.37	20.91	25.07	33.98	16.26	50.44	33.12
5.	Cost per unit of labour (in Rupees)	7.51	8.02	6.78	7.45	7.66	7.09	7.40	7.38	7	6.34	7.70	7.62	7	7.27	7.50
6.	Product per manday labour (in kgs.)	8.17	16.11	9.19	13.24	18.46	6.42	11.14	40.20	207.23	7.26	7.59	5.18	5.88	3.28	7.62

	1984-85	AUS LOCAL	AUS HYV	AMAN LOCAL	AMAN HYV	BORO HYV	JUTE	WHEAT	POTATO	SUGAR-CANE	GRAM	MUSTARD
1.	Per acre Labour Requirement (in man days)	52.29	47.29	55.6	59.73	90.14	95.25	61.89	118.80	116.87	51.81	46.10
2.	Proportion of Family labour (% in per acre)	60.45	51.53	52.16	54.90	50.17	57.76	57.20	68.49	16.64	68.91	65.79
3.	Proportion of Hired labour (% in per acre)	39.55	48.47	47.84	45.10	49.83	42.24	42.80	31.51	83.36	31.09	34.21
4.	Share of labour cost in total cost of production (%)	31.04	31.81	30.51	26.95	26.92	33.62	27.05	22.93	23.65	24.70	25.58
5.	Cost per unit of labour (in Rupees)	8.60	13.76	9.36	8.45	8.98	8.11	8.13	9.33	7.93	6.51	8.78
6.	Product per manday labour in kgs.	12.16	27.32	16.83	22.64	21.50	9.10	13.75	55.37	278.58	11.58	7.14

Source: The Study on Farm Management and Cost of Production, Socio-Economic Evaluation Branch, West Bengal.

TABLE 4.2 : DIFFERENT LABOUR COMPONENTS IN THE COST OF AMAN (LOCAL) CULTIVATION

		1964-65	1965-66	1966-67	1967-68	1972-73	1973-74	1976-77	1977-78	1979-80	1980-81	1981-82	1982-83	1984-85
1.	Per acre labour requirement (in mandays)	51.12	41.66	53.38	49.00	54.48	64.28	63.89	63.58	64.22	63.95	52.39	68.63	55.6
2.	Percentage of Family labour per acre	28.05	26.43	26.38	26.53	31.91	27.01	29.97	31.66	32.12	32.38	40.48	54.77	52.16
3.	Percentage of Hired labour per acre	71.95	73.57	73.62	73.47	68.09	72.99	70.03	68.34	67.88	67.62	59.52	45.23	47.84
4.	Share of labour cost in total cost of production (%)	29.18	33.09	31.89	33.40	29.76	33.55	32.94	32.85	33.28	34.13	28.31	31.61	30.51
5.	Cost per unit of labour	2.26	3.24	2.93	4.32	3.41	3.88	4.60	4.66	5.53	5.98	8.26	6.78	9.36

Source: The Study on Farm Management and Cost of Production, Socio-Economic Evaluation Branch, West Bengal.

TABLE 4.3 : DIFFERENT LABOUR COMPONENTS IN THE COST OF AMAN (HYV) CULTIVATION

		1967-68	1972-73	1973-74	1976-77	1977-78	1979-80	1980-81	1981-82	1982-83	1984-85
1.	Per acre labour requirement (in mandays)	97	79.29	72.47	68.27	79.76	80.11	71.84	70.82	75.22	59.73
2.	Percentage of Family labour per acre	35.05	29.67	20.75	22.66	21.58	19.75	17.34	33.08	40.00	54.90
3.	Percentage of Hired labour per acre	64.95	70.33	79.25	77.34	78.42	80.25	82.66	66.92	60.00	45.10
4.	Share of labour cost in total cost of production (%)	33.26	31.69	33.95	32.94	33.29	37.14	41.14	24.52	27.57	26.95
5.	Cost per unit of labour	2.96	3.31	4.07	5.52	4.70	6.34	8.56	7.38	7.45	8.45

Source: The Study on Farm Management and Cost of Production, Socio-Economic Evaluation Branch, West Bengal.

TABLE 4.4 : DIFFERENT LABOUR COMPONENTS IN THE COST OF AUS (LOCAL) CULTIVATION

		1964-65	1965-65	1966-67	1967-68	1972-73	1973-74	1976-77	1977-78	1979-80	1980-81	1981-82	1982-83	1984-85
1.	Per acre labour requirement (in mandays)	57.45	49.44	58.32	51.52	59.19	62.53	74.43	69.75	114.36	77.03	62.79	66.22	52.29
2.	Percentage of Family labour per acre	34.61	38.65	34.94	26.53	40.68	38.54	47.61	45.02	51.06	52.49	64.91	71.91	60.45
3.	Percentage of Hired labour per acre	65.39	61.35	65.06	73.47	59.32	61.46	52.39	54.98	48.94	47.51	35.09	28.09	39.55
4.	Share of labour cost in total cost of production (%)	28.57	37.43	35.25	33.76	30.36	32.17	35.76	35.46	39.55	41.21	31.57	39.76	31.04
5.	Cost per unit of labour	2.00	2.82	2.55	4.25	3.25	3.51	4.18	4.29	3.58	5.67	6.52	7.51	8.60

Source: The Study on Farm Management and Cost of Production, Socio-Economic Evaluation Branch, West Bengal.

TABLE 4.5 : DIFFERENT LABOUR COMPONENTS IN THE COST OF AUS (HYV) CULTIVATION

		1967-68	1972-73	1973-74	1976-77	1977-78	1979-80	1980-81	1981-82	1982-83	1984-85
1.	Per acre labour requirement (in mandays)	96	74.28	82.78	72.69	83.00	86.90	69.36	61.21	72.49	47.29
2.	Percentage of Family labour per acre	34.33	39.50	32.38	25.77	18.70	24.71	22.46	37.77	62.70	51.53
3.	Percentage of Hired labour per acre	65.67	60.50	67.72	74.23	81.30	75.29	77.54	62.23	37.30	48.47
4.	Share of labour cost in total cost of production (%)	33.76	33.00	32.69	33.13	33.50	40.35	33.36	22.51	28.80	31.81
5.	Cost per unit of labour	2.17	3.43	3.88	5.33	4.68	5.44	6.03	6.65	8.02	8.60

Source: The Study on Farm Management and Cost of Production, Socio-Economic Evaluation Branch, West Bengal.

TABLE 4.6 : DIFFERENT LABOUR COMPONENTS IN THE COST OF BORO (HYV) CULTIVATION

		1967-68	1972-73	1973-74	1976-77	1977-78	1979-80	1980-81	1981-82	1982-83	1984-85
1.	Per acre labour requirement (in mandays)	112	90	106.75	111.78	100.65	105.03	85.32	91.52	103.12	90.14
2.	Percentage of Family labour per acre	41.96	23.33	18.22	23.60	24.63	31.67	22.47	48.71	56.61	50.17
3.	Percentage of Hired labour per acre	58.04	76.67	81.18	76.40	75.37	68.33	77.53	51.29	43.49	49.83
4.	Share of labour cost in total cost of production (%)	30.46	30.74	35.30	31.08	30.45	33.08	30.47	26.15	27.37	26.92
5.	Cost per unit of labour	2.80	3.66	4.75	4.64	4.78	5.58	5.66	7.18	7.66	8.98

Source: The Study on Farm Management and Cost of Production, Socio-Economic Evaluation Branch, West Bengal.

TABLE 4.7 : PER ACRE LABOUR USE IN AGRICULTURE OF WEST BENGAL

	1977-78	1979-80	1980-81	1981-82	1982-83	1984-85
Per acre labour in mandays	72.42	77.05	71.28	63.08	73.91	63.05
Proportion of Family labour	31.74	34.49	32.58	43.69	55.17	54.52
Proportion of Hired labour	68.26	65.51	67.42	56.31	44.83	45.48

Source: Socio-Economic Evaluation Branch, West Bengal.

TABLE 4.8 : LAND ALLOCATION UNDER DIFFERENT CROPS

AREA ('000 Hec.)

CROP YEAR	AMAN	AUS	BORO	WHEAT	JUTE	SUGAR-CANE	POTATO	BARLEY	GRAM	RAPE & MUSTARD	TOTAL
1960-61	3935.9	635.8	33.1	34.6	291.5	40.1	58.6	38.7	151.0	88.6	5307.9
1961-62	3868.8	522.9	29.8	45.8	463.1	34.4	57.5	61.1	164.8	115.5	5363.7
1962-63	3874.0	547.2	23.7	48.9	434.7	31.2	66.0	48.6	162.4	95.3	5332.0
1963-64	3920.1	586.8	24.4	54.9	446.1	32.6	65.6	39.5	157.7	87.1	5414.8
1964-65	4036.9	611.6	22.5	40.8	456.6	41.1	71.0	31.5	151.9	103.4	5567.3
1965-66	4033.5	587.1	30.1	41.2	403.6	39.3	82.1	34.4	142.5	98.4	5492.2
1966-67	3970.2	650.9	27.6	55.4	423.4	29.5	75.8	54.0	200.9	107.4	5595.1
1967-68	3921.9	737.7	54.8	79.0	496.0	26.7	78.5	52.4	167.6	111.9	5726.5
1968-69	3887.0	860.9	90.9	128.0	268.7	31.1	70.9	63.9	165.8	118.5	5685.7
1969-70	4117.6	798.4	106.3	206.8	437.5	39.2	59.6	65.5	162.8	104.0	6097.7
1970-71	3969.9	799.2	186.5	360.2	407.1	38.3	65.1	61.9	155.1	108.2	6151.5
1971-72	3887.4	499.8	304.2	422.4	461.1	33.9	72.8	81.0	134.7	107.0	6304.3
1972-73	3981.7	824.8	262.9	368.2	367.3	32.5	75.7	62.5	116.4	95.5	6187.5
1973-74	4048.0	841.7	325.1	330.1	418.5	30.8	80.5	66.1	94.3	122.6	6357.7
1974-75	4107.1	972.0	340.4	421.8	370.2	29.0	86.0	50.3	77.0	102.7	6556.5
1975-76	4241.1	864.6	320.7	565.3	334.7	29.3	112.8	48.3	98.7	95.3	6710.8
1976-77	4148.7	817.9	237.9	515.2	440.6	29.5	115.0	37.9	100.1	72.2	6515.0
1977-78	4308.5	807.5	308.7	484.4	478.6	31.4	126.1	37.4	89.2	96.6	6768.4
1978-79	3627.8	695.7	441.9	521.0	537.9	32.1	161.4	35.5	100.6	110.0	6263.9
1979-80	4022.9	628.0	253.8	505.9	504.3	29.3	106.3	31.3	104.3	115.6	6301.7
1980-81	4214.6	615.1	346.5	283.0	610.4	14.3	115.6	35.4	96.2	131.1	6462.2
1981-82	4216.2	695.0	298.8	214.0	505.9	23.0	118.0	31.7	64.7	163.3	6330.6
1982-83	3883.4	635.5	342.6	266.2	438.8	31.1	115.9	30.3	72.8	170.9	5987.5
1983-84	4130.9	721.4	520.3	329.1	463.5	20.3	145.8	24.2	62.1	189.3	6606.9
1984-85	4096.4	631.4	470.7	335.9	534.9	13.4	148.8	19.1	62.7	244.7	6558

Source: Department of Agriculture, West Bengal

TABLE 4.9 : PERCENTAGE OF AREA UNDER DIFFERENT CROPS

CROP YEAR	AMAN	AUS	BORO	WHEAT	JUTE	SUGAR-CANE	POTATO	BARLEY	GRAM	RAPE & MUSTARD	TOTAL
1960-61	74.15	11.98	0.62	0.65	5.49	0.76	1.10	0.73	2.85	1.67	100.00
1961-62	72.13	9.75	0.56	0.85	8.63	0.65	1.07	1.14	3.07	2.15	100.00
1962-63	72.66	10.26	0.44	0.92	8.15	0.59	1.24	0.90	3.05	1.79	100.00
1963-64	72.40	10.84	0.45	1.01	8.24	0.60	1.21	0.73	2.91	1.61	100.00
1964-65	72.51	10.98	0.40	0.73	8.20	0.74	1.28	0.57	2.73	1.86	100.00
1965-66	73.44	10.69	0.55	0.75	7.35	0.72	1.49	0.63	2.59	1.79	100.00
1966-67	70.96	11.63	0.49	0.99	7.57	0.53	1.35	0.97	3.59	1.92	100.00
1967-68	68.49	12.88	0.96	1.38	8.66	0.47	1.37	0.92	2.93	1.95	100.00
1968-69	68.36	15.14	1.60	2.25	4.73	0.55	1.25	1.12	2.92	2.08	100.00
1969-70	67.53	13.09	1.74	3.39	7.17	0.64	0.98	1.07	2.67	1.72	100.00
1970-71	64.54	12.99	3.03	5.86	6.62	0.62	1.06	1.01	2.51	1.76	100.00
1971-72	61.66	12.69	4.83	6.70	7.31	0.54	1.15	1.28	2.14	1.70	100.00
1972-73	64.35	13.33	4.25	5.95	5.94	0.53	1.22	1.01	1.88	1.54	100.00
1973-74	63.67	13.24	5.12	5.19	6.58	0.48	1.27	1.04	1.48	1.93	100.00
1974-75	62.64	14.82	5.20	6.43	5.65	0.44	1.31	0.77	1.17	1.57	100.00
1975-76	63.20	12.88	4.78	8.42	4.99	0.44	1.68	0.72	1.47	1.42	100.00
1976-77	63.68	12.55	3.65	7.91	6.76	0.45	1.77	0.58	1.54	1.11	100.00
1977-78	63.66	11.93	4.56	7.16	7.07	0.46	1.86	0.55	1.32	1.43	100.00
1978-79	57.92	11.10	7.05	8.32	8.59	0.50	2.58	0.57	1.61	1.76	100.00
1979-80	63.84	9.97	4.03	8.03	7.99	0.46	1.69	0.59	1.66	1.83	100.00
1980-81	65.22	9.52	5.36	4.38	9.44	0.22	1.79	0.55	1.49	2.03	100.00
1981-82	66.60	10.98	4.72	3.38	7.99	0.36	1.86	0.51	1.02	2.58	100.00
1982-83	64.86	10.60	5.72	4.45	7.33	0.52	1.94	0.51	1.22	2.85	100.00
1983-84	62.52	10.92	7.88	4.98	7.02	0.30	2.21	0.37	0.94	2.86	100.00
1984-85	62.46	9.63	7.18	5.12	8.16	0.20	2.27	0.29	0.96	3.73	100.00

Source : Department of Agriculture, West Bengal

TABLE 4.10 : YIELD RATE (KGS./HEC.) OF DIFFERENT CROPS

CROP YEAR	AMAN	AUS	BORO	WHEAT	JUTE	SUGAR-CANE	POTATO	BARLEY	GRAM	RAPE & MUSTARD
1960-61	1245	813	1139	743	1236	5130	9882	504	581	396
1961-62	1129	759	1101	751	1313	5285	12723	700	486	295
1962-63	1026	751	1131	626	1299	4343	12097	595	544	393
1963-64	1227	843	1189	596	1330	4715	8157	603	571	327
1964-65	1271	958	1204	684	1437	4611	11218	581	526	350
1965-66	1087	802	1226	825	1000	4555	10471	872	749	420
1966-67	1072	814	1449	821	1222	4407	8470	672	729	411
1967-68	1146	819	2018	900	1398	4412	8186	653	572	315
1968-69	1243	846	2441	2095	891	5688	12097	759	767	508
1969-70	1236	813	2979	2330	1398	5758	10195	745	655	421
1970-71	1183	1139	2871	2410	1187	5418	14281	683	666	330
1971-72	1185	1208	3070	2181	1354	4888	14558	747	670	325
1972-73	1052	965	2773	1869	1329	5058	12534	573	574	446
1973-74	1081	827	2243	1905	1580	5282	11997	713	572	361
1974-75	1172	899	2515	1984	1268	5800	15754	708	727	386
1975-76	1222	908	2806	2100	1445	5846	14332	853	796	412
1976-77	1106	788	3004	2040	1418	6142	14410	707	696	353
1977-78	1360	931	2857	2140	1303	6073	15152	895	887	443
1978-79	1335	819	2859	1916	1381	5872	15144	789	649	425
1979-80	1162	844	2680	1518	1348	4905	18800	952	692	462
1980-81	1429	937	2497	1672	1310	6057	17060	881	578	605
1981-82	1045	960	2534	1819	1591	6134	16680	850	663	580
1982-83	900	891	2591	2274	1552	5140	20012	858	695	532
1983-84	1431	966	2557	2595	1544	5044	21008	988	914	597
1984-85	1504	1046	2698	2418	1458	5752	21071	955	795	670

Source : Department of Agriculture, West Bengal.

TABLE 4.16 : LABOUR ABSORPTION AMONG DIFFERENT SIZE-CLASSES.

	AUS (LOCAL)				AUS (HYV)				AMAN (LOCAL)				AMAN (HYV)			
	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big
1981-82																
1. Per acre Labour Requirement (in man-days)	64.83	62.16	62.45	54.1	63.5	60.53	60.73	58.16	63.18	61.31	59.2	51.83	73.4	73.02	70.3	48.52
2. Proportion of Family labour (% in per acre)	67.73	63.84	59.65	65.32	52.61	46.32	21.44	24.64	61.71	42.03	35.71	35.33	38.28	32.88	24.98	30
3. Proportion of Hired labour (% in per acre)	32.27	36.16	40.35	34.68	47.39	53.68	78.56	75.36	38.29	57.97	64.29	64.67	61.72	67.12	75.02	69.0
4. Share of labour cost in total cost of production (%)	32.18	30.19	38.03	33.86	24.18	24.43	20.00	22.53	29.67	27.20	27.75	26.99	22.92	26.72	24.69	24.46
5. Cost per unit of Hired labour (in Rupees)	6.41	6.68	6.79	6.91	6.67	6.70	6.58	6.82	7.57	7.13	7.09	7.25	7.41	7.27	7.17	11.83
1982-83																
1. Per acre Labour Requirement (in man-days)	66.22	62.46	57.98	47.78	75.12	76.37	64.53	60.2	72.56	66.11	62.24	64.27	79.11	74.17	71.85	72.35
2. Proportion of Family labour (% in per acre)	71.91	63.58	59.81	55.19	79.45	57.38	40.04	37.97	64.95	45.85	42.37	36.25	52.96	36.11	32.32	20.40
3. Proportion of Hired labour (% in per acre)	28.09	36.42	40.19	44.81	20.55	42.62	59.96	62.03	35.05	54.15	57.63	63.75	47.04	63.89	67.68	79.60
4. Share of labour cost in total cost of production (%)	39.76	35.37	36.19	34.45	32.25	27.71	25.12	23.99	32.10	30.63	31.16	33.31	27.31	27.45	27.43	29.70
5. Cost per unit of Hired labour (in Rupees)	7.05	6.68	7.40	8.40	8.71	7.84	7.01	8.14	7.28	6.94	7.28	7.63	7.22	7.52	7.52	7.58
1984-85																
1. Per acre Labour Requirement (in man-days)	47.9	56.57	54.8	49.39	67.43	60.14	60.97	68.60	57.96	59.88	52.36	49.60	61.09	69.64	50.10	55.40
2. Proportion of Family labour (% in per acre)	64.97	59.84	52.30	60.56	37.51	67.18	92.20	52.23	59.40	51.13	37.78	32.64	59.79	51.98	55.73	41.25
3. Proportion of Hired labour (% in per acre)	35.03	40.16	47.70	39.44	62.49	32.82	57.8	47.77	40.60	48.87	62.22	67.36	40.87	48.02	44.27	58.75
4. Share of labour cost in total cost of production (%)	31.61	29.99	32.07	36.09	31.46	30.58	33.86	33.01	30.72	30.38	26.92	29.69	26.02	27.71	26.31	31.35
5. Cost per unit of Hired labour (in Rupees)	9.86	7.30	8.511	8.96	9.03	10.40	10.35	10.33	9.82	9.10	9.50	8.82	8.99	7.69	9.58	9.39

TABLE 4.16 (CONTD.)

		BORO				JUTE				WHEAT				POTATO			
		Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big
	1981-82																
1.	Per acre Labour Requirement (in man-days)	96.53	90.43	84.26	81.02	96.64	98.89	94.72	91.1	58.05	60.16	57.29	67.58	96.95	103.39	100.56	99.92
2.	Proportion of Family labour (% in per acre)	57.65	46.21	36.67	17.24	63.08	58.35	52.23	44.99	68.94	59.06	38.87	33.06	54.12	42.20	32.95	41.71
3.	Proportion of Hired labour (% in per acre)	42.35	53.79	63.33	82.76	36.92	41.65	47.77	55.01	31.06	40.94	61.13	66.94	45.88	57.80	67.05	58.29
4.	Share of labour cost in total cost of production (%)	26.94	25.87	25.76	21.08	36.82	38.71	37.79	39.88	23.25	22.98	23.32	25.99	15.40	17.60	18.95	17.79
5.	Cost per unit of Hired labour (in Rupees)	7.25	7.10	7.47	5.67	7.79	6.81	6.98	6.77	6.72	6.76	7.17	7.04	7.05	7.28	7.21	7.13
	1982-83																
1.	Per acre Labour Requirement (in man-days)	115.32	100.29	74.07	99.74	112.14	100.12	87.69	93.38	57.07	59.72	54.21	60.92	126.91	124.94	118.40	108.4
2.	Proportion of Family labour (% in per acre)	61.03	52.18	59.88	27.57	70.03	59.20	47.11	46.71	78.24	70.34	52.32	56.11	75.86	74.99	42.97	61.53
3.	Proportion of Hired labour (% in per acre)	38.97	47.82	40.12	72.43	29.97	40.80	52.89	53.29	21.76	29.66	47.68	43.89	24.14	25.01	57.03	38.47
4.	Share of labour cost in total cost of production (%)	28.23	26.93	26.63	23.76	44.72	41.98	38.28	42.31	24.74	27.26	24.45	29.63	24.63	22.43	20.09	21.93
5.	Cost per unit of Hired labour (in Rupees)	7.16	7.26	12.26	7.20	7.08	6.11	7.20	7.62	6.84	7.00	7.26	8.20	7.40	7.10	7.38	7.05
	1984-85																
1.	Per acre Labour Requirement (in man-days)	98.71	83.91	79.61	72.74	98.71	93.46	95.01	82.6	62.01	59.49	60.13	80.07	129.3	122.02	97.37	111.99
2.	Proportion of Family labour (% in per acre)	54.60	52.89	35.93	20.01	62.54	58.14	47.75	48.08	63.23	58.72	51.32	37.35	76.43	70.22	55.64	51.82
3.	Proportion of Hired labour (% in per acre)	45.40	47.11	64.07	79.98	37.46	41.85	52.25	51.92	36.77	41.28	48.68	62.65	23.57	29.78	44.36	48.18
4.	share of labour cost in total cost of production (%)	29.23	24.74	23.72	24.20	34.40	33.07	30.38	42.99	26.17	27.69	29.09	24.58	23.25	22.42	22.16	24.49
5.	Cost per unit of Hired labour (in Rupees)	9.46	8.24	8.16	7.79	8.10	8.20	8.05	8.94	7.59	7.85	8.97	4.25	8.88	8.71	10.82	11.92

TABLE 4.16 (CONTD.)

		SUGARCANE				GRAM				MUSTARD				LENTIL			
		Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big
	1981-82																
1.	Per acre Labour Requirement (in man-days)	215.32	175.0	215.16	150.0	37.65	49.46	-	29.04	41.61	41.42	39.31	37.09	34.52	39.9	55	45.97
2.	Proportion of Family labour (% in per acre)	40.60	78.57	42.80	60.0	64.25	67.41	-	4.68	73.18	55.29	47.72	36.10	3.45	39.85	100	100
3.	Proportion of Hired labour (% in per acre)	59.40	21.43	57.20	40.0	35.75	32.59	-	95.32	26.82	44.71	52.28	63.90	96.55	60.15	-	-
4.	Share of labour cost in total cost of production (%)	28.39	25.96	28.26	24.74	22.36	23.54	-	17.23	21.52	21.25	19.37	21.63	15.91	23.57	36.20	37.51
5.	Cost per unit of Hired labour (in Rupees)	6.80	7.50	7.69	8.0	6.25	6.30	-	5.36	6.58	6.95	7.04	7.01	7.50	6.88	-	-
	1982-83																
1.	Per acre Labour Requirement (in man-days)	136.19	128.41	142.81	-	34.21	33.19	32.49	30.53	38.08	42.95	39.83	36.39	47.6	44.94		
2.	Proportion of Family labour (% in per acre)	34.74	29.40	20.64	-	54.98	31.33	11.08	23.75	88.27	70.92	63.85	42.77	86.43	44.37		
3.	Proportion of Hired labour (% in per acre)	65.26	70.60	79.36	-	45.02	68.67	88.92	76.25	11.73	29.08	36.15	52.73	13.57	55.63		
4.	Share of labour cost in total cost of production (%)	21.27	19.64	22.75	-	24.43	19.80	18.73	19.44	28.08	25.01	22.66	21.06	34.80	30.83		
5.	Cost per unit of Hired labour (in Rupees)	7.0	7.0	7.0	-	6.25	5.70	5.98	7.41	13.44	7.18	7.46	7.29	7.79	7.5		
	1984-85																
1.	Per acre Labour Requirement (in man-days)	88.18	172.78	111.77	109.9	46.62	67.36	-	-	47.34	45.9	47.05	37.99				
2.	Proportion of Family labour (% in per acre)	24.98	19.72	2.42	7.11	62.87	81.44	-	-	73.53	67.58	51.69	55.44				
3.	Proportion of Hired labour (% in per acre)	75.02	80.28	97.58	92.89	37.13	18.56	-	-	26.47	32.42	48.31	44.56				
4.	Share of labour cost in total cost of production (%)	21.06	26.30	27.25	20.85	22.55	32.05	-	-	24.21	27.13	27.43	22.25				
5.	Cost per unit of Hired labour (in Rupees)	7.61	8.00	8.12	8.00	8.94	8.00	-	-	8.00	7.98	8.97	10.32				

SOURCE : Study on Farm Management and Cost of Production, Socio-Economic Evaluation Branch, West Bengal.

TABLE 4.17 : LABOUR PRODUCTIVITIES AMONG DIFFERENT SIZE CLASSES

	AVS (LOCAL)				AMAN (HYV)				AMAN (LOCAL)				AMAN (KYV)				BORO			
	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big
1981-82	10.10	10.89	11.11	10.94	18.24	19.89	21.95	23.38	11.17	11.85	12.33	13.89	16.00	18.08	16.87	31.53	16.65	19.30	21.05	19.43
1982-83	7.91	9.51	9.62	9.04	13.43	16.21	20.87	21.46	8.16	10.74	10.59	8.45	12.32	13.62	13.93	14.15	16.35	19.95	24.42	18.63
1984-85	11.25	12.96	12.93	10.56	18.70	20.73	22.75	20.01	16.15	17.31	18.05	17.24	20.23	24.72	25.91	19.19	19.70	23.45	25.0	20.73

	JUTE				WHEAT				POTATO				SUGARCANE			
	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big	Marginal	Small	Medium	Big
1981-82	4.32	4.36	7.47	7.54	13.33	11.78	13.89	12.34	46.37	51.99	52.43	50.46	103.98	128.57	159.35	266.66
1982-83	5.96	6.84	7.42	6.01	11.25	10.95	12.62	8.49	34.42	42.80	46.65	41.73	202.32	215.80	211.46	-
1984-85	8.44	8.41	8.49	5.79	14.47	14.09	13.57	9.33	50.54	52.86	56.67	43.15	317.48	250.08	242.05	304.62

Source: Study on Farm Management and Cost of Production, Socio-Economic Evaluation Branch, West Bengal.

TABLE 4.18 : PER ACRE YIELD, LABOUR ABSORPTION AND LABOUR PRODUCTIVITIES IN RICE CULTIVATION

YEAR	1964-65	1965-66	1966-67	1967-68	1972-73	1973-74	1976-77	1977-78	1979-80	1980-81	1981-82	1982-83	1984-85
Per Acre Yield in kgs.	497.66	425.71	420.12	447.13	456.15	450.21	462.52	559.07	485.59	583.54	452.90	411.91	629.95
Per Acre Labour Absorption in Man-days	51.95	42.65	54.08	56.96	58.59	68.26	68.25	69.79	74.44	68.08	59.68	72.61	59.09
Product per Man-day Labour in kgs.	9.58	9.98	7.77	7.85	7.79	6.60	6.78	8.01	6.52	8.57	7.59	5.67	10.66

Source: Study of Farm Management and Cost of Production, Socio-Economic Evaluation Branch, West Bengal.

Summary and Conclusion

Here, we summarise the broad findings of our preceding discussions. This study began with the analysis of the condition of agricultural labourers of West Bengal through history. This is for the very understandable reason that a realistic analysis can not but be based on history.

PRE - INDEPENDENCE GROWTH OF AGRICULTURAL LABOUR

Beginning with an account of the pre - British situation, we traced the growth of agricultural labourers under the British colonial regime. The discussion of the pre-British period mainly concerned the question whether there was a numerically significant class of agricultural labourers in West Bengal before the arrival of the British. For this purpose, from Hunter's caste data we tried to give an idea of the occupational structure of West Bengal during the pre - British period based on Dasgupta's (1984) study.[1] This exercise is very limited because it only included the Hindu population of the state, although non - Hindu population was considerable at that time. Actually, caste system does not exist among the Muslims and other non - Hindu population. So we could not include them in our analysis. However, the exercise with all its limitations suggest the numerical insignificance of the class of agricultural labourers in the pre - British period as compared to what we find later.

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1. See section 1.1.4 and table 1.1

The existence of Khud-Kasht system indicates that agricultural labourers were not totally non-existent during the pre-British period in the state and in fact in the late Mughal period hiring of labour in cultivation occurred although to a very limited extent. However, the hired labourers were not present in plenty as a considerable class during that period. Perhaps this was their secondary occupation.

In the British period agricultural labourers became prominent as a substantial class mostly due to the colonial policies. The three features of the British rule which crippled the agrarian economy of Bengal were, permanent settlement, forced commercialisation of agriculture and de-industrialisation.

The permanent settlement and forced commercialisation of agriculture resulted in a tremendous expansion of usuary and the emergence of a prominent money lender class in the agrarian society of Bengal. By the permanent settlement the Britishers made land an alienable commodity without creating full private property in it. The operations of usuary capital after the establishment of operational property rights on land dispossessed a large section of the traditional rayotes, who swelled the ranks of agricultural labourers.

The de-industrialisation compelled the large section of weavers and artisans to leave their traditional occupation and

to shift to agriculture. But even then, till the 1920s, the pressure on land was not very high and the imbalance created by the colonial policies was not felt much. Two factors have contributed in this regard: (i) expansion of area under cultivation through de-forestation; and (ii) more or less stagnant population. However, demand for labour increased during this period.[2] This demand was met largely by the tribal and migrant labourers. The settled agriculturists of Bengal were not interested in the occupation of pure wage labourers.

After the 1920s the situation changed remarkably. Since 1921 there was a tremendous rise in the population growth which in effect worsened the land-man ratio. The world wide recession of the period between the two world wars also affected the employment opportunities outside agriculture and increased the dependence on agriculture. The tenancy bill of 1928 led to massive ejection of tenants and sharecroppers from the soil. On account of all these factors there was a massive rise of agricultural labourers after the 1920s.[3] This rise of agricultural labourers changed the ethnic composition of the class of agricultural labourers. In earlier periods of British rule agricultural labourers were largely tribals and migrants from outside Bengal. But after 1921 the growing landlessness and

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2. See section 1.2.3.

3. See section 1.2.6.

joblessness compelled a large number of non-tribal Bengali agriculturist to enter into the pool of agricultural labourers.[4]

Thus, in the British period, permanent settlement forced commercialisation of agriculture and de-industrialisation initiated a marked process of pauperisation amongst the poorer section of the population. Basically due to this pauperisation under colonial oppression the class of agricultural labourers was created substantially. This process of the creation of this class is different from the creation of 'agricultural proletariats' in Western advanced capitalist countries. In these countries the class of agriculautral labourers was formed by a process of proletarisation of the poorer peasants with the growth of capitalist production in agriculture.

After 1920s due to the huge rise of agricultural labourers their wages and earnings reduced remarkably. Consequently, they were enmeshed in usurions indebtedness which in term worsened their condition forthermore. As a consequence of the massive rise in agricultural labourers, the patron - client relation became weakened and casualisation of labourers rose. Thelow levels of

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4. Section 1.2.6.

wages and uncertainty in employment opportunities made agricultural labourers subject to destitution. This fact is best udnerstood from the experience of Great Bengal Famine in 1943 - 44 in which the worst affected group was agricultural labourers.[5]

POST - INDEPENDENCE GROWTH OF AGRICULTURAL LABOURER

Even in the post - independence period when the imperial yoke had been lifted, some of those elements which were rooted and strengthened by the colonial oppression and which were primarily responsible for the growth of the class of agricultural labourers are still active. As a result, in the post-independent period the preponderence of the class of agricultural labourers has been maintained in West Bengal.

In the state due to high rate of population growth and inadequate employment opportunities in the industrial sector, the demographic pressure on land is very high. The land - man ratio is steadily declining.[6] Moreover, the distribution of cultivated land in West Bengal is characterised by inequalities in the distribution along with concentration of small and marginal holdings at the bottom end of the distribution.[7]

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5. Section 1.2.7.
6. Table 2.2
7. Table 2.7 and section 2.1.3.

In such a situation the marginalised peasants are taking increasingly to wage employment in and outside agriculture, in order to supplement their household earnings. Hence, there is a rise of agricultural wage labourers among the agricultural workers.

Despite the definitional differences among the decennial Population Censuses it is observed that the proportion of agricultural labourers among total agricultural workers as also among total rural workers is very high and has been rising in the post - independent period.[8] This rise of the proportion of agricultural labourers can be explained by the fact that a considerable proportion of cultivators consisting of mainly tenants and tiny landowners has been deprived of their operational holdings in the state mainly due to tenurial legislations and irrigation -seed - fertiliser innovation after mid - sixtees. These tenants and tiny landowners have joined in the pool of agricultural labourers. Several studies of Bandyopadhaya (1975), Rudra and Newaj (1975), Daniel and Alice Thorner (1962) have provided evindence in this regard.

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8. Table 2.9.

Now, among the agricultural labourers it is observed that the male participation is the highest. Moreover, the proportion of main workers among male agricultural labourers is higher than that of female agricultural labourers.[9] Female agricultural labourers are basically included in the marginal category, because employment of female labourers is highly seasonal and there are some specific operations of cultivation for which female labourers are employed. Furthermore, they are mostly employed in the situation where there is a huge demand for labourers particularly at the time of harvesting and sowing and there is shortage of male labourers.

Reading from the proportion of agricultural labourers belonging to scheduled castes and scheduled tribes to total agricultural labourers we observe that, although the lower castes and tribals continue to constitute the largest proportion, the proportion of upper castes agricultural labourers is increasing over time.[10] The changes in the ethnic composition of castes which began after the 1920s in the British period are still continuing. Again, the massive growth of agricultural labourers had weakened the patron - client relationship even in the British period after the 1920s. That process too continues after the independence with increasing casualisation of labourers.[11]

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9. Table 2.14.
10. See table 2.15.
11. See section 2.2.7

This large section of agricultural labourers of West Bengal who are mostly landless and illiterate people, are not properly organised and have very low bargaining power in the labour exchange. This aspect is reflected in their wages, incomes, and levels of living.

ECONOMIC CONDITION OF AGRICULTURAL LABOURERS DURING THE POST - INDEPENDENCE PERIOD

A debate has been started since seventies whether the economic conditions of agrcultural labourers of India have improved or declined overtime, specially after the advent of green revolution. This question has been looked into in chapter III in the context of West Bengal. This discussion reflects the extent and incidence of poverty among agricultural labourers of the state.

To discuss the economic conditions of agricultural labourers of West Bengal we are mainly concerned with wages, incomes, employments, consumption levels and indebtedness of them. As regards wages, we have observed that the trend of real wage rates have two distinct phases in the state.[12] The first is between 1956 - 57 to 1974 -75 when real wage rates had a declining trend while in the next phase from 1975 - 76

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12. See tables 3.1, 3.2, 3.3 and figure 3.7

onwards there was a rise in the real wage rates, although at a very slow rate and with wide fluctualtions. However, the overall trend of agricultural real wage rates in the state is more or less stagnant or sometimes declining. From the trend of rice equivalent of agricultural wages it is observed that there is a longer trend of deterioration of agricultural wages in the state.

Wage differentials among adult male, female and child agricultural labourers are observed throughout the period under analysis. After mid - seventies a narrowing of wage variation among male, female and child agricultural labourers has taken place. There is also wide wage variation accross districts of West Bengal and there is no discermible trend in the coefficients of variations of wage rates of the districts of West Bengal from which we can infer increase or decrease of inter district variations in wage rates overtime. However, it has been observed that the wage rates are higher in better irrigated districts than in other districts.

Now it has been observed that the intertemporal movement of real wage rates can not be explained by the movemement of labour productivities. Actually after the mid - seventies an increase, although at a very low extent with fluctuations, in real wage rates has been observed in the state possibly due to

some state control on the agricultural wage rates.[13]

The NSS estimates also provide evidences in favour of the observation drawn from AWI data that, in the state, there is a stagnating or declining trend of agricultural real wages.[14] The stagnant or declining trend in real wages is maintained when we move beyond the average to the decomposition of wage rates by major operations. Furthermore, we note that operation wise wage variations do not depend upon that toil or exertion of the work. Perhaps they are determined historically. Again, from the NSS estimates it is also observed that kind payment is highly prevalent for the agricultural labourers of West Bengal.

Wage rates alone can not be ragarded as the indicator of the income earnings of agricultural labourers. For this the employment situation should also be analysed. To see the employment situation of agricultural labourers we started with the wage - earners ratio which reveals the labour participation rates of agricultural labour households since this would provide the information about the proporation of employed members of the

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13. See section 3.8

14. Tables 3.5 and 3.6.

labour household. Apart from 1974 - 75, it is seen that the proportion of wage earners ratio in the agricultural labour households remained within the range of 40 per cent.[15] In the draught year of 1974 - 75 the wage earners ratio became very high because in that year the general levels of living declined sharply and this would have forced a large number of otherwise non - workers, such as women and children, into the work force. Thus, the fluctuations of wage earners ratios in different years could be linked with fluctuations in agricultural performance, particularly when there are sharp variations.

Regarding the employment scenario of agricultural labourers in the state, it has been observed that employment in non - agricultural operations or in self - employment category is declining between 1956 - 57 and 1977 - 78,[16] whereas apart from the draught affected year of 1974 - 75 wage employment in agricultural operations is rising. Broadly speaking, the average number of days of employment per agricultural labourer has risen during the period, although at a very slow rate.

Due to lack of data it is very difficult to show possible trend in income levels of agricultural labour households. In this regard the change in annual wage earnings per agricultural

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15. Table 3.8
16. This is a very different feature of West Bengal compared to many other states of India where in fact secondary employment of agricultural labourers have increased. However, from the 38th Round of NSS it is observed that in 1983 the non-agricultural employment opportuinites for the rural labour household of West Bengal increased and became around 30 per cent of the total employment available.

labour household may give an approximate idea. Its movement is varying: it shows that between 1956 - 57 and 1964 - 65 it increased while in 1974 - 75 it decreased and again in 1977-78 it increased a little. Among agricultural labour households landed housholds' avaerge annual wage earnings is less than that of landless households.

The low levels of income of the agricultural labour households entail low levels of consumption for them. Per capita annual consumption expendidture of agricultural labour households had a declining trend. In the consumption bundle of agricultural labour household food items, and particularly cereals, constitute a very high proportion of expenditure. Among the non - food items the proportion of expenditure, particularly on essential commodities like cloth, footwear, fuel etc. is very low and declining.[17] This reflects the low level of living of the agricultural labour household.

Since there is always a big gap between income levels and essential expenditure requirements of the agricultural labour households the proportion of indebtedness among them is very high. The major sources of the debt of these households are non-institutional and the maximum proportion of the debt taken is spent for unproductive consumption purposes.[18]

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17. Table 3.16

18. section 3.7 and Table 3.17.

These observations can not suggest that the economic conditions of agricultural labourers in West Bengal have improved considerably during the post-independence period. The government policies to improve the wages and employments of these labourers are not properly functioning and are grossly inadequate.[19]

However, our study has a number of limitations. The movements of wage rates over time can not be analysed in depth, given the broad statistics. For example, we can not explain how in a particular year, the wage rate is determined. The discussion on income, employment, consumption levels and indebtedness of agricultural labour households of the state are based entirely on NSS estimates. But NSS provides data for few points of time. From this limited series of data the inferences drawn are bound to be very limited.

LABOUR ABSORPTION IN AGRICULTURE

Our discussion on wage and employment of agricultural labourers would not be complete if we do not consider

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19. Section 3.8 and tables 3.18, 3.19 and 3.20

the conditions of demand for these labourers in agriculture. The large supply of agricultural labourers, mediated by factors governing the level of demand for such labourers, must ultimately reflect itself in the level of employment and wages available for them. Hence, in Chapter IV the labour absorption phenomenon in agriculture of West Bengal is discussed which reflects the patterns of demand for labour in agriculture. Here, it is to be mentioned that although the agricultural labourers earns his major portion of income from wage employment in agricultural operations, he is also engaged in other secondary occupations. But we have not considered those employment aspects in our analysis. This is a limitation of our study.

It has been argued by different studies that labour absorption in Indian agriculture is similar to that in South and South - East Asia, the rate of per acre labour use being very low. However, after the advent of green revolution the rate of labour absorption in agriculture increased. In the context of West Bengal it has been observed although after mid - sixties the per acre labour absorption in the state has increased moderately, the rate is yet very low compared to that of some Far - East Asian countries before the 1960s.[20]

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20. Table 4.7.

In the total increase of labour absorption in West Bengal it has been seen that changes in cropping pattern and cropping intensity have only insignificant contribution during the period 1970 - 71 to 1984 - 85.[21] Most of the increase of labour absorption in agariculture of the state has come from the increase in per acre labour use in man - days in different crops. It has been observed that in the increase of per acre labour absorption in a crop production the HYV seeds, fertiliser and irrigation have positive impacts on employment.[22]

This increase of labour intensity in crop cultivation has not been accompanied by proportionate rise in yield rates. As a consequence, labour productivity has a declinging trend. Hence, it can be stated that the increase of labour use which has taken place in the state may not be a sustainable development.

As regards labour use among different size classes, the 'Farm Size and Productivity' debate and ARTEP studies opine that smaller farms use higher amount of labour per unit of land with greater availability of family labour relative to land on

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21. Table 4.12.

22. See Section 4.4 and tables 4.19, 4.20, 4.21 and 4.22.

smaller holding. In the context of West Bengal it has been observed that, in the majority of cases, the inverse relation between farm size and amount of labour employed prevails. Moreover, it is also observed that marginal and small farms use family labour more intensively than the mediaum and large farms.[23]

In West Bengal, agriculture is characterised by dual labour system, i.e. the prevalence of both family and hired labour. But family labour and hired labour are not substitutive categories. Its is verfied that, in the context of labour in agriculture of the state, neither of the two extreme notions is justified : that family labour and hired labour are completely different categories so that family labour is a datum for cultivating household, or, that they are substitutives so that the existing wage rate for hired labour measures the opportunity cost of family labout.[24]

Regarding the prospect of labour absorption in agriculture it was argued in the earlier studies of ARTEP that since the expansion of non - agricultural sector is not adequate to absorb the rapidly growing labour force in the South and South - East Asian countries, the additional employment opportunities required

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23. Table 4.16.

24. Section 4.3.6

has to be generated within agriculture itself. But serious doubts have been raised agianst this proposition. In some recent studies it is suggested that labour absorptive capacity of Indian agriculture with respect to total output growth and to yield per unit of land was relatively high and possibly rising from the mid-sixties to the mid-seventies but that it declined thereafter. After mid-seventies in order to increase both land and labour productivities a labour saving technique was chosen. Eventually this led to a decline in labour intensity.

We observe in West Bengal, a different phenomenon compared to the highly productive states like Punjab, Harayana and Uttar Pradesh. In West Bengal, although after mid-sixties the labour absorption increased at a moderate level, that rate has not declined after mid - seventies. Even after mid-seventies the rate has been maintained with a decline however in labour productivity.

Comparing the experiences of highly productive states it has become evident that for productive labour absorption in the agriculture of West Bengal, reliance should be on the extension of gross - cropped area by increasing cropping intensity. But this route for generating additional emplpoyment opportunities has certain narrow limits.[25] Hence, for employment of the large section of rural labourers creation of productive jobs outside

25. Section 4.5.

agriculture is immensely important.

Our discussion so far on the condition of agricultural labourers of West Bengal is entirely based on the aggregative data provided by secondary sources. On the basis of these data our analysis does not reflect any major break through in the condition of agricultural labourers of the state during the post - independence period. However, some micro studies have emphasised that changes in real terms have taken place in the agrarian economy of India after independence due to commercialisation and other factors. But that type of change is not focussed in our study. This is basically due to the limitation of aggregative data from secondary sources.

This study reflects some of the features of underformed labour exchange system in the agriculture of West Bengal. But our discussion does not analyse, as such the formation of agricultural labour market or labour exchange systems in the agriculture of the state. In an agrarian economy like West Bengal the agricultural labour market is characterised by the symbiotic relation between the survival strategy of the chronically deficit and subsistent strata and the surplus appropriation strategy of the surplus strata. But to discuss this aspect with required empirical basis we need further study with primary level investigations.

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ARTEP	-	Asian Regional Team for Employment Promotion.
CUP	-	Cambridge University Press.
EPW	-	Economic and Political Weakly.
EPW, ROA	-	Review of Agricultural in the EPW,
GOI	-	Government of India
GOWB	-	Government of West Bengal
IJAE	-	The Indian Journal of Agricultural Economics
JFE	-	Journal of Farm Economics
JPS	-	The Journal of Peasant Studies.
ILO	-	International LabourOffice
OUP	-	Oxford University Press
SS	-	Social Scientist
WEP	-	World Employment Problem.

Note:- In cases where an old book or paper has been reprinted, the date after the author's name refers to the date of the particular edition which has been consulted.

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