| Chapter I : | Introduction and overview of the district |

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1.1   Rationale for District Human Development Report

While writing on the human development perspective, Amartya Sen quotes from Dante's *The Divine Comedy*: "Born to ascend on the wings,/ Why do ye fall at such a little wind?" Sen then adds, "The contrast between what great things human beings can achieve and what limited lives most women and men end up living is truly remarkable". One wonders if Sen is referring to Birbhum, as the district epitomises the contrast in no uncertain terms. The coexistence of a large group of illiterate agrarian population and a Central University that has had deep association with two Nobel laureates has made the district truly remarkable.

The human development perspective explicitly recognizes expansion of people's choices and freedom as the basic purpose of development. Ever since the publication of the first *Human Development Report* (HDR) by the United Nations Development Programme (UNDP) in 1990, the human development perspective has been strengthening its influence on the policy makers and development administrators, and on the way they view development. Some prefer to call it a 'paradigm shift' in development discourse as it draws our attention to the more direct and important aspects of human life than growth in income. UNDP has since been persuading all the national and sub-national governments in the developing world to prepare their own human development reports. The impact of such a drive seems quite evident around the globe. Many developing countries and sub-national units within these countries have taken major steps in formulating and implementing their long-term human development plans based on the reports they have prepared. While economic growth, investment, trade, inflation and balance of payments are all quite legitimate concerns of planners and policy makers anywhere in the world, people often value achievements that do not show up immediately in investment or growth figures. Greater access to knowledge, better nutrition and health services, more secure livelihoods, security against physical violence and natural calamities, political and cultural freedoms, participation in community life – these are all among the most important aspects of living that the human development approach draws our attention to.

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The State Human Development Reports for different states in India have been instrumental in infusing human development concerns into the states' policies and programmes. The positive impact that these reports have on the state plans in the recent years can be considered as a good reason for further extending the effort to produce District Human Development Reports (DHDR). There are even more important reasons why DHDRs ought to have a place in the overall strategy to improve human development in the state. It can be argued that the problems of various services that are directly related to different dimensions of human development, such as health care and education, can be better diagnosed at the district level than at the state level. Programmes such as the District Primary Education Programme (DPEP) have explicit focus on districts as the relevant unit for implementation of the programme. Districts are also the basic implementation units of the state's health care programmes.

A District Human Development Report is therefore expected to

    i)   chart the progress the district has so far made on the human development front, in terms of various indicators;

    ii) reckon intra-district disparities of different kinds – between rural and urban areas, across development blocks, among social and community groups, between men and women;

    iii) analyse the evolution and current state of human development by linking them to the social, economic and demographic processes that characterize the district;

    iv) identify the possible strategies for human development in the district.

The report would focus on such basic dimensions of human development as education, health, and access to basic resources (as indicated by income and assets). However, in each of these areas district-specific factors will have to be identified and analysed. In terms of indicators of human development, Birbhum turns out to be one of the backward districts of West Bengal, as it ranked 14 among the 17[1] districts, according to West Bengal Human Development Report, 2004. The presence of a significant number of people belonging to the Scheduled Castes, Scheduled Tribes and the Muslim

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[1] Wherever Census 2001 data have been used the comparison has been done among the 17 instead of 19 districts, as the bifurcation of West Dinajpur as well as Medinipur is a more recent event than the Census.

community in the district, who are generally more disadvantaged than others, makes it important to focus on various forms of inter-group disparities. The special emphasis will be on different forms of vulnerability among various segments of population. Various indicators will be presented at different levels of disaggregation depending on the availability of data, complemented by studies based on small surveys that researchers have done. However, the richness of the concept of human development hardly matches the data that are currently available at the district and sub-district levels. On a number of variables the data available with the concerned departments do not seem adequate. This is understandable given the fact that they are collected and maintained for various administrative purposes which are somewhat different from the analytical purpose of a report like the district human development report. A district human development report, therefore, must be an exercise in optimisation given the data constraint.

The report is divided into nine chapters including the present one. In the rest of the present chapter, we present an overall picture of Birbhum, its population, land area and demographic composition with district and block level indicators. In Chapter II, progress in the area of education is analysed. Chapter III deals with public health and medical care. In Chapter IV the economic opportunities and livelihood issues will be discussed. In this chapter, the possibilities of expanding economic opportunities are also discussed. The livelihood issues cannot be fully appreciated without the related problem of vulnerability. In Chapter V, it is discussed why the issue of vulnerability is distinct from poverty per se and various indicators of vulnerability have been used to rank blocks. Various natural and other disasters like flood and epidemic of avian flu that make people vulnerable have also been discussed in this chapter. In Chapter VI we revisit some of the indicators of inter-group disparities that we discuss in Chapters I and II and relate to the policy measures adopted by the state that aim at reducing these disparities. In Chapter VII we focus on women and children. We revisit the indicators of male-female disparity in health, education and economic opportunities and relate them to the state's attempt to reduce these disparities. The state's efforts at improving human development indicators and their distribution among different groups of people logically lead to the issues in governance. The effects of decentralisation and the need for and possibilities of convergence among various units of the state machinery are discussed in Chapter VIII. Chapter IX concludes.

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1.2 The Land and the people

Birbhum is one of the 19 districts of West Bengal sharing 5.12 per cent of the land area of the state but 3.76 per cent of its total population, indicating a relatively lower density of population per square kilometre in the district (663) vis-à-vis the state (903). Between 1991 and 2001 census years, the population of Birbhum increased from 25.56 lakhs to 30.15 lakhs registering 18.0 per cent decennial growth rate, which is marginally higher than the growth rate of population in West Bengal as a whole (17.8 per cent).

The district is characterised by an undulating topography caused by the Chhotanagpur plateau that protrudes through the western borders of the district. The land terrain slopes down towards the east and merges with the alluvial plains of the Ganga. The district is triangular in shape with the river Ajoy forming the base of the triangle. The river forms the boundary between Birbhum and Bardhaman districts. The district borders the states of Jharkhand and Bihar on the west, and lies at the eastern end of the Chhotanagpur plateau. Another important river is Mayurakshi, on which a river valley project that includes the Tilpara Barrage provides irrigation for about 600,000 acres (2400 km²).

Almost all the rivers flowing through Birbhum originate in the Chhotanagpur plateau region of Jharkhand and flow across the district in a west-east direction. These rivers are seasonal in nature, and have their maximum flow in the monsoon, but dry up in summer. The district experiences occasional floods due to occasionally heavy rainfall coupled with breaches of river embankments. Excess rainfall in the upper catchment areas of the major river valley projects such as Mayurakshi, Hinglow and Dwarka raises the level of water in the reservoirs and when the excess water is released large areas of the district get flooded, which in turn seriously affects the lives of people. Proneness to disasters such as these has important implications for the district's human development strategy.
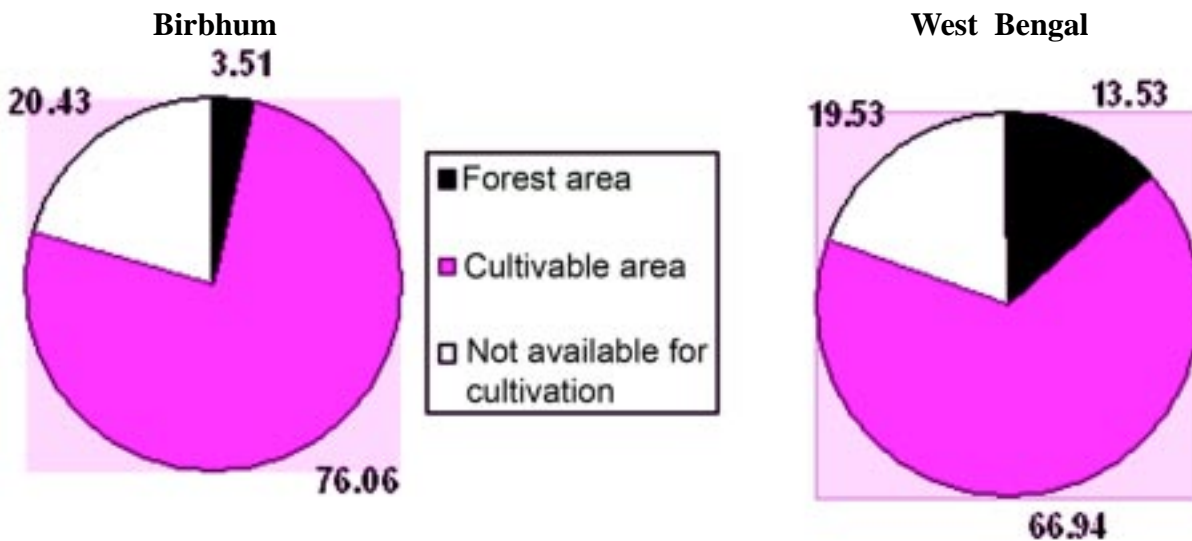
The comparatively fertile eastern portion, constituting the north-eastern Rarh region, merges with the Gangetic plain. Important geographical features in Birbhum are the *khoai* (eroded undulated patches of barren area), the red soil (*ranga mati*), with palm trees visible from a long distance and protected forest areas on the western side. However, the total area under forest as a percentage of total land area of the district is much smaller (3.5 per cent) compared to the state as a whole (13.5 per cent). The principal feature of the geology of Birbhum is the gradient of red soil. Birbhum has

some mineral reserves that are relatively unimportant in the national context but are important locally. Coal, China clay, low grade iron-ore and granite are mined in west Birbhum.

The climate on the western region near the edge of the Chhotanagpur Plateau is dry and extreme, but is relatively milder on the eastern side. Summer temperatures can be over 40°C and winter lows are about 10°C. The region receives a rainfall of around 1,300 mm per year, mostly concentrated in the monsoon. The dry plateau feature makes the land in the west less fertile compared to the plains in the east. Situated near the main railway route connecting Delhi and Kolkata, the district is easily accessed by railroad. The main railway stations are at Bolpur and Rampurhat, with regular trains to Kolkata. The area is also accessible by road from other parts of the country as it is flanked by National Highways 2 and 34 on the south and east.

The district is predominantly agricultural; 76.06 per cent of total land area is reckoned as cultivable, which is ten percentage points higher than that for West Bengal as a whole.

Figure 1.1   Land use pattern in Birbhum and West Bengal, 2004-05

Birbhum

3.51
20.43
76.06

West Bengal

19.53   13.53
66.94

- Forest area
- Cultivable area
- Not available for cultivation

The soil type is older alluvial in the east and laterite in the west. Birbhum tops among all the districts in West Bengal in terms of per capita cereal production. This cannot be attributed entirely to the high percentage of cultivable land area only. Both Uttar Dinajpur and Dakshin Dinajpur have even higher percentage of cultivable land, but per capita cereal production in those districts lag far behind Birbhum. Productivity of cereals like rice and wheat as well as other foodgrains is higher in Birbhum compared to the state as a whole. Although the vast areas of the district remain rural, in recent times

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the Bolpur-Sriniketan area has been the site of many real estate development projects such as condominiums and housing complexes for people from urban centres in West Bengal.

Table 1.1: Land use pattern in Birbhum and West Bengal, 2005-06

	Reporting area (hectares)	% forest area	% Cultivable area	% area not available for cultivation
Birbhum	451118	3.51	76.06	20.43
West Bengal	8682954	13.53	66.94	19.53

Source: Statistical Abstract, Government of West Bengal

Administratively Birbhum is divided into three Sub-divisions: Sadar, Rampurhat and Bolpur. Rampurhat is the largest of the three Sub-divisions in terms of population sharing 42 per cent of the total population of the district, followed by Sadar (33 per cent) and Bolpur (25 per cent). Some pieces of basic information on the three Sub-divisions are provided in Table 1.2.

Table 1.2: Select indicators by Sub-divisions in Birbhum

	Rampurhat	Sadar	Bolpur
Area (sq km)	1574.23	1782.72	1186.66
Population (lakh)	12.70	9.86	7.60
Population density (persons/ sq km)	807	553	640
Percentage of urban population	4.0	14.4	8.6
Number of blocks or Panchayat Samitis	8	7	4
Blocks or Panchayat Samitis in each Sub-division	Nalhati – I Nalhati – II Murarai – I Murarai – II Mayureswar – I Mayureswar –II Rampurhat – I Rampurhat - II	Md Bazar Sainthia Dubrajpur Rajnagar Suri – I Suri – II Khoyrasole	Bolpur-Sriniketan Labhpur Nanoor Illambazar
Total number of Panchayats	65	62	40
Number of municipalities	2	3	1
Municipalities	Nalhati Rampurhat	Sainthia Dubrajpur Suri	Bolpur

Source: Census 2001, Birbhum District Statistical Handbook 2005

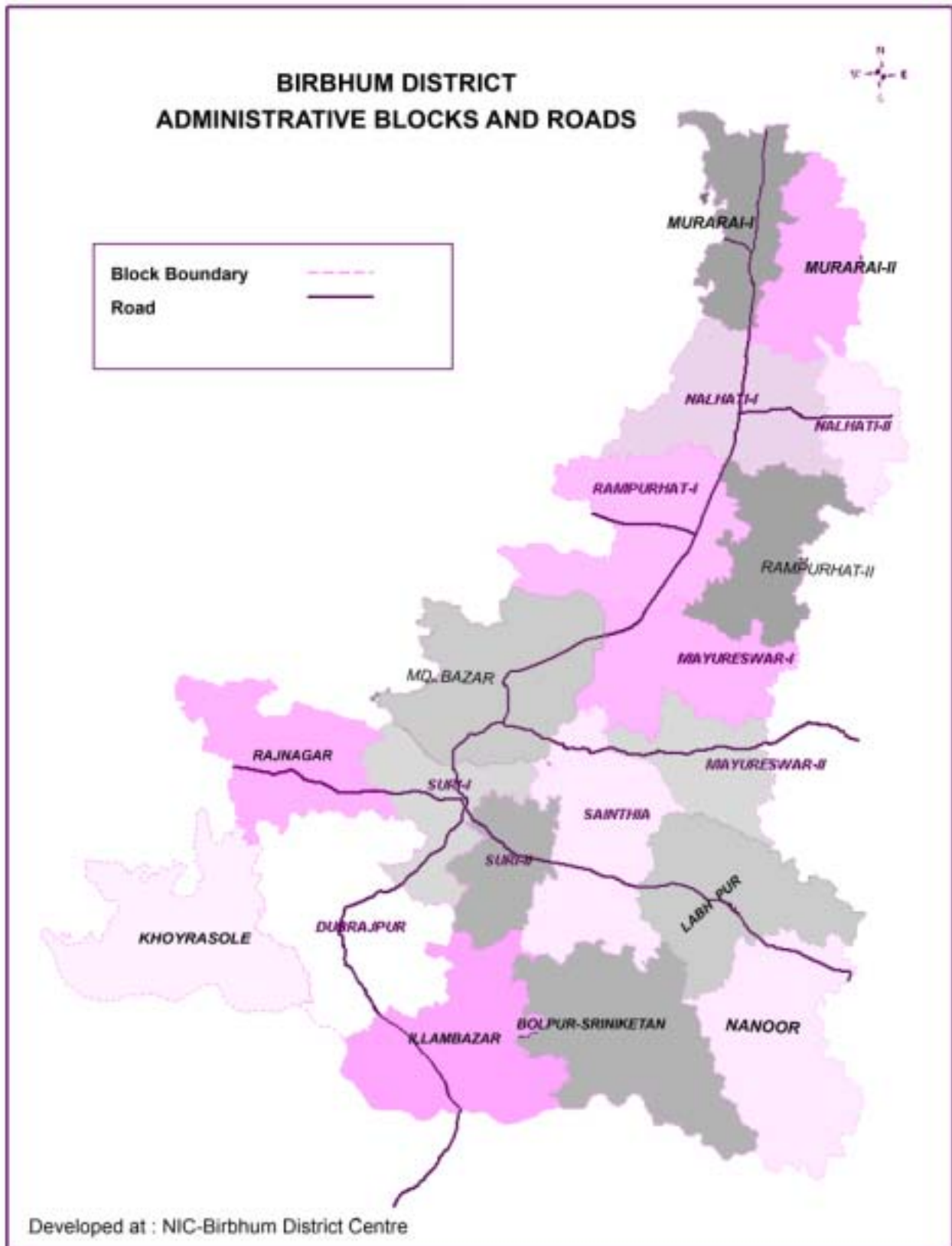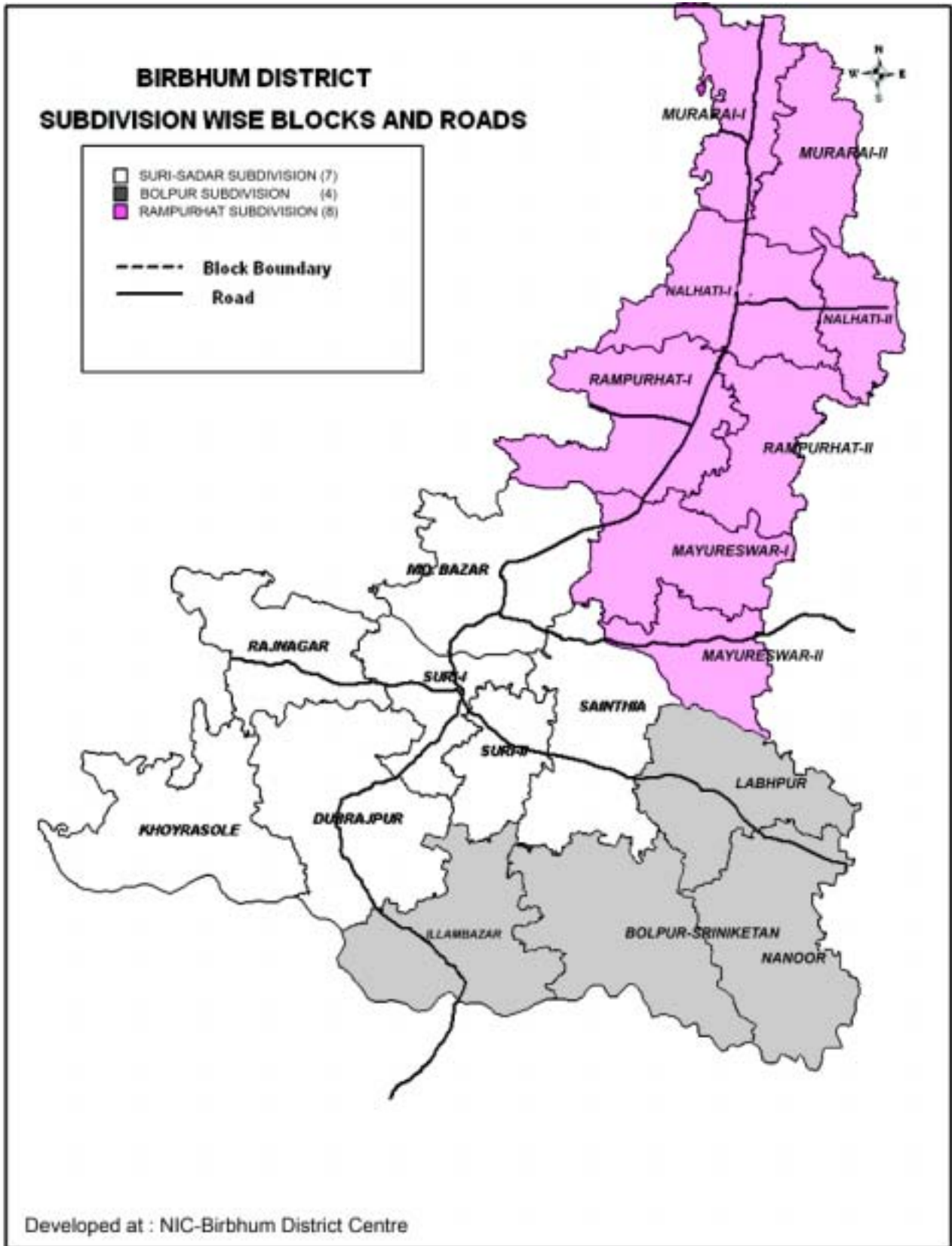**Figure 1.2: Administrative boundaries of blocks in Birbhum**

Figure 1.3: Administrative boundaries of Sub-divisions of Birbhum

Developed at : NIC-Birbhum District Centre

Religious and Caste Composition

According to 2001 Census, 64.5 per cent of the population are Hindu and 35.1 per cent are Muslims[2]. Between 1991 and 2001 census years, the Hindu population grew at a rate of 1.34 per cent per annum, while the Muslim population grew at a rate of 2.27 per cent. As a result of a higher rate of growth of Muslim population, the share of Muslims in total population increased from 33.1 per cent to 35.1 per cent, while the share of Hindus decreased from 66.6 per cent to 64.5 per cent.

Among the non-Muslims, a large section belongs to the Scheduled Castes (SC) and Scheduled Tribes (ST), which are generally considered to be socially disadvantaged classes. In Birbhum the share of SC population is 29.5 per cent as against 23 per cent in West Bengal and the share of ST is 6.7 per cent as against 5.5 per cent in West Bengal. These two categories of the disadvantaged population together constitute 36.2 per cent, which is significantly higher than the corresponding percentage share for West Bengal (28.5 per cent). In 12 among the 19 blocks in Birbhum, SC population exceeds 30 per cent (Table 1.3).

Except Rampurhat municipality, SC population in other municipalities is less than 25 per cent.[3] In six blocks the percentage of ST population is more than 10. They are Rampurhat-I (13.2 per cent), Md Bazar (19.2 per cent), Sainthia (12.1 per cent), Rajnagar (15.1 per cent), Suri II (12.7 per cent) and Bolpur-Srininketan (17.9 per cent). Almost half of the population belonging to the STs live in only four blocks, viz. Bolpur-Sriniketan (15.7)[4], Md. Bazar (13.2), Sainthia (10.4) and Rampurhat-I (10.4).

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[2] The rest includes Christians, Sikhs, Buddhists, Jains, others, and religion not stated.

[2] Since Nalhati municipality has been constituted after Census 2001, we do not have population data for Nalhati municipality from Census 2001.

[4] Figure in the parenthesis next to each of these four blocks indicates the block's share in total ST population in the district.

Table 1.3: Population, population density, SC, ST and Muslim population (number and percentage) across blocks, municipalities and sub-divisions of Birbhum

	Population ('000)				Percentage of total population				
	SC	ST	Muslim	Total	SC	ST	Muslim	SC+ST+Muslim	Popln per km²
Blocks									
Nalhati-I	69.1	9.1	97.4	175.6	33.1	4.4	46.7	84.2	836
Nalhati-II	24.2	0.9	73.2	98.3	22.5	0.9	68.0	91.4	986
Murarai-I	39.0	7.6	86.8	133.4	25.3	4.9	56.2	86.4	879
Murarai-II	31.8	0.7	130.9	163.4	17.9	0.4	73.6	91.9	959
Mayureswar-I	45.6	9.1	38.8	93.5	32.6	6.5	27.8	66.9	621
Mayureswar-II	34.6	7.6	26.9	69.1	30.6	6.7	23.8	61.1	722
Rampurhat-I	50.0	21.0	46.2	117.2	31.4	13.2	29.0	73.6	553
Rampurhat-II	52.4	0.7	74.7	127.8	33.0	0.4	47.0	80.5	874
Md. Bazar	37.4	26.8	40.5	104.7	26.8	19.2	29.0	75.0	442
Sainthia	60.3	21.2	35.1	116.6	34.3	12.1	20.3	66.7	577
Dubrajpur	55.5	8.1	50.2	113.8	34.9	5.1	31.6	71.6	461
Rajnagar	23.6	10.5	9.3	43.4	33.9	15.1	13.3	62.3	315
Suri-I	35.0	8.2	24.4	67.6	36.3	8.5	25.3	70.1	624
Suri-II	25.4	9.8	23.3	58.5	33.0	12.7	30.2	75.9	567
Khoyrasol	47.4	2.2	30.2	79.8	35.1	1.6	22.3	59.1	496
Bolpur-Sriniketan	53.2	32.0	43.6	128.8	29.9	17.9	24.5	72.3	532
Labhpur	52.1	7.3	50.7	110.1	29.5	4.1	28.7	62.3	660
Nanoor	61.8	3.8	64.8	130.4	31.9	2.0	33.5	67.3	621
Illambazar	34.8	12.7	66.7	114.2	24.0	8.8	45.9	78.7	555
Rural Birbhum	833.2	199.3	1012.5	2046.2	30.1	7.2	36.7	74.0	613
Municipalities									
Rampurhat	13.1	1.0	10.2	24.3	25.9	2.0	20.1	48.0	12813
Dubrajpur	7.2	1.0	9.1	17.3	22.0	3.1	27.9	53.0	1946
Suri	12.3	0.9	14.8	28.0	19.8	1.4	23.8	45.0	6883
Sainthia	9.2	0.6	4.2	14.0	23.5	1.5	10.8	35.8	4968
Bolpur	15.0	1.0	5.8	21.8	22.8	1.6	8.8	33.2	6122
Urban Birbhum	56.8	4.5	45.4	105.4	22.9	1.8	17.5	42.2	5170
Birbhum	**889.9**	**203.1**	**1057.9**	**3015.4**	**29.5**	**6.7**	**35.1**	**71.3**	**664**

Note: Nalhati Municipality was established on 26/06/2001.

Source: Census 2001

Muslims, who constitute the second largest religious community in Birbhum, are largely concentrated in the rural areas. While 8.6 per cent of Birbhum's total population live in urban areas, only 4.3 per cent of the total Muslim population find themselves in the urban areas. In other words, while the share of Muslims in total population is 35.1 per cent, their share in urban population is only 17.6 per cent. Low share of Muslim population in the urban areas indicates that a large section of the community does not get the opportunity to enjoy better amenities of urban life.

In the rural areas, concentration of Muslims varies from block to block. While Rajnagar shows comparatively low concentration of Muslims (only 13.3 per cent), there are six blocks which have more than 45 per cent Muslim population. They are Nalhati-I (46.7 per cent), Nalhati-II (68.0 per cent), Murarai-I (56.2 per cent), Murarai-II (73.6 per cent) and Illambazar (45.9 per cent) and Rampurhat -II (47.0 per cent). Except Illambazar, all these blocks are located in the northern part of Birbhum. In other words, these five northern blocks of Birbhum together account for 46 per cent of Muslim population living in rural areas (44 per cent of Muslim population living in Birbhum).

Since it has been observed that the incidence of poverty and illiteracy is higher in pockets with large shares of Muslim population, it may be a useful idea to combine the Muslims with SCs and STs and consider the combined population as disadvantaged from human development point of view. By this reckoning, in 14 out of 19 blocks, two-thirds of the population are socio-economically disadvantaged. In four blocks the share of the population belonging to these groups exceeds 80 per cent. They are Nalhati-I, Nalhati-II, Murarai-I, Murarai-II and Rampurhat-II. Curiously, these are the blocks which have very high population density. High population density lowers the per capita availability of agricultural land. In a high population density area not many people can productively engage in agriculture. Therefore, in high population density areas non-farm income earning activities need to be the focus of attention.

Urbanisation and Population Density

Birbhum is one of the few districts of West Bengal where the share of urban population is less than 10 per cent. West Bengal has a good number of towns and urban agglomerations that have a population exceeding one lakh each. There are 58 such towns and 16 such urban agglomerations, but none of them is in Birbhum. According to Census 2001, only 8.6 per cent of the population of the district lived in urban areas, whereas the corresponding average for West Bengal was 28 per cent. Even if we exclude Kolkata, Howrah and North 24 Parganas, the percentage of urban population in the rest of the 14 districts would turn out to be 17.4 per cent. Besides Birbhum, the three other districts that have less than 10 per cent urban population are Bankura (7.4 per cent), Koch Behar (9.1 per cent) and Malda (7.3 per cent). The urban population of Birbhum is spread in six municipalities (Bolpur, Suri, Saithia, Dubrajpur, Rampurhat and Nalhati) and a census town (Ahmadpur). Sadar Sub-

division is the most urbanised (14.4), followed by Bolpur (8.6), and Rampurhat (4) sub-division is the least urbanised. However, because of its large size in terms of population, more than 40 per cent of Birbhum's urban population is in Rampurhat Sub-division. Figures on percentages of urban population in Birbhum and West Bengal for the past one century are presented in Figure 1.4. The figure shows that the gap in the percentage of urban population between West Bengal and Birbhum has widened over the years. The expansion of urbanised population in some West Bengal districts is in sharp contrast with Birbhum's almost stagnant level of urbanisation in the recent decades.

Figure 1.4: Percentage of urban population in Birbhum and West Bengal (1901-2001
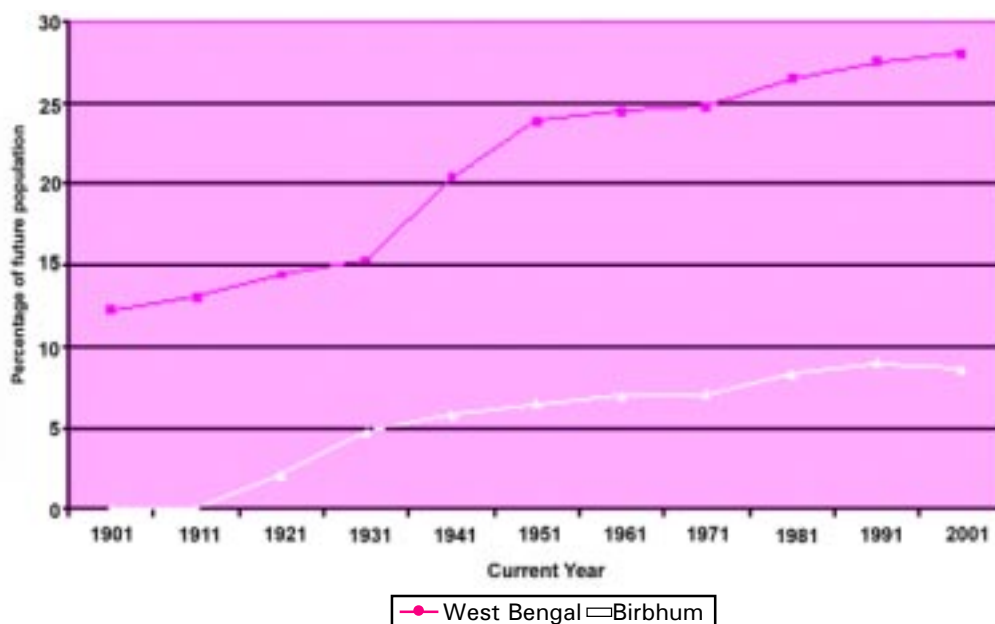
It is expected that the districts with low urbanisation would have comparatively low population density. It seems that the overall density of population of a district is the result of two effects. Since urban areas are much more densely populated than rural areas, low overall density largely results from low urbanisation. But this is not all. Districts with high urbanisation tend to have high population density in rural areas as well. Howrah, Hooghly and North 24 Parganas have very high density of population in both urban and rural areas.   The population density of Birbhum is 663 which is much lower than the population density of West Bengal as a whole (903), or little lower than West Bengal excluding Kolkata. The density in rural Birbhum (613) is also lower than the average density for rural West Bengal (676). Figure 1.5 shows that since the nineteen fifties the density of population in West Bengal on the whole has risen much faster than that of Birbhum.

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Within Birbhum district population density is not uniform. According to 2001 Census, among the Sub-divisions, population density is highest in Rampurhat (807 per square km) followed by Bolpur (640) and Suri/Sadar (553). There is a high inter-block variation in population density (Table 1.3). On the one hand, there are blocks with low population density such as Rajnagar (315). Rajnagar also has the lowest population among all blocks (around 70,000). There are five blocks all located in the northern part of Birbhum having population density more than 800. These blocks are Nalhati-I (836), Nalhati-II (986), Murarai-I (879), Murarai-II (959) and Rampurhat-I (874). Nalhati-I also has the highest population (more than two lakh) among all the blocks. Among the municipalities, Rampurhat has the highest population density (12813) followed by Suri (6883), Bolpur (6122), Sainthia (4968) and Dubrajpur (1946) (Table1.3).

Figure 1.5: Population density in West Bengal and Birbhum (1911-2001)
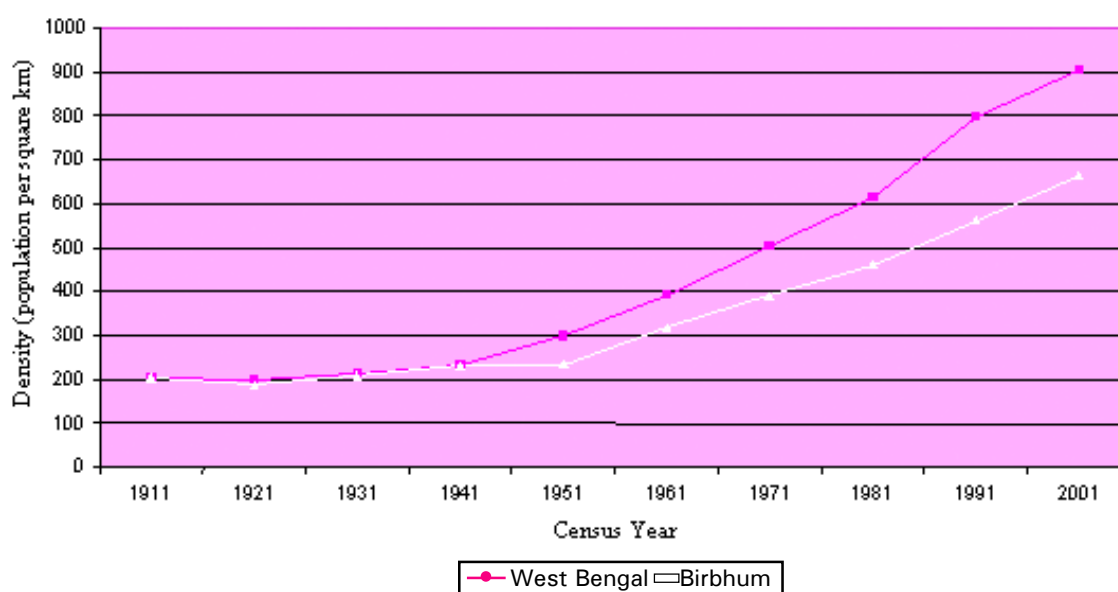
High population density imposes different types of problems in rural and urban areas. In the rural areas, high population density means dependence of a larger number of people on relatively scarce land. High population density limits the scope for sustenance by the population based on local agriculture. In the absence of adequate scope for non-farm activities, people are bound to face livelihood-related problems, which in turn would severely constrain the prospect of human development. In the urban areas high population density imposes high burden on the civic amenities and makes it more difficult to ensure provision of basic services, such as drainage, drinking water and disposal of solid wastes.

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All these basic parameters on the land and its people have been discussed here to situate the human development issues of Birbhum in proper context. The connections among various issues will be made clear as we go along.

Figure 1.6: Population density across blocks in Birbhum according to Census 2001
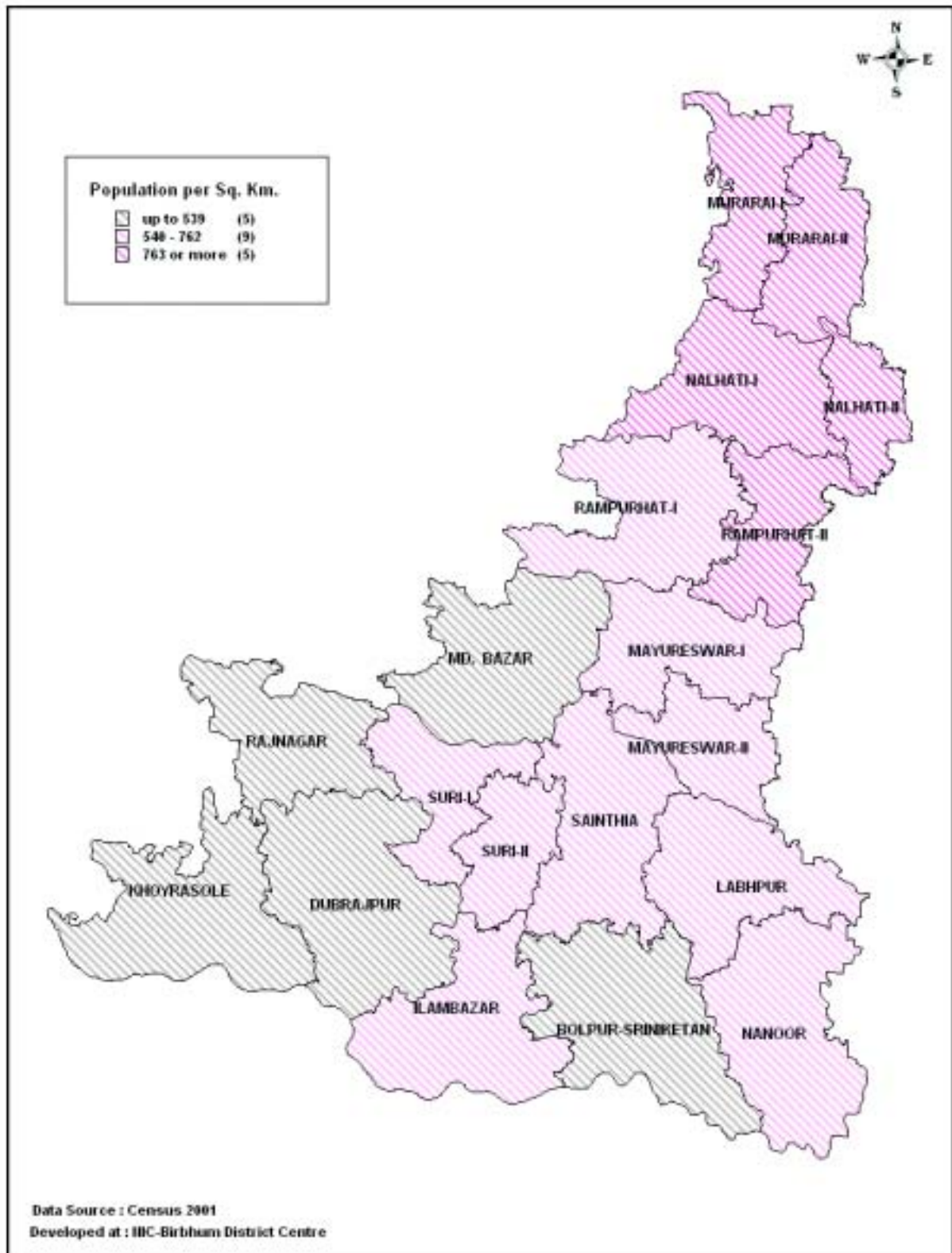
Note: Disadvantaged population consists of Scheduled Castes, Scheduled Tribes and Muslims.

Figure 1.7: Percentage of disadvantaged Population across blocks in Birbhum according to 2001 Census

Percentage of Disadvantaged Population
- Up to 67%   (6)
- 67.1% - 80%   (8)
- more than 80% (5)

Data Source : Census 2001
Developed at : NIC-Birbhum District Centre
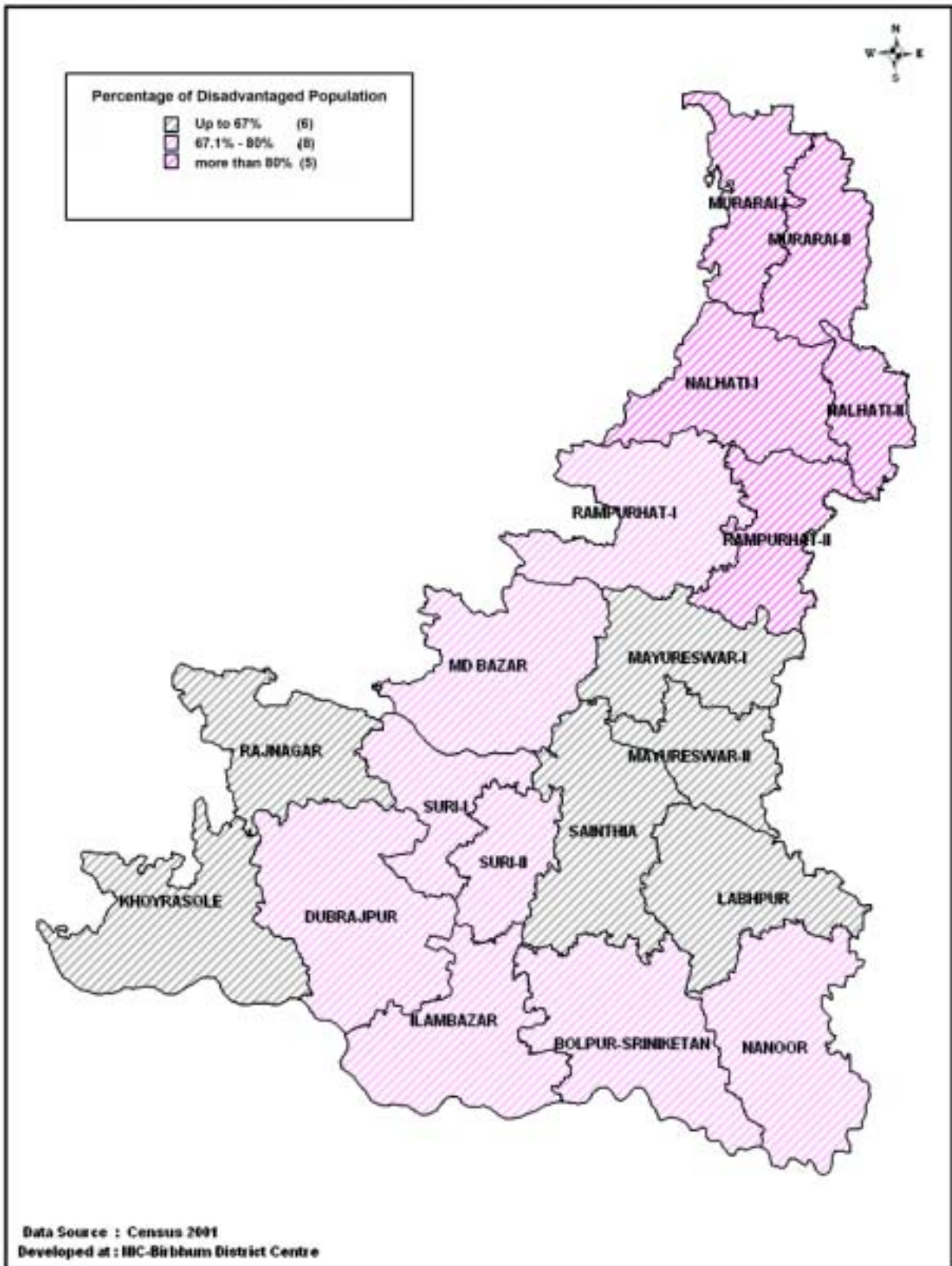
Appendix

Table A1.1 Population composition across West Bengal districts

District	Population lakh	Population per km²	% of urban population	% of SC population	% of ST population	Sex ratio
Bankura	31.93	464	7.4	31.2	10.4	952
Barddhaman	68.96	982	36.9	27.0	6.4	922
Birbhum	**30.15**	**663**	**8.6**	**29.5**	**6.7**	**950**
Kolkata	45.73	24718	100.0	6.0	0.2	829
Darjiling	16.09	511	32.3	16.1	12.7	937
Haora	42.73	2913	50.4	15.4	0.4	906
Hugli	50.42	1601	33.5	23.6	4.2	947
Jalpaiguri	34.01	546	17.8	36.7	18.9	942
Koch Bihar	24.79	732	9.1	50.1	0.6	949
Malda	32.90	881	7.3	16.8	6.9	948
Medinipur	96.11	683	10.2	16.4	8.3	955
Murshidabad	58.67	1102	12.5	12.0	1.3	952
Nadia	46.05	1173	21.3	29.7	2.5	946
N 24 Parganas	89.34	2182	54.3	20.6	2.2	926
Puruliya	25.37	405	10.1	18.3	18.3	954
S 24 Parganas	69.07	693	15.7	32.1	1.2	937
U Dinajpur	24.42	778	12.1	27.7	5.1	938
D Dinajpur	15.03	677	13.1	28.8	16.1	951
West Bengal	*680.78*	*903*	*28.0*	*23.0*	*5.5*	*934*

Source: Census 2001

Table A1.2 Growth in population of major communities across blocks of Birbhum

	Percentage of Hindus in total population			Percentage of Muslims in total population			Compound annual growth rate of			
							Hindu population		Muslim population	
Blocks	1981	1991	2001	1981	1991	2001	1981-91	1991-01	1981-91	1991-01
Murarai-I	38.6	35.9	43.1	61.3	64.1	56.2	1.8	4.2	3.0	1.0
Murarai-II	38.0	35.9	26.2	61.9	64.1	73.6	1.8	-1.1	2.8	3.5
Nalhati-I	48.9	47.6	52.4	50.6	51.8	46.7	2.0	2.8	2.6	0.8
Nalhati-II	56.3	47.6	31.8	43.2	51.8	68.0	0.7	-2.2	4.2	4.6
Rampurhat-I	71.0	63.0	69.8	28.7	36.6	29.0	0.9	2.8	4.6	-0.6
Rampurhat-II	66.7	63.0	52.8	33.0	36.6	47.0	1.3	-0.4	2.9	3.9
Mayureswar-I	77.0	75.9	71.9	22.6	24.0	27.8	0.9	1.3	1.7	3.3
Mayureswar-II	76.9	75.9	76.0	22.6	24.0	23.8	1.7	1.4	2.4	1.3
Md.Bazar	75.1	73.1	70.3	24.6	26.5	29.0	2.0	1.4	3.1	2.8
Sainthia	82.0	76.0	79.1	16.9	23.5	20.3	1.1	1.2	5.2	-0.7
Dubrajpur	76.5	70.7	68.3	23.5	29.2	31.6	1.0	1.2	4.0	2.4
Rajnagar	88.1	87.9	86.3	11.9	12.0	13.3	1.3	1.1	1.4	2.3
Suri-I	74.6	71.5	74.5	25.1	27.9	25.3	1.6	2.6	3.1	1.2
Suri-II	74.9	71.5	69.4	24.9	27.9	30.2	1.7	1.4	3.4	2.5
Khoyrasol	81.2	79.8	77.6	18.7	20.1	22.3	1.8	0.7	2.7	2.1
Bolpur-Sriniketan	77.7	75.4	74.9	21.7	24.4	24.5	1.4	1.5	3.0	1.6
Labhpur	74.4	73.2	71.2	25.4	26.7	28.7	1.5	1.1	2.2	2.1
Nanoor	71.3	68.2	66.4	28.4	31.3	33.5	1.2	1.2	2.6	2.1
Illambazar	57.5	57.5	53.6	42.0	42.4	45.9	2.0	1.1	2.1	2.7

Source: Calculated from Census 2001

2

| Chapter II: | Education |

2.1   *Literacy and schooling*

The observation that until the beginning of the present century West Bengal has had only moderate success in spreading elementary education among the masses is not much in dispute, and the record of Birbhum goes pretty well with the overall trend. 31.4 per cent of the state's population aged 7 years and above remained non-literate at the beginning of the present century, which is considerably lower than the all-India average (35.2 per cent). However, the percentage of non-literate in Birbhum is conspicuously higher than both West Bengal and all-India percentages (Table 2.1). At the beginning of the nineteen nineties more than half of the population in Birbhum could not read and write. According to Census 1991, only 48.56 per cent of total persons aged seven and above were literate. In 2001, however, the percentage of literate persons rose to 61.48. Although it continues to remain substantially below the percentage for the state as well as India, the gap with the state average slightly narrowed down over the nineteen nineties.

Table 2.1: Literacy rates excluding 0-6 age group (in percentage) in Birbhum compared to West Bengal and India by sector, 1991 and 2001

		1991			2001		
		Person	Male	Female	Person	Male	Female
INDIA	Total	52.21	64.14	39.29	64.84	75.26	53.67
	Rural	44.70	57.87	30.63	58.74	70.70	46.13
	Urban	73.08	81.09	64.05	79.92	86.27	72.86
WEST BENGAL	Total	57.70	67.81	46.56	68.64	77.02	59.61
	Rural	50.50	62.05	38.12	63.42	73.13	53.16
	Urban	75.27	81.19	68.25	81.25	86.13	75.74
BIRBHUM	Total	48.56	59.26	37.17	61.48	70.89	51.55
	Rural	46.60	57.52	35.00	59.88	69.51	49.70
	Urban	67.42	75.69	58.36	77.65	84.73	70.20

Source: Census 2001

A closer look at the literacy rates for rural and urban areas of the district vis-à-vis West Bengal reveals that a part of the gap can be attributed to the low level of urbanization in the district. As we mentioned in Chapter I, while 28 per cent of the total population of West Bengal lives in urban areas, urban Birbhum shares only 8.57 per cent of the district population. As a result the overall literacy

rate in the district carries an overwhelming weight of the rural literacy rate, which is generally lower than the literacy rate for urban areas. The gap between the literacy rates in rural Birbhum and rural West Bengal is almost half the gap between the overall average rates for the district and the state (see Table 2.1). In Birbhum, between the two censuses, while the urban literacy rate improved by about 10 percentage points, rural literacy rate improved by 13 percentage points indicating a narrowing down of rural-urban differential.

Figure 2.1 Progress in literacy in Birbhum, 1901-2001
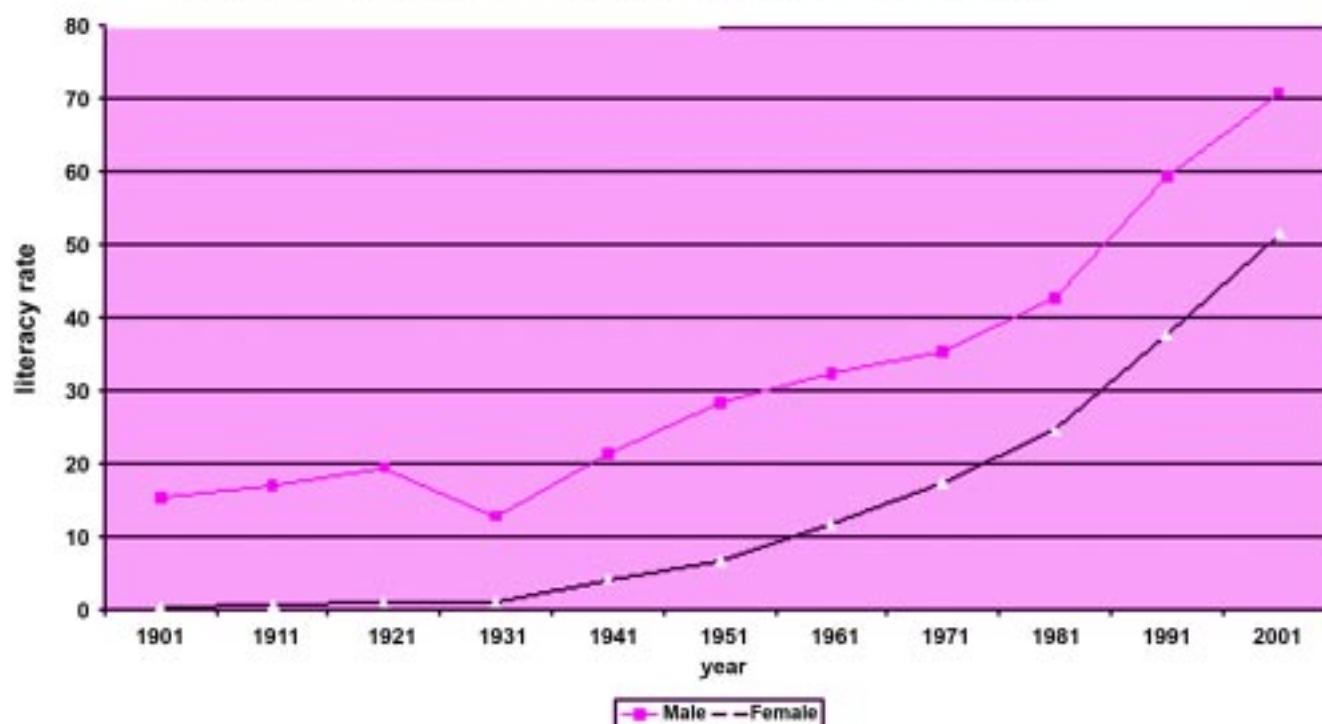
The problem of low literacy rate is exacerbated by disparities across different groups. Going by the simple logic of average, overall literacy cannot approach 100 per cent so long as a substantial gap between male literacy and female literacy exists. The male-female gap in literacy in the district is slightly larger than that in West Bengal as a whole. The gap is more in rural areas than in urban areas. Over the entire past century (excepting the decade between 1921 and 1931) both male literacy and female literacy have increased, and the rate of increase even accelerated quite a bit in the past three decades. However, the reduction in the gap between male literacy and female literacy has been rather small as it is evident from Figure 2.1. The two trends show remarkably similar pattern with a remarkably stable vertical distance between the two.

A common finding of a number of village studies and household surveys across India is that education is widely perceived by members of socially and economically disadvantaged groups as the most promising means of upward mobility for their children. Yet the disparity in levels of educational achievement between these groups and others has not decreased as fast as it should. Interestingly, in the rural areas of Birbhum, there is not much difference in the rates of literacy between Muslims and others. In urban Birbhum, however, they differ significantly. The groups that really lag behind others in both rural and urban areas of the district belong to the scheduled tribes (Figure 2.2).

Figure 2.2: Percentage literate among social and community groups in rural and urban Birbhum, 2001
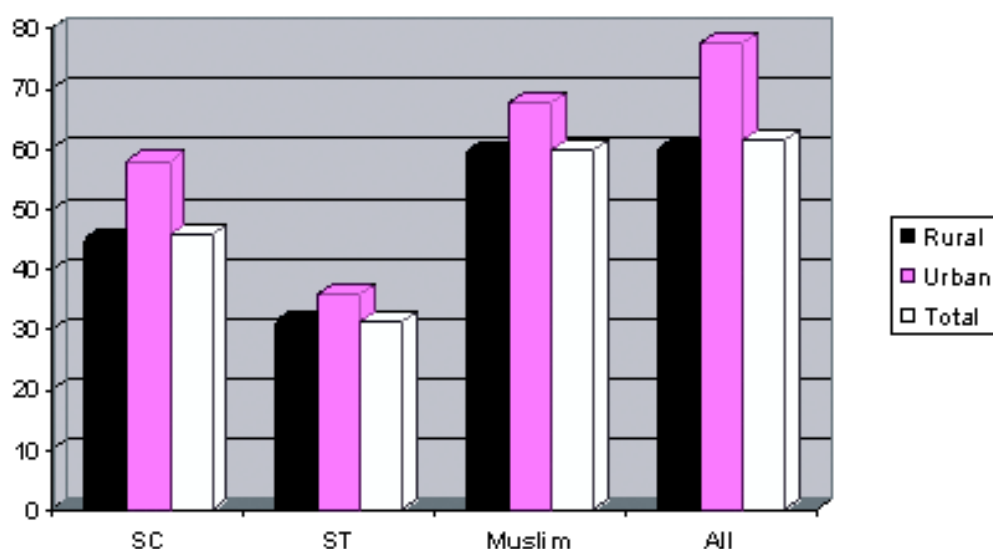
The literacy rate among the women belonging to the scheduled tribes is slightly higher than one-third of the overall female literacy for the district and almost one-fifth of the male literacy rate in urban Birbhum (Table 2.2).

Table 2.2: Literacy rates among SC, ST and Muslims in Birbhum, 2001

	Rural			Urban			Total		
	Person	Male	Female	Person	Male	Female	Person	Male	Female
Schedule Castes	44.8	56.9	32.0	58.0	69.3	46.5	45.7	57.8	33.1
Schedule Tribes	31.1	44.1	18.0	35.8	46.2	25.7	31.2	44.2	18.2
Muslims	59.5	67.9	50.6	67.6	76.4	58.3	59.9	68.3	51.0
All	59.9	69.5	49.7	77.7	84.8	70.2	61.5	70.9	51.6

Source: Census 2001

To achieve total literacy in a short span of time the standard policy approach emphasises programmes for adult literacy and continuing education on the one hand and universalisation of primary school enrolment by improving school facilities, on the other. The current level of illiteracy can be thought of as the result of past non-enrolment and dropouts. For West Bengal as a whole, what is worrying is that universal enrolment even at the primary level has not been attained, which means total literacy in the near future remains unattainable unless a concerted effort is made to bring to schools all out-of-school children in the relevant age group.

Although significant efforts have been made in recent years towards universalisation of elementary education, the results are far from spectacular. The District Primary Education Programme (DPEP) was implemented in 1997 in five districts of the state, and later extended to cover five more districts, with the overall objective of universalisation of elementary education. Birbhum was one of the five districts covered in the first phase. Rapid expansion in enrolment has been generally noted in the DPEP districts vis-à-vis the non-DPEP districts. However, the goal of universal enrolment is yet to be reached. In Birbhum, what is worrying is that total primary enrolment has in fact declined in the past three years (Table 2.5). Besides, according to the Child Census completed in December 2006, in Birbhum about 16 thousand children were found to be out of school, which constitute 5.8 per cent of all children in the age group 5+ to 8+. Furthermore, a cohort study of children who got admitted to class I in 1999-2000 found that by the end of the next four years 14.7 per cent students dropped out. If we combine these pieces of information it can be said that Birbhum will carry a substantial burden of illiteracy in the years to come.

In another study of 147 schools taken from all the cirlcles[1] in Birbhum, conducted by the District Primary School Council (DPSC), it was found that among the students who passed out of Class IV, on average 17.24 per cent did not take admission in Class V. While for a good number of primary schools almost all those who pass Class IV go to Class V, there are a few schools from

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[1] Circles are the relevant units for district school administration. Even though all the schools in a block are roughly distributed between two circles, the circles include urban areas as well.

2

which a large number of students drop out after Class IV. In the sample of 147 schools, 26 schools produced 75 percent of total dropout.

At the policy level this requires distinct focus on several aspects of the process of universalisation. Instead of focusing on the averages, it is important to narrow down the focus on the schools that are lagging behind others in terms of certain outcome indicators. The DPSC study of dropouts helps identify those schools. The analysis then has to be taken to find out whether it is the lack of adequate school infrastructure or the wider socio-economic context that has greater influence. It is well-known that literate parents – mothers in particular – are more likely to send their children to school than the non-literate parents. The adult literacy programme, which was implemented in the early nineties in a campaign mode, eventually ran out of steam, leaving a substantial number of adult non-literates untouched. Even the positive gains from the programme could not be kept up as the neo-literates lost their literacy skills for the limited reach of the post-literacy and continuing education programmes. In Birbhum there are 2027 Continuing Education Centres (CEC) meant for 732257 illiterates in the age group 15 and above. If we assume that for every 20 illiterate persons there should be one CEC, then 36255 CECs are needed in the district. Cleary the actual number of CECs in Birbhum falls far short of the required number. Besides, in the absence of any system of assessment of the functioning of the CECs it is hard to judge how many of them are really functioning the way they should be. It seems that in the absence of financial allocation even for paying the honorarium that the *Preraks* and *Saha Preraks* are supposed to get, it is almost impossible to keep up their motivation. This problem is not specific to Birbhum as such. The CECs have almost ceased to be on the development agenda in West Bengal.

2.2   *School infrastructure*

There are 2372 primary schools, 76 upper primary, 204 secondary and 123 higher secondary schools in Birbhum. Besides, there are 650 Sishu Siksha Kendras (SSK) that enroll about 49 thousand children. Table 2.3 presents the distribution of schools across blocks and municipalities. What is to be noted from the table is that while in the municipal areas roughly for three primary schools there

2

is one upper primary/secondary or higher secondary school, in rural areas the ratio turns out to be close to 6:1. We shall take up this point again later.

Table 2.3 Number of schools of different categories, including Sishu Siksha Kendras (SSK) across blocks/municipalities, 2007

Block/Municipality	Primary	Upper Primary	Secondary	Higher Secondary	Total schools	SSK
Bolpur Sriniketan	147	4	14	6	**171**	45
Illambazar	135	3	10	6	**154**	40
Nanoor	157	10	13	7	**187**	33
Labhpur	159	5	14	7	**185**	24
Suri-I	84	2	8	4	**98**	22
Suri-II	78	2	6	3	**89**	15
Sainthia	174	6	14	6	**200**	37
Md. Bazar	123	1	11	6	**141**	48
Rajnagar	92	3	3	4	**102**	25
Dubrajpur	139	2	10	4	**155**	28
Khoyrasole	122	3	11	5	**141**	32
Rampurhat-I	146	5	8	6	**165**	27
Rampurhat-II	116	3	12	6	**137**	33
Murarai-I	98	3	9	4	**114**	42
Murarai-II	87	3	10	3	**103**	50
Nalhati-I	129	5	15	5	**154**	43
Nalhati-II	67	3	6	4	**80**	34
Mayureswar-I	112	3	16	5	**136**	33
Mayureswar-II	88	3	6	5	**102**	39
Bolpur (M)	23	0	1	6	**30**	-
Suri (M)	32	0	3	7	**42**	-
Sainthia (M)	15	1	1	4	**21**	-
Dubrajpur (M)	12	1	0	4	**17**	-
Rampurhat (M)	23	2	3	4	**32**	-
Nalhati (M)	14	3	0	2	**19**	-
BIRBHUM	**2372**	**76**	**204**	**123**	**2775**	**650**

Source: Sarva Siksha Mission and Office of DM, Birbhum

Table 2.4 presents the cumulative growth in the number of all categories of schools over a period of 140 years. The highest growth occurred in the two consecutive decades – from 1941 to 1960. Roughly, 83 per cent schools were established during the period 1941 to 1980.

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Table 2.4: Cumulative growth of the number of primary and upper primary schools in Birbhum District, 1865 – 2006

Block/ Municipality	PERIOD											
	Till 1900	1901 - 1910	11 - 20	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70	71 - 80	81 - 90	1991 - 2000	01 - 06
BOLPUR SRINIKETAN	1	3	3	6	8	37	90	116	151	162	166	171
ILLAMBAZAR	1	2	3	4	4	36	78	96	130	144	151	153
NANOOR	1	1	1	5	12	57	107	130	161	179	184	187
LABPUR	2	5	5	5	5	67	104	126	165	176	182	184
SURI-I	1	1	1	5	5	21	42	56	76	90	97	97
SURI-II	0	0	2	4	5	16	51	59	75	82	85	89
SAINTHIA	0	1	7	8	10	55	88	118	173	189	195	199
MD. BAZAR	0	1	2	2	4	47	77	95	127	134	139	141
RAJNAGAR	0	0	0	0	3	26	53	63	88	96	99	101
DUBRAJPUR	0	2	2	3	8	44	78	100	136	147	152	154
KHOYRASOLE	0	1	1	2	2	31	85	95	127	134	141	141
RAMPURHAT-I	1	2	2	4	5	52	91	105	148	158	163	165
RAMPURHAT-II	1	2	2	4	4	48	76	95	114	123	130	137
MURARAI-I	1	1	2	2	7	26	56	67	98	108	112	114
MURARAI-II	0	0	0	2	4	30	57	68	92	100	103	103
NALHATI-I	1	3	6	7	7	52	87	108	141	151	153	154
NALHATI-II	0	0	0	1	1	20	42	59	72	77	78	80
MAYURESWAR-I	0	5	6	7	10	50	84	102	119	133	133	136
MAYURESWAR-II	0	0	0	0	0	32	51	65	89	98	101	102
BOLPUR (M)	0	1	1	2	2	4	11	15	27	29	29	30
SURI (M)	3	4	5	5	7	8	15	22	36	38	39	40
SAINTHIA (M)	0	0	0	1	1	5	11	13	16	20	21	21
DUBRAJPUR (M)	0	0	0	2	4	6	11	13	13	15	17	17
RAMPURHAT (M)	2	2	3	3	3	7	9	13	28	31	32	32
NALHATI (M)	0	0	2	2	3	7	12	14	15	17	19	19
BIRBHUM	**15**	**37**	**56**	**86**	**124**	**784**	**1466**	**1813**	**2417**	**2631**	**2721**	**2767**

Source: SSM, Birbhum

In what follows we focus exclusively on the primary schools. In 146 schools (i.e. about 6 per cent) there is no drinking water facility and 177 schools (i.e. about 7.5 per cent) are without toilets. What is commendable is that between 2005-06 and 2006-07 the percentage of primary schools without drinking water has come down significantly from about 20 per cent to 6 per cent, and the percentage of primary schools without toilets has decreased from about 18 per cent to 7.5 per cent. Although these two indicators, together with information on school building and number of classrooms,

are used to assess school infrastructure, studies show that the indicators which have the most significant influence on education outcome are the number of classrooms and the number of teachers. The average number of classrooms per school is 2.63. But there are 335 single-classroom primary schools, which constitute about 14 per cent of all primary schools in the district (Table 2.5).

Table 2.5 Progress in primary school infrastructure in Birbhum in recent years

		2004-05	2005-06	2006-07
Number of schools		2367	2371	2372
Enrolment	Boys	173012	160960	154084
	Girls	165990	154617	148379
	Total	339002	315577	302463
Teachers	Male	6690	6516	6495
	Female	1392	1390	1459
	Total	8082	7906	7954
% of schools with no drinking water facility		16.9	20.1	6.1
% of schools without toilet		50.4	17.8	7.5
Average number of classrooms per school		2.48	2.51	2.63
% of schools with single or no classroom		20.2	18.5	14.1
Pupil teacher ratio		42	40	38
Pupil classroom ratio		58	53	48
Pupil teacher ratio 80 & above		4.3	4.2	3.5
Pupil classroom ratio 80 & above		25.7	21.5	15.7

Source: District Information System for Education (DISE)

Birbhum is favourably placed in terms of two important indicators: the pupil-teacher ratio and the percentage of single-teacher schools. The pupil-teacher ratio for the district as a whole stands at 38.5, which is slightly below the norm (i.e. 40:1) and far below the average for West Bengal. Only 3.6 per cent of primary schools in Birbhum are single-teacher schools. This is significantly lower than most of the Indian states, which is commendable. This may be the result of the sensitivity of the education administrators to the need for reducing the number of single-teacher schools on a priority basis. The response has been to provide the single-teacher schools with at least one more teacher. However, what is often missed out is that even two teachers are not enough to maintain the quality

2

of teaching in a primary school. Evidence shows that significant differences exist in learning achievement of students studying in schools with two or fewer teachers and others (Chakraborty et al, 2005). In Birbhum, about 35 per cent schools have either one or two teachers.

Both pupil-teacher ratio and pupil-classroom ratio at the primary level have been coming down in Birbhum in the recent years. The percentage of female teachers has also increased marginally. But no improvement is observed on the other three indicators, viz. percentage of schools with single or no classroom, percentage of schools with two or fewer teachers, and the ratio of the number of primary schools to upper primary and secondary schools. The last indicator points at one of the most crucial factors in universalisation of elementary education, going beyond the primary. Unfortunately, West Bengal trails far behind all other states in terms of this important indicator i.e. the availability of upper primary or secondary schools compared to primary schools, and Birbhum is no exception. In Birbhum, roughly speaking, for every six primary schools there is only one upper primary or secondary school. Although none of the students who pass out of class-IV is denied admission to class-V, the relative shortage of upper primary and secondary schools must have a dampening effect on the students' desire to continue studies beyond class-IV. Existence of a high percentage of female teachers in schools is likely to encourage especially girl students to continue their studies. The record of Birbhum is rather poor in this regard. The percentage of female teachers at the primary level is only 18.7.

Predictably, there are large rural-urban gaps in some of these indicators. The ratio of primary to upper primary/secondary schools is 2.8 in urban Birbhum as against 6.2 in rural Birbhum. Similarly, the percentage of schools with two or fewer teachers is 16.8 in urban areas, but 36.1 in rural areas. In urban Birbhum, about half of the primary teachers are women, whereas only 16 percent teachers in rural areas are women. In Section 2.4 we discuss all these indicators for blocks.

2.3   Impact of mid-day meal

The Government of West Bengal introduced cooked mid-day meal first in 1100 primary schools in five districts and Birbhum was one them. Initially it was introduced in 200 schools in two blocks, viz. Suri-II and Sainthia. Over the past five years the programme has been gradually extended to all the blocks. To assess the impact of the programme, a study was conducted by the Pratichi Trust in 2004 that compared the schools where mid-day meal was introduced with those which were yet to introduce the programme. It was found that the attendance rate in the schools that provided cooked mid-day meal was at least ten percentage point higher than in the schools that did not introduce the programme. This is quite predictable. What is remarkable is that the impact of the programme was much greater on the children belonging to the disadvantaged groups, viz. scheduled castes, scheduled tribes and Muslims. The impact has been the maximum on the girls belonging to the scheduled tribes (Table 2.6).

Table 2.6: Improvement in attendance after mid-day meal was introduced

		Average attendance of children in sample schools that introduced mid-day meal			Average attendance in sample schools w/o MDM
		Before MDM was introduced	At the time of the study	Increase by percentage points	
SC	Boy	52.8	66.3	13.5	60.5
	Girl	57.4	68.2	10.8	58.7
	Total	54.7	67.3	12.6	59.8
ST	Boy	55.7	72.6	16.9	53.7
	Girl	61.5	86.9	25.4	56.0
	Total	57.0	76.9	19.9	55.2
Muslim	Boy	58.6	73.9	15.3	18.8
	Girl	60.4	71.6	11.2	47.7
	Total	59.6	72.8	13.2	39.8
Others	Boy	68.1	70.2	2.1	72.2
	Girl	66.8	72.7	5.9	66.8
	Total	67.6	71.4	3.8	69.8
Total	Boy	61.4	71.2	9.8	60.3
	Girl	62.4	72.6	10.2	61.0
	Total	61.8	71.9	10.1	60.6

Source: Pratichi (India) Trust, 2005

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It was observed that a good majority of the parents belonging to the 'other' category felt that the programme had no positive impact on schooling. However, the parents belonging to the disadvantaged categories generally shared the view that the programme had significant impact.

2.4   Literacy and primary education across blocks

Between 1991 and 2001 overall literacy in rural Birbhum increased by 13.28 percentage points. However, this increase had not been uniform across rural blocks (Table 2.7). While in Nalhati-I and Nalhati-II literacy rates increased by 19.41 and 18.03 percentage points, respectively, in Nanoor and Khoyrasole they increased by about ten percentage points. What is worrying is that Murarai-I, which had the second lowest rate of literacy in the district in 1991, lagged behind thirteen other blocks in terms of decadal change in literacy. Inter-block disparity decreases if the blocks with lower rates of literacy make greater improvement. But the evidence is mixed, as far as Birbhum is concerned. There is no correlation between the 1991 literacy rates and the decadal changes in literacy, (correlation coefficient is -0.14). However, the overall disparity across blocks slightly decreased in the nineties, as it is evident from the value of the coefficient of variation that dropped from 11 per cent to 9 per cent, which is not worth reckoning.

Table 2.7: Literacy rates and decadal changes (1991-2001) in literacy across blocks of Birbhum

Block	1991			2001			Change		
	Person	Male	Female	Person	Male	Female	Person	Male	Female
Murarai–I	34.8	44.4	24.8	46.6	55.1	37.7	11.8	10.8	12.8
Murarai–II	32.9	42.7	22.6	46.2	54.5	37.7	13.3	11.7	15.1
Nalhati–I	44.3	56.0	31.9	63.7	73.2	53.7	19.4	17.2	21.8
Nalhati–II	43.6	56.2	30.3	61.7	70.2	52.7	18.0	13.9	22.4
Rampurhat–I	47.9	58.4	36.8	61.9	72.0	51.3	14.0	13.6	14.5
Rampurhat–II	49.4	61.2	36.5	63.5	73.2	53.2	14.2	12.0	16.7
Mayureswar–I	51.9	63.0	40.0	65.4	75.7	54.5	13.5	12.7	14.6
Mayureswar–II	51.8	63.9	38.9	62.8	73.1	51.8	10.9	9.2	12.9
Md. Bazar	44.2	56.0	31.7	55.1	65.5	44.2	10.9	9.5	12.5
Rajnagar	44.9	57.5	31.8	58.3	70.4	45.7	13.4	12.9	13.9
Suri–I	49.5	60.2	38.1	62.5	72.3	52.0	13.0	12.1	13.9
Suri–II	46.4	56.1	36.0	63.9	73.4	53.7	17.4	17.3	17.7
Sainthia	50.9	61.0	40.1	64.4	74.0	54.3	13.6	13.1	14.2

Labpur	49.0	58.9	38.6	62.1	71.0	52.7	13.1	12.1	14.1
Nanoor	50.9	60.1	41.3	61.2	69.3	52.7	10.3	9.2	11.4
Bolpur-Sriniketan	46.6	56.5	36.3	60.0	69.3	50.3	13.4	12.8	14.0
Illambazar	48.1	59.2	36.2	63.0	72.3	53.0	14.8	13.1	16.7
Dubrajpur	46.0	58.1	33.1	56.8	68.1	44.8	10.7	9.9	11.7
Khoyrasol	50.2	63.6	36.0	60.6	72.2	48.0	10.3	8.6	12.0
Birbhum (Rural)	**46.6**	**57.5**	**35.0**	**59.9**	**69.5**	**49.7**	**13.3**	**12.0**	**14.7**

Source: Census 2001

What is more important is that female literacy rates increased more than male literacy in all the blocks indicating that the male-female gap in literacy has been coming down. The male-female disparity in literacy is sharper in the cases of both SC and ST communities in almost all the blocks, compared to the male-female disparity in the total population of the blocks (Table 2.8). In other words, not only that the females belonging to these groups suffer a double disadvantage for being female and for belonging to these groups, the disadvantage is further exacerbated by the effect of the latter on the former. Therefore, it is important to note that the lower degree of gender disparity in certain areas, such as work status and certain health indicators, which is observed among certain ST communities, does not necessarily imply absence of gender disparity in other dimensions, such as literacy and education.

Table 2.8: Literacy among Scheduled Castes and Scheduled Tribes across blocks of Birbhum, 2001

Block	Scheduled Tribes			Scheduled Castes		
	Person	Male	Female	Person	Male	Female
Murarai-I	21.72	32.70	10.97	31.83	41.52	21.39
Murarai-II	27.25	37.94	16.73	29.75	38.63	20.36
Nalhati-I	40.02	56.19	23.80	52.62	65.00	39.29
Nalhati-II	25.57	35.48	16.67	53.10	65.01	40.38
Rampurhat-I	31.67	44.65	18.80	48.84	61.05	36.11
Rampurhat-II	38.84	50.74	27.24	47.15	60.19	32.95
Mayureswar-I	28.08	39.24	16.65	52.04	64.46	38.95
Mayureswar-II	26.47	37.90	14.88	46.84	60.11	32.90
Mohammad Bazar	29.17	42.11	16.33	42.35	53.99	30.07
Rajnagar	31.17	45.44	17.09	42.79	56.43	28.55
Suri–I	33.69	45.10	22.06	44.96	57.77	31.31
Suri–II	32.66	47.42	17.48	50.68	62.59	38.10
Sainthia	34.05	47.72	20.44	50.94	63.08	38.05

Labhpur	32.04	44.10	18.99	43.42	54.79	31.42
Nanoor	22.35	31.95	13.17	40.67	52.11	28.80
Bolpur-Sriniketan	32.23	45.29	19.35	48.35	59.90	36.16
Illambazar	29.55	43.05	15.53	45.64	57.37	33.17
Dubrajpur	28.10	40.92	14.69	34.81	48.22	20.81
Khoyrasol	38.65	53.00	22.02	40.32	53.53	26.02

Source: Census 2001

Tables 2.9 and 2.10 present the profile of blocks and municipalities in terms of a select number of indicators of school infrastructure. The pupil-teacher ratios in most of the blocks in the district are below the 40:1 norm. However, the ratios in Murarai-I and Murarai-II are 59.91 and 61.57, respectively, which are not only much above the norm, they are even higher than the district average. In Murararai-I there are eleven schools in which the pupil-teacher ratio exceeds 100. In Murarai-II there are seven such schools. According to DISE 2006, in Banarampur Primary School, 464 children are being taught by only two teachers. The pupil-classroom ratios are also not very high in any of the blocks except Murarai-I and Murarai-II.

Although between 2005-06 and 2006-07 the total number of single-teacher schools has come down from 91 to 86, in Rajnagar it has increased from 8 to 15. Rajnagar has the highest percentage schools with two or fewer teachers (65.22). The same block also has the highest percentage of schools with single or no classroom (29.35) and the highest ratio of the number of primary to upper primary/secondary schools (9.2).

In Tables 2.9 and 2.10, we have taken six indicators, viz. pupil-teacher ratio, pupil-classroom ratio, percentage of female teacher, percentage of schools with single or no classroom, percentage of schools with two or fewer teachers, and the ratio of the number of primary to the number of upper primary/secondary schools. The last indicator indicates the opportunity for further education available to students who complete primary education. This ratio is the highest in West Bengal among all the states in India; and Birbhum also shows a very high ratio of the number of primary to upper primary/secondary schools. All the blocks have been ranked in Table 2.9 (municipalities in Table 2.10) in terms of each of the six indicators, and the rank order numbers for each block (and municipality)

have been added. The blocks (and municipalities) are then ranked according to the sum of the rank scores. The last columns in the two tables give the final ranking. While Bolpur-Sriniketan tops the ranking in terms of primary school infrastructure, Dubrajpur trails behind all other blocks.

Table 2.9: Ranking of rural blocks of Birbhum in terms of school infrastructure

Block	Pupil teacher ratio	Pupil class room ratio	% of female teacher	% of schools with single or no classroom	% of schools with 2 or fewer teachers	Ratio of Primary/ UP & Secondary	Rank
Bolpur Sriniketan	29.42	42.84	27.08	13.61	21.09	6.13	1
Mayureswar-I	37.18	48.91	16.31	8.93	25.00	4.67	2
Nanoor	36.08	44.51	18.20	9.55	28.66	5.23	3
Suri-II	34.56	44.55	19.01	8.97	24.36	7.09	4
Mayureswar-II	28.94	39.74	15.10	22.73	29.55	6.29	5
Nalhati-II	43.20	52.70	12.70	5.97	22.39	5.15	6
Suri-I	35.71	45.17	21.66	15.48	33.33	6.00	7
Sainthia	31.39	44.25	24.03	25.86	32.76	6.69	8
Rampurhat-I	35.61	41.89	15.64	11.64	43.15	7.68	9
Labpur	35.93	47.13	20.04	18.24	35.22	6.12	10
Nalhati-I	39.75	48.93	10.49	14.73	24.81	5.16	11
Md. Bazar	39.16	53.55	15.26	9.76	26.02	6.83	12
Rampurhat-II	39.78	50.36	11.55	10.34	30.17	5.52	13
Illambazar	38.02	41.80	13.83	13.33	50.37	7.11	14
Khoyrasole	39.52	42.82	9.85	11.48	54.92	6.42	15
Murarai-II	61.57	73.08	9.70	2.30	48.28	5.44	16
Rajnagar	31.42	33.08	8.22	29.35	65.22	9.20	17
Murarai-I	59.91	71.47	12.30	15.31	33.67	6.13	18
Dubrajpur	43.03	43.03	12.60	16.55	54.68	8.69	19
Birbhum (Rural)	**38.64**	**47.72**	**15.90**	**14.29**	**36.09**	**6.24**	

Source: DISE, 2006

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Table 2.10: Ranking of Municipalities in terms of school infrastructure

Municipality	Pupil teacher ratio	Pupil class room ratio	% of female teacher	% of schools with single or no classroom	% of schools with 2 or fewer teachers	Ratio of Primary/ UP & Secondary	Rank
Sainthia	35.42	59.73	51.16	0.00	6.67	2.50	1
Rampurhat	34.27	54.74	53.91	13.04	13.04	2.56	2
Dubrajpur	53.04	65.37	45.28	0.00	8.33	2.40	3
Nalhati	45.65	72.85	52.00	7.14	0.00	2.80	4
Suri	33.16	49.28	38.99	9.38	15.63	2.91	5
Bolpur	31.67	65.29	59.70	17.39	43.48	3.29	6
Birbhum (Urban)	**36.56**	**59.06**	**50.00**	**9.24**	**16.81**	**2.77**	

Source: DISE, 2006

Interestingly, even though Bolpur-Sriniketan block tops the block ranking, Bolpur municipality lags behind all other municipalities in terms of primary school infrastructure. However, it would be misleading if we put too much importance on the overall ranking. Tables 2.9 and 2.10 reveal a lot more than what the overall ranking does. From the two tables it is not difficult to see where the focus should be in order to reduce inter-block disparity in school infrastructure. While in Murarai-I & II more teachers and classrooms are needed overall, in Rajnagar and Dubrajpur the problem is of a different kind. In the latter two, the combination of high percentages of single-teacher and two-teacher schools with low percentages of pupil-teacher ratio and pupil-classroom ratio indicates that a good number of schools have such a small number of students that it is difficult to justify posting three or four teachers in those schools. This is a rather tricky policy issue. However, it is not generally true that single teacher schools have fewer students. Among the fifteen single-teacher schools in Rajnagar, five have more than fifty students each. What it means is that even within a block different schools may require different policy interventions.

No clear pattern can be observed on the correlation between various indicators of school infrastructure and the percentage of out-of-school children. Bolpur-Sriniketan – the topper in terms of school infrastructure – does not appear to have the minimum percentage of out-of-school children,

perhaps for the reason that schooling outcome is the result of the interaction of both supply side and demand side factors. Table 2.11 gives the percentages of out-of-school children in the age-groups 5+ to 8+ and 9+ to 13+ across blocks. Six blocks, viz. Dubrajpur, Khoyrasole, Sainthia, Labhpur, Murarai-I and Murarai-II share almost one-half of the total out-of-school children in the age-group 5+ to 8+. Dubrajpur has the highest number and Khoyrasole has the highest percentage of such children. In the age-group 9+ to 13+ Murarai-I has the dubious distinction of having the highest number and highest percentage of out-of-school children. In Table 2.9 Murarai-I ranks 18 among the nineteen blocks. In other words, this block lags behind others in terms of school infrastructure as well as an outcome indicator, viz. children out-of-school.

Table 2.11: Number and percentage of children out of school in Birbhum, 2006

BLOCK	Number (5+ to 8+ yrs)	Percentage (5+ to 8+ yrs)	Number (9+ to 13+ yrs)	Percentage (9+ to 13+ yrs)
SAINTHIA	1198	6.80	2403	12.09
BOLPUR SRINIKETAN	919	5.12	2369	11.34
DUBRAJPUR	1625	8.95	3783	20.11
ILLAMBAZAR	982	6.76	2309	14.44
KHOYRASOLE	1577	14.01	2280	18.23
LABPUR	1113	6.78	2460	13.28
MAYURESWAR - I	525	4.38	1462	11.41
MAYURESWAR - II	405	4.38	922	8.31
MD.BAZAR	1092	7.56	2494	17.46
MURARAI - I	1350	7.33	4189	23.50
NALHATI - II	118	1.03	1037	8.24
NALHATI - I	375	1.80	2723	11.47
NANOOR	1055	6.04	2650	13.64
MURARAI - II	1151	5.45	2833	13.45
RAJNAGAR	557	8.81	1319	18.26
RAMPURHAT - II	202	1.40	2244	13.07
RAMPURHAT - I	1030	5.50	2591	12.55
SURI-II	223	3.00	1001	12.90
SURI-I	758	6.35	1926	14.45
BIRBHUM	16255	5.81	42995	14.07

Source: SSM, Birbhum

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2.5 Concluding remarks

In terms of both overall literacy and female literacy Birbhum has lagged behind most other districts of West Bengal. To achieve faster improvement in literacy intervention in two distinct areas is needed at the same time: universalisation of elementary education for children by reducing the number of out-of-school children, and revitalizing adult literacy and continuing education programmes. We observe that there is some connection between the quality of primary school infrastructure and the percentage of out-of-school children at the block level. While certain parts of the primary school infrastructure has improved in recent years, a shortage of upper primary and secondary schools vis-à-vis primary schools poses a serious problem for transition from primary to upper primary. We further observe that there is significant variation in the incidence of dropout within blocks, which lead us to suggest that instead of focusing on the averages, it is important to narrow down the focus on the schools that are lagging behind others in terms of certain outcome indicators, such as high dropout rates.

The adult literacy programme, which was implemented in the early nineties in a campaign mode, eventually ran out of steam, leaving a substantial number of adult non-literates untouched. Even the positive gains from the programme could not be kept up as the neo-literates lost their literacy skills for the limited reach of the post-literacy and continuing education programmes. The scenario in Birbhum is no different from other districts in this regard, as the Continuing Education Centres (CEC) are now almost non-functional throughout the state.

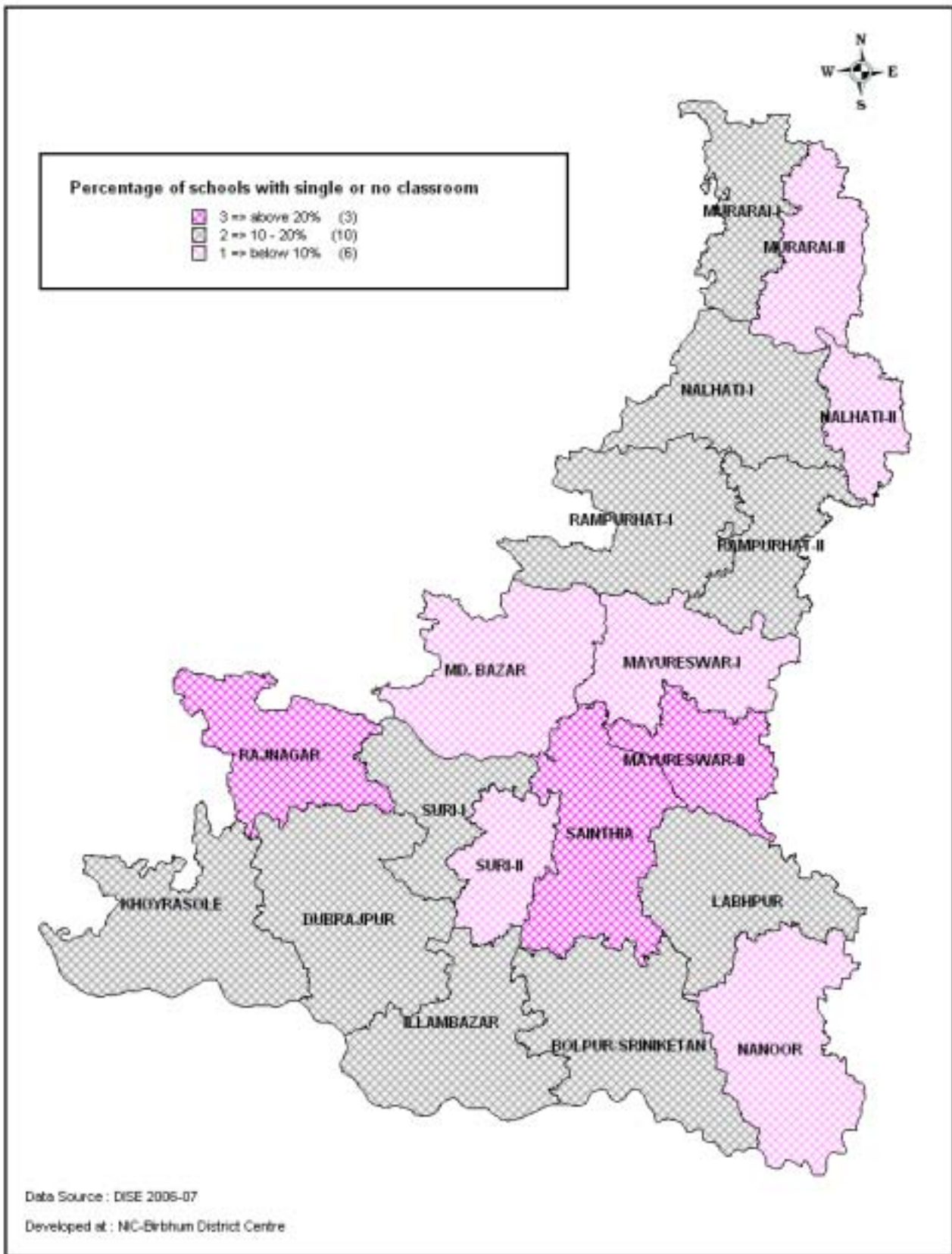**Figure 2.3: Percentage of primary schools in Birbhum with single or no classroom, 2006**

Percentage of schools with single or no classroom

- 3 ⇒ above 20%   (3)
- 2 ⇒ 10 - 20%   (10)
- 1 ⇒ below 10%   (6)

Data Source : DISE 2006-07

Developed at : NIC-Birbhum District Centre

Figure 2.4: Pupil-teacher ratios in blocks of Birbhum, 2006

Pupil teacher ratio

1 => below 40   (15)
2 => 40-50   (2)
3 => above 50   (2)

Data Source : DISE 2006-07

Developed at : NIC-Birbhum District Centre
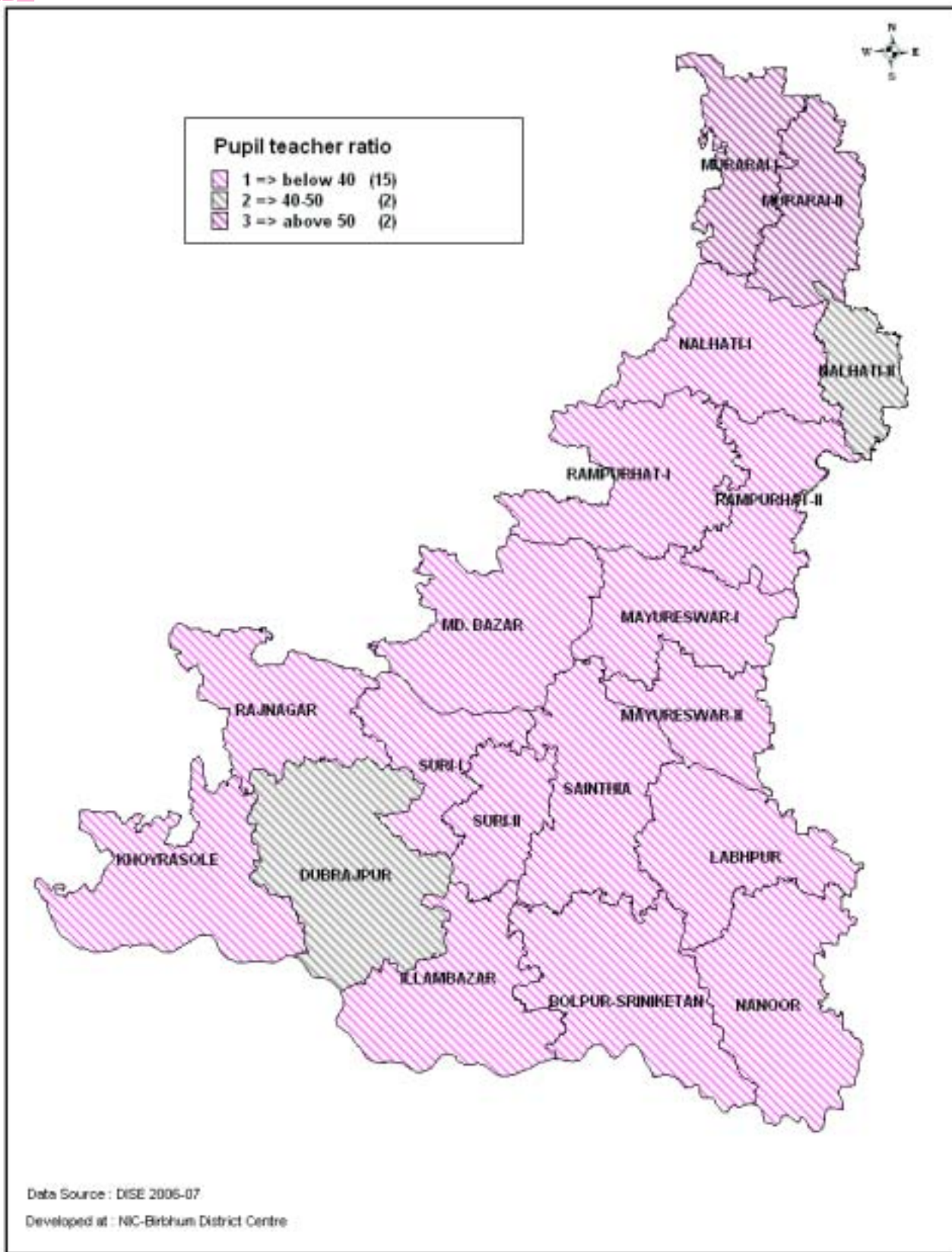
Figure 2.5: Percentage of primary schools in Birbhum with two or fewer teachers, 2006

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Percentage of schools with 2 or fewer teachers

4 => above 50%   (4)
3 => 40 - below 50% (2)
2 => 30- below 40%   (5)
1 => 20- below 30%   (8)

Source : DISE 2006-07

Developed at : NIC-Birbhum District Centre

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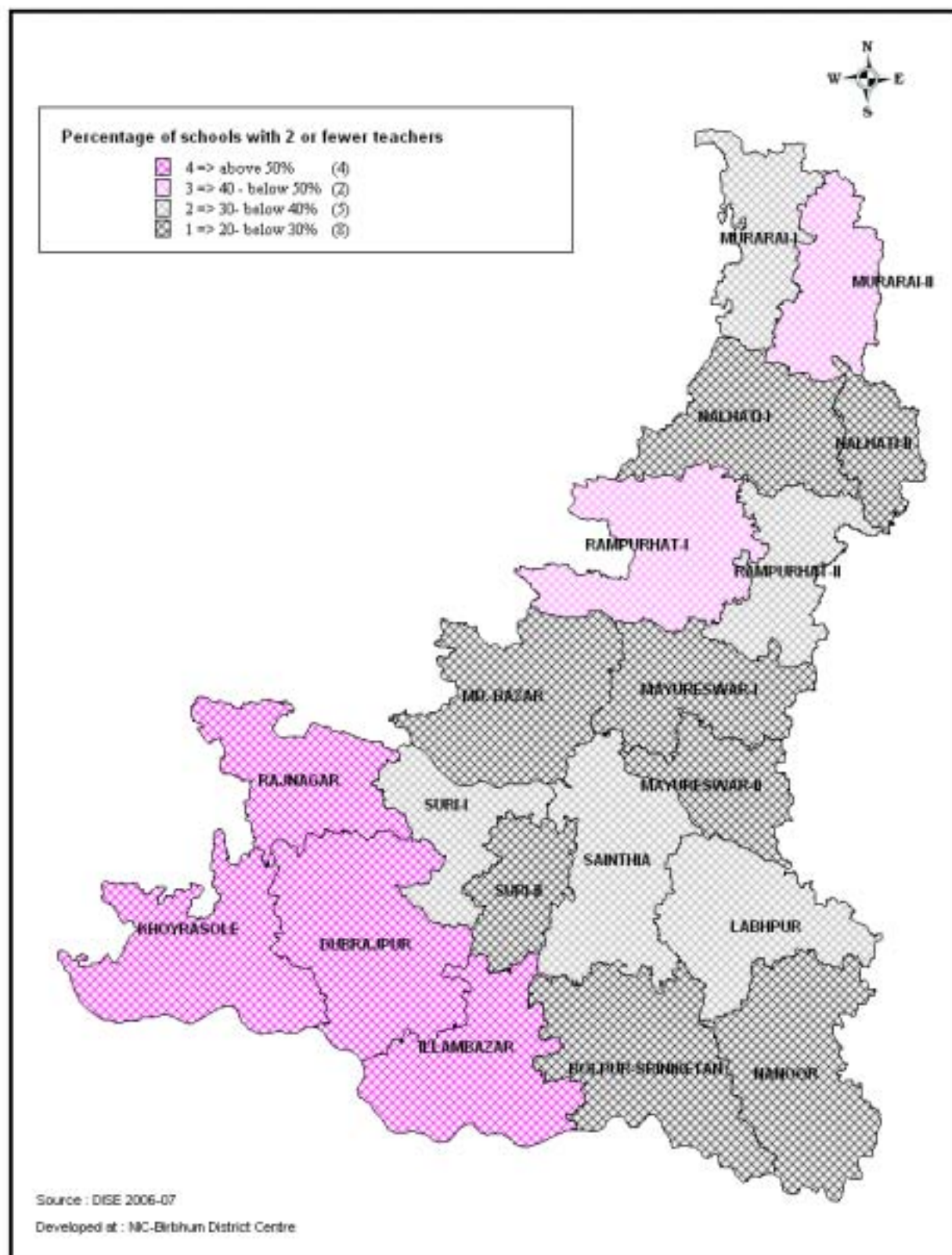
Chapter III : | Health and health care

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3.1   Health care infrastructure in Birbhum vis-à-vis West Bengal

The public health care infrastructure of Birbhum district consists of 58 Primary Health Centres (PHCs) located in various blocks, 15 Block Primary Health Centres (BPHCs) located at the headquarters of the Blocks, 4 Rural Hospitals (RH) which are better equipped than the BPHCs and located at block headquarters, 2 Sub-divisional hospitals situated in 2 subdivisions and the district hospital located at the district headquarter (Table 3.1). Out of 58 PHCs, only 15 have in-patient care facility. There are 392 beds in the PHCs, 340 in the BPHCs, and 170 beds are available in the RHs – altogether 902 hospital beds distributed among 77 health facilities located in the rural areas serving mainly the rural population in the district. Out of 4 RHs, there are two rural hospitals, namely, Sainthia and Dubrajpur, which also serve the urban population of these areas.

In the urban areas, 520 beds are available in the district hospital and 411 beds are in the two sub-divisional hospitals. Besides, 396 beds are available in the private sector nursing homes, 382 beds in other hospitals, which means a total of 1709 hospital beds distributed among 47 secondary and tertiary level healthcare facilities in urban Birbhum. Thus, from the projected population of 2006, it can be inferred that while in the rural areas one hospital bed is to serve 3301 persons, in urban areas 157 persons are served per bed. In comparison with West Bengal as a whole, though fewer persons are served per bed in both rural and urban Birbhum (state averages are 4666 and 296 persons per bed), on the whole 1243 persons are served per bed in Birbhum district compared to 931 persons per bed in West Bengal as a whole. In other words, there are about 0.8 beds per 1000 population in Birbhum compared to 1 bed per 1000 population in the state as a whole. On the whole, this indicates that more beds are required in both rural and urban areas in the district.

Birbhum clearly needs more doctors to raise its doctor-population ratio to the level of the average for the state as a whole (combining rural and urban areas). There are about 8 doctors per 100,000

persons in Birbhum, whereas the number of doctors per 100,000 persons for the state as a whole is 46, more than ten times as many. Even in the neighboring district of Burdwan there are more than 14 doctors per 100,000 people. It seems that the existence of a government teaching hospital makes substantial difference in terms of these indicators, and there is no such medical college and hospital in Birbhum. Similar observations can be made regarding relative concentration of para-medical personnel in Birbhum vis-à-vis West Bengal.

Table 3.1: Health Infrastructure in Birbhum vis-à-vis West Bengal

Type of the Facility	Birbhum		West Bengal	
	Total No. of Institutions	Total No. of Beds	Total No. of Institutions	Total No. of Beds
Sub Centres	484	Nil	10356	Nil
PHCs with only OPD facility	43	Nil	922	5247
PHCs with indoor facility	15	NA		
BPHCs	15	301	241	3475
Rural Hospitals	4	170	93	3468
Sub-Divisional Hospitals	2	413	45	6823
State General Hospital	Nil	Nil	34	3127
District Hospital	1	500	15	6567
Medical College	Nil	Nil	9	10396
Other Hospitals	1 *	NA	32	7223
Population served per bed	1243		931	
Doctors per 100,000 population	8		46	
Estimated population in 2006	2977103		62359244	

Source: District Heath Action Plan, 2007-08 and Health on the March, 2005-06
*District Police Hospital

3.2   *Rural health infrastructure and shortfall*

In the provision of public healthcare infrastructure in India, ensuring equity in access to all population sub-groups has been the central theme. For this reason, the healthcare facilities across country

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– their number and location – have been defined in terms of some population norms. According to the norm there should be one Sub-centre (SC) for every 5000 population (3000 population in case of hilly and tribal areas), one Primary Health Centre (PHC) for every 30,000 population and one Community Health Centre (or Rural Hospital) (CHC or RH) for every 100,000 to 120,000 population. In Birbhum, the population density varies significantly across the blocks. Among the three subdivisions, blocks in the Rampurhat subdivision have the highest population density and the highest aggregate population in the district in comparison with the blocks of other two subdivisions. However, the physical infrastructure of public healthcare institutions and health care personnel in Rampurhat do not appear to be substantially larger than the healthcare resources supplied to the less populated blocks in the district. For example, there are 627 hospital beds and 81 doctors in Rampurhat Sub-division, whereas there are 1173 hospital beds and 103 doctors positioned in Suri Sadar subdivision which has the second highest aggregate population but the lowest population density in the district. Because of these factors, the system loads borne by lower level healthcare institutions are unequal and limiting the access of the people on the one hand and affecting the quality and delivery of healthcare services on the other. Thus, analysis of such block level disparity in health care infrastructure would help to identify specific deficiencies and suggest corrective measures to improve the health care system in the district.

Since population and the total number of healthcare institutions vary widely across different blocks of the district, the ratio between the population and the number of healthcare institutions such as BPHCs that provide both in-patient and out-patient facility and PHCs and SCs that basically provide out-patient care, also vary substantially. It is worth noting that out of 58 PHCs in the district, only 15 PHCs have necessary infrastructure to provide in-patient care. Though every PHC in the district serves about 53,000 people, which indicates moderate system load, the distribution is extremely uneven – ranges from as high as 89,000 persons per PHC in Murarai-I to about 35,000 in Sainthia. Other PHCs which have very high system load include the PHCs belonging to Nalhati-I, Mayureshwar-I, Illambazar, Nanoor and Bolpur-Sriniketan. PHCs of these blocks have to bear very high system load as these PHCs serve densely populated regions of the district except Illambazar. Because of the high system load in the PHCs of these blocks, patients are often compelled to travel to the BPHCs

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or nearby RHs or SDHs not only for in-patient care but also to obtain out-patient care, which in turn increases the system load in the higher level healthcare facilities. They have no other choice but to go to the private nursing homes and other providers to seek treatment in the subdivisions and district headquarter if they don't find any place in the over-loaded RHs or SDHs. Although nowhere in the country do we find that the desired national norm of PHC-population ratio is satisfied, other blocks in the district have a more favourable PHC to population ratio compared to the blocks mentioned above. As indicated, Sainthia block holds the best position in terms of PHC-population ratio followed by Rajnagar, Md. Bazar, Mayureswar-II and Suri-II.

Mismatch between the healthcare facilities existing in blocks and the current population of the corresponding blocks are clearly observed if we compute the requirements of PHCs, SCs and Female Health Assistants (HAF) on the basis of projected current population of the blocks. On the whole, each block of the district should be served by more than 5 PHCs under the existing national norms instead of the present average per block, which is just above 3 per block. In regional terms, the largest shortfall in the number of PHCs is observed in the populous Nalhati-I block followed by Murarai-I in Rampurhat sub-division and Bolpur-Sriniketan and Nanoor blocks in Bolpur sub-division. Nalhati-I block requires 5 additional PHCs and other aforesaid blocks require another 4 PHCs under the existing norm. On the other hand, the corresponding gaps are among the lowest in Mayureshwar-II, Md. Bazar, Sainthia, Rajnagar, Suri-II and Labhpur. Each of these blocks requires one additional PHC following the existing PHC-population norm.

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Table 3.2: Shortfall of health infrastructure and personnel in rural Birbhum

Blocks	projected population 2007	No. of PHC	Population per PHC	No. of Sub-centres	No. of HA (F) (Available)	No. of HS (F) (Available)	No. of PHCs/30000 pop	No. of SCs/5000 pop	No. of FHAs/1000 pop	Req no. of PHCs (additional)	Req no. of SCs (additional)	Req. no. of HA(F) (additional)	shortfall of PHCs	shortfall of SCs	Shortfal of HA(F)
Nalhati-I	250616	3	83539	35	33	6	0.36	0.70	0.13	8	50	251	-5	-15	-218
Nalhati-II	120002	2	60001	18	15	4	0.50	0.75	0.12	4	24	120	-2	-6	-105
Murarai-I	177255	2	88628	27	18	4	0.34	0.76	0.10	6	35	177	-4	-8	-159
Murarai-II	200924	4	50231	29	26	7	0.60	0.72	0.13	7	40	201	-3	-11	-175
Mayureswar-I	155768	2	77884	23	23	6	0.39	0.74	0.15	5	31	156	-3	-8	-133
Mayureswar-II	122522	3	40841	20	18	2	0.73	0.82	0.15	4	25	123	-1	-5	-105
Rampurhat-I	176269	4	44067	27	27	6	0.68	0.77	0.15	6	35	176	-2	-8	-149
Rampurhat-II	172292	3	57431	28	27	6	0.52	0.81	0.16	6	34	172	-3	-6	-145
Md. Bazar	155508	4	38877	25	22	9	0.77	0.80	0.14	5	31	156	-1	-6	-134
Sainthia	174963	5	34993	33	33	5	0.86	0.94	0.19	6	35	175	-1	-2	-142
Dubrajpur	175991	4	43975	30	29	6	0.68	0.85	0.16	6	35	176	-2	-5	-147
Rajnagar	75094	2	37547	16	16	3	0.80	1.07	0.21	3	15	75	-1	1	-59
Suri-I	110084	2	55042	16	16	4	0.55	0.73	0.15	4	22	110	-2	-6	-94
Suri-II	85120	2	42560	14	14	4	0.70	0.82	0.16	3	17	85	-1	-3	-71
Khoyrasole	143570	3	47857	24	20	4	0.63	0.84	0.14	5	29	144	-2	-5	-124
Bolpur-Sriniketan	195847	3	65282	30	28	6	0.46	0.77	0.14	7	39	196	-4	-9	-168
Labhpur	192524	5	38505	31	20	6	0.78	0.81	0.10	6	39	193	-1	-8	-173
Nanoor	210827	3	70276	34	34	6	0.43	0.81	0.16	7	42	211	-4	-8	-177
Illambazar	162037	2	81019	24	20	7	0.37	0.74	0.12	5	32	162	-3	-8	-142

As far as Sub-centres (SCs) are concerned, the highest shortfall is observed in Nalhati-I (shortfall of 15) followed by Murarai-II (shortfall of 11) and Bolpur-Sriniketan (shortfall of 9). There are a number of blocks, such as Murarai-I, Mayureshwar-II, Rampurhat-I, Labhpur, Nanoor and Illambazar, which require additional 8 SCs under the existing norm. The most favourable position in terms of SCs per 5,000 population is held by Rajnagar, which has one more sub-centre than its requirement. The other two blocks which have lowest shortfall are Sainthia and Suri-II. On an average, every block needs to add 7 SCs to the existing ones. The requirements of such a significant number of SCs indicate that a very large section of rural population is deprived of basic healthcare, and they require travelling to nearby PHC or BPHC in order to obtain primary healthcare bearing direct and indirect costs.

The infrastructure of the sub-centres in the district is not up to the mark. It has been found that about 36 per cent of the sub-centres do not have own building, 43 per cent do not have electricity connection, 22 per cent do not have any toilet facility and about 7 per cent run without water supply. In spite of that, the average clinic attendance is found to be high (Table 3.3).

Table 3.3: Status of Sub-Centres in the district, 2006

GP HQ Sub-Centres	167
Non HQ Sub-Centres	317
Number & percentages of SCs in rented house/clubs	177 (36.6)
Number & percentages of SCs without electricity	212 (43)
Number & percentages of SCs without water supply	33 (7)
Number of SCs without toilets	189 (22)
Average clinic attendance per day	232

Note: numbers in the parentheses denote percentages out of total SCs.

The norm regarding female health assistant (FHA) per 1,000 population is not followed in most of the states in India, and Birbhum is no exception. The rural health personnel play a significant role in educating rural population about various health related matters in general and about reproductive health matters, in particular. Services of these personnel would significantly improve the healthcare-

3

seeking behaviour and guide patients to the referral system. The analysis shows that according to the norm, the requirement of these field staff is huge in every block ranging from 218 in Nalhati-I to 59 in Rajnagar. Even if we consider the sanctioned, existing and vacant positions of FHAs currently (not shown in the Table), it can be seen that about 8 percent posts of field personnel are lying vacant. Out of 484 sanctioned posts, 446 are in position. The number of vacant positions of FHAs is very high in Murarai-I followed by Khoyrasole.

All these evidences again indicate that due to the inadequacies of physical infrastructure and field staff a substantial proportion of rural population of the district live beyond the reach of the healthcare system. The analysis shows that the requirements of PHCs, SCs and FHAs are the highest in the Rampurhat subdivision followed by Bolpur subdivision because the size of population and the population density are the highest in Rampurhat subdivision, which affects the distribution and allocation of health facilities and therefore deviated significantly from the existing national norm.

Besides the mismatch of institutional network of hospitals, PHCs and SCs in the blocks, the quality and effectiveness of healthcare delivery are also affected by the disparity between the postings of medical officers and other para-medical staff and also by the availability of hospital beds in the facilities. It can be observed that for some of the densely populated blocks of Rampurhat subdivision such as Nalhati-I and II, Murarai-II and Mayureshwar-I, the number of doctors per lakh population is about 2, which is well below the norm. Similar doctor-population ratio is found in Suri-I, Khoyrasole and Nanoor. Although low doctor-population ratio in Nalhati-I and Suri-I is mitigated by its proximity to urban healthcare facilities located at Nalhati and Suri towns, low doctor-population ratios in other blocks indicate the paucity of rural healthcare personnel in these blocks. Relatively better doctor-population ratio has been observed in most of the blocks of Suri subdivision such as Sainthia, Rajnagar and Suri-II. Better doctor-population ratio has also been seen in Mayureswar-II and Bolpur-Sriniketan. As in the case of doctor-population ratio, the populous blocks of the district have fewer paramedical personnel. It can be observed from the Table 3.4 that generally the number of nurses and other paramedical personnel are also higher in those blocks where the doctor-population ratios are relatively better, although there are exceptions too.

Similarly, some variations regarding availability of hospital beds have also been observed in different blocks. Except Sainthia, which has high availability of 5 beds per 10,000 population, the figures for the other blocks in the district range from 2 to 4 beds per 10,000 population. As observed in the cases of other health infrastructural indicators, the bed-population ratio is also lower in the most of the densely populated blocks of Rampurhat subdivision such as Nalhati-I, Murarai-II, Mayureswar-I and Rampurhat-I in comparison to the others. Other blocks which have low bed-population ratios are Suri-I, Khoyrasole and Nanoor. Other blocks of Suri and Bolpur subdivisions have relatively more favourable bed-population ratios as observed from Table 3.4. On the other hand, more than 95 per cent of beds in the private sector are located in the urban areas and about 70 per cent among them are positioned either at the district headquarter or at two subdivisions (Office of the CMOH, Birbhum 2007). Hence in overall terms, blocks belonging to Suri and Bolpur subdivision are better placed in terms of hospital beds for patients, while the blocks in the populous Rampurhat subdivision offer least assured coverage to patients who require hospitalization.

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Table 3.4: Health care infrastructure in rural Birbhum by blocks, 2007

Blocks	Projected population 2007	No. of PHC	No. of Medical Officers available including PHC	No. of other paramedical staff	Staff nurse (No.)	No. of hospital beds	Doctors/ 100000 pop	Other paramedical staff/ 100000 pop	Nurse/ 100000 pop	Beds/ 10000 pop
Nalhati-I	250616	3	6	4	16	47	2	2	6	2
Nalhati-II	120002	2	3	5	7	31	2	4	6	3
Murarai-I	177255	2	6	7	18	66	3	4	10	4
Murarai-II	200924	4	5	6	13	47	2	3	6	2
Mayureswar-I	155768	2	3	5	9	31	2	3	6	2
Mayureswar-II	122522	3	6	4	11	52	5	3	9	4
Rampurhat-I	176269	4	6	8	13	43	3	5	7	2
Rampurhat-II	172292	3	6	6	11	52	3	3	6	3
Md. Bazar	155508	4	5	5	14	62	3	3	9	4
Sainthia	174963	5	10	7	30	102	6	4	17	6
Dubrajpur	175901	4	8	4	17	58	5	2	10	3
Rajnagar	75094	2	4	5	11	31	5	7	15	4
Suri-I	110084	2	2	6	9	27	2	5	8	2
Suri-II	85120	2	4	5	11	31	5	6	13	4
Khoyrasole	143570	3	3	4	14	37	2	3	10	3
Bolpur-Sriniketan	195847	3	5	7	23	86	3	4	12	4
Labhpur	192524	5	9	4	23	60	5	2	12	3
Nanoor	210827	3	5	6	13	37	2	3	6	2
Illambazar	162037	2	7	5	13	46	4	3	8	3

On the whole, it may be inferred from the present analysis that there is a substantial gap in physical infrastructure as well as paucity of health personnel in the populous blocks of the district and require special attention. In the case of other blocks, it seems that the existing facilities are possibly adequate to meet current healthcare demand. It should also be kept in mind that due to such inadequacies of facilities a large section of the rural population may either seek alternative healthcare from private practitioners (qualified or unqualified), traditional healers or simply do not seek any treatment due to the variety of constraining factors.

3.3 *Performance of District Hospital, Sub-divisional Hospitals, Rural Hospitals and Block Primary Health Centres*

Referral healthcare system in Birbhum district comprises 15 Block Primary Health Centres (BPHCs) and 4 Rural Hospitals (RHs) located at 19 block headquarters to serve the rural areas, 2 Sub-Divisional Hospitals (SDHs) at Bolpur and Rampurhat and the District Hospital (DH) at Suri. BPHCs are the first referral point from the Primary Health Centres (PHCs) or Sub-Centres (SCs) situated in the villages. These BPHCs are supposed to be better equipped in terms of more doctors and nurses, and other para-medical personnel and also have the facility of in-patient care (in other words, hospital beds) in accordance with the size of population composition. The performance indicators such as bed occupancy rates[1] and bed turnover rates[2] of the BPHCs for the last two years (see Figure 3.1) suggest that out of 15 BPHCs, bed occupancy rates and bed turnover rates are higher than the standard rates for only 5 and 9 BPHCs respectively. In-patient care facilities in as many as 5 BPHCs, namely, Bara Chaturi, Bolpur-Sriniketan, Chakmandola, Lohapur, Nakrakonda and Satpalsa, are grossly underutilized, whereas such facilities in Illambazar, Nanoor, Rajnagar and Paikar are over-utilized. This creates unequal pressure on the existing institutional network of healthcare system in the district. In case of out-patient care, similar patterns of utilization have been observed for these BPHCs. The underutilization may occur due to a variety of reasons, such as non-availability of doctors and support staff, equipments, medicine, and physical proximity to the RHs/SDHs/DH which make it easy for patients to bypass lower level facilities. Underutilization of most of the lower level facilities creates excessive pressure on the existing rural hospitals (RHs) and sub-divisional hospitals (SDHs) for in-patient care as observed from the indicators such as bed-occupancy rates and bed-turnover rates in the Rural and Sub-divisional hospitals.

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[1] Bed occupancy rate is defined as the number of hospital bed days divided by the product of the number of available hospital beds and the number of days in a year.
[2] Bed Turnover Rate gives the number of patients using one bed in a time span of a year.

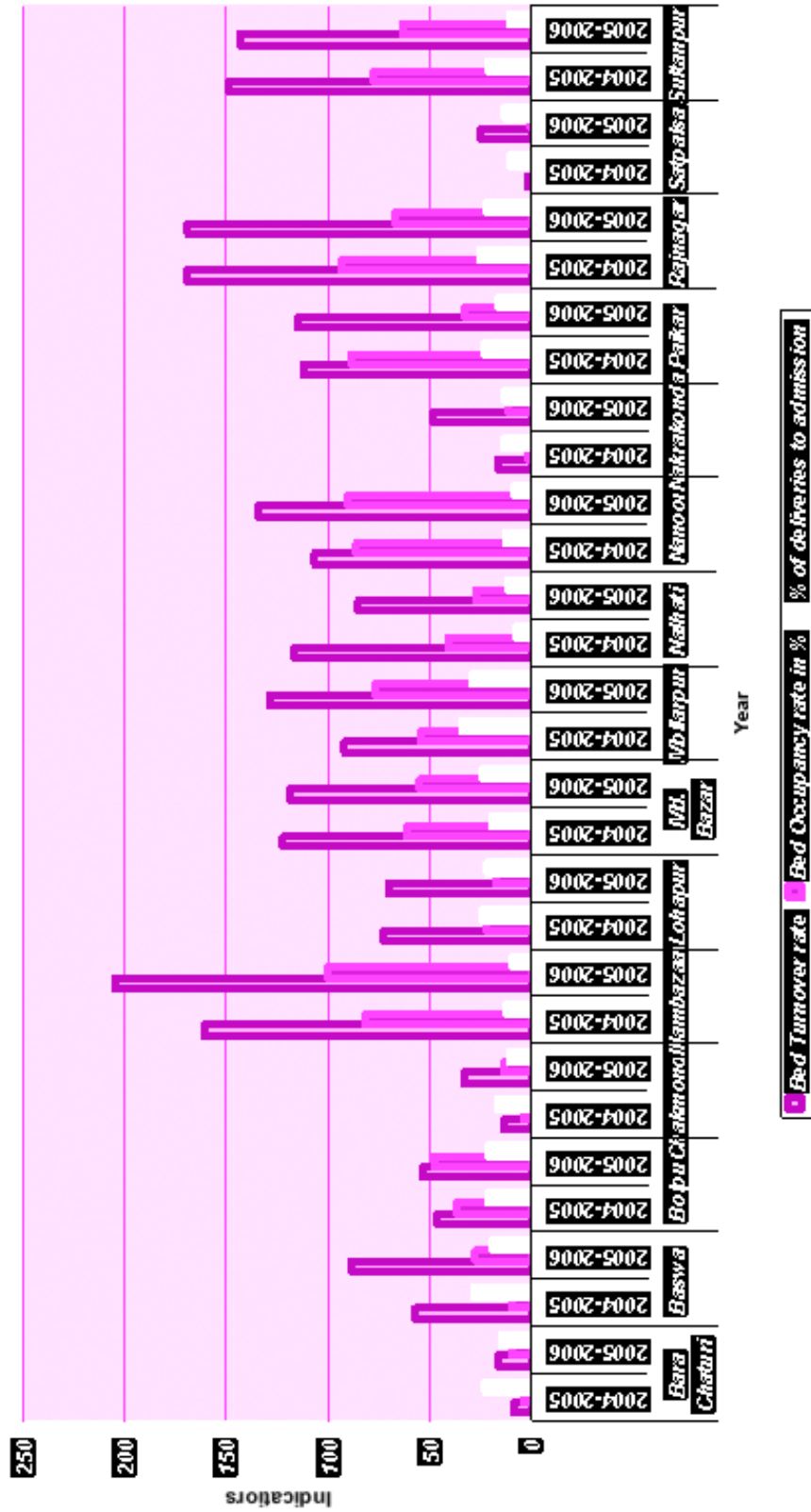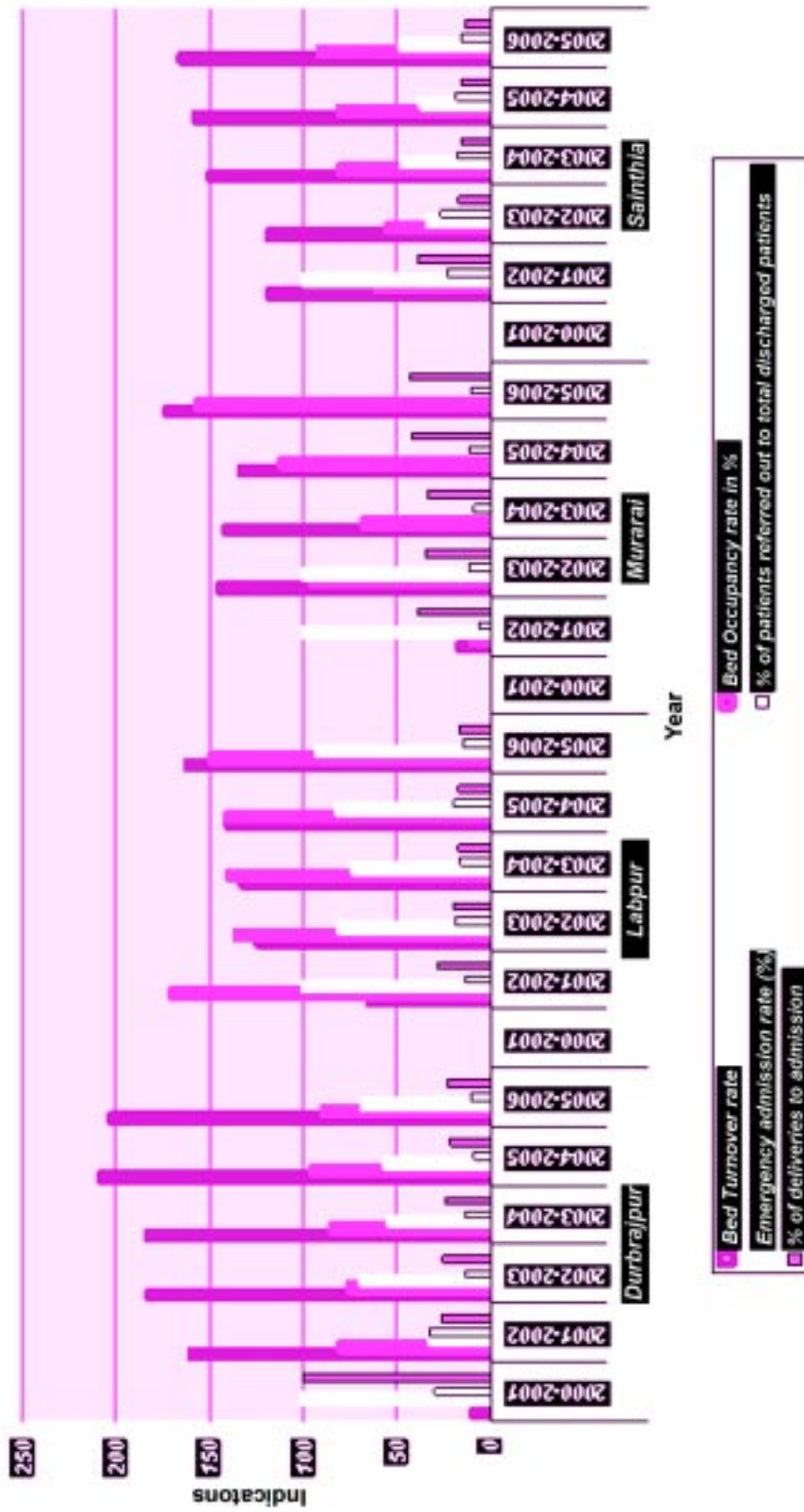3

Figure 3.1: Performance Indicators of BPHCs in Birbhum

Figure 3.2: Performance Indicators of Rural Hospitals (RHs) in Birbhum

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Among the four RHs, one is located in the northern part (Murarai) of the district; another in the middle (Sainthia) and the other two in the southern part (Dubrajpur and Labpur) of the district. These Rural Hospitals should be better operational for the in-patient care in terms of more doctors, support staff and number of beds than the BPHCs/PHCs. They act as referral units for the BPHCs/PHCs and also serve the people in those blocks where they are situated so that the system load on the District and Sub-division hospitals is somewhat relieved. It is evident from the Figure 3.2 that bed occupancy and bed turnover rates are significantly high in all these rural hospitals in the recent years. In addition to in-patient care, utilization of out-patient care is also reasonably high in these RHs in the recent years, especially in Sainthia and Murarai RHs. This clearly indicates the gross inadequacy in the infrastructure of the rural hospitals and the asymmetry between demand for and supply of healthcare in the rural areas. For example, Murarai RH serves most densely populated regions of the district with only 66 beds and only 4 medical officers positioned at present. Very high bed occupancy rates in Labhpur and Murarai reflect that the overload of patients frequently causes multiple bed occupancy. The concurrence of exceptionally high bed turnover and occupancy rates implies that either there is a high flow of referred patients to these RHs from the BPHCs/PHCs or people from the rural areas directly come to the RH to obtain in-patient care bypassing lower level institutions located at the blocks, as mentioned earlier. Besides, the emergency admission rates for other hospitals in the recent years (recent data on Murarai RH is not available) are much higher than the standard norm, thereby indicating that the patients brought to the RHs are often in the critical stage.

It is interesting to note that, bed occupancy rates as well as bed turnover rates were substantially higher in the Sub-divisional hospitals than the District hospital during the last six years. Bolpur sub-divisional hospital has recorded phenomenally high bed occupancy rates, bed turnover rates and emergency admission rates in the successive years that sharply exceed the standard rate. Rampurhat sub-divisional hospital has also recorded higher bed occupancy and bed turnover rates than the district hospital during the past six years. It is therefore apparent that the referral healthcare systems in the subdivisions are heavily overloaded and the district hospital operates with a slack. The district hospital located at Suri has 520 beds. But its location is in the middle of the district and accessible mainly by road network. Apart from the referred patients from other lower level referral units, it serves Rajnagar, Md. Bazar and Suri-I blocks, mainly because of contiguity of these areas, and also the urban areas of Suri. Bolpur and Rampurhat sub-divisional hospitals have only 125 and 285 beds respectively and located in southern and northern parts of the district, respectively. They are well connected with rail as well as road network and thus provide easy access to the people of not only the district but also

nearby areas of contiguous districts. Very high bed turnover rates of both the sub-divisional hospitals indicate high system load from short-term patients on the one hand and very high bed occupancy rate points out multiple occupancy of beds, on the other. It can be noted that the emergency admission rates for the district hospital as well as the other two sub divisional hospitals are substantially higher than the standard rates. As these hospitals function as secondary referral, the percentage of patients referred to these hospitals is significantly high excepting Rampurhat sub-divisional hospital. High emergency admission rates as well as high percentages of patients referred to these institutions imply that patients admitted to these institutions are most likely in critical condition when referred from the lower level referral units.

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Figure 3.3: Performance Indicators of Sub-Division Hospitals
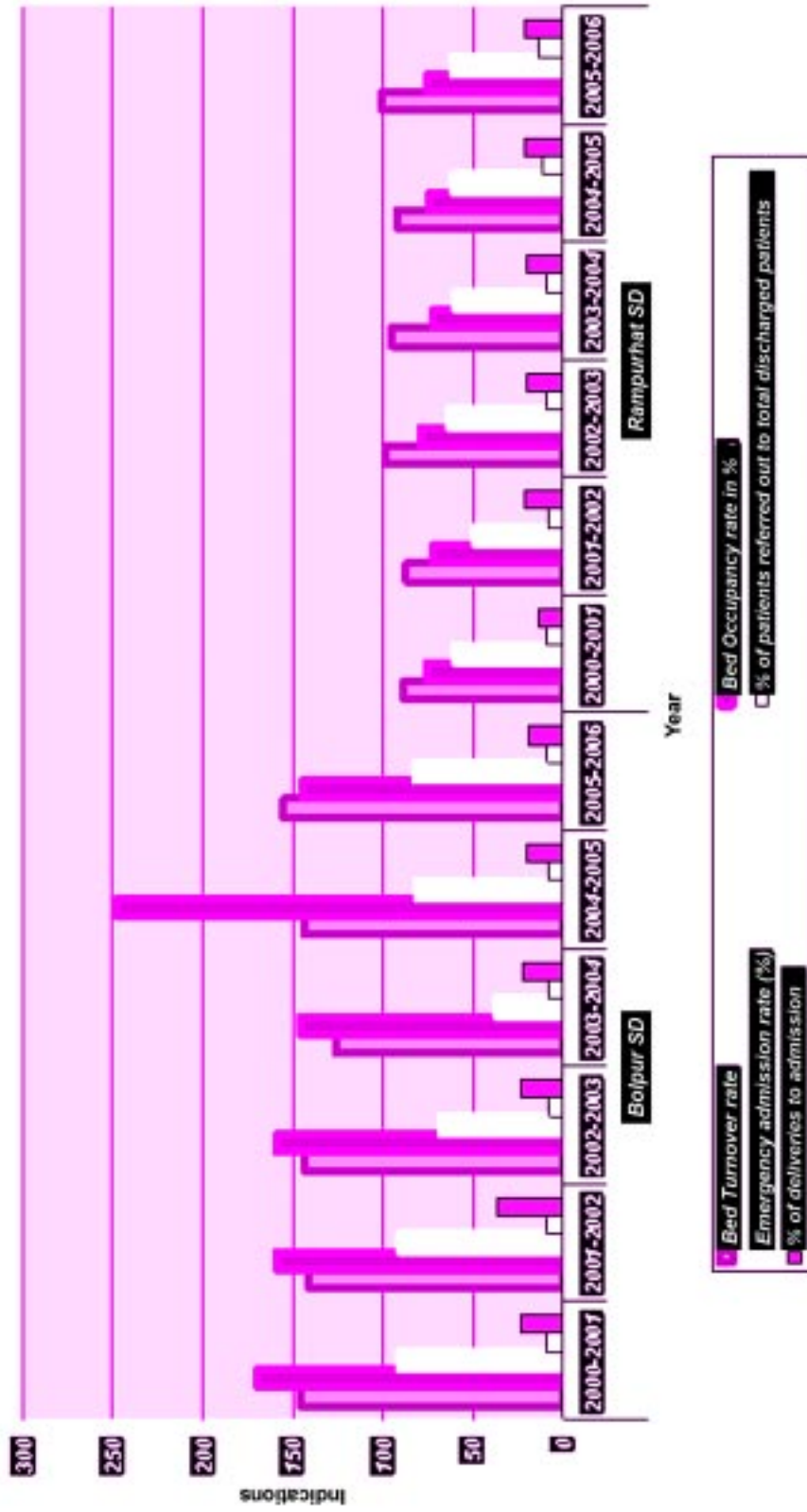
The proportion of patients in the population of a block may also vary due to micro agro-climatic factors at the local level and that may influence local endemicity of diseases and morbidity patterns and thus utilization of health services. In addition to these factors, local level accessibility (physical as well as perceived) also affects utilization of healthcare services. Nevertheless, it may thus be inferred that while most of the rural healthcare facilities i.e. BPHCs/PHCs in the district are still relatively underutilized, rural hospitals (RHs) and the sub-divisional hospitals (SDHs) are generally over-utilized. Despite patient (both in-patient and out-patient) overload in the rural hospitals and the sub-divisional hospitals, most of the cases are handled at these hospitals without referring them to the district hospital.

Table 3.5: Performance indicators of Suri Sadar (District) Hospital, Birbhum

Indicators	Year					
	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
Bed Turnover rate	79.18	64.71	69.64	66.84	72.52	77.4
Bed Occupancy rate in %	78.05	63.69	67.01	63.76	71.86	78.3
Emergency admission rate(%)	71.9	74.22	72.18	72.63	78.12	81.4
% of patients referred out to total discharged patients	1.08	1.66	2.27	2.24	2.11	2.5
% of patients referred in to total inpatients	10.29	13.62	13.01	12.17	11.04	11.5
% of deliveries to admission	18.16	22.01	21.45	21.25	20.32	19.9

Source: Health on the March, Govt. of West Bengal for various years

3.4 *Prevalence and incidence of various communicable diseases in Birbhum*
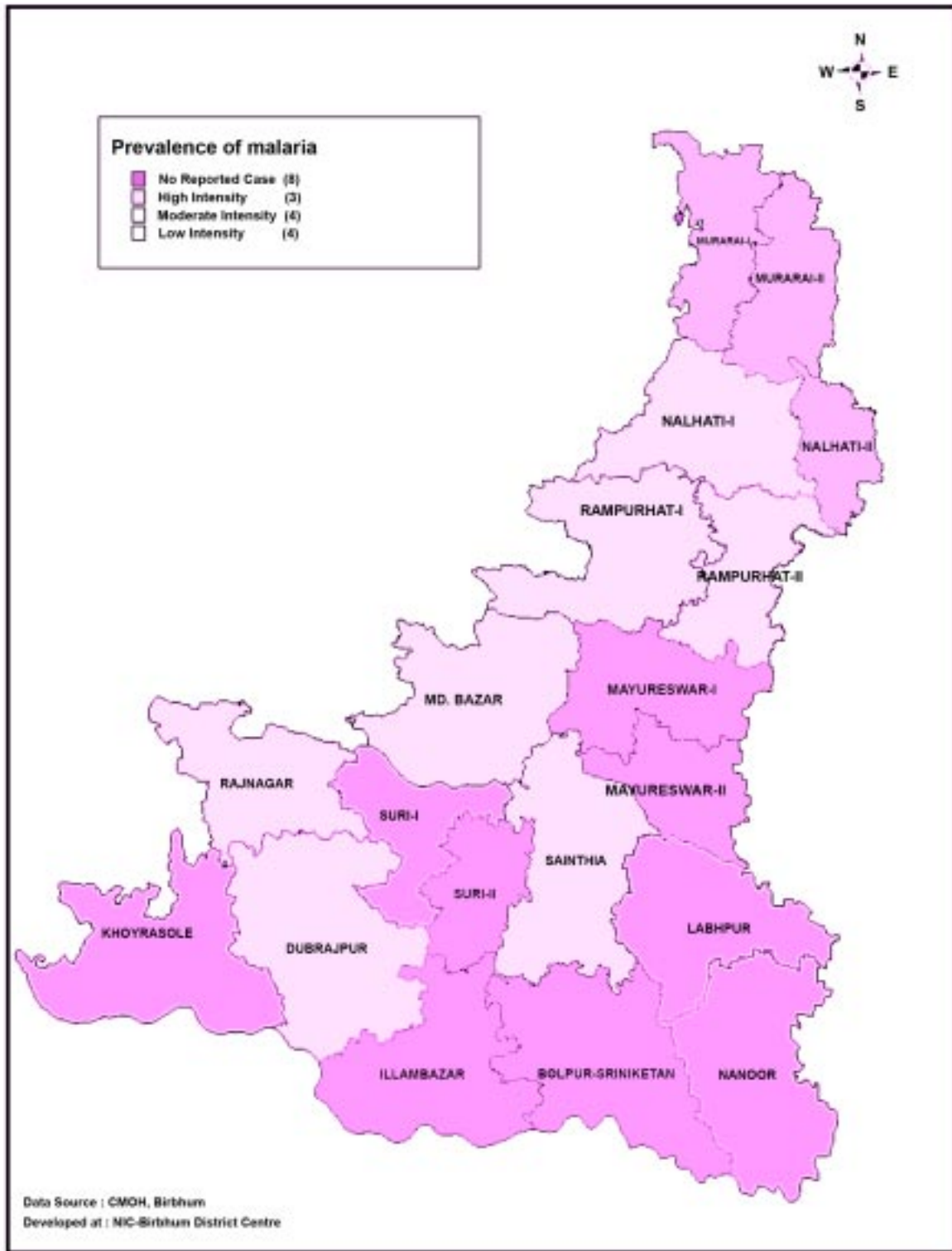
Malaria

Malaria is a potentially life threatening parasitic disease and has been one of the major public health problems in India. West Bengal is one of the largest contributors of reported malaria infections and deaths in the country. Incidence of malaria in Birbhum district has been found to be high, especially during and after its resurgence in 2003 in the whole State and continued to be high thereafter. Five blocks are endemic area of malaria covering more than 5 Lakhs of population. These are Rampurhat-I, Md. Bazar, Sainthia, Rajnagar

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and Dubrajpur. All other 14 blocks and municipalities are more or less affected with malaria but not endemic in nature. The resurgence of malaria in this district is primarily due to the occurrence of flood during 2002 which gave rise to both *P. Vivax* (Pv) and *P. Falciparum* (Pf) vectors, the principal vectors of malaria incidence. Before that, also due to flood during 2000, altogether 16 blocks were affected. It can be noted that the percentages of Pf have been consistently high from 2003-04 in comparison with the State as a whole. The climatic and topographic factors are to some extent responsible for the resurgence of incidence. Maximum rainfall usually occurs between June and September. Maximum temperature used to be recorded in June. Usually from June to September the maximum numbers of malaria cases are detected.

The public health department has been spraying DDT to contain the incidence of malaria, although the coverage of DDT spraying is not satisfactory in the district. DDT (50 percent) is to be sprayed in those areas where any death due to Pf malaria would be reported. From May 2007 to October 2007, DDT has been sprayed in 5 endemic blocks which cover more than 2.75 Lakh population besides supply of other drugs and injectables for malaria affected persons. Also, Radical Treatment has been introduced against all malaria positive and fever cases. In addition to the aforesaid activities, mosquito net has been distributed by the Health Department to 20,000 below poverty line households in the affected blocks of the district and will be distributed to all the below poverty line households very soon. Some NGOs have also taken initiative to distribute mosquito net in different blocks.

Figure 3.4   Prevalence of Malaria in blocks of Birbhum, 2003-07

Note: High intensity: Incidence of malaria found during any 3 or more years in the specified period.
Moderate intensity: Incidence of malaria found during any 2 years in the specified period.
Low intensity: Incidence of malaria found during any 1 year in the specified period.

Tuberculosis

Tuberculosis has been a major public health problem not only in Birbhum district or West Bengal but also in different parts of India. Latest estimates show that in India, about 40 per cent of the population is infected with the *tuberculosis bacillus* (Ministry of Health & Family Welfare, Government of India, 2004). Annual new smear positive case detection in Birbhum district is somewhat higher than the average figure for the whole state in the recent years. To control the recurrence of the disease, six Tuberculosis Units (TUs) have been set up in the district, each Unit covering approximately 5.4 lakh population (Table 3.6). The population load per TU varies substantially across blocks mainly due to the variation in the population density. The TUs of Murarai and Bolpur serve much higher population compared to other TUs.

Table 3.6: Population load in each Tuberculosis Unit in Birbhum

TB Unit	Block/Municipality covered	Population covered in 2006 (Projected)
Suri	Suri-I, Suri Municipality, Suri-II, Md. Bazar, Rajnagar	484222
Sainthia	Sainthia, Labpur, Mayureshwar-II	542323
Bolpur	Bolpur-Sriniketan, Bolpur Municipality, Illambazar, Nanoor	633065
Rampurhat	Mayureshwar-I, Rampurhat-I, Rampurhat-II, Rampurhat Municipality	550971
Murarai	Murarai-I & II, Nalhati-I & II	716048
Niramoy	Dubrajpur, Khayrasole	350282
Total		3275473

Source: Office of the DTO, Birbhum

Revised National Tuberculosis Control Programme (RNTPC) started in the district in April, 2001. The primary objective of RNTCP was to emphasize the cure of infectious cases through administration of Directly Observed Treatment Short Course (DOTS) to achieve a cure rate of above 85 percent and sputum microscopy is the diagnostic criteria in RNTPC. At present there are 28 Microscopy Centres situated in all the BPHCs and some PHCs and 484 DOT Centres covering all the *Gram Panchayats* and Municipalities.

Both annual case detection rate and suspected incidence rate are higher in the population covered

by Sainthia, Niramoy and Suri TUs compared to other TUs during the last two years (Table 3.7). But in absolute number, the number of cases is the highest in the Murarai TU. It can also be observed that the proportion of suspected tuberculosis cases where patients are subsequently diagnosed as positive and registered under DOTS are higher in Suri, Bolpur and Niramoy TUs compared to the other TUs.

Table 3.7: Performance of Revised National Tuberculosis Control Programme in Birbhum

TB Units	2006			2007		
	Suspected incidence rate/1000 population	Percent diagnosed positive and registered under DOTS among suspected cases	Cure rate (2005)	Suspected incidence rate/1000 population	Percent diagnosed positive and registered under DOTS among suspected cases	Cure rate (2006)
Suri	6.91	11.33	87.65	6.64	12.07	87.89
Sainthia	7.92	7.82	84.59	6.35	8.81	82.77
Bolpur	6.44	10.28	84.81	5.59	12.22	86.14
Rampurhat	6.89	7.20	86.03	3.62	10.64	84.23
Murarai	6.21	6.90	86.41	5.61	8.62	85.41
Niramoy	7.12	10.91	92.76	6.46	12.81	92.62
Total	6.85	8.85	86.67	6.10	10.67	86.30

Source: Office of the District Tuberculosis Officer (DTO), Birbhum

Birbhum has achieved both the objectives of RNTPC regarding cure rates and case detection rates during the recent years and performed significantly better than West Bengal as a whole (Health on the March, Government of West Bengal, 2005-06). But it is seriously lagging behind many other districts in terms of annual total case detection. The highest cure rate has been observed in Niramoy TU followed by Suri TU.
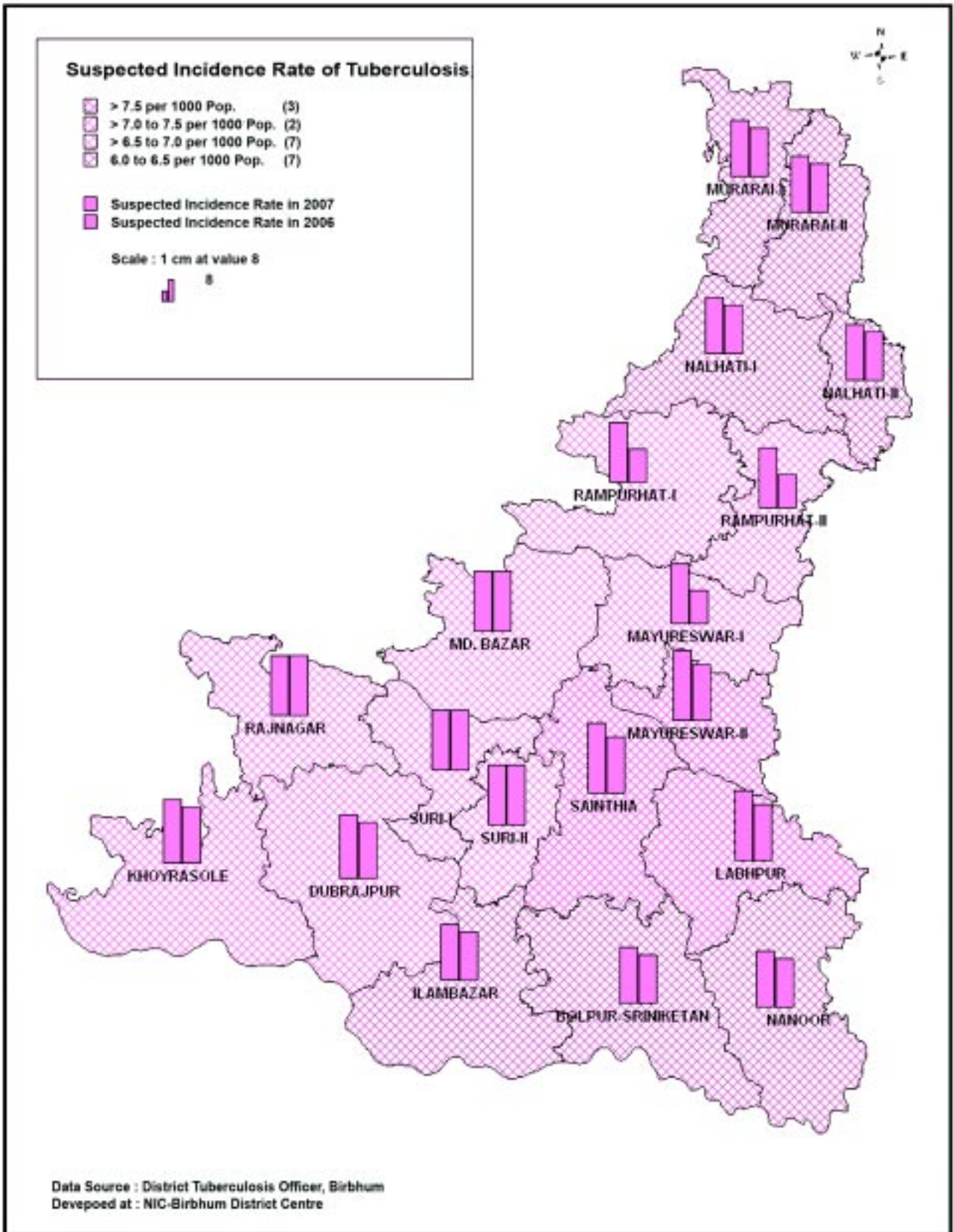
Regarding the age-distribution of smear positive new cases (not shown in the table), it can be observed that in 2006 and 2007, the proportion of cases among women has decreased sharply for the age group of more than 14 years. This possibly indicates the poor nutritional level among the girl children compared to the boys. From the data it can also be argued that the detection of new cases in women may not be taking place properly during the adult ages. This is possibly due to women's self-abrogating nature as far as the physical ailments are concerned and social taboo and misconception

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regarding the illness. Local NGOs and self-help groups at the local level may be helpful in reaching out to the women and educate them about the severity of the disease.

Some of the major constraints of the programme in achieving desired level of success have been identified by the Office of the District Tuberculosis Officer, Birbhum. These are - lack of training, improper history taking and lack of motivation among some of the Medical Officers in charge of Tuberculosis (MOTCs), other Medical Officers (MOs) and Multi Purpose Health Workers (MPHWs). It has also been pointed out that some of the microscopes do not work properly and cannot be used for case detection. Chemo Prophylaxis is also not being practiced.

To overcome these barriers some steps have been taken by the District Tuberculosis Officer, Birbhum. The district authority has requested MOs for proper counseling at the time of diagnosis and informed the health workers to make home visits at least for all positive patients. Besides, follow-up examination within one week of the last dose to achieve maximum cure rate, the provision for sputum collector in all health facilities and initial mandatory home visits by health workers will help to reduce defaulter in future have also been initiated. Various sensitization programmes and IEC activities have been conducted about the issue.

Figure 3.5 Incidence of Tuberculosis in blocks of Birbhum, District Tuberculosis Cell, 2006-07

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Suspected Incidence Rate of Tuberculosis

> 7.5 per 1000 Pop.   (3)
> 7.0 to 7.5 per 1000 Pop.   (2)
> 6.5 to 7.0 per 1000 Pop.   (7)
6.0 to 6.5 per 1000 Pop.   (7)

Suspected Incidence Rate in 2007
Suspected Incidence Rate in 2006

Scale : 1 cm at value 8

Data Source : District Tuberculosis Officer, Birbhum
Devepoed at : NIC-Birbhum District Centre

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Leprosy

India accounts for more than 60 per cent of total global recorded cases of leprosy. The states with high prevalence rates are Uttar Pradesh, Bihar, Orissa and West Bengal (National Leprosy Elimination Programme Status Report, 2000). Since there is no effective primary prevention, early detection, regular and adequate treatment with Multi Drug Therapy (MDT) and follow-up surveillance are essential for eradication of the disease.

Like other communicable diseases, leprosy has been one of the major public health problems in the district for a long time. After the introduction of MDT during last twenty years enormous progress has been achieved in combating the disease. It has been observed that the New Case Detection Rate (NCDR) as well as Prevalence Rate (PR) per 10,000 population have been consistently declining over the period, though both the rates are still higher in the district compared to the State as a whole. The proportion of women among the new cases varied between 25-30 percent and that of children between 8-10 percent during the past few years, which are somewhat lower than the average figures of the State. But it should be noted that the percentages of *Multi Bacillum* (MB) cases, which are more complicated and serious than *Pauci Bacillum* (PB) cases, are significantly higher in Birbhum district compared to the overall figure of the state.

Analyzing the data for the last three years (given in Table 3.8), it can be ascertained that the concentration of leprosy cases remained consistently higher in the blocks of Western zone of the district, especially in the blocks like Khayrasole, Dubrajpur, Rajnagar and Md. Bazar (more than 2 per 10,000 population during 2006-07). A sharp decline in the prevalence rate can be noticed in Mayureswar-I, Rampurhat-I, Suri-I and II during the past three years. Though the data for the municipal areas are not available for all the three years, it can be pointed out that the prevalence rates were very high in Rampurhat, Dubrajpur and Suri Municipalities, but in the last of the three it declined steadily over the years.
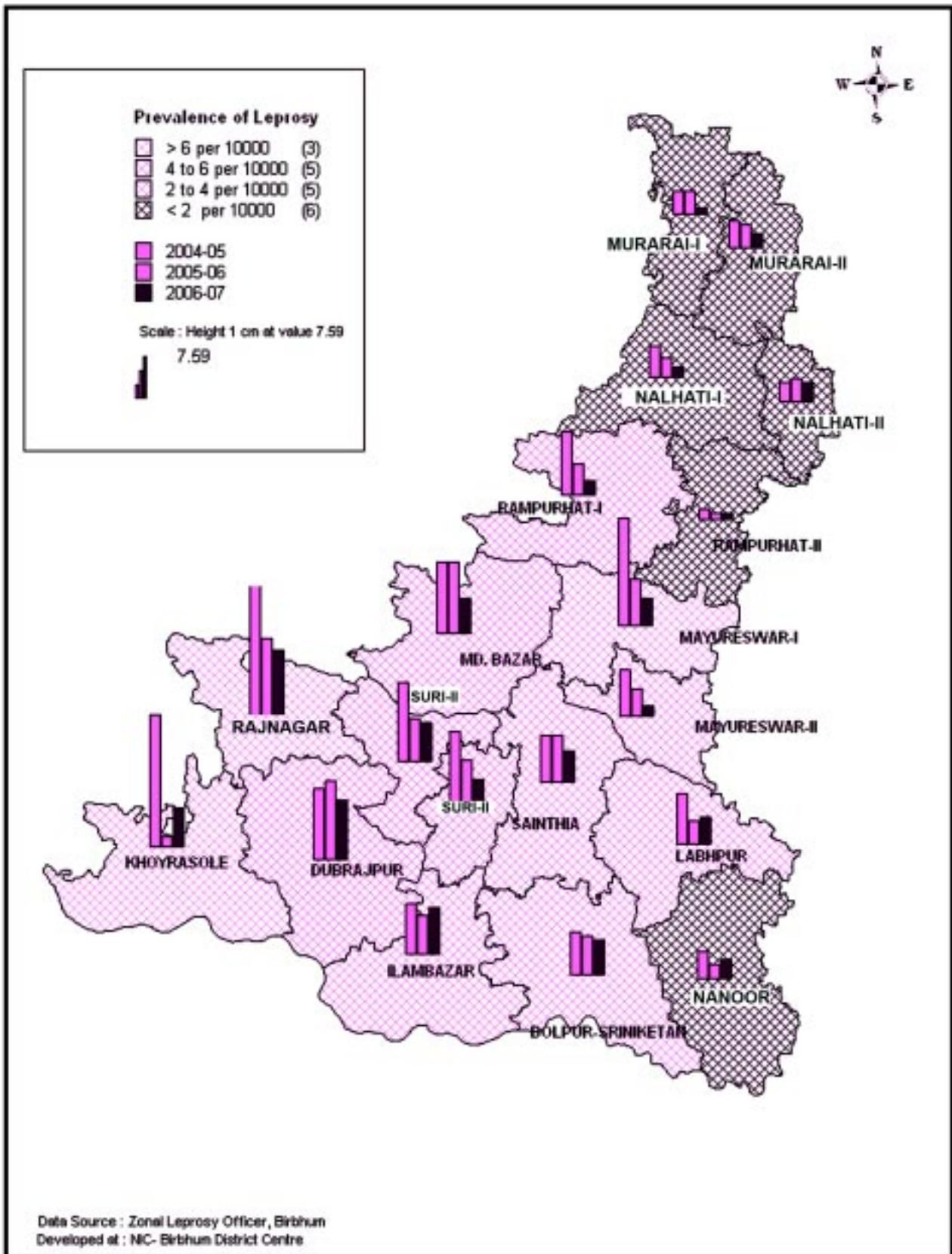
Table 3.8: Prevalence of leprosy by blocks/municipalities in Birbhum

Blocks/ Municipality	2004-05			2005-06			2006-07		
	Total no. of reported cases	Prevalence rate/10,000 population	Percentage of Multi-Bacillum cases	Total no. of reported cases	Prevalence rate/10,000 population	Percentage of Multi-Bacillum cases	Total no. of reported cases	Prevalence rate/10,000 population	Percentage of Multi-Bacillum cases
Bolpur-Sriniketan	46	2.40	73.91	42	2.19	90.48	38	1.98	71.05
Rampurhat-II	12	0.68	91.67	7	0.39	71.43	9	0.51	100.00
Suri-I	48	4.57	58.33	25	2.38	84.00	23	2.19	82.61
Rampurhat-I	62	3.59	70.97	30	1.74	73.33	16	0.93	87.50
Dubrajpur	71	4.03	83.10	79	4.48	67.09	60	3.40	80.00
Illambazar	46	2.93	80.43	34	2.16	82.35	42	2.67	61.90
Labpur	48	2.90	77.08	22	1.33	81.82	25	1.51	84.00
Nalhati-II	12	1.10	100.00	15	1.38	73.33	11	1.01	90.91
Md. Bazar	62	3.99	82.26	64	4.12	76.56	31	2.00	87.10
Mayureswar-I	92	6.08	71.74	40	2.64	77.50	23	1.52	73.91
Murarai-I	25	1.40	80.00	25	1.40	88.00	9	0.50	100.00
Nalhati-I	36	1.86	77.78	23	1.19	73.91	15	0.77	93.33
Nanoor	32	1.56	65.63	17	0.83	64.71	21	1.03	90.48
Khayrasole	110	7.34	68.18	9	0.60	77.78	35	2.33	57.14
Murarai-II	30	1.48	66.67	26	1.28	76.92	19	0.94	89.47
Rajnagar	58	7.59	65.52	31	4.06	77.42	25	3.27	84.00
Sainthia	50	2.63	66.00	51	2.68	64.71	32	1.68	46.88
Suri-II	38	4.45	65.79	24	2.81	62.50	16	1.87	93.75
Mayureswar-II	34	2.70	94.12	20	1.59	75.00	7	0.56	85.71
Suri(M)	36	6.48	91.30	37	5.21	78.38	23	3.24	86.96
Rampurhat (M)	NA			28	4.01	53.57	31	4.44	19.35
Sainthia (M)	NA						3	0.71	66.67
Dubrajpur (M)	NA						12	3.37	33.33
Bolpur (M)	NA			28	2.83	53.57	29	2.93	44.83
Nalhati (M)	NA						0		
Total	958	2.88	74.43	677	2.04	73.71	555	1.67	71.89

Source: Office of the Zonal Leprosy Officer, Birbhum

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The results of Block Leprosy Awareness Campaign (BLAC), which was implemented during 2004-05, were very encouraging. The Campaign included special efforts to improve quality of services in the endemic pockets and also to increase public awareness about leprosy and skill of the general healthcare staff. BLAC-IV (4th version of BLAC) was conducted in five blocks and three Municipalities in Birbhum where the prevalence rates were more than 2 per 10,000 population during the end of 2007 in Suri-I, Khayrasole, Illambazar, Rajnagar and Dubrajpur blocks and Suri, Rampurhat and Dubrajpur municipalities. Besides household contact with family members in the villages, different IEC activities were also conducted.

Figure 3.6: Prevalence of Leprosy in blocks of Birbhum, 2004-07

Data Source : Zonal Leprosy Officer, Birbhum
Developed at : NIC- Birbhum District Centre

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Filaria

Filariasis is a major public health problem in India and in spite of existence of National Filaria Control Programme (NFCP) since 1955, currently there may be up to 23 million cases of symptomatic filariasis (Agarwal and Sashindran, 2006). West Bengal is among those seven states in India, which contribute over 86 percent of micro-filariasis carriers and 97 percent of disease cases in the country. Three districts, namely, Birbhum, Bankura and Malda are responsible for the majority of cases in West Bengal.

Two NFCP Units are located in Birbhum district at Suri and Bolpur Municipalities covering the Suri sub-division and partly Bolpur sub-division out of 9 Units in the State. Therefore, the data on prevalence of filaria in the rural areas separately are not available as such. From the available data, it can be ascertained that though both the microfilaria rate (number of persons having micro-filaria per 1,000 population) and disease rate (number of persons having disease manifestation per 1,000 population) in the district have been consistently declining over the years (Table 3.9), both the rates have been found to be the highest in the Suri NFCP Unit followed by the Bolpur NFCP Unit among all the NFCP Units of the state. Data from the Health Department suggest that four blocks, namely, Rajnagar, Md. Bazar, Dubrajpur and Bolpur-Sriniketan contributed majority of the cases in the district.

Table 3.9: Micro-filaria Rate in different reporting units in Birbhum and in West Bengal

Reporting Units	2001	2002	2003	2004	2005	2006
Suri	11.46	9.83	6.92	4.27	3.2	4.85
Bolpur	0.0	1.13	1.11	0.97	0.0	0.74
West Bengal	3.50	3.92	3.52	3.21	3.78	2.84

Source: Health on the March, Govt. of West Bengal for various years

The new strategy for filariasis elimination aims at transmission control through Mass Drug Administration (MDA) with diethylcarbamazine (DEC) (combination of two drugs) single dose annually (on Filaria Day). In Birbhum, Filaria Day is observed every year and found to be successful to some extent (60 per cent of target has been achieved) in the recent years (Table 3.10).

Table 3.10: Observance of National Filaria Day in Birbhum

Year	Target population	Population covered				Percent covered	Diethylcar bamazine (DEC) Consumed
		2-4 yrs	5-14 yrs	Above 14 yrs	Total		
2004	2025500	125721	290428	806340	1222489	60	2515190
2005	2941700	193066	496258	1319996	2009320	68	2954430

Source: Office of the CMOH, Birbhum

Kala-azar

Kala-azar or Visceral Leishmaniasis (VL) is a deadly protozoal disease caused by parasites of genus Leishmania Donovani which is transmitted to humans by the bite of infected female phebotomine sand fly. Between 2003 and 2007, a total of 278 cases were detected in the district. Though the incidence of Kala-azar has been lower than the other affected districts of West Bengal, a rising incidence has been observed in 2005 (Table 3.11). As many as 131 cases have been detected in that particular year. In 2006 and 2007, the number of cases declined to 39 and to 30 respectively. Though it only accounts for 5 percent of total cases in West Bengal, the incidence of the disease in the district was substantially higher than the previous years. The incidence of *kala-azar* has been found mainly among the migrating population from neighbouring states of Bihar and Jharkhand. Majority of the cases were reported from the three blocks, namely, Rampurhat-I, Murarai-I and Nalhati-I. In addition to these, Murarai-II, Suri-I, Sainthia, Md. Bazar, Dubrajpur, Mayureshwar-I, Nanoor and Bolpur are also found to be somewhat affected.

Table 3.11: Incidence of Kala-azar in Birbhum and West Bengal

	2003		2004		2005		2006		2007	
	No. of Cases	Dead	No. of Cases	Dead	No. of Cases	Dead	No. of Cases	Dead	No. of Cases	Dead
Birbhum	46	3	30	0	131	0	39	0	30	1
West bengal	1487	8	3015	23	2710	15	1843	10	NA	NA

Source: Office of the CMOH, Birbhum and Health on the March, Govt. of West Bengal for various years

To arrest the incidence of *kala-azar* and its early detection, Health Department of the district has taken some necessary measures, which include special drive for mass collection and examination of blood samples in affected blocks at different points of time and special spray of DDT during 2007 in 6 affected blocks covering 97 per cent of population in those blocks.

Japanese Encephalitis (JE)

Japanese encephalitis (JE) is a viral disease transmitted by mosquito. Children and young adults are most prone to JE virus. The incidence of JE in West Bengal was very high during mid-nineties and several human lives were lost, especially in Burdwan and Birbhum districts during that period. From early period of this century the situation has been under control. But incidence of JE still persists in these two districts at regular intervals (Table 3.12). A little upsurge has also been found in the recent year in Birbhum.

Table 3.12: Incidence of Japanese Encephalitis in Birbhum and West Bengal

	2001		2002		2003		2004		2005	
	No. of Cases	Dead	No. of Cases	Dead	No. of Cases	Dead	No. of Cases	Dead	No. of Cases	Dead
Birbhum	0	0	0	0	0	0	12	1	23	1
West Bengal	119	21	301	105	2	1	64	12	72	7

3.5   Urban Health: DFID assisted Honorary Health Worker (HHW) Scheme

DFID assisted HHW scheme is a significant step in meeting the health care needs of the urban poor in West Bengal. It was implemented in 2004 in 11 Municipalities of 8 districts in the State with the objective of enhancing the quality of health care services among the urban poor by honorary health workers from the same community. In Birbhum, the scheme has been implemented in two municipalities – Suri and Bolpur. HHW is the first contact point for delivery of primary and referral health care services to the below poverty line families at their doorstep. It aims at integrating the urban health services with the general health services rendered by the district and sub-divisional hospitals. HHW visits every house in her locality twice a month under the guidance of the supervisor. Besides collecting data on health related issues, HHW also creates awareness about RCH, vector borne diseases, cleanliness of household and environment, malnutrition, physiological problems during adolescent period, involvement of male in family matters etc. In addition, seeking treatment in time in case of any disease is also encouraged.

There are three tiers in the implementation of the scheme. In the first tier, i.e. at the community level, one community health worker serves 1,000 population or one urban block. In the second tier, one Sub-Health Post (SHP) is created for 5,000 population or 5 blocks. At the highest tier, one Health Post (HP) is created in each Municipality to serve all the below poverty line families residing in the Municipal areas. Although the success of the programme can not be ascertained within this short period of time since beginning of implementation, it can be said that the maternal and child health indicators are somewhat better among the urban poor in the two municipalities. Table 3.13 presents a selected number of indicators for the two municipalities.

Table 3.13: State of Health Care of Poor Households in DFID assisted Honorary Health Worker (HWW) Scheme in Bolpur and Suri Municipalities, 2006-07

	Name of Municipalities	
	Bolpur	**Suri**
Number of Population covered	**13841**	**14737**
Number of Families covered	**2819**	**3028**
Status of maternal health		
Total ANC registered	**203**	**258**
Percentage registered within 12 weeks	46.8	34.5
Percentage had at least 3 ANC Check-ups	35.5	59.3
Percentage received two doses of TT	81.3	70.5
Percentage given prophylaxis for Anemia	21.7	61.6
Total Number of Deliveries took place	**190**	**227**
Percentage institutional delivery	92.1	78.9
Percentage of mothers aged <20 years	24.2	22.9
Total live-births	**190**	**227**
Percentage <2.5 Kilograms babies	15.8	14.5
Percentage received 3 PNC	8.4	22.0
Status of infant and child health		
Number of infants	**225**	**239**
Percentage fully immunized	57.8	64

3

Percentage given Vitamin A supplementation	63.1	78.2
Number of Under–five children	**1105**	**1185**
Percentage had measles during last year	10.9	0.5
Percentage had tuberculosis	0.8	1.8
Percentage had Acute Respiratory Infections (ARI)	19.6	6.7
Percentage had diarrhoea	24.2	20.9
Percentage treated with ORS during diarrhoea	88.8	100

3.6   Water and sanitation

The health indicators of a population are related as much to water and sanitation as to curative care services and mother and child health care services including immunization. The institutional structure of delivery of services in water supply is much more centralized and supply driven than sanitation. The Public Health Engineering Department is the implementing agency of water supply schemes. The fund for capital investment and operation and maintenance comes from two different sources. One is through Accelerated Rural Water Supply Programme (ARWSP), which is central assistance to the state. The other is the matching contribution of the state government through Minimum Needs Programme (MNP). The state government also provides non-plan fund for operation and maintenance.

The coverage of rural water supply in West Bengal is quite high; 86 per cent of the population and 78 per cent of the habitations are fully covered[3] by rural water supply. In Birbhum, they are substantially higher than the state average. 96.7 per cent of habitations and 97.2 per cent of population are covered by water supply.

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[3] For definitions of Fully Covered (FC), Partially Covered (PC) and Not Covered (NC) as per the Ministry of Rural Development, Government of India, see Appendix to this chapter.

Table 3.14: Extent of coverage of habitations with drinking water facility, 2003

Block Name	Habitations not covered (No.)	Partially covered (No.)
Murarai – I	5	26
Murarai – II	6	29
Nalhati – I	6	14
Nalhati – II	8	21
Rampurhat – I	1	10
Rampurhat – II	3	19
Mayureswar – I	7	10
Mayureswar – II	10	38
Md. Bazar	8	17
Rajnagar	10	8
Suri – I	18	27
Suri – II	5	13
Sainthia	7	13
Labpur	4	41
Nanoor	1	17
Bolpur Sriniketan	3	2
Illambazar	5	19
Dubrajpur	44	126
Khoyrasole	27	88
Total	**178**	**538**

Source: Office of the Executive Engineer, Public Health Engineering Directorate (Civil), Birbhum (As per Habitation Survey 2003)

Table 3.14 presents the distribution of habitations not covered by safe drinking water facility. There are 178 habitations which are yet to be covered and exactly half of them are in three blocks, viz. Dubrajpur, Khoyrasole and Suri-I. Dubrajpur seems to be the worst block in terms of water facility – both the number of habitations not covered (44) and the number of habitations partially covered (126) are much above the numbers in other blocks. Rural piped water supply has covered around 32 per cent of the rural population of the state as on March 2006. But in Birbhum, the coverage is only 18 per cent (Table 3.15).

Table 3.15: Coverage of Rural Piped Water Supply Scheme in Birbhum, 2006

Programm	No. of piped water supply scheme	Villages covered	Habitations covered	Population covered (as per 2001 Census)
ARWSP	17	113	254	2,94,081
MNP	15	93	172	2,27,708
PMGY	2	11	51	20,975
Total	**34**	**217**	**477**	**5,42,764**

Source: Office of the Executive Engineer, Public Health Engineering Directorate (Civil), Birbhum

The progress of Total Sanitation Campaign (TSC) has been quite diverse within the districts of West Bengal. Till September 2007, around two lakh household latrines have been constructed. Birbhum is among the few districts where progress in latrine construction has been slow. In West Bengal the progress of TSC has been on average higher among the BPL households than among the APL households. In Birbhum around 62 per cent of the latrines constructed are in BPL households. TSC is a demand driven programme where beneficiaries themselves have to contribute. The APL beneficiaries have to pay full price of toilets, but BPL households get a subsidy of 20 per cent on the cost. 68.5 per cent contribution has been made by the households themselves and the rest by the central and state governments. The beneficiaries' share in total expenditure varies across blocks – from 60 to 81 (Table 3.16). It has been observed that the performance of TSC in terms of physical achievement correlate positively with literacy and negatively with proportion of BPL households in the district.

Table 3.16: Progress in Total Sanitation Campaign in Birbhum till 2006

	Number of latrines				Expenditure (in Rs lakh)			Beneficiary Share
	Approved	Constructed	% Achieved	% BPL	Central	State	Beneficiary	
Bolpur-Sriniketan	30742	14599	47.5	52.6	13.9	4.4	50.1	73.2
Dubrajpur	31837	10455	32.8	41.8	8.0	2.5	38.3	78.5
Illambazar	25163	29684	118.0	63.6	33.0	8.8	90.9	68.5
Khoyrasol	26246	6983	26.6	49.8	6.3	2.5	25.0	74.0
Labpur	34675	14437	41.6	56.5	14.8	4.3	49.9	72.3
Mayureswar-I	28978	11301	39.0	74.0	15.2	4.6	33.9	63.1
Mayureswar-II	21133	8241	39.0	73.1	11.1	4.0	26.7	63.9
Md Bazar	27364	8775	32.1	61.0	9.8	3.0	29.4	69.7
Murarai-I	28448	6853	24.1	41.8	5.2	1.5	25.9	79.4
Murarai-II	31133	7352	23.6	71.5	9.3	4.2	20.5	60.3
Nalhati-I	34614	6219	18.0	80.1	9.5	2.6	17.6	59.3
Nalhati-II	19496	7611	39.0	38.3	5.4	1.7	30.1	80.9
Nanoor	36297	15268	42.1	69.1	19.3	5.7	46.6	65.1
Rajnagar	14543	7214	49.6	64.3	8.5	2.6	23.4	67.8

Rampurhat-I	30318	8252	27.2	63.0	9.4	2.7	26.5	68.7
Rampurhat-II	31336	14040	44.8	79.3	21.1	6.4	41.2	60.0
Sainthia	33933	9858	29.1	74.6	15.4	4.7	30.0	59.9
Suri-I	16797	6651	39.6	55.5	6.7	2.7	23.2	71.2
Suri-II	14416	6117	42.4	55.5	6.2	1.9	21.3	72.4
Total	**517469**	**199910**	**38.6**	**62.2**	**228.4**	**70.8**	**650.7**	**68.5**

Source: Zilla Parishad, Birbhum

3.7 Concluding Remarks

The state of healthcare infrastructure and provisioning, performance of various tiers of hospitals, maternal and child health, endemicity of diseases and state of water and sanitation in the district etc. have been dealt with in a great detail in the present chapter. It has been found in the analysis that there is a substantial gap between demand and supply of healthcare infrastructure, both physical and manpower, especially among the blocks of Rampurhat sub-division. Though the percentage of institutional deliveries has been increasing during the recent years, other aspects of maternal health such as provisioning of ante-natal care, post-natal care have to be improved and require special attention from the Health Department of the district. Due to paucity of time-series data, the trend of infant death per 1,000 live-births could not be established, the present trend of other child health indicators such as incidence of low birth weight, achievement of complete immunization etc. suggest that there has not been much improvement on infant and child health in the recent years. Special effort from Health Department is needed to improve maternal and child health indicators in the district. Though the prevalence of communicable diseases has been declining consistently during the recent years, the data suggest that prevalence of some of the communicable diseases such as leprosy, tuberculosis, filaria and malaria are still significantly high. Coverage of drinking water and sanitation facility has to be improved as the present analysis implies.

To observe whether there is a relationship between infrastructural input and health outcome among blocks, two indices – one for infrastructural input and another for health outcome have been constructed. The input variables consist of doctor-population ratio and bed-population ratio on the one hand and percentage of institutional deliveries and number of infant deaths per 1,000 live-births as output variables, on the other. Then the blocks are ranked in descending order. The result shows (Table 3.17 and Figure 3.7) that with some variations, there is a link between input of infrastructure and outcome (Spearman Rank Correlation Coefficient: 0.49, significant at 5% level of significance).

Table 3.17: Ranks of blocks with respect to the input and output indicators

Blocks	Index of Health Infrastructure	Ranking	Blocks	Index of Maternal and Child Survival	Ranking
Sainthia	1.00	1	Murarai-I	0.93	1
Mayureswar-II	0.63	2	Mayureswar-II	0.86	2
Rajnagar	0.63	3	Dubrajpur	0.83	3
Suri-II	0.63	4	Nanoor	0.78	4
Dubrajpur	0.50	5	Sainthia	0.74	5
Labhpur	0.50	6	Rajnagar	0.72	6
Murarai-I	0.38	7	Labpur	0.70	7
Md. Bazar	0.38	8	District	0.64	Dist. Average
Bolpur-Sriniketan	0.38	9	Nalhati-I	0.57	8
Illambazar	0.38	10	Nalhati-II	0.52	9
Rampurhat-II	0.25	11	Bolpur	0.49	10
Nalhati-II	0.13	12	Khoyrasole	0.40	11
Rampurhat-I	0.13	13	Murarai-II	0.38	12
Khoyrasole	0.13	14	Suri-II	0.37	13
District	0.13	Dist Average	Rampurhat-II	0.36	14
Nalhati-I	0.00	15	Md. Bazar	0.35	15
Murarai-II	0.00	16	Illambazar	0.29	16
Mayureswar-I	0.00	17	Mayureswar-I	0.26	17
Suri-I	0.00	18	Rampurhat-I	0.23	18
Nanoor	0.00	19	Suri-I	0.19	19

Figure 3.7: Scatter diagram showing the relation between index of health infrastructure and index of maternal and child survival
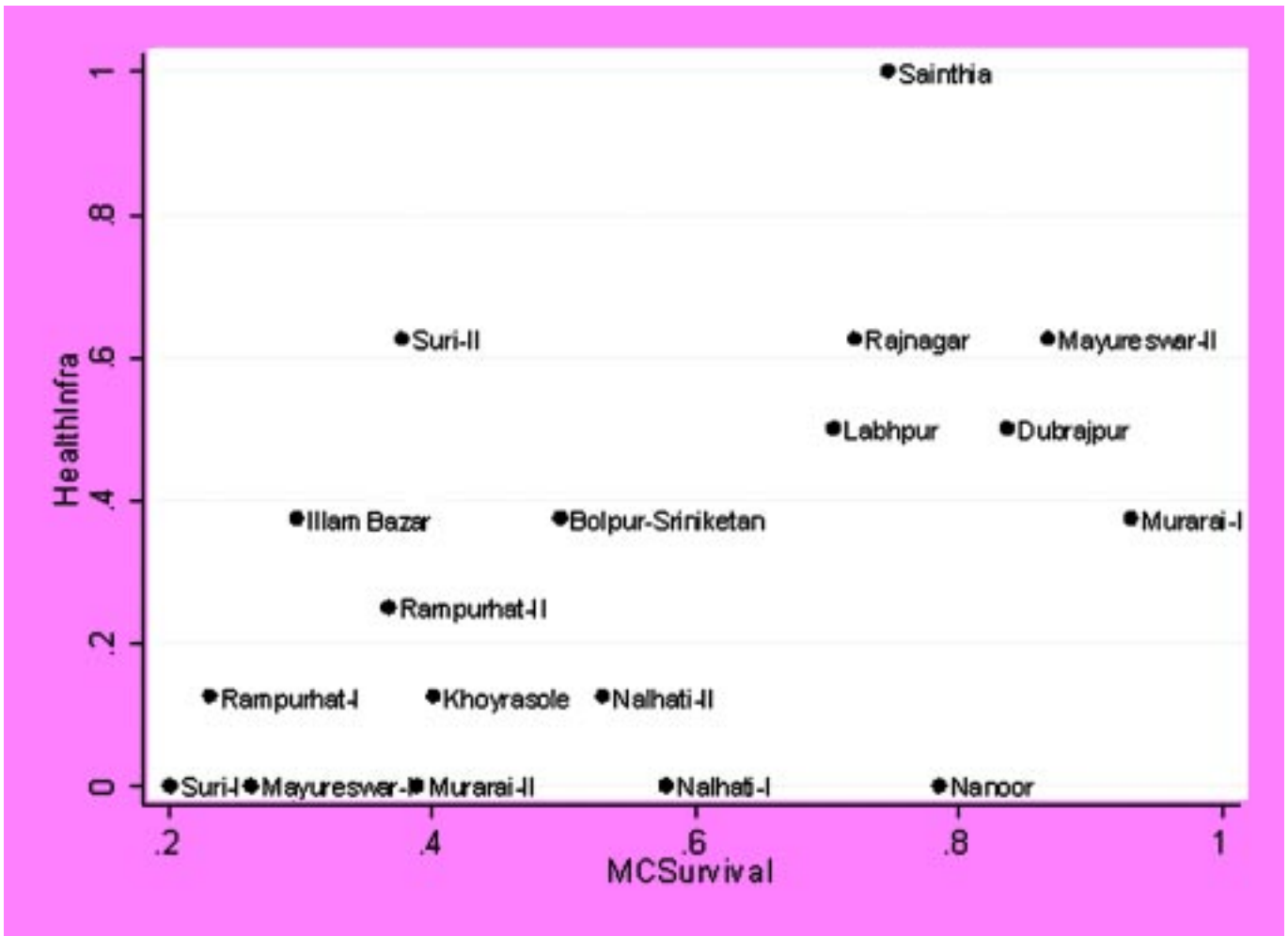
Appendix

The criteria for identifying habitations as Not Covered (NC), Partially Covered (PC), and Fully Covered (FC) by the source of drinking water

Not Covered

A habitation which fulfills the following criteria may be categorised as a Not Covered (NC) / No Safe Source (NSS) habitation:

i) The drinking water source/point does not exist within 1.6 km of the habitations in plains or 100 meter elevation in hilly areas. The source/point may either be public or private in nature. However, habitations drawing drinking water from a private source may be deemed as covered only when the water is safe, of adequate capacity and, is accessible to all.

3

ii)   Habitations which have a water source but are affected with quality problems such as excess salinity, iron, fluoride, arsenic or other toxic elements or biologically contaminated.

iii)   Habitation where the quantum of availability of safe water from any source is not enough to meet drinking and cooking needs.

Partially Covered

Habitations which have a safe drinking water source/point (either private or public) within 1.6 km. in plains and 100 meters in hill areas but the capacity of the system ranges between 10 liters per capita per day (lpcd) to 40 lpcd.

Fully covered

All the remaining habitations may be categorised as Fully Covered (FC). That is, a habitation is categorised as Fully Covered if there is a drinking water source/point (either private or public) within 1.6 km. in plains and 100 meters in hill areas, and availability of water is 40 lpcd or more.

Chapter IV :	Economic opportunities and security of livelihood

4.1   Structure of district income

Per capita district income in Birbhum has been lower than that of West Bengal for long. This is what one would expect given the limited range of modern sector activities in the district in comparison with several other districts and of course with Kolkata. But what is of particular interest is that how it has been growing vis-à-vis the state as a whole in the recent period. Figure 4.1 shows that between 1997-98 and 2003-04 per capita income in the state has grown faster than that of the district, and as a result the gap between the two has widened in the recent years. While the compound growth rate in per capita income in the district is 4.3 per cent per year, it is 5.4 per cent per year for West Bengal as a whole in the reference period mentioned above.

Figure 4.1 Per capita annual income (Rs) in Birbhum and West Bengal at constant prices(93-94)
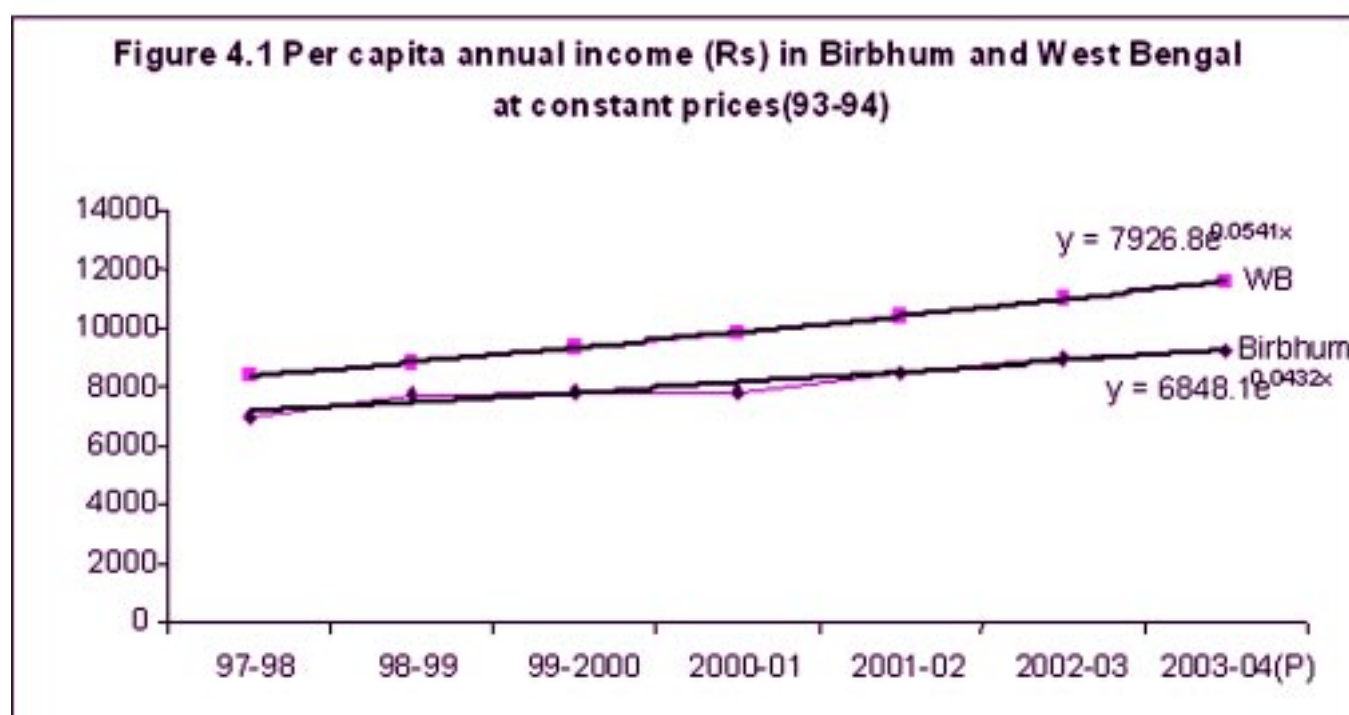
Source: Statistical Abstract, GoWB; P stands for 'Provisional'

As mentioned earlier, Birbhum is predominantly an agricultural district. Table 4.1 shows that the share of primary production in net district domestic product is 38.51 per cent in 2003-04 (provisional), which is much higher than the corresponding figure for West Bengal. Although this share has been declining in both Birbhum and West Bengal, it is not matched by a corresponding increase

in the share of the secondary sector. It is the tertiary sector that has been growing fast all over West Bengal so that its share in total district or state income has been steadily increasing. In the case of Birbhum, roughly one-half of the district income can currently be attributed to the tertiary sector.

Table 4.1 Sectoral shares (%) in Net District Domestic Product of Birbhum and Net State Domestic Product of West Bengal at constant prices

	Birbhum			WB		
Year	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1999-00	45.08	10.86	44.06	29.75	21.29	48.96
2000-01	40.87	12.07	47.06	28.73	20.51	50.76
2001-02	43.75	11.51	44.74	29.62	20.00	50.38
2002-03	40.41	11.11	48.48	26.44	19.65	53.91
2003-04(P)	38.51	10.93	50.56	25.61	19.03	55.36

Source: Statistical Abstract 2005, GoWB

Given the low share of the secondary sector in district income, which means the production base for manufacturing is rather thin, it is more difficult for Birbhum to make a steady expansion of the secondary sector. This is for the economic logic of positive externality that feeds into the process of industrialization. The fact that there are very few industries in Birbhum feeds into the perceived notion that there must be district-specific factors less favourable to investment. This might have made it more difficult to attract investors to the district.

Figure 4.2 Sectoral shares (%) in District and and State Products
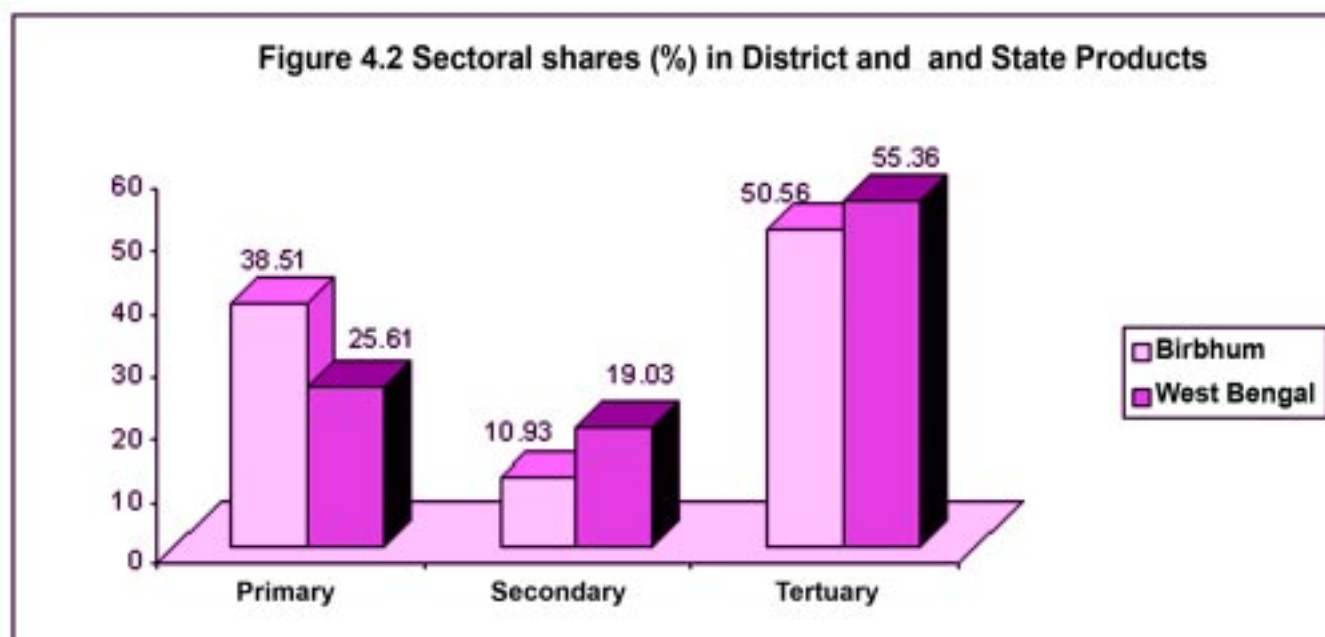
4.2   Structure of employment

According to Census 2001, the share of workers in total population was 37.4 per cent in Birbhum, which was marginally higher than the state average of 36.8 per cent. Between the two census years (viz.1991 and 2001) the district had experienced 4 percentage point increase in work participation rate (from 33.2 per cent to 37.4 per cent). Like in other districts, in Birbhum too the work participation rate is higher for males compared to females. While the share of male workers in total male population was 54 per cent, that of female workers was only 20 per cent in 2001. However, the female work participation rate increased from 13 per cent in 1991 to 20 per cent in 2001 (Table 4.2)[1]. The overall increase in work participation is also reflected in the falling dependency ratio (expressed as a ratio of non-working population to working population) between the two latest census years. In Birbhum the dependency ratio came down from 2 in 1991 to 1.7 in 2001.

Table 4.2 Work participation rates in Birbhum and West Bengal

	Percentage of workers in total population	1991			2001		
		Person	Male	Female	Person	Male	Female
Birbhum	Main + Marginal	33.2	52.2	12.8	37.4	54.3	19.7
	Main	30.4	51.6	8.1	27.6	46.1	8.1
West Bengal	Main + Marginal	32.2	51.4	11.3	36.8	54.0	18.3
	Main	30.2	50.7	8.0	28.7	47.0	9.1

Source: Census 1991, 2001.

However, it is important to note that in Birbhum, increasing overall work participation has been associated with an increasing share of marginal workers in total work force. By census definition marginal workers are those who do not work for major part of the year, which could either be due to lack of opportunity or other reasons. Between the last two censuses the decadal growth in the number of main workers in the district was 7 per cent, whereas in the same period the number of marginal workers grew by an astonishing 326 per cent. As a result the share of marginal workers in total work force in the district increased from 8.2 per cent in 1991 to 26.3 per cent in 2001.

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[1] A detailed analysis of women's work participation in Birbhum is presented in Chapter VII.

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The number of workers engaged in agriculture (which includes both 'cultivators' and 'agricultural workers' – two census categories) as a percentage of total workers has decreased from 72 per cent in 1991 to 60 per cent in 2001. This corresponds to the overall common perception that more people are now engaged in non-agricultural activities, such as fishing[2], retail sales, vegetable vending, selling milk, and so on. As all these activities are at the lower end of the spectrum of marketable skills, it remains doubtful if these activities generate enough return for their family's sustenance.

Table 4.3 Percentages of different categories of workers to total workers in Birbhum

Categories of workers	1991			2001		
	Person	Male	Female	Person	Male	Female
Cultivators	34.1	37.7	18.4	23.1	27.5	10.4
Agricultural workers	38.3	34.0	57.1	36.9	33.5	47.1
Household industry workers	4.1	3.0	8.8	6.5	3.2	16.0
Other workers	23.5	25.3	15.7	33.5	35.8	26.5

Source: Census 2001

Although a falling agricultural workforce is an expected and desirable change as an economy progresses, it has not been an unmixed good in our context. The share of agricultural labour in total workers engaged in agriculture increased over the Census decade (53 per cent in 1991 to 62 per cent in 2001). As a matter of fact, between 1991 and 2001, the absolute number of cultivators in Birbhum came down from 289155 to 260955 indicating a 10 per cent decennial fall, while during the same period, the number of agricultural labourers increased from 324701 to 416949 indicating a decennial growth rate of 28 per cent (Figure 4.3). In other words, while the overall dependency on agriculture has been coming down, an increasing number of landless in rural areas join wage work in agriculture as a major activity.

If overall the percentage of working population engaged in agriculture is coming down, then it must be the case that people are joining non-farm activities in increasing number. Census classifies non-farm employment into two categories: 'household industry workers' and 'other workers'. In Birbhum the share of non-agricultural employment has increased from 28 per cent in 1991 to 40 per cent in 2001. What is remarkable is that even in rural Birbhum the share of non-agricultural employment

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[2] Fishing is included in the broader definition of 'agriculture', but here we refer to agriculture proper that excludes fishing.

increased from 23 per cent in 1991 to 35 per cent 2001. In 2001, 19 per cent of non-agricultural employment belonged to the household industry category and the rest belonged to 'other workers'. The share of household industry in non-agricultural employment does not seem to have changed over time.

Figure 4.3 Number of workers in different categories in Birbhum (in thousand)
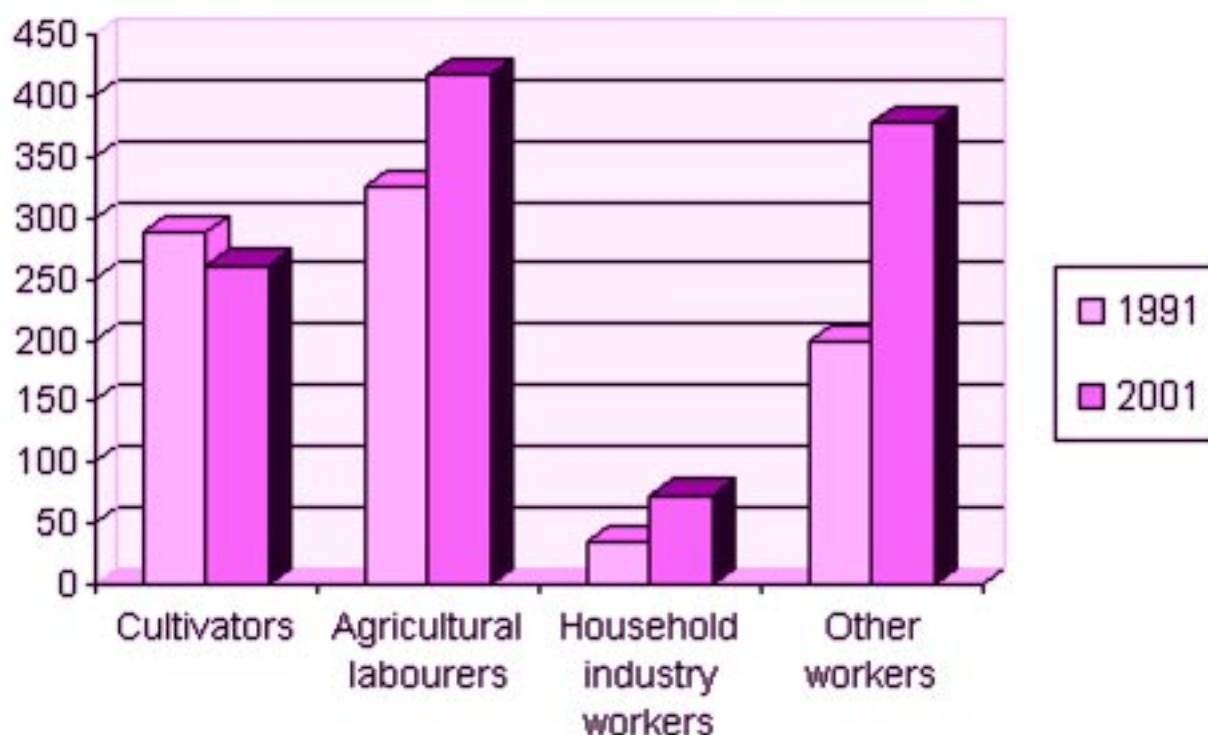
We now look at inter-block variation in work participation. According to Census 2001, all blocks in Birbhum have more than 30 per cent of their population in the work force. However, there are five blocks (Rampurhat-I, Rajnagar, Suri-I, Suri-II and Bolpur-Sriniketan) in which the work participation rate is more than 40 per cent (Table 4.4). Out of these five blocks, in two blocks Rajnagar and Suri-II higher work participation is due to higher share of marginal workers. Except Mayureswar-II and Nanoor, all the blocks show a decline in the percentage of main workers in total population between 1991 and 2001, and the overall increase in work participation in rural areas is entirely due to significant increase in marginal workers in all the blocks. In all the municipalities except Dubrajpur the percentage of main workers increased between 1991 and 2001. In the urban areas in general the percentage of marginal workers in total workers is much lower compared to the rural areas. Higher work participation might be either due to expanding employment opportunities that acted as the 'pull

4

factor' or due to economic hardship that compelled people to accept any kind of job, or some combination of both.

Table 4.4   Percentage of workers (Main+Marginal) in total population and of cultivators and agricultural workers in total workers across blocks of Birbhum, 2001

Blocks/ Municipalities	Percentage of workers in total population	Percentage of marginal workers in total workers	Percentage of cultivators in total workers	Percentage of agricultural labourers in total workers
Murarai - I	32.7	24.2	14.7	35.1
Murarai-II	32.4	19.9	20.1	38.5
Nalhati-I	35.2	25.1	21.7	38.0
Nalhati-II	33.3	24.5	23.5	40.6
Rampurhat-I	44.3	28.7	25.9	38.4
Rampurhat-II	35.0	24.8	22.0	39.4
Mayureswar-I	38.4	30.3	28.7	44.0
Mayureswar-II	38.1	18.2	34.1	39.2
Md. Bazar	37.6	27.8	20.7	40.6
Rajnagar	45.8	39.4	22.8	34.0
Suri-I	42.8	28.8	15.4	28.0
Suri-II	49.4	45.9	27.7	40.3
Sainthia	38.4	30.3	26.7	46.8
Labhpur	35.4	24.7	33.1	38.8
Nanoor	36.9	19.6	30.1	40.1
Bolpur-Sriniketan	43.7	28.8	21.0	43.9
Illambazar	36.5	29.3	27.2	44.2
Dubrajpur	39.8	29.7	27.6	40.2
Khoyrasole	35.1	35.4	26.5	34.3
Rampurhat (M)	29.9	7.7	-	-
Sainthia (M)	33.1	8.2	-	-
Suri (M)	32.4	7.2	-	-
Dubrajpur (M)	33.7	18.4	-	-
Bolpur (M)	33.8	9.4	-	-

Source: Census 2001

80

Figure 4.4 Percentage of workers in total population across blocks of Birbhum, 2001
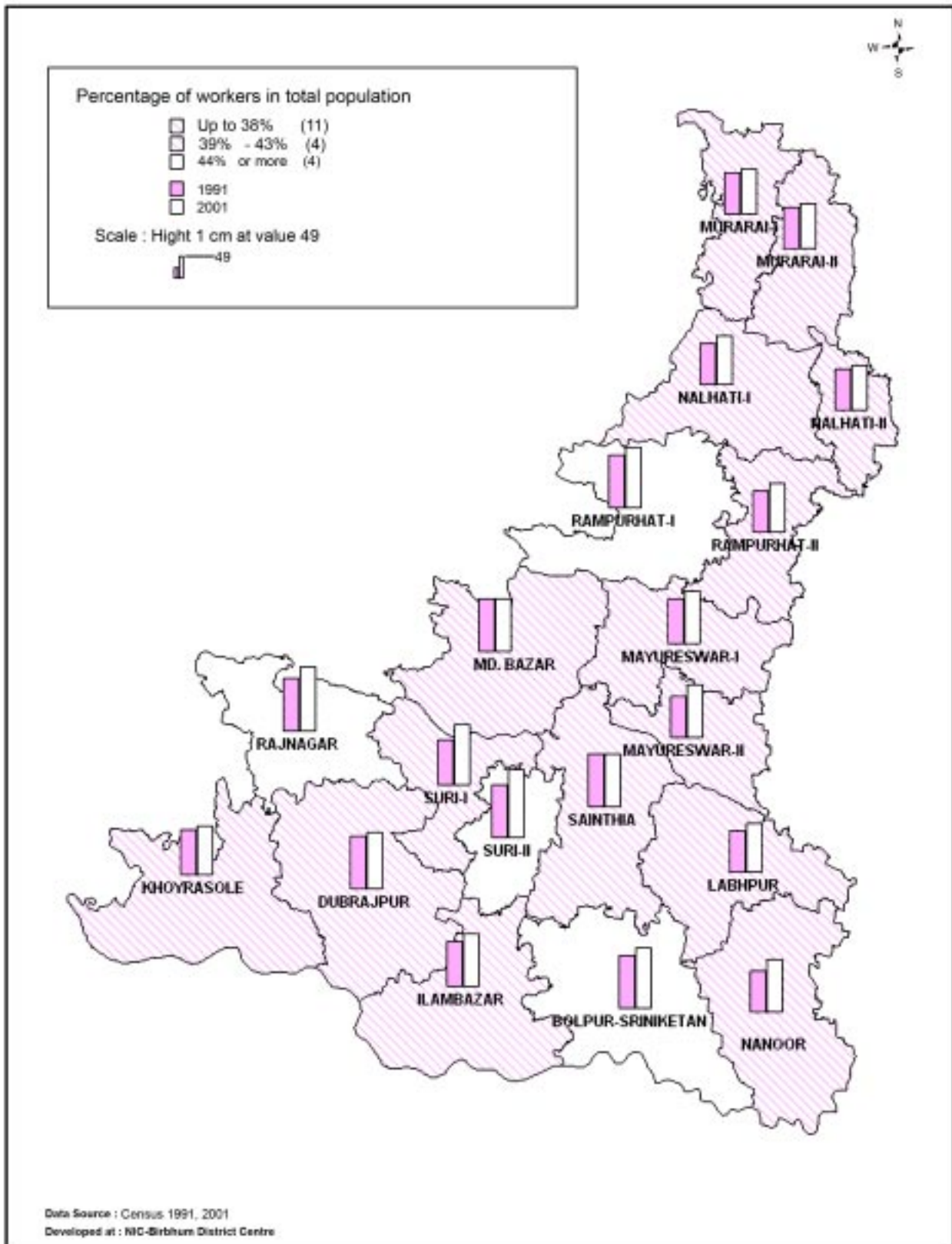
Figure 4.5 Percentage of agricultural labourers in total workers across blocks of Birbhum, 2001

Percentage share of agricultural labourers in total workers

□ Up to 35%   (2)
□ 36% - 42%   (14)
□ 43% or more   (3)

■ 1991
□ 2001

Scale : Height 1 cm at value 49
                                    49

Data Source : Census 1991, 2001
Developed at : NIC-Birbhum District Centre

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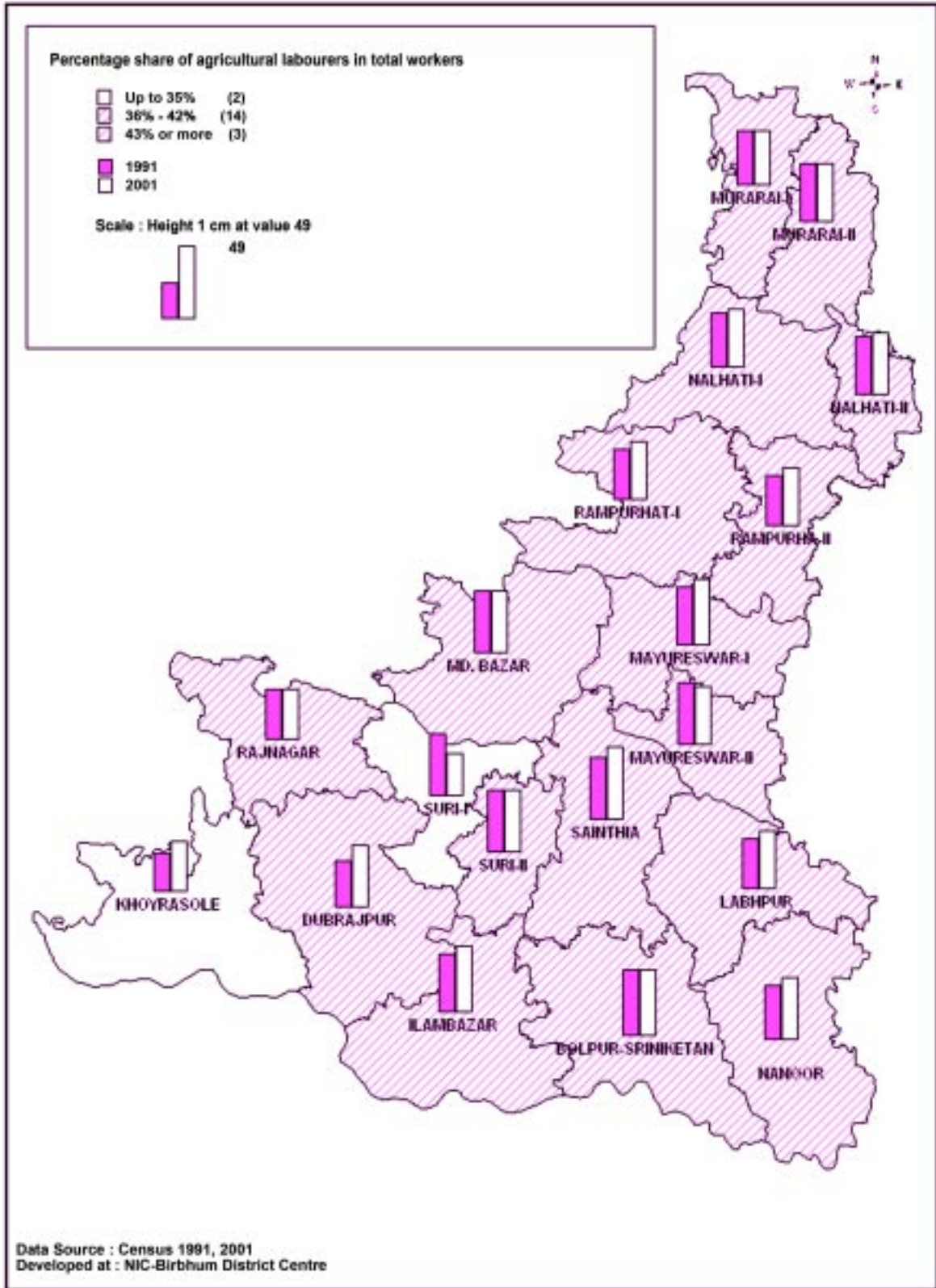
Although a fall in agriculture-based workforce is considered as a positive change from development point of view, not all blocks of Birbhum have experienced such positive changes to a significant level. For example, there are still 6 blocks (Mayureswar-I and Mayureswar-II, Sainthia, Labhpur, Nanoor and, Illambazar) where the percentage of workers dependant on agriculture is 70 per cent or more. It is also observed that in those blocks where a high percentage of people are engaged in agriculture, it is mostly due to higher share of agricultural labourers and not for higher shares of cultivators. There are seven blocks where the percentage of agricultural labourers is 40 or more (Table 4.4). These blocks are Nalhati-II, Mayureswar-I, Md Bazar, Suri-II, Sainthia, Nanoor, Bolpur-Sriniketan, Illambazar and Dubrajpur. High dependence of workers on agriculture implies that they are subject to seasonal variations in income. It is obvious that in those blocks where the percentage of marginal workers or agricultural labourers is higher, the households' incomes are subject to seasonal fluctuations that make them vulnerable. Therefore, NREGS need to be strengthened in those blocks. We shall come back to this point later.

We now look at the incidence of rural poverty and its connection with the composition of employment across blocks. The BPL household survey carried out in 2005 provides information on total number of families and families below the poverty line at a highly disaggregated level (viz. the *Sansad* level). Despite the controversies surrounding the BPL survey and reliability of the data, the figures can highlight certain important aspects of the spatial distribution of the poor people if we assume that the alleged upward bias is more-or-less evenly distributed across blocks. The percentage of BPL families across blocks is presented in Table 4.5. The table shows that the percentage of BPL households is the lowest in Rajangar (25.3 per cent) and highest in Murarai II (78 per cent). There are only three blocks where the percentage of BPL households is less than 30 per cent (Rajnagar, Suri I and Labhpur). There are five blocks where percentage of BPL households is more than 50 per cent. These blocks are Suri-II, Rampurhat-I, Rampurhat-II, Nalhati-II and Murarai-II.

Table 4.5 Number and percentage of BPL households, 2005

Block	Number of total households	Number of BPL households	Percentage of BPL households
Murarai-II	42079	32812	78.0
Nalhati-II	25180	14165	56.3
Rampurhat-II	37954	20389	53.7
Rampurhat-I	39665	21393	53.9
Suri-II	21502	10881	50.6
Murarai-I	33854	16995	50.2
Nalhati-I	44356	19002	42.8
Mayureswar-II	28220	11461	40.6
Mayureswar-I	26449	10526	39.8
Bolpur-Sriniketan	41308	15965	38.6
Khoyrasole	28274	10424	36.9
Illambazar	37912	13514	35.6
Dubrajpur	38749	13764	35.5
Md. Bazar	32398	11444	35.3
Nanoor	48251	16746	34.7
Sainthia	46677	14876	31.9
Labhpur	45293	12798	28.3
Suri-I	20462	5775	28.2
Rajnagar	15343	3879	25.3
Birbhum	**653926**	**276809**	**42.3**

Although there is no indication that the share of BPL households is more in blocks with higher share of agricultural labourer, there is a clear pattern that the share of BPL households is more in blocks with disadvantaged population in general and Muslim population in particular. To examine this correlation graphically, we have plotted the percentage of BPL households across blocks against the percentage of disadvantaged population, viz. SCs, STs and Muslims (Figure 4.6).

Figure 4.6 Correlation between percentages of BPL households (2005) and disadvantaged population (2001) at block level in Birbhum
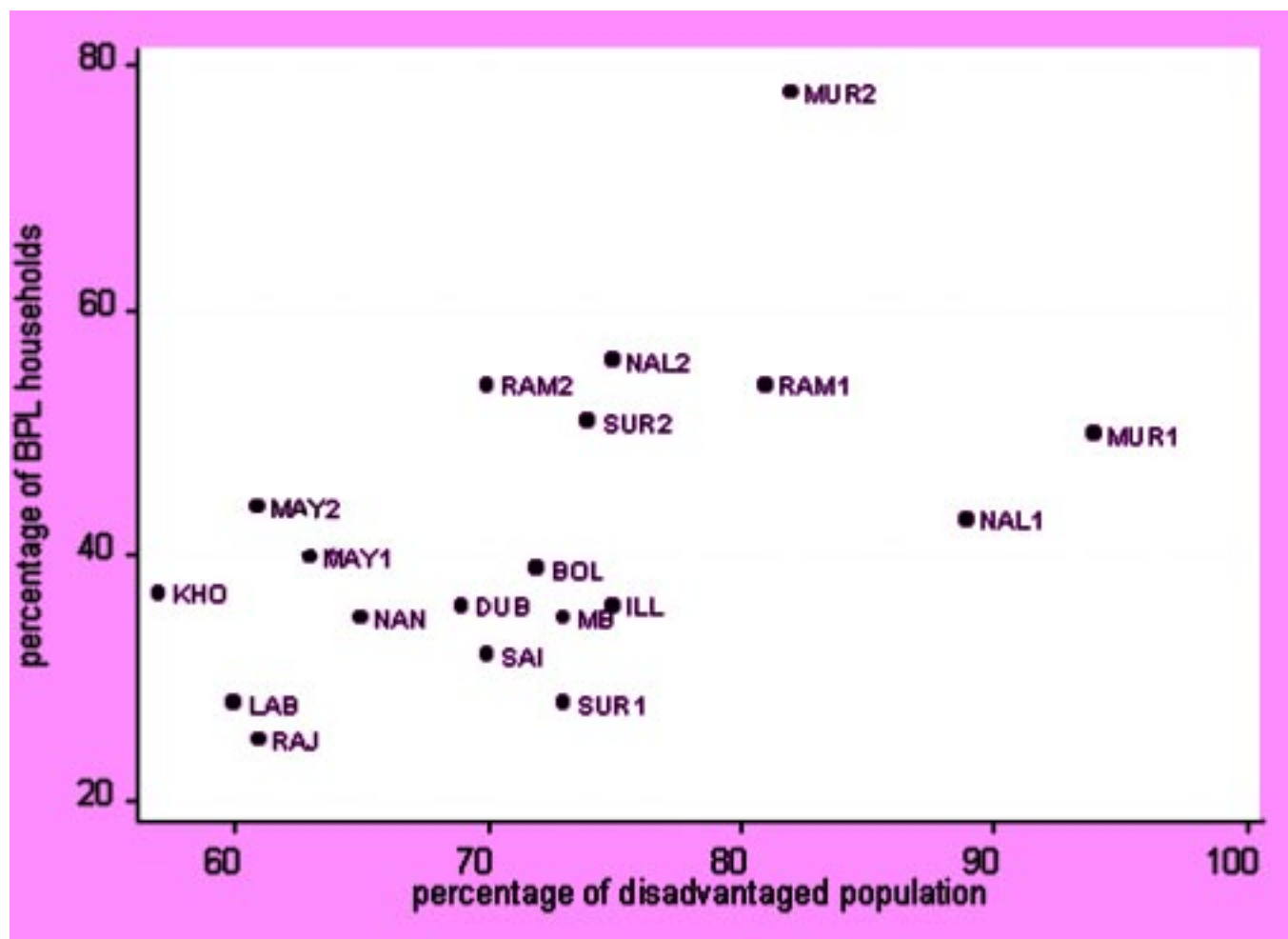
It seems that the percentage of BPL households is closely associated with the percentage of disadvantaged population in general and the percentage of Muslim population in particular (Figure 4.7). While the percentage of BPL households shows a correlation coefficient value of 0.54 with percentage of disadvantaged population, with the percentage of Muslim population it shows a much stronger association (0.73). This indicates that, even though there is much scepticism about identification procedure of BPL households, by and large the data conform to our expectation that the socially disadvantaged groups be identified as BPL so that the benefits of targeted poverty alleviation schemes and programmes reach them.

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Figure 4.7 Correlation between percentages of BPL households (2005) and Muslim population (2001) at block level in Birbhum
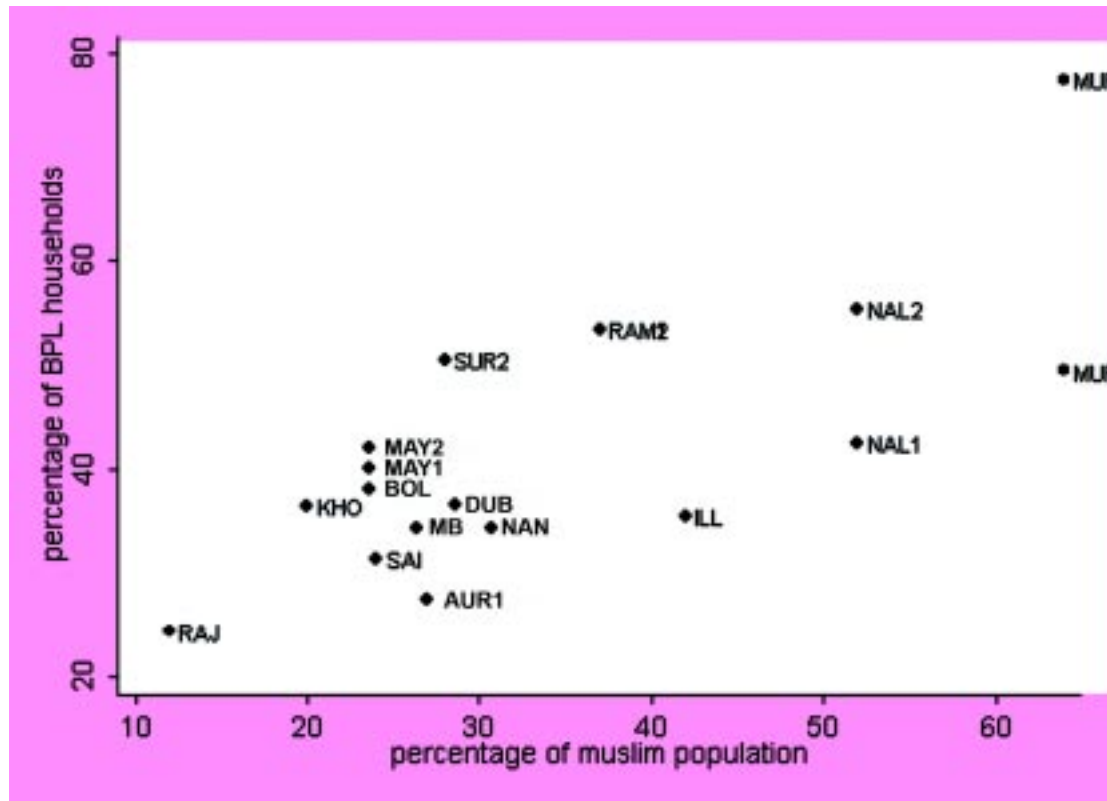
4.3   National Rural Employment Guarantee Scheme (NREGS) in Birbhum

One of the major causes of rural poverty is believed to be lack of employment opportunities or regular employment opportunities. However, it has been found in many contexts that the incidence of poverty is higher in the households with predominantly non-working population (children, elderly, ill and disabled) rather than the working population. The National Rural Employment Guarantee Scheme (which later became an Act) has been introduced with the objective to enhance the livelihood security in rural areas by providing 100 days of guaranteed wage employment per household in a financial year. One can expect that the demand for NREGS work will be more in places with higher share of disadvantaged population or agricultural labourer. We have already established that the incidence of poverty is higher among the disadvantaged population, who are also generally over-represented in the class of agricultural labourers.

According to the latest NREGS statistics available on the official website (www.nrega.nic.in), the number of households provided employment under NREGS is slightly more than 3.85 lakhs in Birbhum district. This is 10.4 per cent of the number of households provided such employment in West Bengal, and looks rather good if we consider the fact that Birbhum has only 4.8 per cent of West Bengal's total rural population.

Table 4.6: Average number of person-days created per household and utilisation of NREGS funds across blocks of Birbhum (2006-07)

Block	Person-days per household			% Utilization of NREGS funds		
	Min	Max	average	Min	Max	average
Suri I	10	32	27	54	87	78
Suri II	18	43	27	78	99	86
Md Bazar	6	48	25	74	100	95
Saithia	12	35	20	68	93	82
Rajnagar	20	38	28	83	97	92
Dubrajpur	10	23	14	70	98	88
Khoyrashole	13	66	30	72	92	84
Bolpur-Sriniketan	18	57	33	94	100	97
Illambazar	11	28	17	82	100	93
Labpur	15	54	24	53	100	84
Nanoor	9	38	19	92	80	87
Rampurhat I	7	35	14	74	100	90
Rampurhat II	6	27	12	73	100	87
Mayureswar I	11	16	14	87	97	93
Mayureswar II	11	32	20	72	100	89
Murarai I	9	18	11	70	100	90
Murarai II	6	27	13	79	100	91
Nalhati I	9	25	17	71	100	89
Nalhati II	8	11	10	62	100	85

Note: Min (or max) shows the minimum (or maximum) value of person days/utilisation of available NREGS funds for the GPs under the block.
Source: Calculated from data provided by NREGS Cell, Birbhum district

According to the latest available figures NREGS fund utilisation in Birbhum is 68 per cent which is much higher than the state average of 39 per cent.[3] It is observed from the data that not

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[3] According to data provided by District NREGS Cell, the fund utilisation rates for the year 2005-06, 2006-07 and 2007-08 (till October) are 43 per cent, 77 per cent and 78 per cent respectively, which are rather good.

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all households which had applied for the job card finally demanded work against their job cards. For example, during the financial year 2006-07, only 85 per cent of the households holding job card finally demanded employment. In Birbhum there is no difference between the number of households which demanded work and were provided with work, though such difference exists for rural West Bengal as a whole.

However, in terms of the average man-days created per household the district's performance does not look so good. Table 4.6 shows block-wise figures on average person-days created per household and percentage utilisation of NREGS funds. The same table also shows minimum and maximum average person-days per household and utilisation of funds at the GP level under each block. There is a considerable variation across blocks in terms of average person-days per household. Out of 19 blocks in Birbhum, only 6 blocks could provide 25 or more days of work on an average. Performance of NREGS in terms of person-days per household is extremely poor in 7 blocks of Birbhum with average person-days less than 15. The blocks which performed better also showed considerable intra-block differences.

Most of the blocks perform well in terms of utilisation of NREGS funds, even though inter-block differences are observed. On the one hand there are blocks like Bolpur-Sriniketan which had spent nearly 97 per cent of the available funds, on the other hand blocks like Suri-I could spend only 78 per cent of the available funds during the financial year 2006-07. Out of 19 blocks, 6 blocks could spend more than 90 per cent of the available funds under NREGA. There is an apparent puzzle here. The performance of NREGS in Birbhum looks good if one looks at the percentage of funds utilised, but on the contrary, if one looks at the average person-days created per household the picture turns out to be rather dismal. It requires further scrutiny. Is there any positive relationship between utilisation of available NREGS funds and average person-days created at the block level? In other words, did those blocks which finished most of the available funds under NREGS create higher average person-days? We explore this relationship graphically at the block level (see Figure 4.8).

Figure 4.8: Scatter diagram showing the association (at the block-level) between percentage utilisation of NREGA funds and average number of person days created per household
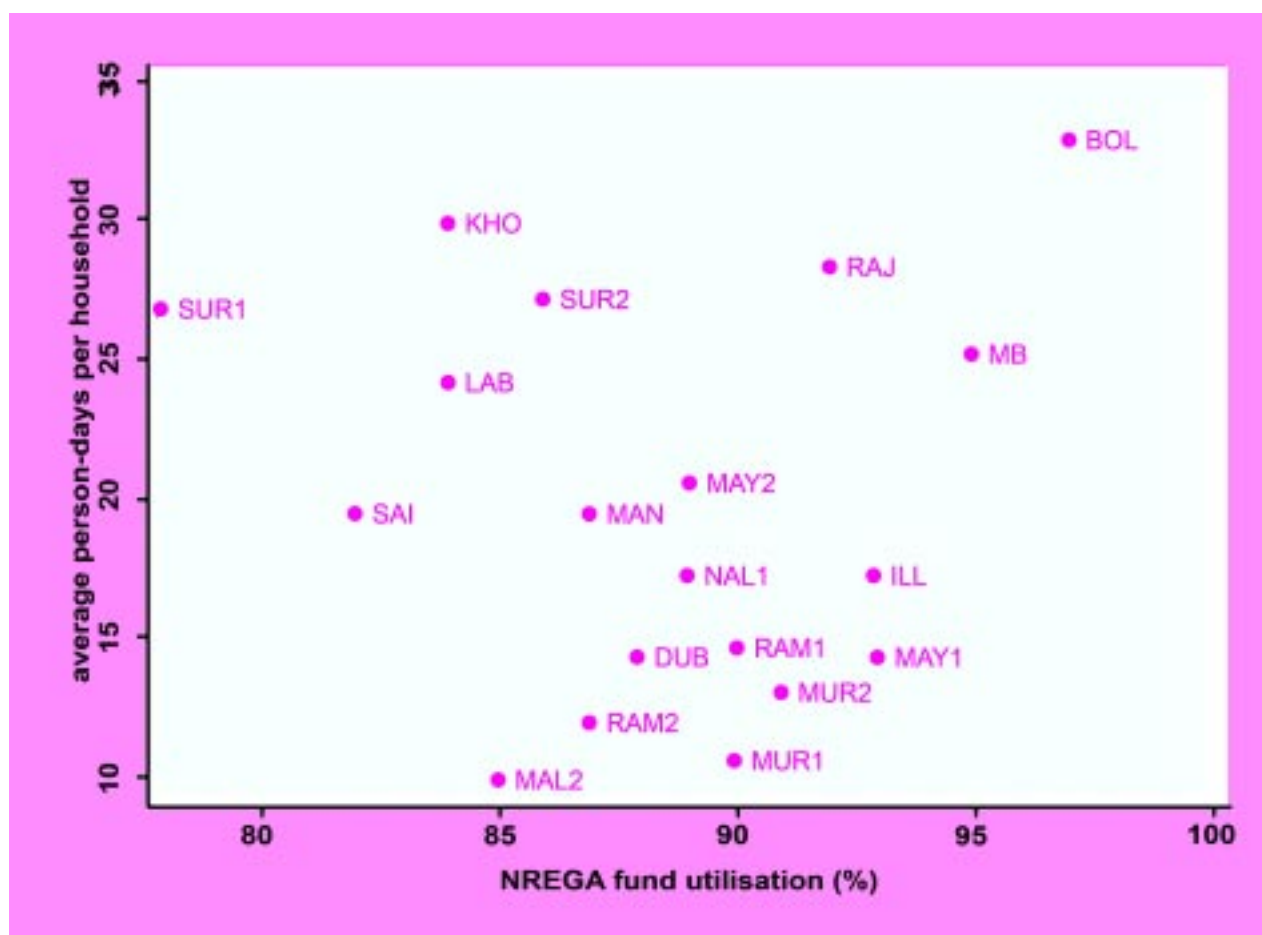
Apparently there is no clear relationship between utilisation of available funds and average person-days created. Given the divergent performance of GPs within a block, one may reasonably question the appropriateness of exploring this relationship at the block level. In Figure 4.9 we explore the same relationship at the GP level. The scatter again fails to support any relationship between average person-days per household and percentage utilisation of funds. What it however indicates is that a single block or GP may exhaust all its funds and still be unable to provide longer days of employment to households who are in need of employment.

Figure 4.9: Scatter diagram showing the association (at the GP-level) between percentage utilisation of NREGA funds and average number of person days created per household
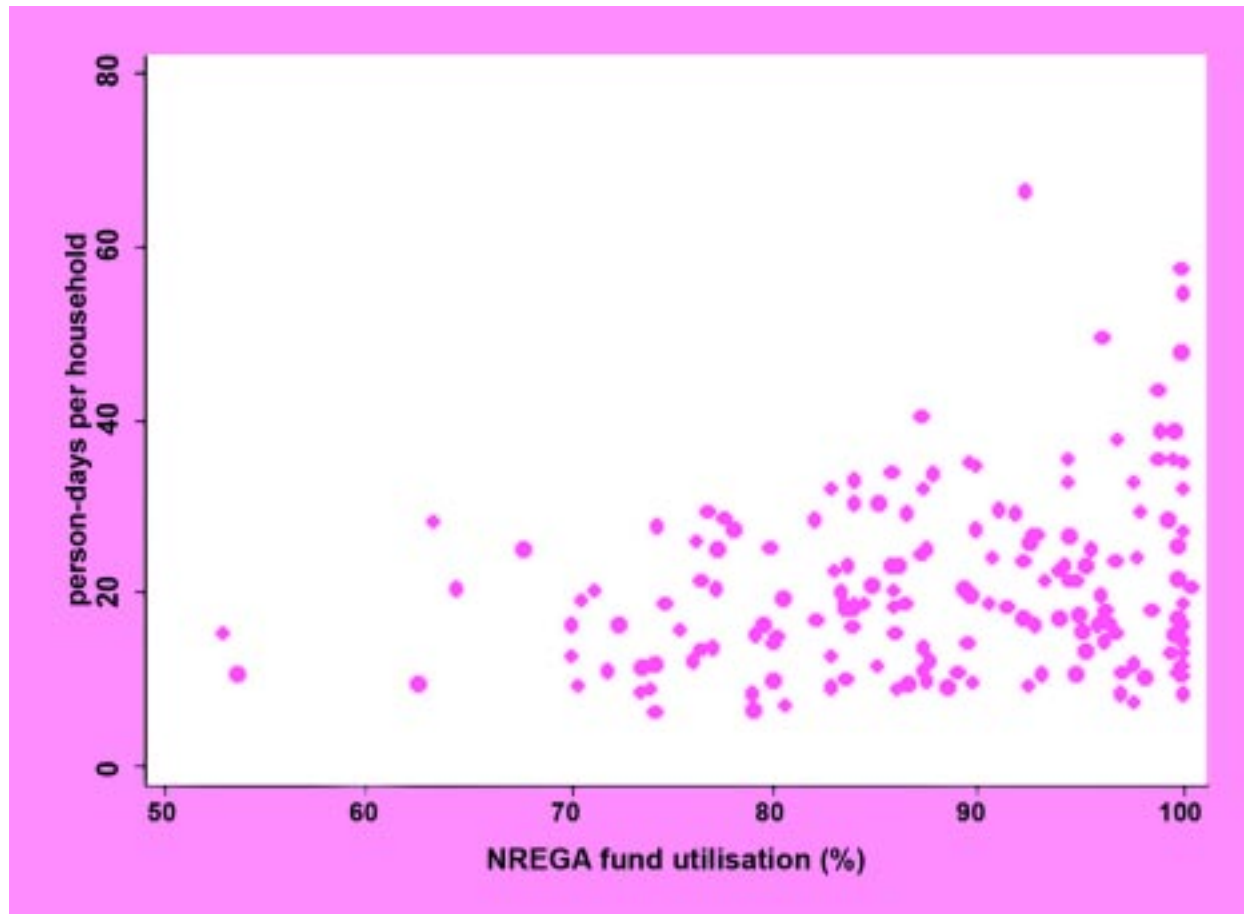
The main reason for low average person-days at the block/GP level, according to some, is that GPs are not able to develop adequate number of schemes to absorb the labour who demand work under NREGS. Since NREGS is supposed to be a demand-driven programme (demand for funds should come from the Gram Panchayat), it is apparent that the GPs can hardly develop enough number of schemes to provide employment to all who demand employment.

What could be the possible reasons for the low average person-days per household? There is no way to know how many people needed work but did not get it. Since in the official records there is no difference between the total number of days demanded and the number of days of employment provided, one has no other option but to conclude that the demand for work is low. If people have the opportunity to work at higher wage rates or have more certain work at the same or even little

lower wage rate, they may not be interested in NREGS work. NREGS is expected to be better implemented in places with large number of agricultural labourers or large number of poor households, since working opportunities of the agricultural labourers or poor people are subject to seasonal variations.[4] However there is no evidence in support of this argument (see Figure 4.10).

Figure 4.10: Scatter diagram showing association (at the block-level) between average number of person days per household and percentage of agricultural labourers in total workers

NREGS is also expected to create more number of days of work in places with higher concentration of poor people. In Figure 4.11 the average number of person-days per household is plotted against percentages of BPL households across blocks. Again, there is no correlation (0.08)[5]. If distribution of funds across PRIs is not strictly related to the number of households demanding

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[4] For example, the Action Plan section of the NREGA notes that for the purpose of identification of the quantum of work need to be created, estimation of the below poverty line population, number of marginal agricultural labourers, migration figures and other parameters may be required for each Gram Panchayat.

[5] For various reasons it is believed that the percentage of BPL households in Murarai II block is too high to be reliable. However, if we exclude Murarai-II the value of the correlation coefficient slightly increases (0.14).

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employment under NREGA, areas with higher demand for work due to poverty are likely to end up with fewer days of work. Furthermore, poor people in poverty stricken areas may not be able to take advantage of NREGS because of the lack of physical capacity to work.

Figure 4.11: Scatter diagram showing the association (at the block-level) between percentage of BPL households and average number of person days per household.
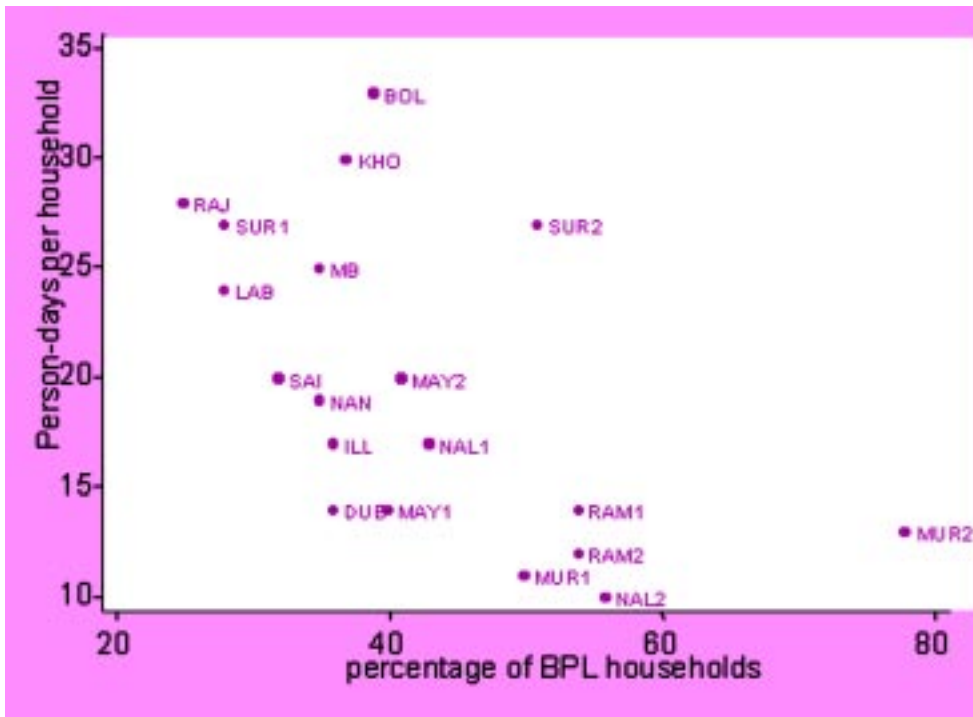
To get some idea about the levels of living of the agricultural workers we look at the annual average wage rate of male agricultural field labourers in the district (Figure 4.12).

Figure 4.12 Average daily wage rate (Rs) for male agricultural workers
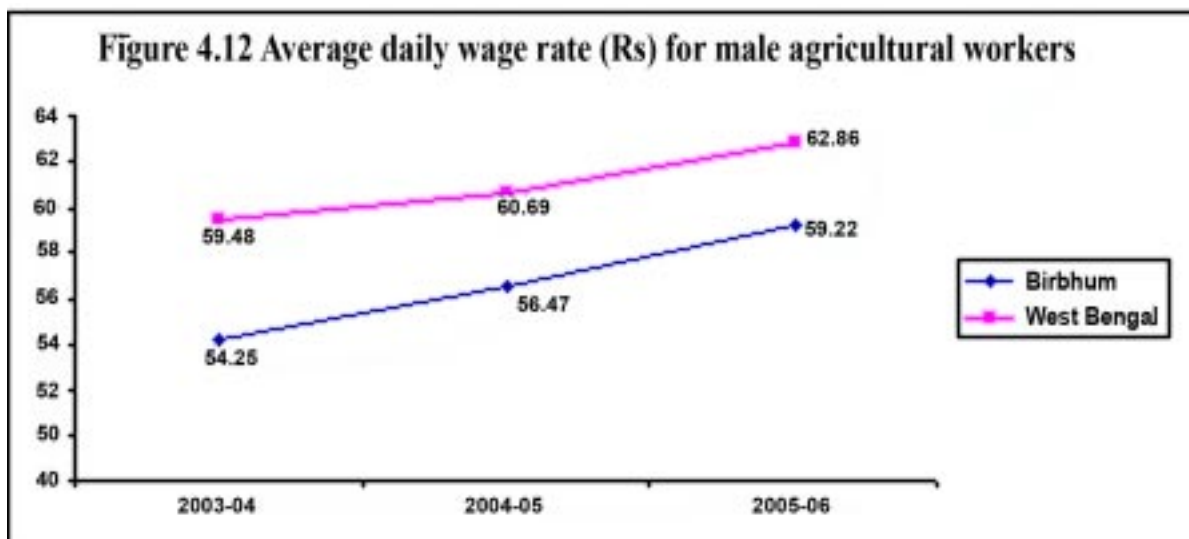
Limited opportunities in the non-farm sector seem to have worked against them, as the wage rate in the district has been lower than the average wage in West Bengal. However, it can be noted that the gap between the wage rate prevailing in Birbhum and the average wage for all districts has been narrowing, albeit slowly.

4.4 Opportunities in industries

Birbhum is one of the most backward districts in terms of industrial development. During the period between 1991 and 2005, 1220 new industrial projects were set up in West Bengal with a total investment of Rs 29101.8 crore. Only 1.23 percent of these projects came to Birbhum, the investment share being a meager 0.18 percent. In 2006, among the 173 new projects only one with an investment of Rs 5.86 crore was proposed in Birbhum.

According to the latest information available from the District Industries Centre, Birbhum, there is only one large scale industry in the district, four medium scale industries and approximately 4748 registered small-scale units. About 5000 people are engaged in the only large industry, viz. Bakreshwar Thermal Power Project, either as direct employees or as contract workers. Although this project is expected to generate successive rounds of economic activities in the downstream and upstream areas, they are yet to develop to a significant extent. Among the medium scale industries, the National Sugar Mill at Ahmedpur, which has been taken up by the Government of West Bengal, is unfortunately in a very bad shape. Although it can provide work for about 600 persons, it can run for only one or two months in a year because of shortage of raw material and other problems. A mini steel plant established at Suri in 1984 provides work for about 300 persons through direct and indirect employment.

The small-scale units are in the areas of rice-husking, oil-pressing, stone crushing, China clay washing, wheat grinding, wooden and steel furniture, printing, mould plastic wares, automobile servicing, readymade garments, cold storage, bakery, electrical transformer, and so on. The mineral processing units are mostly in Nalhati-Rampurhat-Md. Bazar area, as certain minerals like China clay, granite stone and fire clay are available in this area. There are about 400 stone crushing units of which only 100 are registered SSI units.

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Table 4.7: The number of small scale industries in different areas

Sl no	Type of industry	Number of units	Nature of activity (product, or activity towards production)
1	Food products	1102	Rice mill, oil mill, chira, chanachur, noodles etc
2	Tobacco products	41	Bidi
3	Cotton textile	47	
4	Woolen and silk textile	35	
5	Hosiery and garments	93	
6	Wooden products	468	
7	Paper products & printing	99	Handmade paper, corrugated cotton box, printing press
8	Leather products	40	
9	Plastic products	12	Plastic toys, polythene bag, container etc.
10	Chemical products	42	Laundry soap, washing soap, phenyl, detergent, tooth powder, tooth powder
11	Coke and coal products	100	Soft coke, coal and coal briquette
12	Mineral products	191	Stone crushing, china clay powder etc
13	Metal products	920	Agricultural implements, gate grill, machinery parts, engineering job works
14	Cold storage and warehouse	15	Preservation of potatoes
15	Repairing and servicing	571	Cycle, motor cycle, car repairing; TV, tape recorder, radio repairing
16	Studio and Xerox	17	
17	DTP/Fax/Internet etc	8	
18	Cement products	1	PCC pole
19	Handicraft products	946	Kantha stitch, sola pith, cane, bamboo, batic printing, pottery, bell metal, woodcraft etc
	Total	**4748**	

4.5   *Expansion of economic opportunities*

It is important to recognize the complementarity between expanding economic opportunities and the social conditions that facilitate the use of those opportunities (e.g. elementary education and

good health). There is evidence that the returns to educational expansion tend to increase with the expansion of market opportunities, and that can be a strong incentive for parents to educate their children. The options that a person has depend greatly on relations with others and on what the state and other institutions do. Opportunities are shaped by the interaction of social circumstances and public policy. The opportunities offered by expanding modern economic activities that require certain types of skills may be difficult to use when a person is handicapped by illiteracy or ill-health. On the other hand, a person with some education and good health may still be unable to use his or her abilities because of limited economic opportunities.

Graduation into the non-farm sector by the lower economic strata in rural areas generally follows a familiar trajectory in which an initial move towards diversification plays a crucial role. Some of the erstwhile landless households got access to land through patta or barga. Agricultural labor or vegetable selling combined with cultivation on patta or barga land however small reduces their propensity to shock, which leads to higher saving and investment in human capital accumulation, which in turn facilitates entry into non-farm activities – either through salaried job or through non-farm self-employment or small business through loan access and better marketing skills.

We have discussed the predominantly agricultural nature of the economy of Birbhum district, and the nature of agriculture is also predominantly rice based. To a limited extent wheat and other foodgrains are also cultivated. In both rice and wheat, productivity in Birbhum far exceeds the average for West Bengal. Yet, there is an urgent need for encouraging producers towards more diversified products, as the return from rice cultivation has been declining. One main reason for continuing rice production is the farmer's perception about the risk involved in venturing into new kinds of production. The risk perception may have real basis as the marketing channels and other infrastructural facilities that could support such diversification are poorly developed. For example, development of horticulture requires proper storage facilities without which it would not be possible to arrest the steep fall in the post-harvest prices. Without a cushioning mechanism to protect the poor farmers from widely fluctuating prices, horticulture, especially fruits and vegetable cultivation, will remain unattractive to farmers, even though it is observed to have grown moderately in recent period.. It has been envisaged

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by district level functionaries that with the development of religious-cultural tourism circuit that they have planned there will be steady demand for flower within the district and therefore expansion of flower production can be sustained in future. In what follows we discuss in somewhat detail two areas that are likely to have some impact in future on expansion of economic opportunities among the people. They are horticulture and tourism development.

Development plan under National Horticulture Mission

Along with other states and union territories,[6] National Horticulture Mission (NHM) is being implemented in West Bengal to promote comprehensive growth of the horticulture sector covering fruits, vegetables, roots & tuber crops, mushroom, spices, flowers, aromatic plants, cashew and cocoa. This is a centrally sponsored scheme in which the central government is providing 100 per cent assistance to West Bengal during the 10th Plan. During the 11th Plan period, central government is providing 85 per cent and the state government will have to provide the remaining 15 per cent.

The main objectives of the Mission are the following: (1) To provide holistic growth of the horticulture sector through area based regionally differentiated strategies which include research, technology promotion, extension, post harvest management, processing and marketing, in consonance with comparative advantage of each State/Region and its diverse agro-climatic features. (2) To enhance horticulture production, improved nutritional security and income supports to farm household. (3) To establish convergence and synergy among multiple on-going and planned programmes for horticulture development. (4) To promote, develop and disseminate technologies, through a seamless blend of traditional wisdom and modern scientific knowledge. (5) To create opportunities for employment generation for skilled and unskilled persons, specially unemployed youth.

As a response to the objectives set by the National Horticulture Mission, Government of West Bengal has created the West Bengal State Horticulture Development Society for implementation of the Mission programmes at the state and district levels. In Birbhum, the District Mission Committee

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[6] Except the North Eastern States, Himachal Pradesh, Jammu & Kashmir and Uttaranchal.

(DMC) has been formed. The DMC is chaired by Zilla Parishad Sabhadhipati. Apart from different district-level officials, the committee has got representation from Rathindra Krishi Vigyan Kendra (Visva Bharati University) and Regional Research Station (Sekhampur Campus, BCKV). A series of programmes have been designed to be implemented in Birbhum under National Horticulture Mission, which can be classified under the following headings:

A.   Production of Planting Materials (Model Nursery):

The production and distribution of good quality seeds and planting materials is an important component of the mission. Birbhum district has a network of nurseries for producing planting material. Therefore to meet the requirement of planting material for bringing additional areas under improved varieties of horticultural crops, assistance would be provided for setting up new nurseries under the Public and Private sectors (Table 4.8).

Table 4.8: Nursery schemes for Birbhum, allotment and target

Name of scheme	Total allotment		Target
	Physical (no)	Financial (Rs. lakh)	
Model nursery for public sector (4 ha)	1	9	2,00,000 planting materials will be produced for a period of approximately 9 months.
Model nursery for private sector (4 ha)	1	9	2,00,000 planting materials will be produced for a period of approximately 9 months.
Model nursery for private sector (1 ha)	10	12	5,00,000 planting materials will be produced for a period of approximately 9 months.

B. Expansion of area under fruits:

Table 4.9 summarizes requirement of fruit, present level of production, shortfall in Birbhum district and how much new area has to be brought for fruit production.

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Table 4.9: Requirement, level of production and shortfall of fruit production in Birbhum

Total population in Birbhum district	30,15,422
Requirement of fruits per head per day	80 g
Total requirements of fruits per year in Birbhum district	88050 MT
Total fruit production of the district per year	44980 MT
Shortfall per year	43070 MT
Area under fruits to be increased (approx.)	3500 hectare

The following strategies have been adopted to address the problem of shortfall in fruit production: (1) Utilization of wasteland for fruit cultivation. (2) Use of soil ameliorant e.g. *dolomite*. (3) Utilization of shallow rooted fruit plants due to hard rock in soil. (4) To access distant markets for less perishable species e.g. Sweet Orange, Ber etc. are promoted. (5) Cashew is also a promising crop if grown with full irrigation facilities and processing facility is provided. (6) Introduction of tissue cultured propagating materials. (7) Acidic soil and drought tolerant species. (8) Inter cropping with vegetables/ flowers/ legumes. (9) Establishment of model nursery for good quality planting materials. (10) Use of drip irrigation system. Central Micro Irrigation Scheme is bearing 50 per cent of the cost, and the rest may be obtained from the PUP fund.

To augment fruit production, orchards will be developed on cluster basis through LAMPS/ SHGs or unemployed youths or through individual beneficiary. An allocation of Rs 22.5 has been made to expand area under fruit production by 200 hectares. It is expected that 2500 persons will directly benefit from this scheme.

C. Creation of Water Sources:

Under the Mission, assistance would be provided for creating water sources through construction of community tanks, farm ponds/ reservoirs with plastic lining. This structure will help in storing water throughout the year. The assistance will be limited to Rs. 10.00 lakh per unit for an area of 10 ha (including catchment area) to be taken up on community basis. Maintenance of the water sources will be the responsibility of the community. In case of a district like Birbhum, this scheme will be ideal as there is scarcity of water in the district, mainly in the western part.

D. Post Harvest Management:

Post harvest management includes packaging, grading, transportation, curing and ripening and storage. These facilities are essential for increasing the marketability of the horticultural produce, adding value to the produce, increasing profitability and reducing losses. It is proposed to create a network of infrastructure facilities horticulture storages, transportation, marketing, packaging and grading and export. The existing schemes of the National Horticulture Board (NHB), Directorate of Marketing and Inspection (DMI) and National Cooperative Development Corporation (NCDC) will be made use of to the maximum possible extent. In this context, specific programmes which would be taken up under the NHM would include establishment of pack houses, ripening chambers, cold storage units, Controlled Atmosphere (CA) storage, supply of refrigerated vans and mobile processing units besides supports for marketing intelligence. All these projects will be entrepreneur driven through commercial ventures for which the Central Government assistance will be credit linked back-ended subsidy for 25 per cent of the total project cost.

Table 4.10: Schemes for post harvest management of fruits in Birbhum

Name of scheme	Total allotment	
	Physical (number)	Financial (Rs. lakh)
Multipurpose Cold Storage	3	150
Refrigerated Vans/ Container	3	18
Mobile Pre-cooling/ Processing Units	3	18
Functional Infrastructure for collection / Grading/ Storing Centers	12	72
Pack House	10	6

E. Creation of Market Infrastructure:

The main objectives of providing assistance under this component are: (1) to induce investments from private and cooperative sectors in the development of marketing infrastructure for horticulture commodities; (2) strengthen existing horticulture markets including wholesaler, rural haats; (3) focus on promotion of grading, standardization and quality certification of horticulture produce at farm/market level to enable farmers to realize better price; and (4) create general awareness among farmers,

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consumers, entrepreneurs and market functionaries on market related agricultural practices including contract farming.

Table 4.11: Schemes for marketing of fruits in Birbhum

Name of scheme	Total allotment	
	Physical (number)	Financial (Rs. lakh)
Rural Mandi	6	22.5
Creation of infrastructure for rural mandi	6	22.5

Tourism

Birbhum has a rich heritage of cultural traditions. Apart from Shantiniketan, several *Shakti Peeths* scattered throughout the district attract a good number of tourists. If these tourist destinations and several other lesser known places could be developed with a comprehensive outlook they could bring in large numbers of visitors to the area and contribute significantly to the livelihood of the local people. With this possibility in mind the Zilla Parishad with the help of India Tourism Development Corporation and a private consultancy agency has recently developed a detailed tourism development plan.

Even with very modest facilities Birbhum now attracts a good number of visitors to various places of interest, with Shantiniketan, Bakreshwar and Tarapeeth being the principal attractions. Shantiniketan remains one of the most important destinations in this part of the state with over 1.2 million visitors each year. Temples such as Tarapeeth receive over 1.4 million visitors annually[7]. However, most of the tourism traffic in the area is from within West Bengal, and despite its great potential the district has not been able to attract the numbers that could exploit the potential effectively.

Several archaeological discoveries dating back to the Stone Age have been made in several places in the district. Associated with both Mahavira and Gautam Buddha, the area was once part of the Mauryan Empire, and later, also a part of the empires of the Guptas, Shashanka and Harshavardhan. After the end of Harshavardhan's empire, the region came under the rule of the Pala

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[7] Birbhum district official website (Birbhum.nic.in)

and Sena dynasties, until the advent of the Muslim rulers in the thirteenth century. Ruins of this period have recently been found in the Nanoor area of the district.

The region has seen periods of influence of all the major Indian religions, including Buddhism, Jainism, Hinduism and Islam, with their respective impact on the culture of the area. Mythological traditions linking Sati's dismembered body parts to different places have given rise to what are now known as Shakti Peeths with temples honouring the goddess Sati. In Birbhum they are located in Bakreshwar, Tarapeeth, Kankalitala, Labpur, Fulberia and Nalhati.

The region is famous for its tradition of poetry, and several poets dating back to centuries have been inspired by the local setting. Birbhum is the land of poets of Vaishnav and Shakta Padavali fame, such as, Jayadev and Chandidas . The folk culture of Birbhum is typified by the rich contribution of Bauls, their songs and a religiously liberal philosophy and lifestyle with links to the Sahajiya movement of 16th Century A.D. Chandidas and many other poets were part of the Sahajiya movement. Rabindranath Tagore was inspired by their philosophy and patronised them actively. Birbhum has been home to famous kabiyals, kirtaniyas and other folk performing art groups and is also famous for a number of fairs including the popular Pous Mela at Shantiniketan and a lively fair at Kenduli with the participation of bauls in large numbers.

The numerous temples and the association with the Shakti Peeths set the spiritual undertone of tourism activity in the district. The temple and hot spring complex at Bakreshwar is a famous and unique attraction, steeped in tradition and religiosity. The Vishwa Bharati University at Shantiniketan and the ashram complex at Sriniketan, built by Rabindranath Tagore, form an important location for the confluence of local traditions and modern ideas in art, culture society. Yet, despite its immense potential, the district is almost nonexistent on the country's tourist map.

To translate the potential into practice, the framers of West Bengal Tourism Policy 1996 generally suggested "*The only way out is to devise a comprehensive & competitive package of measures, incentives & concessions for attracting adequate investment from private sector, domestic or foreign, for tourism*

4

projects in West Bengal." Religious, pilgrimage and cultural tourism can be identified as thrust areas for tourism development in Birbhum. A Toursim Circuit forming a triangle joining Bolpur, Bakreshwar and Nalhati has been proposed to be developed.

Birbhum attracts millions of people to its various tourist spots each year. However, at present, these locations lack basic tourist amenities like public transport, public conveniences, drinking water facility, pathways, parking for private and public vehicles, sit-outs, shelters, illumination etc. While most of these spots are day-tourist attractions and accommodation is needed only at a few places like Bolpur and Tarapeeth where sufficient accommodation already exists. Additional hotels and budget accommodation near the other spots on the circuit should be encouraged through private sector participation, by the State Government. Parts of the district such as Bolpur and Tarapeeth already have numerous facilities for tourists such as hotels, dharmshalas and eateries, of various categories.

While numerous attractions with immense tourism potential exist, poor marketing, promotion and lack of awareness amongst tourists is a major detractor. Most of the tourist centres are situated in the middle of human habitation, and are surrounded by dense development, making access difficult. This also limits the area available for construction of amenities, additional structures, parking etc. Poor quality of hygiene and limited awareness of hygienic practices amongst the local citizens and visitors is a detractor for tourists from outside the region. Maintenance is not adequate and limited funds are available. Since all these tourist spots are situated at a considerable distance from one another in terms of travel time, a lot of time is lost moving from one to the other.

Proper marketing and promotion to popularise the district can help convert it into a successful tourism circuit. Dissemination of information about the various destinations in the circuit and their attraction to potential tourists is extremely important to increase awareness about the district (at present most people outside the region have heard only of Shantiniketan, and limited details are available in tourist literature, internet etc.). Improvement of transportation within the district to ease local and regional movement of tourists can be beneficial for a satisfactory tourism experience. Improvement of conditions for visitors at the various sites, addition of amenities and simplification of access with

clean pathways etc., well maintained public toilet facilities and hygienic food at stalls within the complexes will make the area more attractive.

Figure 4.13 Proposed tourism circuit for Birbhum

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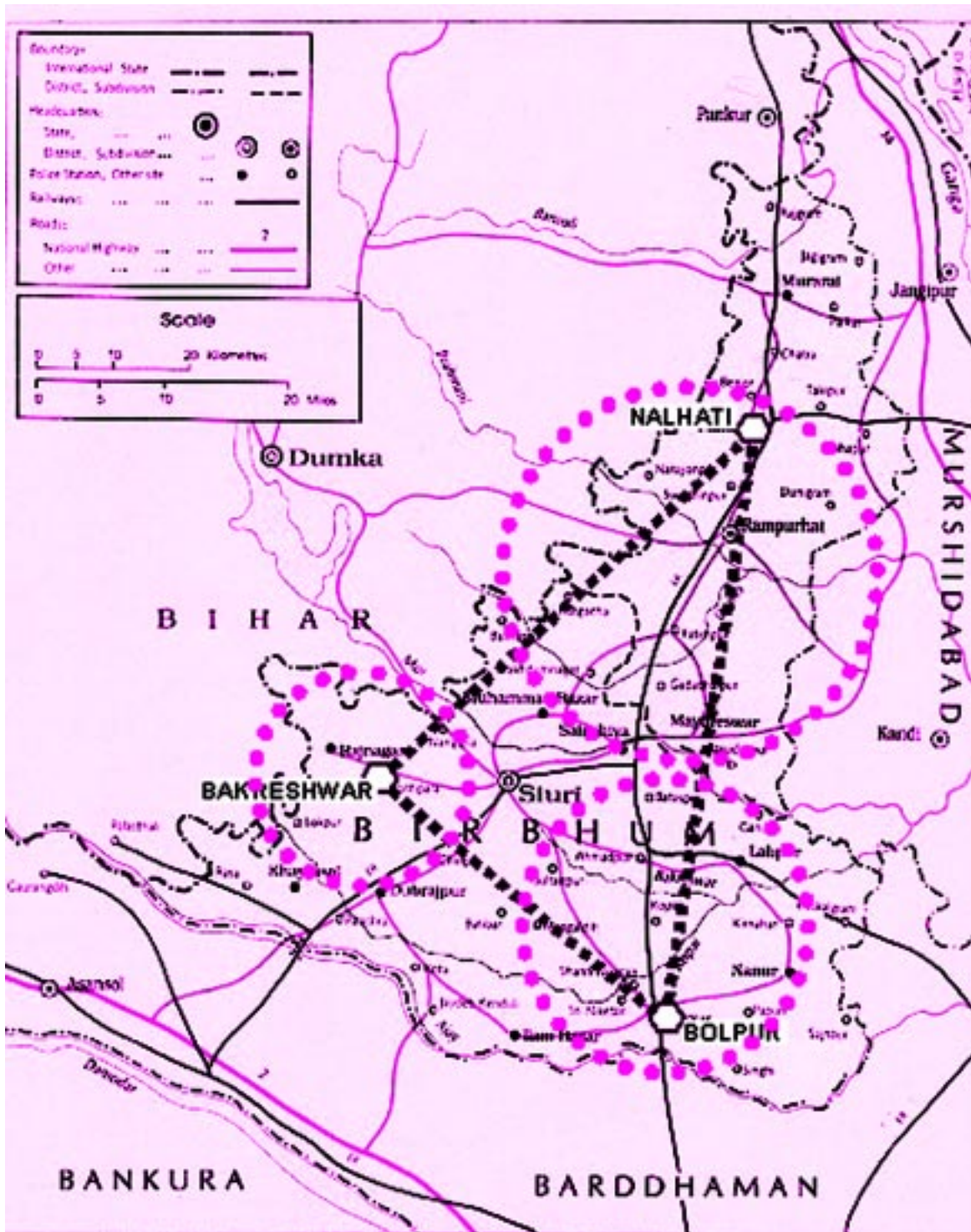
Appendix

<u>Main workers</u>: Main workers, according to Census definition, are those who had worked for the major part of the year preceding the date of enumeration i.e., those who were engaged in any economically productive activity for 183 days (or six months) or more during the year.

<u>Marginal workers</u>: Marginal workers are those who worked any time at all in the year preceding the enumeration but did not work for a major part of the year, i.e., those who worked for less than 183 days (or six months).

Table 4A1:   Population Features of Farmers in the Blocks of Birbhum for the year 2004-05

Name of Block	Bargadars	Patta holders	Small farmers	Marginal farmers	Agricultural labourers (2001)
Murarai-I	1987	6382	5602	8500	17710
Murarai-II	2926	6627	7360	10580	22166
Nalhati-I	6475	6075	6829	12682	27839
Nalhati-II	1998	4125	3010	4215	14573
Rampurhat-I	4304	7804	3000	9000	27079
Rampurhat-II	2361	4181	7000	7000	21908
Mayureswar-I	3267	7990	9986	11695	23599
Mayureswar-II	2901	7255	4400	7945	16912
Md.Bazar	4069	15274	4005	4675	21311
Sainthia	7982	7825	6475	6500	31594
Dubrajpur	14931	10653	3894	8410	25419
Rajnagar	7080	5807	3275	6850	10838
Suri-I	4572	6271	2480	6950	11551
Suri-II	3502	3897	4858	5758	15348
Khoyrasol	13304	7657	404	14330	16252
Bolpur-Sriniketan	8584	17806	6500	10000	34187
Labhpur	8107	8613	1817	5765	24282
Nanoor	9255	9776	3550	8360	28639
Illambazar	7975	8315	4865	5750	23423
Birbhum	**115580**	**152333**	**89310**	**154965**	**414630**

Notes:(1) Marginal farmer possesses agricultural land measuring up to 1 hectare. (2) Small farmer possesses agricultural land measuring more than 1 hectare & up to 2 hectares.

Sources: (1) Census of India, 2001; (2) B.L. & L.R.O. Birbhum; (3) B.D.O.s

Chapter V	Poverty and Vulnerability

5.1   *Conceptual distinction and policy relevance*

Vulnerability implies a predisposition of individuals or households to the risk of sliding down the well-being scale and becoming poor. However, the concept should be distinguished from *poverty*, no matter whether the latter is defined narrowly in terms of the lack of basic income or in terms of several dimensions including educational opportunity, health, nutrition, and so on. Vulnerability can be linked to any of the outcomes of human well-being and often such links are not simple. For example, links between health and vulnerability are complex because not only is ill health often the result of poverty and deprived living conditions, but poor health can also lead to impoverishment.

To understand the livelihood processes we need to distinguish three levels: assets, incomes and what Amartya Sen calls 'capabilities'. Households and individuals have assets, such as labour, human capital, physical capital, social capital, commons and public goods at their disposal to make a living. Households activAssets are used to generate income in various forms, including earnings and returns to assets, sale of assets, transfers and remittances. Incomes provide access to dimensions of well-being or human development: consumption, nutrition, health, etc., mediated by information, markets, public services and non-market institutions. Generating incomes from assets is also constrained by information, the functioning of markets and access to them, the functioning of non-market institutions, public service provision and public policy. Each transformation from one level to the next involves active decisions in conditions of risk.

Poor households face risks at various levels in this framework. Assets, their transformation into incomes and in turn their transformation into dimensions of well-being are all subject to risk. Examples include destruction due to environmental factors or conflict, the erosion of human capital due to health or unemployment, the collapse of asset markets and values, problems with property rights and their enforcement, risks in social capital and access risk to public goods and commons.

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While well-being and poverty are the ex-post outcome of a complicated decision process of individuals and households over assets and incomes, faced with risk, vulnerability is the ex-ante situation, i.e. before one has knowledge of the actual shocks that will occur. Vulnerability is determined by the options available to households and individuals to make a living, the risks they face and their ability to handle this risk.

Any policy to try to reduce vulnerability must start from understanding the nature of the vulnerability faced by individuals, households and communities. This will require an understanding of how observed outcomes are linked to incomes and assets. Furthermore, one must develop an understanding of the different sources of risks faced by household and their relative importance. Finally, one needs to study how risk affects assets, incomes and entitlements, ex-ante and ex-post, requiring a study of ways individuals, households and communities cope with risk. Policies to reduce vulnerability will include standard poverty reduction policies, aimed at improving levels and trends in well-being, but will need to be supplemented with policies focusing on risk and on fluctuations in well-being, such as related to seasonality.

Optimal policy design should aim to strengthen, complement and replace existing strategies to obtain maximal reduction in vulnerability. Replacement of traditional mechanisms is not necessarily problematic, although more needs to be known about the extent to which, how these changes are occurring and their net impact. Traditional coping mechanisms, such as via mutual insurance, is likely to come further under pressure with economic mobility, wealth differentiation, changing age profiles in the developing world. The security of access to land and commons is also coming under further pressure.

It is found in different studies that vulnerable groups targeted by public interventions are heterogeneous. The majority of the government schemes, whether they are managed at the local, district or state level, target households that are below the poverty line (BPL) or households belonging to scheduled castes (SC) or scheduled tribes (ST) without emphasising the distinction between different

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subgroups (for example, self employed SC versus agricultural labourers SC households or male headed BPL households versus female headed BPL households). The implications of recognising inter-group variations in risk-proneness are the following: (1) certain targeted households are vulnerable while others are not, which means that certain vulnerable groups are not adequately covered by public interventions because they are either excluded from BPL category or treated at par with other BPL families who are not vulnerable; (2) there are possible inefficiencies in targeting policies.

Understanding vulnerability requires that we need to think beyond the standard practice of stratification that categories people into poor and non-poor, SC/ST and others, and so on. In addition, observed disparities need to be linked with key individual, compositional and contextual factors. For example, we need to understand the possible interactions between the 'access to community amenities/ resources' and individual capacities (which mostly come from income and education). Unfortunately, limitations and inadequacy of available data handicap our understanding of this type of interaction.

Public interventions encompass various social risk management strategies. These strategies can be classified into three main categories. (1) risk prevention (i.e. preventing a risk as such); (2) risk mitigation (i.e. preventing *ex ante* the consequence of risks such as exclusion or impoverishment, examples being health insurance in case of illness, crop insurance in case of crop failure etc.); (iii) risk coping (i.e. managing *ex post* the consequences of risks (e.g. support price in case of fall in market price of some agricultural products, waiving farmer's loan in case of bad harvest etc).

Although highly inadequate to meet the requirement, micro-credit and micro-insurance (not very common) are two general forms of community interventions observed in many contexts as risk mitigation strategies. There are other forms of public interventions to protect the well-being of vulnerable population sub-groups (such as helping through various centrally sponsored schemes, compensation for a loss caused by natural calamities or similar reason, select products at subsidised price etc).

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Table 5.1 gives examples of various kinds of risk and the corresponding indicators that could roughly capture those risks in a given population. Even though the concept of vulnerability is to be distinguished from poverty, while empirically capturing the extent of vulnerability in a given population many indicators can be thought of which are indistinguishable from the indicators of poverty in a multidimensional framework.

Table 5.1: Various kinds of risk and vulnerability and corresponding indicators

Nature of risk and vulnerability	*Examples of possible indicator*
Imperfect information and knowledge about opportunities to cope with risk	Literacy and indicators of access to education and information (eg. exposure to media)
Land tenure insecurity, uncertain titles to other assets	Percentage landless, unregistered share-cropper, living in own house, ownership of homestead land
Asset damage due to climate or disaster	Percentage affected by flood etc
Lack of access to commons and public goods due to unclear entitlement	Percentage of poor dependent on common property resources, forest resources etc
Output risk due to climatic shocks, disease, conflict	Value of crop damage due to flood etc, loss of livestock (eg avian flu)
Output price risk	Indicators of movement in pre and post-harvest prices
Risk in asset returns from savings and investment (including inflation)	Changes in real rates of return (i.e. inflation-weighted) on investment in different activities
Uncertain access to inputs or cash flow support during production	Indicators of flow of credit (eg. credit-deposit ratio), percentage having access to subsidised input
Imperfect enforcement of contracts, such as payment for goods or services rendered	Percentage of organized workers etc
Uncertainty regarding rationing in public support, for example, risk of exclusion from safety net	Percentage having access to various transfers (eg. old age pension etc)
Food availability, price risk in food markets, and rationing risk	Percentage having access to PDS
Uncertain quality of public provision in health and education	Various indicators of health and education infrastructure

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5.2   Towards a block level vulnerability index

In Chapter 4 we discussed the nature of relationships between the percentage of population below the poverty line (BPL) and various other indicators at the block level. The percentage of BPL in a block is a highly aggregated indicator computed by adding scores on twelve indicators – first for each household and then identifying households with scores below a certain cut-off. Here we make use of the indicator-level disaggegated information to highlight the vulnerability aspect of the population across blocks. A number of indicators among the twelve used by BPL survey can be seen as capturing certain aspects of vulnerability.

Ownership or operational right to land is one of the most important aspects of livelihood security in rural areas, particularly in a predominantly agrarian rural economy like that of Birbhum. The absence of this right generally indicates vulnerability, even though there may be a few landless households whose members have managed to have a better life than a typical small or marginal farmer because of their higher levels of human capital. Therefore this indicator should be considered along with other indicators. We have taken the information on the nature of dwelling, food security, earning capability, working status, education, and special vulnerabilities due to old age, physical handicap, women-headed households etc. We have taken seven out of twelve indicators as they better correspond to our objective of identifying the vulnerable. Instead of taking the whole range of scores that each household is assigned in the process of BPL identification we have focused only on the lower end of each of the seven indicators and computed the percentage of households that may be considered vulnerable according to each of these indicators. In Table 5.2 the second column gives the percentage of households which neither own nor have any operational right on land. The third column gives the percentage of households having no dwelling house or living in a hut with one room. The fourth column presents the percentage of households that cannot even manage one square meal a day during the major part of the year. The fifth column presents the percentage of households that have no male member in the working age. The sixth column gives the percentage of households whose main income earner is a daily unskilled wage worker. The seventh column gives the percentage of households that have at least one child in the school going age who has never gone to school. The last column gives the percentage of

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households with disabled or chronically ill persons and also the households headed by a single woman. Given the possibility of misrevelation of information and the way BPL survey was designed, conducted and processed, one has good reason to be suspicious about the quality of the data. Nevertheless, one can still make use of the data with adequate care and judgement at various stages of one's analysis.

Table 5.2 Indicators of vulnerability across blocks, 2005

Block Name	Landless	Houseless or hut with one room	Less than one square meal a day	No adult male earner	Daily physical labour	Children never gone to school	Disabled chronically ill women head
MURARAI-II	68.7	67.7	4.4	8.8	69.5	51.9	34.3
SURI-II	58.5	67.4	8.9	8.5	56.6	21.9	21.4
MURARAI-I	71.7	61.8	6.5	6.4	64.1	26.8	19.2
NALHATI-I	60.1	65.1	10.0	8.3	56.3	18.9	22.3
RAMPURHAT-I	58.2	63.7	8.3	6.4	59.7	23.3	20.3
RAMPURHAT-II	65.5	70.8	6.4	4.5	62.2	13.3	23.3
MAYURESWAR-I	57.6	70.7	4.7	6.0	52.6	15.4	16.7
MOHAMED-BAZAR	56.9	66.8	3.9	6.4	54.6	18.2	12.1
NALHATI-II	67.9	55.9	2.4	5.0	64.3	21.0	20.3
KHAYRASHOL	56.8	60.5	4.6	5.7	52.9	17.5	15.4
BOLPUR-SRINIKETAN	55.1	59.5	3.5	6.2	52.8	20.7	14.9
SAINTHIA	57.1	65.9	3.2	5.7	51.1	14.4	11.6
DUBRAJPUR	53.0	61.3	3.7	6.0	49.8	22.4	14.7
MAYURESWAR-II	56.8	58.6	3.4	5.8	55.7	13.8	18.7
ILAMBAZAR	51.5	60.7	3.1	6.1	49.5	14.5	14.6
LABHPUR	50.3	65.4	2.4	4.5	45.4	15.7	13.2
SURI-I	67.7	46.7	3.7	3.3	48.3	13.2	11.8
NANUR	48.8	54.7	3.0	5.1	46.1	15.6	14.7
RAJNAGAR	41.9	63.0	0.9	3.7	43.5	14.8	7.6
Total	**58.0**	**63.8**	**4.7**	**6.0**	**54.6**	**20.1**	**17.6**

Source: BPL Survey, Government of West Bengal, 2005

Even though there may be a tendency to overstate one's deprivation if one anticipates the benefits that may come with BPL identification, the extent of misrevelation may not be high as most of the indicators that we have taken here are observable by the enumerators. However, 'agency problems' on the part of the enumerator also cannot be ruled out.

In Table 5.3 we present the composite index of vulnerability following roughly the same procedure of normalization as UNDP's Human Development Index. As expected, the five blocks, which have so far come up as relatively backward in terms of most human development indicators in our analysis, again turn out to be relatively more vulnerable in terms of our composite index of vulnerability. In addition, Suri II turns out to be in the league with these five. The case of Rajnagar is somewhat puzzling. Its least vulnerable status does not go well with some other indicators like child malnutrition, which is high according to the data collected by the District Project Office of ICDS. The truth perhaps lies somewhere in between.

Table 5.3 Ranking of blocks according to the index of vulnerability

Block Name	Index of landless-ness	Index of shelter	Index of food insecurity	Index of earning capability	Index of working status	Index of education deprivation	Index of special handicap	**Vulnerability index**
MURARAI-II	0.90	0.87	0.38	1.00	1.00	1.00	1.00	0.88
SURI-II	0.56	0.86	0.87	0.95	0.50	0.22	0.52	0.64
NALHATI-I	0.61	0.76	1.00	0.91	0.49	0.15	0.55	0.64
MURARAI-I	1.00	0.63	0.62	0.56	0.79	0.35	0.43	0.63
RAMPURHAT-I	0.55	0.71	0.81	0.56	0.62	0.26	0.48	0.57
RAMPURHAT-II	0.79	1.00	0.60	0.21	0.72	0.00	0.59	0.56
NALHATI-II	0.87	0.38	0.16	0.44	0.8	0.20	0.48	0.48
MAYURESWAR-I	0.53	1.00	0.42	0.49	0.35	0.06	0.34	0.46
MOHAMED-BAZAR	0.50	0.83	0.33	0.56	0.43	0.13	0.17	0.42
Birbhum	**0.54**	**0.71**	**0.42**	**0.30**	**0.43**	**0.18**	**0.37**	**0.42**
KHAYRASHOL	0.50	0.57	0.41	0.52	0.36	0.11	0.29	0.39
MAYURESWAR-II	0.50	0.49	0.27	0.51	0.47	0.02	0.42	0.38
BOLPUR-SRINIKETAN	0.44	0.53	0.29	0.44	0.36	0.19	0.27	0.36
SAINTHIA	0.51	0.80	0.25	0.49	0.29	0.03	0.15	0.36
DUBRAJPUR	0.37	0.61	0.31	0.45	0.24	0.24	0.27	0.35
ILAMBAZAR	0.32	0.58	0.25	0.22	0.23	0.03	0.26	0.27
SURI-I	0.86	0.00	0.31	0.33	0.18	0.00	0.16	0.26
LABHPUR	0.28	0.78	0.17	0.00	0.07	0.06	0.21	0.22
NANOOR	0.23	0.33	0.23	0.07	0.10	0.06	0.27	0.18
RAJNAGAR	0.00	0.68	0.00	0.49	0.00	0.04	0.00	0.17

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5.3   Vulnerability due to flood

Almost all the rivers flowing through Birbhum are seasonal in nature. They have their maximum flow in the monsoon, but dry up in summer. The district experiences occasional floods due to heavy rainfall during the monsoon months coupled with breaches of river embankments. Excess rainfall in the upper catchment areas of the major river valley projects such as Mayurakshi, Hinglow, Dwarka etc raises the level of water in the reservoirs and when the excess water is released large areas of the district get flooded, which in turn seriously affects the lives of people. Proneness to disasters such as this has important implications for the district's human development strategy.

The main dam in this region is on Mayurakshi river at Massanjore in the state of Jharkhand. Its optimum capacity is 5 lakh acre feet. Apart from this there are six main barrages/dams in the district – Tilpara barrage on Mayurakshi with a capacity of 7350 acre feet, Hinglow dam on Hinglow river with a capacity of 13865 acre feet, Deucha barrage on Dwarka river with a capacity of 1400 acre feet, Baidhara barrage on Brahmani with 440 acre feet, Kultora and Kadisala on Kopai and Bakreswar respectively with negligible capacity. However, the actual capacity of all the dams and barrages come down to an alarmingly low level because of siltration for a long time.

The district experienced a devastating flood in September, 2000. 18 out of 19 blocks and 115 out of 169 GPs so that almost one third of the population of the district were affected. 228 human lives and 7341 animals were lost. It demolished a huge number of houses and caused damage to the standing crops of value Rs 11, 530 lakh. Another devastating flood occurred in 2006. Rampurhat-II, Murarai-I & II, Mayureswar-II, Sainthia, Suri-I, Mahammad Bazar, Bolpur-Sriniketan, Illambazar, Labhpur and Nanoor were the worst affected blocks during this fllod. About 10 lakh people were affected and 18 human lives were lost. Total damage was estimated at Rs 6300 lakh.

A detailed *Disaster Management Plan* for the district has been formulated. The plan contains both structural and non-structural measures. The structural measures include construction and strengthening of embankments, anti-erosion works, improvement of road communication, drinking water schemes, and so on. The non-structural measures include collection of rainfall data from Central Water Commission, water level readings from the Irrigation and Water Department, keeping warning system

in order, storage of food, medicines, relief material, drinking water facility, making arrangement for rescue operations and shelter points, preparing inventories of various equipments like excavator, bulldozer, tractors, dumpers, tree-cutting equipments etc.

An interesting organizational innovation can be seen in that desiltation of the reservoir is now being done as part of the NREGS work, even though its share in total expenditure on NREGS is small. The last column in the following table shows that for Birbhum as a whole, 6.8 percent of total expenditure has gone to finance flood control work. However, in a few blocks like Nalhati-II, Mayureswar-I and Murarai-I, the percentage is much higher.

Table 5.4   Flood control work with NREGS fund (up to March 2007)

(Drainage in water logged areas, construction or repair of embankment etc)

	Completed expenditure on flood	Ongoing expenditure on flood	Total expenditure on flood	Total expenditure on all works	% expenditure on flood
Suri-I	1286902	467296	1754198	35751536	4.9
Suri-II	1055044	45000	1100044	41836881	2.6
Md. Bazar	964432	984966	1949398	48573869	4.0
Sainthia	1107355	896420	2003775	54331061	3.7
Rajnagar	0	0	0	35885059	0.0
Dubrajpur	509511	0	509511	57973505	0.9
Khoyrasole	2006451	1063743	3070194	56781277	5.4
Bolpur-Sriniketan	3503605	6156251	9659856	92838810	10.4
Illambazar	512878	92158	605036	48782110	1.2
Labpur	3603509	4424493	8028002	86689052	9.3
Nanoor	1110505	1751217	2861722	60440575	4.7
Mayureswar-I	1497716	5147020	6644736	36966378	18.0
Mayureswar-II	1253384	465230	1718614	38202789	4.5
Rampurhat-I	475765	437640	913405	31433971	2.9
Rampurhat-II	3432587	170287	3602874	36187194	10.0
Nalhati-I	3560231	1599236	5159467	47970964	10.8
Nalhati-II	3456787	658432	4115219	23748755	17.3
Murarai-I	3028562	782680	3811242	28770643	13.2
Murarai-II	1151408	1259636	2411044	27997162	8.6
District	**33516632**	**26401705**	**59918337**	**879364131**	**6.8**

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5.4 Vulnerability due to excessive fluoride in water

The groundwater resources in 95 villages of Birbhum district are reported to have excess flouride content. The effect of fluoride on human life is apparently paradoxical. In small doses it has remarkable influence on the dental system, while in higher doses, it causes dental and skeletal fluorosis. In India 62 million people including 6 million children are affected with fluoride related health diseases. Excess fluoride in ground water is reported from 17 States in India, including West Bengal. It may be worth mentioning that the extent of fluoride occurring naturally in groundwater is governed principally by composition of the host rock and hydrology. Areas with semi-arid climate, crystalline rocks and alkaline soil are mainly affected. In general, the presence of fluoride may be due to low-level basaltic volcanic activity or even presence of hot spring water.

In West Bengal detection of fluoride contamination is a recent phenomenon. Fluoride contamination of ground water in West Bengal was first detected in 1997 in Nalhati-I block in Birbhum district. According to Rapid Assessment of Fluoride Contamination in Ground Water conducted by the Fluoride Committee with the help of UNICEF, excess fluoride was detected in 665 habitations in West Bengal spread across 43 blocks in 7 districts.

In Birbhum district initially 4 blocks, namely, Nalhai-1, Dubrajpur, Rampurhat-1 and Suri-2 were detected as fluoride affected blocks by SWID. After completion of fluoride analysis of the scheme under SWID, it has been observed that not only the fluoride content in ground water in the aforesaid blocks are increasing but also in five more blocks, namely, Khayrasole, Md. Bazar, Rajnagar, Suri-I and Murarai-1, i.e., whole of the North Western zone of the district, fluoride concentration was subsequently detected above the permissible limit. Altogether 9 blocks comprising 49 mouzas are affected by fluoride contamination.

It may be mentioned here that the presence of fluoride in the North Western part of Birbhum district may be from the sources of steady influx of fluoride into the surface and ground water by the leaching of highly soluble Villiaumite (NaF) present in the volcanic ash, exhalations and sublimates related to the Rajmahal volcanic zone. Detailed list of blocks and the mouzas in the blocks which are affected by fluoride contamination are given in Table 5.5.

Table 5.5   Mouzas affected by excess fluoride in water

Blocks	Mouzas
Nalhati-1	Lakshminarayanpur and Kartickdanga
Murarai-1	Bhatra
Rampurhat-1	Narayanpur, Kaura and Ayash
Md. Bazar	Abdarpur
Suri-1	Lakhindarpur, Chandipur, Ranpur and Adda
Suri-2	Chatra, Khanna, Rostanpur, Januri and Bansankha
Rajnagar	Ghoshpara Saluka and Baraghata, Kushmasul, Musaboni, Uparpara, Sahabad, Kushma, Shankarpur, Malpara, Kumarbad and Tantipara
Dubrajpur	Bakreahwar, Kendragaria, Jamrand, Panchra, Gopalpur, Rampur, Jhapartala, Dechandrapur, Tapaspur, Mamudpur, Teliadangal and Ellema
Khayrasole	Tentulipukur, Ghoshpara and Laubere, Naopara, Kaithi, Barra, Kalyanpur, Sahapur, Anandanagar, Jahidpur, Haripur and Bhaddy
Total (9 Blocks)	**49 Mouzas**

It has been found that very alarming condition regarding fluoride content is experienced in both the mouzas of Nalhati-1 block mentioned in Table 5.5. In these mouzas there are visible signs of tooth decay among children. But surprisingly fluorosis patients have not been seen in that area; possibly people do not drink much water from those particular tubewells. But some families of the villages belong to Laubere mouza of Khayrasole have structurally weak enamel of the teeth, dental molting and skeleton deformation, which are the basic symptoms of fluorosis. More importantly, in some cases highly fluoride contaminated water samples are collected from tube wells, which are situated very close to primary or high schools in various mouzas of these blocks. Students of these schools used to drink water from these tube wells. It is known that children are affected more by fluorosis than adults possibly because their teeth and bones are still forming. The detailed list of the schools affected is given below.

5

Table 5.6 Schools with fluoride contaminated drinking water facility

Name of the schools	Block	Mouza
Ellema Primary School	Dubrajpur	Ellema
Kendragaria PS	Dubrajpur	Kendragaria
Gopalpur PS	Dubrajpur	Gopalpur
Anandanagar PS	Khayrasole	Anandanagar
Bhaddy PS	Khayrasole	Bhaddy
Sahapur PS	Khayrasole	Sahapur
Abdarpur PS	Md. Bazar	Abdarpur
Jahanabad PS	Rajnagar	Uparpara
Kushma PS	Rajnagar	Kushma
Shankarpur PS	Rajnagar	Shankarpur
Mrityunjoypur No. 2 PS	Rampurhat-1	Narayanpur
Adda S.P.P. High School	Suri-1	Adda
Ranpur PS	Suri-1	Ranpur
Khanna PS	Suri-2	Khanna
Rostanpur Haripur PS	Suri-2	Rostanpur

Following the Rapid Assessment of 43 blocks of 7 districts including Birbhum, a Joint Plan of Action in consultation with the Fluoride Committee has been prepared by UNICEF which would take up complete testing of all the public tube wells in the affected blocks and take the following measures:

1. Provision of alternate safe sources in place of unsafe sources.
2. Surface water based water supply schemes.
3. Hand Pump attached Fluoride Removal Plants.
4. Supply of water from traditional sources.
5. Rain Water Harvesting.
6. Household treatment.
7. Artificial recharging including dilution of fluoride by injecting water.
8. Identification of Fluorosis cases at early stage and remedial measures.
9. Communication and awareness generation.

5.5 *Occupational health hazards*

Stone crushing is one of the major non-agricultural activities in Md Bazar-Nalhati-Rampurhat area. There are around 450 stone crushing units in this area. While it provides a relatively more attractive

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livelihood option to a good number of people who lack education and skill, a costly trade-off is being made by them between higher earning and serious health hazard. During the different processes of operation in stone crushing, dust is evolved and the evolved dust if contains free silica in higher percentage may lead to silicosis, most dreaded of occupational diseases. The Central Pollution Control Board observed that around the crushing units, respirable particulate matter (RPM) and suspended particulate matter (SPM) were several times higher than the prescribed limit value applicable to this industry. The free silica estimation of the settled dust by FTIR method revealed that it is in non-detectable range. Dr. Rupak Ghosh, a Chest Specialist of Suri Sadar Hospital, conducted a research study to assess the working environmental conditions and health status among 402 stone crushing workers (control male 74, female 49, exposed male 143 and female 135) in the Panchami area of Md. Bazar block with the help of other Government departments.

The control and exposed subjects according to sex were taken in such a way that they were comparable. A substantial number of male subjects of both the groups were smokers and used to take country liquor. They were working for about 8-9 hours per day. Unskilled workers in the crushing units are predominantly tribal women employed on a contract basis.

Apart from vertigo and weight loss and pain in abdomen among the exposed group possibly due to irregular food habits, non-hygienic food intake, bad personal hygiene and worm infestations, distribution of respiratory symptoms suggested that cough, cold and sputum had significantly higher prevalence rates in exposed group compared to control group. Breathlessness and chest pain were comparable. Exposure to different climatic conditions might have its effect on respiratory system. However, exposure to dust was one of the most important aspects needing due consideration for causation of these complaints. The complaints related to musculo-skeletal system such as headache, backache, weakness, joint pain and muscular pain were more in exposed group. The repetitive movements, stress and strain and carrying heavy loads might lead to osteoarthritis of the joints. Bad postures might also be responsible for the aches and pains.

The restrictive type of pulmonary function impairments were more in exposed group but the obstructive and combined type of impairments were more in control groups. The restrictive type of impairments is a feature of dust related morbidity involving the lungs. The radiological picture of the chest x-rays suggested about 3 percent of suspected pneumoconiosis and about 2 percent of definite

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pneumoconiosis. Considering the free silica level in non-detectable range, the prevalence rates were on lower side compared to the environmental exposure, presumably because their duration of exposure is low. Nevertheless, protective measures should be undertaken to prevent pulmonary impairment in both groups of workers.

5.6   Vulnerability due to such epidemic as avian flu

At the beginning of 2008 there was an outbreak of avian influenza (popularly known as 'Bird Flu') in several blocks of Birbhum. In the recent years there had been sharp increases in the stock of animal resources in general and poultry birds, in particular, in the district. With overcrowding in land based occupations and stagnating income from land people find animal husbandry a feasible alternative economic activity. The popularity of the sector is supported by the fact that the credit disbursement to the poultry sector in the district jumped by more than 600 per cent between 2004-05 and 2006-07, according to NABARD (Table 5.7).

Table 5.7   Credit disbursement in the poultry sector

Year	2004-05	2005-06	2006-07
Credit in Rs lakh	32.31	63.17	230.29

Source: Potential Link Credit Plan, NABARD, 2007

On January 16, 2008, the operation for eradication started in five rural blocks, viz. Rampurhat I & II, parts of Nalhati I & II, Myureswar I; and the entire areas of Rampurhat and Nalhati Municipalities. Soon after, operations had to be extended to other blocks as the incidence of outbreak spread to other districts as well. Among the 19 blocks, 17 (excepting Murarai I & II) were affected, and among the six municipalities three were affected (Rampurhat, Nalhati and Suri). It was an enormous task to identify the affected areas and birds to be culled as the poultry units are mostly of backyard type and therefore highly dispersed – a large number of households rearing only a few birds each.

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About 13.5 lakh people live in the 1405 affected villages of the district. Roughly one-third of the poultry population has been eradicated through the culling operation. Around 2.14 lakh families have been affected by the loss of their poultry stock. Besides, there are more than 200 Self-Help Groups who had taken bank loans for poultry have been affected. The numbers of affected people multiply as we add all those whose livelihood depends on selling, transporting and other direct and indirect activities related to the poultry sector. Table 5.8 presents blockwise number of affected families.

Table 5.8 Effect of bird flu across affected blocks

| Block	No. of birds culled	No. of affected families
Suri - I	226922	12457
Suri - II	23637	3777
Md. Bazar	87489	7223
Sainthia	2835	371
Rajnagar	8174	1264
Dubrajpur	4365	352
Khayrasole	20777	3482
Bolpur–Sriniketan	39777	1727
Illambazar	13675	2591
Labpur	29758	26570
Nanoor	96601	2491
Mayureswar - I	192775	33140
Mayureswar - II	123070	11588
Rampurhat - I	145618	41663
Rampurhat - II	222784	39864
Nalhati - I	84258	20239
Nalhati - II	19871	4889
Total	**1342386**	**213688**

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Although Rs 4.8 crore as culling compensation and Rs 5.2 crore as one-time grant – altogether Rs 10 crore was disbursed to families affected by the epidemic, it is not easy for the affected families to recover from the livelihood shock they experienced. Not all the families belong to the poorest of the poor, but in terms of proneness to vulnerability they too are in the need of special policy support.

Chapter VI	Inter-group disparities

The presence of a significant number of people belonging to the Scheduled Castes, Scheduled Tribes and the Muslim community in the district, who are generally more disadvantaged than others, makes it important to focus on various forms of inter-group disparities. We noted in Chapter 1 that according to 2001 Census, the share of SC population in Birbhum was 29.5 per cent as against 23 per cent in West Bengal and the share of ST was 6.7 per cent as against 5.5 per cent in West Bengal. These two categories of the disadvantaged population together constituted 36.2 per cent, which is higher than the corresponding percentage share for West Bengal (28.5 per cent). Muslims, who constitute 35.1 per cent of the total population of Birbhum, are largely concentrated in the rural areas. While 8.6 per cent of Birbhum's total population lives in urban areas, only 4.3 per cent of the total Muslim population lives in urban areas. In other words, while the share of Muslims in total population is 35.1 per cent, their share in urban population is only 17.6 per cent. Low share of Muslim population in the urban areas indicates that a large section of the community does not get the opportunity to enjoy better amenities of urban life.

In 14 out of 19 blocks, two-thirds of the population are socio-economically disadvantaged, i.e. they belong to either of the three communities – SC, ST and Muslims. In five blocks the share of the population belonging to these groups exceeded 80 per cent. They are Nalhati-I, Nalhati-II, Murarai-I, Murarai-II and Rampurhat-II. Curiously, these are the blocks which have very high population density. High population density lowers the per capita availability of agricultural land. In a high population density area not many people can productively engage in agriculture.

We also observed in Chapter II that in the rural areas of Birbhum, there is not much difference in the rates of literacy between Muslims and others. In urban Birbhum, however, they differ significantly. The groups that really lag behind others in terms of literacy in both rural and urban areas of the district belong to the scheduled tribes.

Figure 6.1 Literacy rates among SC, ST and Muslims

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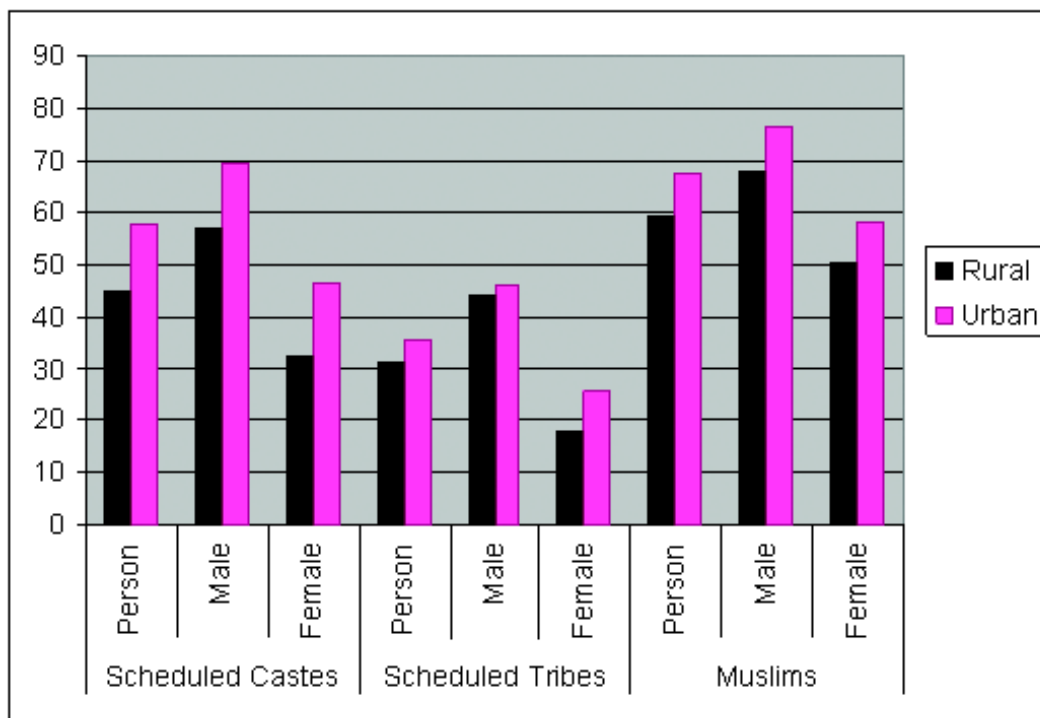
Economic disparity then and now

In 1933 Professor Hashim Amir Ali and his student-colleagues Tara Krishna Basu and Jiten Taluqdar studied a cluster of villages near Sriniketan. In an article titled "Rural Research in Tagore's Srineketan", which appeared in *Modern Review* in May, 1934, Professor Ali wrote:

"When all this mass of data was taken up for analysis and the population classified into economic groups it was found that such grouping on a purely economic basis corresponded remarkably closely with the social groupings according to caste and religion. As soon as we saw what caste a particular family belonged to and noted whether that caste was among the high, middle or low castes of Hindu society or whether it was a Mussalman or a Santhal family, we could, with a fair degree of certainty, indicate what its economic status was likely to be. Considering this close correspondence, there was no way but to analyse village society not as homogeneous whole but as consisting of five heterogeneous economic groups. The economic level of the high castes was higher than that of the middle castes. Third in order followed the Mussalmans, also with a distinct economic level, but following closely the *Nabashaks* while the low castes such as Hadis, Doms, Muchis were far below, only Santhals occupying a still lower position".

Professor continues

"….in these villages we do not have to ask a man's occupation; we have only to know his caste or his religion and we know his economic position".

Is this remarkable correspondence between economic position and the position in the caste-community hierarchy that was so typical of the village society in Bengal seventy five years ago only a thing of the past?

Three researchers from Pratichi Trust[1] have studied the same cluster of villages recently. They find that land remains a prime source of livelihood for most of the households in the village, although fifty seven percent of the households in the village do not have any cultivable land. Marginal and small farmers constitute 71 per cent of the landholders (Table 6.1). Landlessness is more among the SC (56.5 per cent) and ST (89 per cent) households than among the caste Hindus (23.6 per cent)[2]. Few SC households own more than 2.5 acres of land. However, 14 out of 55 caste Hindu households have more than 2.5 acres of land. The Teli community in Binuria village has a very special history. Earlier they had the thriving business of oil pressing and thus managed to acquire land with the profit from oil pressing business. Later, when the oil pressing business was on the decline, they could still thrive on earnings from land.

Table 6.1: Cultivated landholding status of the households

| Size of landholding	Number of households				
	SC	ST	Caste Hindus	Muslim	Total
Landless	48 (56.5)	54 (88.5)	13 (23.6)	1 (50)	116 (57.1)
Up to 2.5 acres	35 (41.2)	6 (9.8)	28 (50.9)	1 (50	70 (34.5)
2.6 – 5 acres	2 (2.4)	1 (1.6)	10 (18.2)	-	13 (6.4)
5.1 – 7.5 acres	-	-	3 (5.5)	-	3 (1.5)
Above 7.5 acres	-	-	1 (1.8)	-	1 (0.5)
Total	85 (100)	61 (100)	55 (100)	2 (100)	203 (100)

Source: Rana et al.

Thus, it appears that the caste Hindus, despite constituting only 27 per cent of the total households, own 77 per cent of the total cultivable land, while the SC community forming 42 per

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[1] Kumar Rana, Abdur Rafique and Arindam Mukherjee, *Pratichi Village Studies – I: Binuria, A Village in Perspective*, mimeo.

[2] The number of Muslim households is insignificant in the case village.

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cent of the total households own only 17 per cent of the cultivable land. Land ownership by the ST households is extremely low – only 4 per cent, though their share in the village population is 30 per cent. In other words, in terms of possession of the most important asset in rural society, i.e. land, the relative positions of different social groups have not changed much in the past seventy five years. This points to the lack of opportunities for upward social mobility that a large number of people belonging to the socially disadvantaged groups face even today. One kind of response of the state has been designing various schemes for the people below poverty line (BPL). For the benefits to reach the poor, first identification of who is poor is very important. From the data on the percentage of BPL household in the blocks, we can examine if they are associated with the percentage of disadvantaged population across blocks. It seems that the two are highly correlated, with a correlation coefficient value of 0.54. This is reasonable and in the expected direction. We present the scatter diagram below (Figure 6.2) showing this correlation.

Figure 6.2 Correlation between percentages of BPL households (2005) and disadvantaged population (2001) at block level in Birbhum
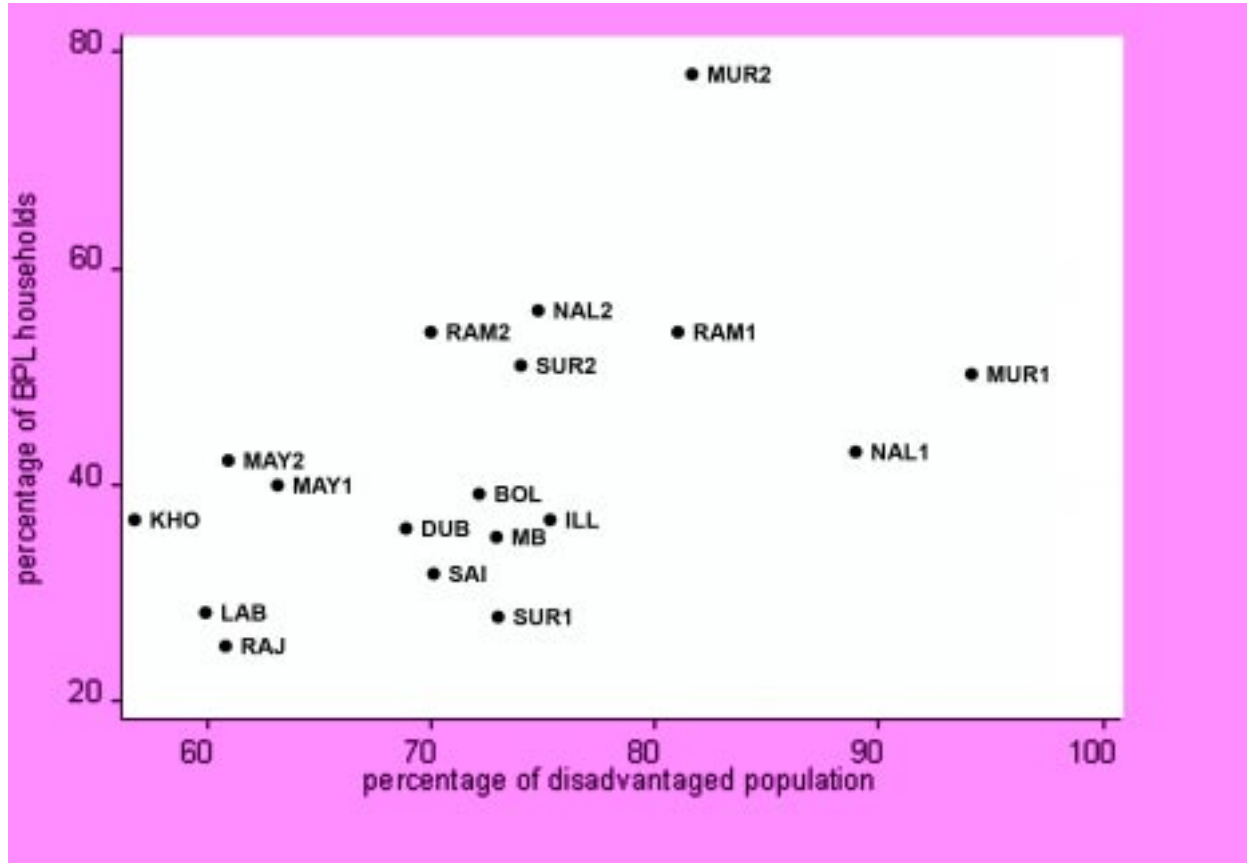
In what follows we present two cases of successful interventions in helping groups of disadvantaged people to earn their livelihood in a sustained way.

Collective effort to restore greenery

The famous jungle of Ilambazar in Birbhum that was on the verge of extinction 12 years ago has come back to life. The villagers living inside the jungle of Ilambazar now firmly believe that a single live tree can help them earn more than a dead one. The people living in 32 villages situated within the jungle used to cut trees illegally and sell those as timbers and firewood. But the situation has undergone a dramatic change over the past 12 years. The Forest Department formed 12 'Bonosamrakshan committees' comprising the villagers and made them understand how their survival was linked with that of the jungle. Now the villagers have realised that by selling thalis made of Shaal tree leaves and Toshor Ghuti (mushrooms) – abundantly available in the forest, they can take care of their livelihood. They have recognised this as a better option compared to the risky and illegal tree-felling. About 1,800 hectares of the jungle area have been demarcated into 12 zones. Twelve such committees have been constituted and deployed to save the jungle. Residents of 32 villages are involved in these committees. Two persons from each village are deployed to help the forest guards. A large number of those who have benefited from this effort belong to the Scheduled Tribes. [*Source: The Statesman*]

SHGs success in providing livelihood security through Tasar culture

Tasar culture is a forest based economic activity attuned to the nature. The laterite soil of the western part of the district where agriculture is less suitable, Arjun trees are abundantly grown, and these are needed for rearing of Tasar silkworm. The steady demand for Tasar products in and outside the country has gradually opened up immense opportunities for expanding the production base. Most of the workers engaged in Tasar culture belong to the disadvantaged groups, in general, and Scheduled Tribes in particular. A large number of them are women.

The Directorate of Sericulture in association with the district administration developed both on-farm and non-farm activities under ISTP, RSVY, NREGS. Several schemes have been taken up under these

6

projects for economic plantation of Arjun by involving SHGs in vested land or land leased in by the SHGs. One such plantation is located at Saparajpur (Laghata) mouza of Labhpur No.1 Gram Panchayat in Labhpur block. In 2005 the plantation was handed over to two SHGs, namely, Tarasankar Smriti SHG having seven women and three men members, and Sidhu Kanu SHG with all ten male members. All the members of these two SHGs belong to the ST community. They were given training on Tasar rearing, maintenance of Arjun garden and were provided with the necessary implements. Rearing started with a modest number of Tasar layings at the beginning. But in the most recent crop season, i.e. November to January, the two groups reared 2500 disease free Tasar layings under the technical supervision of the departmental staff. The layings were supplied by the government. The group members were able to harvest 146,560 Tasar cocoons and earned Rs 129,150. Thus the members earned a good amount of money in three months' time by taking up Tasar culture as a spare time activity.

For marketing their cocoons they got help from Kalipur Resham Shilpa Samabaya Samity Ltd – a Sericulture Cooperative Society in Karidhya in Suri-I block. The Society bought the entire harvest of cocoons for their members who are engaged in reeling, weaving and production of Tasar fabrics. The Society reportedly earns profit. Tasar culture, with concerted efforts from the Sericulture Directorate, the district administration and the Panchayats, can be an economically viable production activity that can bring benefits to a large number of people, especially to the disadvantaged groups living in rural areas where there is little scope for agriculture.

Chapter VII | Women and children

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Any discussion on the unequal achievement on human development indicators between women and men has to be in relation to the opportunities women get in different spheres of life. How many women are able to read and write compared to men? What is the probability of a girl child to drop out of school? How difficult is it for a pregnant mother to access the necessary ante-natal care? Do women and men have equal access to the different segments of the labour market? This can go on. While some of these questions can be answered with the available data, albeit imperfectly, some others can hardly be answered for lack of reliable data.

7.1   Sex Ratio, female literacy and girls' enrolment in schools

According to the Census 2001 data, the overall sex ratio in Birbhum district was 950 females per thousand males, which was above the West Bengal average of 934. Historically, Birbhum was one of the few districts with sex ratios favourable to females in the beginning of the 20th Century.[1] Data from 1901 Census to 1931 Census show Birbhum having sex ratios exceeding 1000 females per thousand males. In fact, Birbhum is among the few West Bengal districts that started with better sex ratios at the beginning of the 20th century. The sex ratios of Birbhum and West Bengal are presented in Figure 7.1. Between 1991 and 2001, sex ratio marginally improved from 946 and 950. The large rural-urban gap in sex ratio which was found in 1991 has totally disappeared in 2001. This happened apparently because of large improvements in sex ratios achieved in almost all urban areas.

Though the overall sex ratio has not come down in Birbhum between 1991 and 2001, in some blocks the sex ratio has decreased. These blocks are Nalhati-I, Murarai-I, Suri-I, Khoyrasole, Bolpur-Sriniketan and Labhpur. It is also a matter of concern that the sex ratio in 0-6 population has come down not only in some blocks (Murarai-I, Mayureswar-II, Dubrajpur and Bolpur Sriniketan), but also in municipalities like Rampurhat and Bolpur.

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[1] The districts of Bankura, Birbhum and Murshidabad show favourable sex ratios for first three decades of the beginning of the 20th Century.

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Figure 7.1: Sex ratio in West Bengal and Birbhum (1901-2001
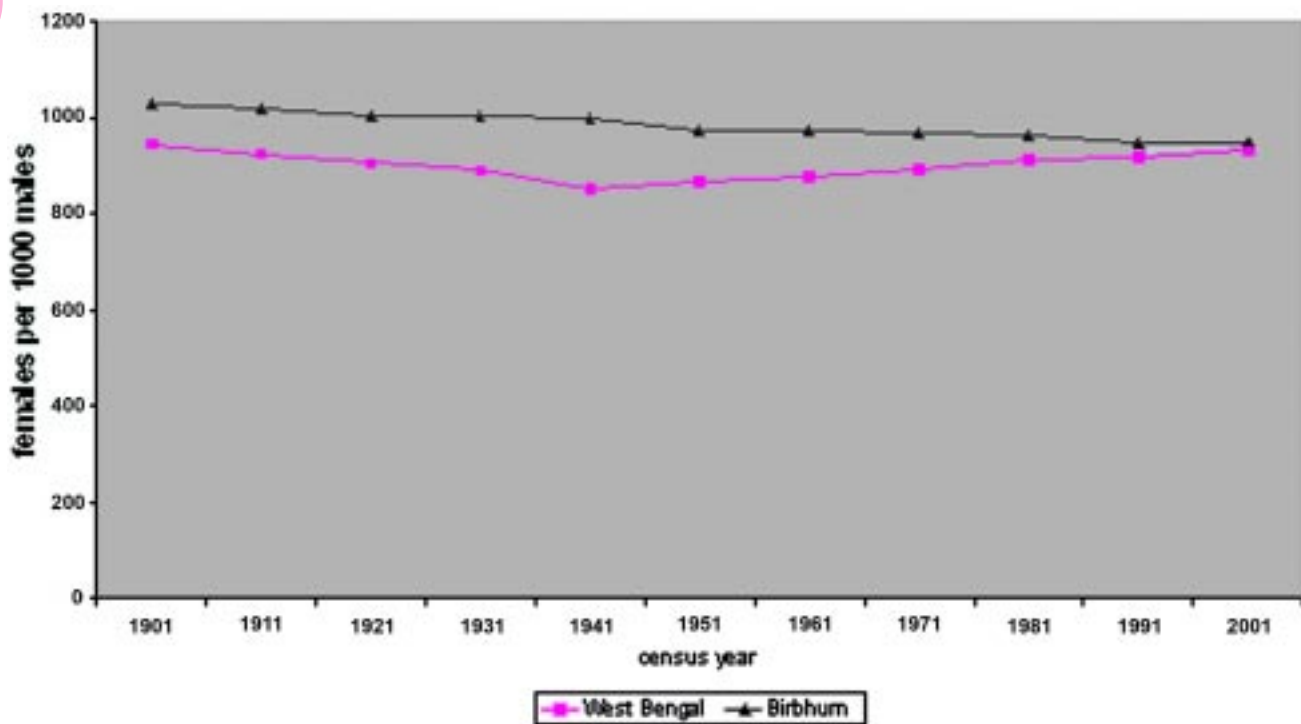
In Chapters II and III we discussed the unequal levels of achievement by men and women on various indicators of education and health. We noted that the male-female gap in literacy in the district is slightly wider than that in West Bengal as a whole. The gap is more in rural areas than in urban areas. And since Birbhum has very low level of urbanization, the overall male-female gap in literacy carries an overwhelming weight of the larger gap in rural areas. However, what is more important is that between 1991 and 2001 female literacy rates increased more than male literacy in all the blocks indicating that the male-female gap in literacy has been coming down throughout the district. Yet, substantial gap still exists.

It is now well-known that there is a strong correlation between female literacy and various other indicators of social development. In particular, evidence shows that female literacy has a positive influence on fertility. We do not have available data on total fertility rate across blocks. But we can use the percentage of children age 0-6 in total population as a proxy for fertility. We plot these figures against female literacy for blocks (Figure 7.2) and find a good negative correlation between the two (the correlation coefficient being – 0.66).

Figure 7.2: Correlation between female literacy and percentage of population age 0-6, 2001
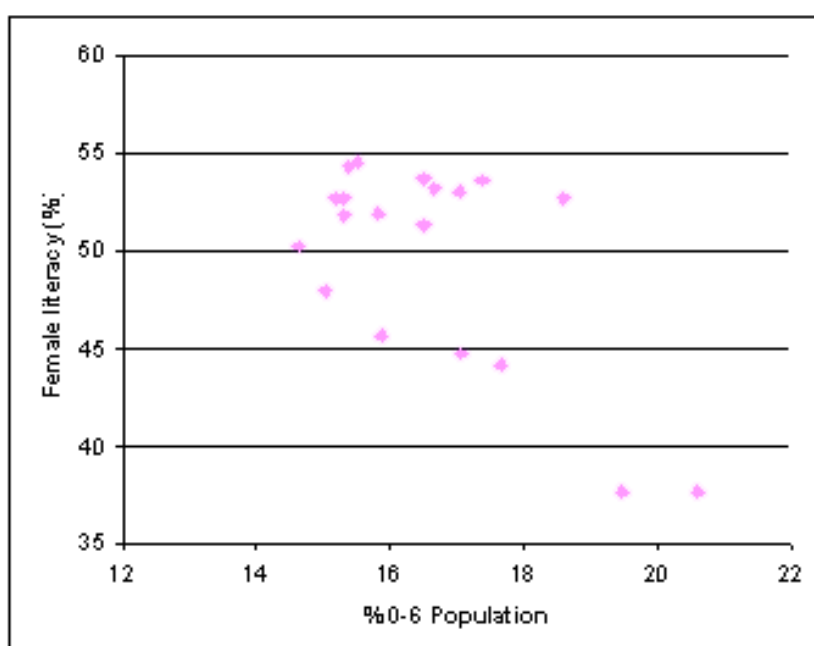
A remarkable achievement in the sphere of education in the recent years is that at least at the primary and upper primary level there is not much difference between the enrolment ratios for girls and boys. However, beyond the upper primary level the difference starts showing up sharply (Figure 7.3).

Figure 7.3: Ratio of enrolment of girls to boys in Classes I to XII, 2006

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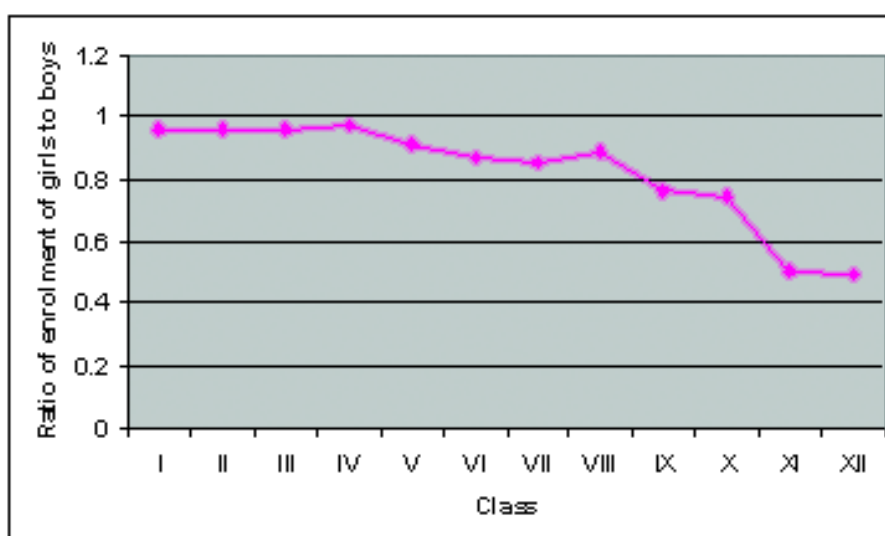
7.2   Women's work participation

Women's participation in the labor force has long been central to research on gender inequalities. Much of this research has sought to find out how and to what extent labor force participation contributes to women's empowerment and well-being and reduction of gender inequalities. Scholars on gender inequality tend to emphasize the importance of women's economic role in determining their position in other spheres, from household bargaining to representation in state governance. Empirical research has found that women's labor force participation is associated with less bias against the girl child within the family, reduced mortality and better health for girl children, and with more say in some areas of household decision making. Of course, many conditions may limit the liberating impacts of work outside the household (e.g., who controls the income from such work), and, even in the best of circumstances, outside work usually implies a dual burden for wives and mothers. Nevertheless, it is less often asserted that women's labor force participation sometimes may actually restrain women's progress toward more equality. More women's labor force participation under economic stress may lead to girls being withdrawn from school and put to work such as domestic chores and sibling care; the frequency of girls' work may restrict their schooling, which widens the gender gap in basic education. None of these linkages is inevitable, though. Nevertheless, the general pattern across India provides a cautionary message and reminds us of the multidimensionality of gender stratification.

Understanding the multidimensionality of gender stratification also helps us think about other gendered consequences of women's labor force participation. While the frequency of women's work may increase girls' economic value, which has positive benefits for their survival, girls' economic value may also increase their parents' incentives to keep them out of school to maximize their immediate economic returns. Each dimension of gender inequality requires careful scrutiny.

In Birbhum the work participation rate for women is very low compared to men. While the share of male workers in total male population is 54 per cent, that of female workers is only 20 per cent (2001 Census). However, the female work participation rate has increased from 13 per cent in 1991 to 20 per cent in 2001. From the increasing trend in work participation by women it is not clear whether the women view their engagement in income earning activities as a liberating opportunity or something that had to be undertaken on being forced by economic circumstances. Therefore we

need to examine closely which factors have had influence on women's participation in the workforce. One way to go about it is to further analyse the composition of the work force and try to understand the changes from different angles.

Table 7.1 Work participation by women across blocks and municipalities in Birbhum, 1991 and 2001

Blocks and municipalities	Main+Marginal		Main	
	1991	2001	1991	2001
MURARAI - I	7.72	15.01	3.88	5.51
MURARAI - II	6.35	13.08	3.17	6.07
NALHATI - I	8.96	17.46	4.65	5.97
NALHATI - II	5.84	13.89	2.58	4.66
RAMPURHAT - I	20.36	30.22	13.30	13.18
RAMPURHAT - II	8.79	15.29	3.15	6.18
MAYURESWAR - I	14.16	21.55	9.66	8.93
MAYURESWAR - II	7.21	17.11	5.28	8.46
Md. BAZAR	21.51	20.78	15.66	8.29
RAJNAGAR	21.41	34.15	14.83	11.00
SURI - I	15.40	28.43	9.17	11.42
SURI - II	19.59	40.41	11.38	8.23
SAINTHIA	18.11	20.72	12.17	7.16
LABHPUR	6.60	14.24	4.31	5.86
NANOOR	6.68	16.33	4.03	8.22
BOLPUR-SRINIKETAN	21.01	29.00	16.40	13.46
ILLAMBAZAR	13.56	18.42	8.64	7.23
DUBRAJPUR	22.38	24.03	12.09	9.65
KHOYRASOL	14.81	15.69	7.39	3.55
Rural Birbhum	**13.35**	**20.35**	**8.27**	**7.95**
RAMPURHAT M	5.00	8.68	4.68	6.97
SAINTHIA M	5.60	11.22	5.47	9.11
SURI M	5.93	12.21	5.79	10.02
DUBRAJPUR M	10.68	15.51	8.04	10.22
BOLPUR M	7.06	13.71	6.17	10.78
Urban Birbhum	**6.52**	**12.20**	**5.84**	**9.45**
Birbhum	**12.75**	**19.65**	**8.05**	**8.08**

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What is to be noted is that, in Birbhum, increasing work participation by women between 1991 and 2001 was associated with increasing share of marginal workers in total work force. By census definition marginal workers are those who do not work for major part of the year which could either be due to lack of opportunity or other reasons. Higher work participation by women indicates that more women are engaged in income earning activities inside or outside the household, which is likely to have positive impact on their families' well-being. Although the decennial growth rate of the female workers between two census years is 81 per cent, the number of main workers increased by a modest 14 per cent, while the number of marginal workers increased by a hopping 189 per cent). As a result, the share of female marginal workers in total female workers increased from 38 per cent in 1991 to 61 per cent in 2001.

There is a rural-urban gap in female work participation. While in rural areas work participation rate is 20.35 per cent, in urban areas it is 12.2 per cent. What is to be noted is that while the percentage of female main workers in total female population increased in urban areas it actually decreased in rural areas (Table 7.1). If we further look into the distribution of workers into broad occupational categories, we find that between 1991 and 2001, the total number of female cultivators increased from 29175 to 30030 (2.9 per cent increase), but the number of female agricultural labourer increased from 90467 to 135855 (50.2 per cent increase) (Figure 7.4). This is enough to establish that a large number of women who are joining the work force are not doing it out of choice. They are rather compelled by economic circumstances to accept the drudgery of working in the field.

Figure 7.4 Number of female workers in different categories (in thousand) in Birbhum
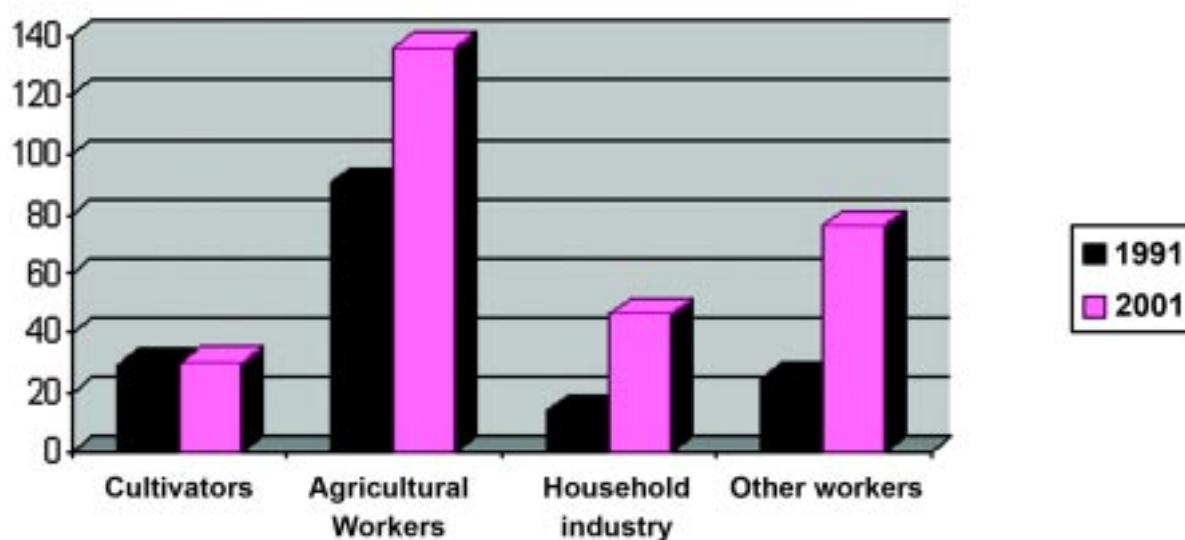
Table 7.2: Share of women in total work force, marginal workers and agricultural labourers

Block	Percentage share of women in total work force		Percentage share of women in agriculture labourers	
	1991	2001	1991	2001
MURARAI – I	13	22	5	19
MURARAI - II	11	20	1	7
NALHATI – I	15	24	14	32
NALHATI – II	10	20	4	14
RAMPURHAT - I	26	33	30	46
RAMPURHAT - II	14	21	6	17
MAYURESWAR - I	20	27	27	35
MAYURESWAR - II	11	22	18	31
MOHAMMAD BAZAR	28	27	32	42
RAJNAGAR	28	37	33	50
SURI – I	22	32	22	50
SURI – II	25	40	27	46
SAINTHIA	24	27	30	39
LABHPUR	10	20	13	23
NANOOR	11	22	12	26
BOLPUR-SRINIKETAN	27	32	34	41
ILLAMBAZAR	19	24	25	33
DUBRAJPUR	28	29	29	40
KHOYRASOLE	21	22	22	29

Source: Calculated from Census 1991 and 2001 data

7

This pattern of employment is not surprising given the level of human capital that women have had the opportunity to acquire. Table 7.3 presents the distribution of educational achievement among males and females in the age group 20-59 years, according to Census 2001.

Table 7.3 Distribution of education level among population in the age group 20-59 in Birbhum, 2001

	TOTAL	MALE	FEMALE
Illiterate	43.32	32.22	54.95
Literate	56.68	67.78	45.05
Without Educational level	1.42	1.78	1.04
Below Primary	15.78	16.97	14.53
Primary	12.15	12.83	11.44
Middle	11.96	14.34	9.46
Matric/Secondary	7.24	9.51	4.86
Higher Secondary	3.13	4.57	1.63
Non technical Diploma	0.01	0.02	0.00
Technical diploma	0.16	0.30	0.02
Graduate and above	4.76	7.36	2.05
Unclassified	0.07	0.11	0.02

There is a wide gap between males and females in educational attainment at all levels, and the gap widens as they progress towards higher levels of education. We focus on 20-59 age-group as it is considered the relevant age group for workers who, under ideal conditions, would have 15 years of education – sufficient to acquire the minimum level of human capital to enter the skilled labour market. It is remarkable how the gap increases beyond the primary level. The first two rows divide the population into literate and illiterate. The total literate population is then subdivided into different categories according to different levels of educational attainment. Clearly there is not much male-female gap for primary and below primary. Among the total female population about 26 percent have either completed primary education or literate but could not complete primary education. The corresponding percentage for males is around 29. But from the middle school level the gap further widens. While 7.36 per cent of the males in the age group 20-59 have graduate or post-graduate degree, only 2.05 per cent of the females in the same group have such degrees.

What the above analysis shows is that the large gap between males and females in educational attainment severely constrains women's opportunities in the skilled labour market and they end up in the unskilled market which is overwhelmingly agricultural work in Birbhum. In the absence of adequate work opportunities, it has been envisaged at the policy level that formation of self-help groups would help women to engage in income-earning activities on their own.

Table 7.4 Number of Self-Help Groups and percentage of women's groups in blocks of Birbhum

Name of the Block	No. of SHGs	No. of women SHGs	% of Women SHGs
Suri-I	580	443	76.38
Suri-II	672	295	43.9
Sainthia	758	521	68.73
Md. Bazar	757	517	68.3
Rajnagar	703	418	59.46
Khayrashole	829	471	56.82
Dubrajpur	569	240	42.18
Illambazr	846	468	55.32
Bolpur-Sriniketan	828	598	72.22
Nanoor	717	576	80.33
Labpur	1034	594	57.45
Mayureswar-I	706	342	48.44
Mayureswar-II	728	386	53.02
Rampurhat-I	676	417	61.69
Rampurhat-II	530	233	43.96
Nalhati-I	922	572	62.04
Nalhati-II	402	156	38.81
Murarai-I	750	488	65.07
Murarai-II	796	652	81.91
Total	**13803**	**8387**	**60.76**

About fourteen thousand SHGs have so far been formed in Birbhum, and about 61 per cent of them are women's groups. In a good number of blocks less than half of all SHGs are women groups. This is a bit surprising, given the fact that most of the self-help groups elsewhere in the country are women's groups.

7

7.3   *Maternal and child health indicators*

Low mean age at marriage is one of the many factors contributing adverse maternal and child health outcomes since babies born to the young mothers are more likely to be premature, have low birth weights, and suffer from complications at the time of delivery. This enhances gynaecological and obstetric morbidity, even chances of maternal death. The DLHS-RCH, 2003-04, data show that (Table 7.5) in Birbhum the mean age at marriage among girls is 17.6, which is lower than the state average of 18.6. The percentage of girls married below the legal age at marriage is about 60 per cent, which is significantly higher than the state average of 45.4 per cent.

It has also been observed from the same data source that though more than 91 per cent of expectant mothers had any antenatal check-up, the percentage declined sharply to 63 per cent for 3 or more antenatal check-ups. In case of West Bengal as a whole similar pattern of decline has been observed. Iron and folic acid (IFA) tablets are regarded as one of the important components of micro-nutrients during pregnancy. In Birbhum, the percentage of pregnant women who had received IFA is substantially lower (13 per cent) than the state average (19 per cent), even though neither can be considered as satisfactory. Only about 11 per cent of expectant mothers in the district received full antenatal care that comprises at least three ANC visits, at least one dose of tetanus injection and taking 100 or more IFA tablets, which is a little less than the state average of 13.4. About 46 per cent of pregnant mothers used public sector health facility to obtain ANC, and about 48 per cent of total deliveries were conducted in institutions in the district. It is worth noting that among these delivery cases, about 40 per cent have been conducted in two sub-divisional hospitals at Bolpur and Rampurhat and the district hospitals at Suri. As far as safe delivery (either institutional delivery or home delivery attended by trained medical or para-medical personnel) is concerned, about 53 per cent of deliveries can be regarded as safe and there is no significant difference with the state-level average.

**Table 7.5: Maternal and child health indicators for Birbhum
vis-à-vis West Bengal, 2003-04**

7

	Birbhum	West Bengal
% of girls married under 18 years of age	59.8	45.4
5 of pregnant women received at least 3 ANC	63.0	64.6
% of pregnant women received 2 doses of TT	77.2	80.0
% of pregnant women received 100 IFA	12.9	18.9
% of pregnant women received full ANC	10.8	13.4
% of safe delivery	52.8	54.1
% of institutional delivery	48.1	46.3
% of children aged 12-35 months fully immunised	43.2	54.4
% of mothers aware of diarrhoea	88.2	79.5
% of mothers used ORS during diarrhoea	49.2	34.8

Source: DLHS-RCH, 2003-04

The percentage of children who received full immunization can be considered as a useful indicator to judge the status of child health. It has been found that only about 43 per cent of children age 12-35 months received all the required doses of complete immunization, which is considerably lower compared to West Bengal as a whole (more than 54 per cent). On this, among all the districts of West Bengal, Birbhum stands at third from the bottom. The low coverage of complete immunization may primarily be attributed to the low coverage of measles vaccination (only about 51.4 per cent of children have been covered by measles vaccine). The drop-outs from DPT3 and Polio3 are also higher compared to most of the other districts of the state. It is also worth mentioning that more than 10 per cent of children have not been covered by any sort of vaccine. The percentages of mothers who are aware of diarrhea and the use of ORS during diarrhea are significantly high, about 90 per cent and more than 49 per cent respectively, and substantially higher than the state average.

7.4   Low birth weight, infant deaths, child immunization and maternal care

Infant mortality has been recognized as an important summary indicator of the quality of health care as well as the overall socio-economic development in a country or region. Although remarkable decline in the infant and child mortality was observed in India till the mid-1990s, the rate of decline has been quite slow since then. Further decline in infant mortality will depend on reductions in neonatal

7

mortality since more than 60 percent of infant deaths occur during the first month after birth. Estimate from the Sample Registration System (SRS) reveals that in recent periods 38 babies out of 1000 live births did not survive till one year of birth in West Bengal with substantial rural-urban difference (SRS Bulletin, October 2007).

No dependable estimate of infant and child mortality is possible at the district level, let alone the block level, for lack of adequate data (sample size). Information on infant deaths in some form is being kept only in the recent years by the Health Department and the Public Health Cell of the district. The data are full of inconsistencies. Also, the infant and child deaths occurred in the private health care institutions are not available. Data are also not available for those who do not come to any institution for the treatment of their sick babies. Nevertheless, in what follows we make an attempt to come up with some numbers which may partially represent the current scenario.

During the recent years the number of neonatal deaths per 1000 live births in Birbhum district seems lower compared to the all-India average. During 2006-07 and 2007-08 (up to Dec, 07), less than 15 babies per 1000 live births did not complete the first month of their lives. This is far from uniform across blocks and sub-divisions. During 2006-07, the neonatal deaths were the highest in Bolpur P.P. Unit followed by Suri P.P. Unit, Bolpur BPHC, Mallarpur BPHC, Barachaturi BPHC and Sultanpur BPHC. It was the lowest in P.P. Unit Rampurhat followed by Lohapur BPHC and Dubrajpur RH. During the current year, the scenario does not change much.

As far as the infant deaths per 1000 live births are concern, it follows almost a similar pattern as seen in case of neonatal death. The exception is Illambazar BPHC, where infant deaths per 1000 live births are substantially higher than district average. Unlike neonatal deaths, the infant deaths are also somewhat higher in Mallarpur BPHC than Bolpur BPHC. From the data, neither the child deaths per 1000 live births can be computed (since data on live births are not available for the entire period) nor can any conclusive statement regarding child death be made. It can be said that the number of child deaths is higher in Suri District Hospital than other public institutions. Possibly this is due to the fact that being the highest level referral unit in the district, a child is usually brought to the hospital when she/he is already in a critical stage.

Very recently, the Department of Health and Family Welfare has initiated social audit of infant and maternal deaths in the district. Out of 281 infant deaths occurred between January and July 2007 in various BPHCs and RHs, 209 were audited. In most of the cases, the causes of deaths are found to be birth asphyxia and low birth weight followed by respiratory tract infection.

Data for the occurrence of still birth are not available for all the reporting units in the district. Also, since the number of still births being small, rates based on number of such births are found to be often unreliable. From the available data (not given in the table), it can be observed that occurrence of still births was remarkably higher in Sainthia, Murarai-II, Bolpur-Sriniketan and Mayureshwar-I blocks than in the rest. Personal communication from CMOH, Birbhum, reveals that in the case of non-institutional delivery, especially when the delivery is conducted by quacks, arbitrary application of oxytocine injections to the labouring mothers accelerates delivery process which ultimately results in still birth in most cases.

7

Table 7.6: Neonatal and infant deaths per 1,000 live-births and number of child deaths by reporting units in Birbhum during April 2006 –December 2007.

Sl.No	Name of the Unit	April2006–March07				April 2007–Dec2007			
		Total number of live births	Neonatal deaths/1000 live births	Infant deaths/1000 live births	Number of deaths of children aged 1-5 Year	Total number of live births	Neonatal deaths/1000 live births	Infant deaths/1000 live births	Number of deaths of children aged 1-5 Year
1	P.P UNIT RAMPURHAT	7061	0.6	1.8	4	5911	4.1	5.2	7
2	CHAKMONDOLA BPHC	2314	12.5	19.4	6	1441	25.7	30.5	20
3	BOSWA BPHC	2784	9.3	15.1	16	1881	15.4	21.3	8
4	NALHATI BPHC	3782	4.0	5.0	0	4141	1.7	3.4	1
5	LOHAPUR BPHC	2217	1.8	2.3	0	1607	1.2	3.1	2
6	MURARAI RH	4805	3.5	5.2	16	3961	5.6	7.3	14
7	PAIKAR BPHC	4265	14.5	17.8	23	2805	3.9	7.1	23
8	MALLARPUR BPHC	2096	20.5	33.4	13	1470	14.3	19.7	7
9	SATPALSA BPHC	1859	5.4	5.9	3	917	5.5	16.4	4
10	P.P UNIT SURI	8736	35.9	41.1	74	5844	45.2	54.4	39
11	BARACHATURI BPHC	1022	18.6	28.4	2	581	20.7	46.5	14
12	SULTANPUR BPHC	1080	17.6	24.1	5	656	9.1	10.7	0
13	NAKRAKONDA BPHC	1928	6.7	13.5	5	1286	7.0	10.1	2
14	DUBRAJPUR RH	3384	3.3	4.7	3	2602	1.9	3.1	0
15	RAJNAGAR BPHC	1396	15.0	17.9	10	913	24.1	31.8	1
16	MD. BAZAR BPHC	2337	13.7	20.5	17	1618	13.6	17.3	4
17	SAINTHIA RH	2444	11.5	18.4	11	1904	21.0	26.8	15
18	P.P UNIT BOLPUR	4053	39.7	46.6	21	3356	31.6	34.6	4
19	BOLPUR BPHC	2951	21.7	28.8	23	2050	16.6	22.4	13
20	NANOOR BPHC	2907	7.6	12.4	5	2124	7.1	10.8	11
21	LABPUR RH	2676	13.5	18.3	2	1870	5.9	7.5	3
22	ILLAMBAZAR BPHC	2634	15.9	27.7	13	1832	6.0	13.1	2
	DISTRICT TOTAL	68731	14.4	19.1	272	50770	14.1	18.3	194

Source: Calculated from the data provided by the CMOH, Birbhum

140

7

Sick Newborn Care Unit in Suri Sadar Hospital

It is well-known that further reduction in infant mortality in India would primarily depend upon the decline in neonatal mortality since more than 60 per cent of infant deaths occur in the first month of birth. It is also an established fact about 20 per cent of newborn babies requires special care for survival and it is this 20 per cent which accounts for the majority of deaths.

With the goal of reducing neonatal mortality, the *Neonatal Special Care Unit* in Suri District Hospital was established on 23 February 2006 with an initial expenditure of Rs 80 Lakhs. This is the second unit of its kind in West Bengal after the first was set up earlier in Purulia. Dr. AK Singh, Dr. Amitava Sen and Dr. Dilip Mahalanabis – three very eminent personalities in the area of health and health care were instrumental in setting up the unit in Purulia and in Suri, the district headquarter of Birbhum. Recently, this model of Neonatal Special Care Units has been praised and recognized by the United Nations as a model to be followed by other Indian states.

The important components of care are: training to help personnel in the art of newborn care, basic care of all newborn babies, specialized medicine care for sick newborn, high risk follow up and saving newborn irrespective of socio-economic identity. A team of trained doctors and nurses are managing the Sick Newborn Services 24 hours a day with the state of the art services and equipments. This 20-bed unit built over a space of more than 1800 sq.feet, has been planned with special care, keeping in mind the ambient temperature, sound and specified intensity of light.

The unit not only caters to the newborn of Birbhum but also to others from the neighbouring districts and the adjacent State of Jharkhand. Data from March 2006 to December 2006 show that altogether 278 newborns, about 70 per cent of whom were males, were admitted in this unit for treatment having wide range of problems such as birth asphyxia, severe respiratory distress, preterm delivery with LBW, septicemia, physiological jaundice, convulsion etc. Sometimes a combination of the problems has also been found. Out of 278 newborns, 50 newborns could not survive. The common causes of death were found to be birth asphyxia, preterm delivery with LBW, septicemia and severe respiratory distress. The duration of stay in this unit varied from 6 minutes to 109 days. Between January and December 2007, 186 newborns were admitted. Among 186 babies 72 per cent were males. Similar range of problems was found in them. Among the 186 newborns, 35 could not survive and in most of the cases the causes of death were as stated earlier. It can be noted that during 2007, the number of babies who were not discharged by the authority but released without permission is significantly higher than during the previous year cause of which need to be investigated by the authority.

7

Infant deaths and causes of infant deaths as obtained from CHCMI

Community Health Care Management Initiative (CHCMI) has recently been introduced by the Panchayat & Rural Development Department of the Government of West Bengal by involving the *Panchayeti Raj Institutions* (PRIs) and self-help groups in strengthening rural health care system and data collection and management. The data obtained from that source given by the *Panchayat Samity* of the respective blocks reveals that between September 2006 and August 2007, the number of infant deaths per 1000 live births was just above 17 in rural Birbhum. This seems an underestimation as we know that the infant mortality rate for West Bengal as a whole is now 38. The infant deaths per 1000 live births were substantially higher in Suri-I, Rajnagar and Labhpur blocks compared to the other blocks, whereas they were comparatively low in Nalhati-I and II, Murarai-I and in Dubrajpur. About 35 per cent of infant deaths occurred due to either diarrhea or respiratory tract infections, which are the two major killer diseases among infants and children all over the world.

It must be pointed out that though the data provided by the Health Department and CHCMI are not strictly comparable due to varying reference period, a careful look into the data reveals that there are inconsistencies between these two data sets that need to be corrected. CHCMI is a well thought out initiative taken up by the Department of Panchayats & Rural Development of the Government of West Bengal. But to achieve better delivery in the rural areas, convergence among the Panchayats & Rural Development Department, general administration, District ICDS Cell and the Health Department is essential.

Incidence of low birth weight

According to the World Health Organization (WHO), low birth weight (LBW) babies are those whose weight at the time of birth is less than 2.5 Kilograms. The chances of survival for the low birth weight babies are less than those of the mature babies. As found earlier from the recently initiated *Social Audit* system, low birth weight babies are more likely to die within infancy.

Table 7.7: Incidence of Low Birth Weight (LBW) by reporting units in Birbhum during April-March 2006-07

Sl. No.	Name of the Reporting Units	Total No. of Live Birth	Number of Babies with Birth Weight <2.5Kgs	Percentages of LBW Babies
1	P.P UNIT RAMPURHAT*	2399	1016	42.4
2	CHAKMONDOLA BPHC	2314	101	4.4
3	BOSWA BPHC	2784	270	9.7
4	NALHATI BPHC	3782	470	12.4
5	LOHAPUR BPHC	2217	86	3.9
6	MURARAI RH	4805	289	6.0
7	PAIKAR BPHC	4265	277	6.5
8	MALLARPUR BPHC	2096	596	28.4
9	SATPALSA BPHC	1859	48	2.6
10	P.P UNIT SURI*	2845	1304	45.8
11	BARACHATURI BPHC	1022	27	2.6
12	SULTANPUR BPHC	1080	87	8.1
13	NAKRAKONDA BPHC	1928	176	9.1
14	DUBRAJPUR RH	3384	400	11.8
15	RAJNAGAR BPHC	1396	238	17.0
16	MD. BAZAR BPHC	2337	233	10.0
17	SAINTHIA RH	2444	206	8.4
18	P.P UNIT BOLPUR*	1332	144	10.8
19	BOLPUR BPHC	2951	216	7.3
20	NANOOR BPHC	2907	232	8.0
21	LABPUR RH	2676	259	9.7
22	ILLAMBAZAR BPHC	2634	265	10.1
	DISTRICT TOTAL	55457	6940	12.5

*Note: * Data for the PP Units of Sadar and SDHs are from January'07 to July'07*
Source: Calculated from data provided by Office of the CMOH, Birbhum

From the data of 2006-07, it has been observed that the babies born with LBW were notably high in number in the P.P. Units of Suri and Rampurhat. This may be due to the fact that being the higher

7

level referral unit within the district, most of the high risk pregnancies which are complicated in nature and have a higher chance of LBW are handled in these P.P. Units. It is also considerably higher in Mallarpur BPHC followed by Rajnagar and Nalhati BPHC compared to other reporting units. Data from the CHCMI reveals that nearly 70 per cent of the babies were weighed at the time of birth varying from around 96 percent in Suri-I to 41 per cent in Murarai-II. Other blocks where less than 6 out of 10 babies were weighed at the time of birth are Suri-II, Rajnagar, Khayrasole, Nanoor and Murarai-I. In other cases and also for the babies born outside institutional set up are simply not weighed at birth.

Child immunization

Child vaccination for the preventable diseases has been recognized as an important indicator of the efficacy of the health care delivery system in a country or region. Typically, the field level staff of the health department fix a *target* of immunization based upon the expected number of births that could take place during a year in his/her jurisdiction from the eligible couple's register and also through community involvement. The field worker then tries to measure *achievement* in immunizing those expected number of babies. Since the fixing of target is based on 'expected' number and not on the 'actual' number of live births, the *achievement* can exceed *target*. From the data provided by the office of CMOH in Birbhum, it can be observed that BCG, which is administered generally within the first week of birth had the highest percentage of coverage during the last two years, ranging from about 93 per cent at Paikar BPHC to more than 200 per cent at Rampurhat PP Unit during 2005-06 and more than 80 per cent in Sainthia RH to more than 205 per cent in Rampurhat PP Unit during 2006-07. In between BCG and measles (administered after 9 months of age), a considerable number of dropouts can be observed for both the years. The dropouts are especially high for the PP Units located at the sub-division and at the district headquarter. This dropout during the process of immunization affects the progress of full-immunization. It is worth mentioning that in the case of institutional delivery BCG and Polio1 are given generally within 3 days of child birth and thus coverage of these two vaccines is high. But subsequent immunizations may or may not be obtained from the same source. Again, many expectant mothers go to their maternal home around the time of pregnancy and delivery but usually return to their marital home before the process of immunization is completed.

For this reason, some of the babies might have migrated to other places after obtaining some of the immunization shots.

In spite of these caveats, the progress of complete immunization based on the *target and achievement* is remarkable in the district. The *achievement* regarding complete immunization has been more than 90 percent in both the years 2005-06 and 2006-07. Notable progress has been seen with respect to full immunization for Nalhati, Murarai and Paikar BPHC. Though the data for 2007-08 are not available for the complete financial year, immunization figures up to December 2007 suggest that the progress is quite unsatisfactory during the current year.

7

Table 7.8: Achievements of target in child immunization by reporting units in Birbhum district

Name of Unit	BCG			O.P.V			DPT			Measles			Fully Immunized		
	2005-2006	2006-2007	2007-2008	2005-2006	2006-2007	2007-2008	2005-2006	2006-2007	2007-2008	2005-2006	2006-2007	2007-2008	2005-2006	2006-2007	2007-2008
P.P UNIT RAMPURHAT	203.1	205.3	241.1	110.2	97.6	57.6	109.4	97.6	66.1	97.5	81.9	56.6	97.5	81.9	56.6
CHAKMONDOLA BPHC	99.0	96.8	62.4	94.2	92.5	49.4	93.4	93.7	61.3	91.1	89.6	61.3	89.8	89.4	61.3
BOSWA BPHC	98.9	109.7	67.5	93.6	100.2	49.8	90.0	100.7	62.6	92.6	102.7	63.4	92.6	100.7	62.4
NALHATI BPHC	107.4	108.3	68.1	101.5	104.5	64.2	97.3	103.7	66.7	97.7	103.1	66.1	97.7	97.0	64.0
LOHAPUR BPHC	104.6	120.8	72.8	96.1	114.3	69.5	93.6	105.9	72.8	91.3	111.9	73.3	91.2	111.7	73.4
MURARAI BPHC	106.2	119.8	58.5	89.2	105.8	46.1	88.5	106.0	54.0	87.4	105.6	55.1	74.6	100.0	54.6
PAIKAR BPHC	92.9	108.3	60.9	77.1	97.8	47.1	76.9	99.4	59.4	73.3	94.9	58.3	70.4	92.3	55.5
MALLARPUR BPHC	104.4	104.5	77.6	103.2	104.6	52.5	101.5	102.0	75.4	98.6	98.1	72.6	98.6	96.1	69.2
SATPALSA BPHC	111.2	98.8	65.4	110.6	97.2	58.8	110.1	97.5	62.8	105.9	95.3	63.1	105.9	95.3	61.2
P.P UNIT SURI	133.0	133.1	120.1	104.5	69.6	56.7	104.5	69.6	56.7	78.4	48.6	40.5	78.4	48.6	40.5
BARACHATURI BPHC	97.6	108.5	84.1	95.3	102.8	63.7	95.1	103.5	69.9	90.7	96.3	66.9	90.7	95.7	65.4
SULTANPUR BPHC	88.9	111.6	62.4	79.3	105.1	58.6	80.2	104.9	59.2	78.0	100.3	59.5	78.7	101.3	59.5
NAKRAKONDA BPHC	106.4	104.8	68.2	106.7	105.6	60.2	106.6	105.6	65.3	99.3	101.9	64.0	97.7	101.6	61.4
DUBRAJPUR RH	100.1	100.7	61.8	93.0	86.4	45.3	93.6	86.6	54.8	95.3	83.3	47.5	95.3	83.8	47.5
RAJNAGAR BPHC	116.4	116.3	71.6	108.4	105.3	60.8	107.0	105.7	73.2	96.1	98.1	73.7	94.3	98.0	71.6
MD. BAZAR BPHC	96.4	111.1	56.1	93.0	99.5	50.5	93.5	99.5	54.8	92.7	98.9	57.4	92.5	98.9	55.1
SAINTHIA RH	108.3	81.0	55.7	96.9	78.4	47.4	96.4	76.3	51.6	91.6	69.2	50.0	90.6	68.7	47.8
P.P UNIT BOLPUR	162.5	148.1	147.4	101.5	57.5	72.9	102.0	57.9	72.9	101.1	41.3	60.0	101.1	41.3	60.0
BOLPUR BPHC	99.3	115.4	73.6	98.2	107.0	57.3	99.0	106.6	78.8	94.9	103.8	74.2	94.9	103.8	66.0
NANOOR BPHC	113.8	114.7	70.4	105.5	109.5	49.4	106.4	112.3	65.0	105.9	106.3	69.2	105.9	106.3	64.5
LABPUR RH	102.3	108.9	72.9	98.8	101.0	54.8	98.6	102.6	70.5	95.8	100.0	69.3	95.8	100.0	69.0
ILLAMBAZAR BPHC	96.9	100.9	61.1	88.4	89.4	38.6	88.0	90.2	53.2	83.3	85.9	55.0	82.7	84.6	54.0
District	106.5	110.8	71.3	96.3	97.3	53.3	95.6	97.3	62.9	92.5	93.1	61.6	91.2	91.9	59.7

Note: 2007-08 implies up to December 2007. Source: Office of the CMOH, Birbhum

When Community Needs Assessment Approach (CNAA) was introduced during the late nineties under Reproductive and Child Health (RCH) programme, which also covered child immunization programme, two basic and most significant initiatives were taken: (a) Decentralized Participatory Planning, and (b) Bottom-up approach for programme implementation, dispensing with the decades-old target-oriented approach for implementing reproductive and child health programmes. The basic idea was not to provide any target from the top to the field level workers but the target would be arrived at through a participatory process by involving local people. With help of the local people, the ANM of the sub-centre would count the number of children in a particular age group to be immunized in the next year, and so on. The data provided by the Health Department of Birbhum district reveals that in practice CNAA remains a myth. For example, during 2007-08 (though the year is not yet over), as mentioned earlier that the PP Unit of Rampurhat has already reached more than 240 per cent *achievement* against the *target* regarding immunization of BCG, which is incongruous with the target. For most of the immunizations, there is a large difference between target and achievement, which reinforces the observation that CNAA is largely incomplete and the calculation of *targets* is primarily an ad-hoc and arbitrary affair where the ANM possibly comes up with *target* figures based on her performance during the previous year.

In the national surveys such as National Family Health Survey (NFHS), District Level Household Survey (DLHS) etc., complete immunization coverage, which consists of one dose of BCG, three doses of polio (OPV), three doses of DPT and one dose of measles, is estimated for the children aged 12-35 months. From the given data set, it is not possible to see the progress of full immunization between 2005-06 and 2006-07 since the data set only provide total number of live births in a financial year but do not provide the number of live births by month of birth on the one hand and arbitrarily fixed *target* of immunization and its *achievement* on the other. For instance, a baby born in January, 2006 would partially be immunized within March, 2006 but completely immunized by December, 2006 or January 2007. Thus, although the baby was born in the financial year 2005-06, immunization would

7

complete in the financial year 2006-07. For this reason, the aforementioned progress of *achievement* of full immunization against *target* is not sufficient to measure the *actual* progress of full immunization in precise manner among children of 12-35 months of age in the district.

From the above discussion some important aspects regarding child immunization have emerged: the need for maintaining 'eligible couple register' in a proper way, target fixing should be based on the precise calculation of the number of births that could take place in a year given the number of eligible couples, involving local level people to make CNAA feasible, building up a demographic surveillance system (DSS) to keep track of month-wise data of live birth and subsequent routine immunization process of every child through unique identification to understand the progress of complete immunization. To accomplish them, streamlining of the present system is called for. In any plan for offering immunization services, the precise calculation of target age group is a primary responsibility. Otherwise, there may be under-achievement hidden under the façade of so-called 'over-achievement'.

Maternal health care

It is now well recognized that utilization of maternal health care services has a very important role to play in the improvement of women's reproductive health and child health outcomes in developing countries. Traditionally, maternal care was provided by members of the family. With the spread of the modern health care system, professional antenatal and delivery care began to be obtained from the public and private medical institutions. However, there are some constraints in obtaining such services like the fees required to be paid, distance to the health facility, inconvenience of hours of operation, perceived cost and opportunity cost to utilize such services, and lack of awareness about the need for such services. In India, Government hospitals and primary health centres provide maternal health care services free of cost. Besides, paramedical professionals provide maternal services in the rural areas.

Maternal health care services comprise ante-natal care (ANC), delivery care and post-natal care (PNC). ANC services include an early registration of pregnancy (ANC registration), ANC check-ups by health care providers, administration of two doses of tetanus toxoid injection and, distribution of

100 iron and folic acid (IFA) tablets. Delivery care primarily focuses on institutional delivery or delivery by trained health professionals, or trained *dai* using appropriate delivery kits in case of home delivery. PNC centres upon at least a check-up within 42 days of termination of pregnancy so that any post-delivery complication can be detected early and treated subsequently to arrest various kinds of maternal morbidity and mortality.

From the data (Table 7.9) on ANC in the district it can be inferred that ANC services have been increasing their reach in the recent years in the district as a whole. For instance, at least 3 antenatal check-ups of the expectant mothers have increased by nearly 10 percentage points between 2005-06 and 2006-07. IFA tablets given in the year 2005-06 exceeded 100 percent possibly due to some pregnant women receiving 100 IFA tablets more than once. Without any surveillance system, block-wise progress of ANC services over the years may not be worth estimating since customarily a large number of women after registering for ANC and seeking some of the ANC services go to their maternal home for delivery where they might obtain the rest of the ANC services.

Table 7.9: Antenatal and delivery care services in public health care system in Birbhum district in 2005-06, 2006-07 and 2007-08 (Up to December 2007)

	2005-06	2006-07	2007-08 (Up to Dec, 07)
Total no. registered for ANC	81293	78844	62323
% of women who received 3 ANC to total registered	58.3	68.5	65.8
% received 100IFA to total registered	105.3	87.1	76.3
% received two TT to total registered	78.2	77.0	86.0
Total deliveries conducted	68603	69825	51533
% Institutional delivery	44.8	51.0	52.6

Source: Calculated from the data provide by Office of the CMOH, Birbhum

Institutional delivery is regarded as the most significant component of maternal health care since it is positively associated with maternal and neonatal survival. From the data it can be observed that the percentage of institutional delivery has been increasing in the district with substantial inter-block

7

variations (Table 7.10). Nearly 60 per cent of total institutional deliveries take place in the District and Sub-divisional hospitals. This implies that the percentage of institutional delivery is substantially low in the block level health care institutions. The percentage of institutional delivery is less for those blocks which are in physical proximity with district and sub-divisional hospitals. This is the case especially for Suri-I and Rampurhat-I and II. Except Murarai-I, the blocks where crude birth rate is higher – such as Nalhati-I and II – than other blocks, the percentage of institutional delivery is substantially low. This relationship provides some basis for the hypothesis that institutional delivery is positively related to infant and child survival and in turn would eventually bring down the birth rate as security motive for child survival decreases. The other blocks where significant number of home deliveries takes place are Khoyrasole and Md. Bazar as inferred from the same table. The plausible causes may be relative inaccessibility of the health care institutions and high concentration of population belonging to the marginalized sections of the society in these blocks.

Data from CHCMI (not shown in the Table), which have been compiled by the Panchayat Samitis of respective blocks, reveal that about 35 per cent deliveries have been conducted in the block-level public health care institutions during September 2006 to August 2007 varying from only about 7 per cent in Nalhati-II to about 56 per cent in Sainthia. Other blocks where institutional deliveries are abysmally low are Khoyrasole, Murarai-II, Md. Bazar and Rampurhat-I. These are in the same line as observed from the data provided by the Health Department.

Table 7.10: Percentage of institutional deliveries by reporting units in Birbhum

Sl.No	Name of The Reporting Units	2005 - 2006		2006 - 2007		2007 – 2008 (Up to Dec 07)	
		Total Delivery	% of Institutional Delivery	Total Delivery	% of Institutional Delivery	Total Delivery	% of Institutional Delivery
1	Suri-I	1052	5.4	1028	15.2	585	14.0
2	Suri-II	934	23.4	1093	26.0	661	34.2
3	Khoyrasole	1879	5.7	1935	11.3	1292	15.4
4	Dubrajpur	3206	35.7	3395	40.9	2621	44.0
5	Rajnagar	1491	49.3	1420	50.6	926	53.9
6	Md. Bazar	2577	18.5	2348	18.5	1637	21.4
7	Sainthia	2730	48.0	2493	54.0	1940	53.8
8	Bolpur	2845	37.1	2990	45.7	1904	46.6
9	Nanoor	2711	48.1	2912	48.2	2150	48.8
10	Labhpur	2543	37.9	2707	49.6	1883	54.1
11	Illambazar	2498	20.6	2655	23.8	1841	27.5
12	Rampurhat-I	2235	1.5	2340	3.7	1460	4.7
13	Rampurhat-II	2783	7.3	2797	10.4	1888	8.7
14	Nalhati-I	5158	5.3	3782	15.3	4142	14.6
15	Nalhati-II	2272	8.8	2228	6.1	1613	8.7
16	Murarai-I	4957	38.8	4827	51.2	3950	49.7
17	Murarai-II	4211	11.5	4308	17.0	2817	25.0
18	Mayureswar-I	2253	29.5	2131	29.5	1491	35.6
19	Mayureswar-II	1804	33.9	1878	46.0	921	9.6
20	P.P. Unit Suri	7802	100.0	9070	100.0	6100	100.0
21	P.P. Unit Bolpur	3894	100.0	4196	100.0	3627	100.0
22	P.P. Unit Rampurhat	6768	100.0	7292	100.0	6084	100.0
23	**District total**	**68603**	**44.8**	**69825**	**51.0**	**51533**	**52.6**

Source: Office of the CMOH, Birbhum

7

Figure 7.5: Percentage of Institutional Deliveries in blocks of Birbhum
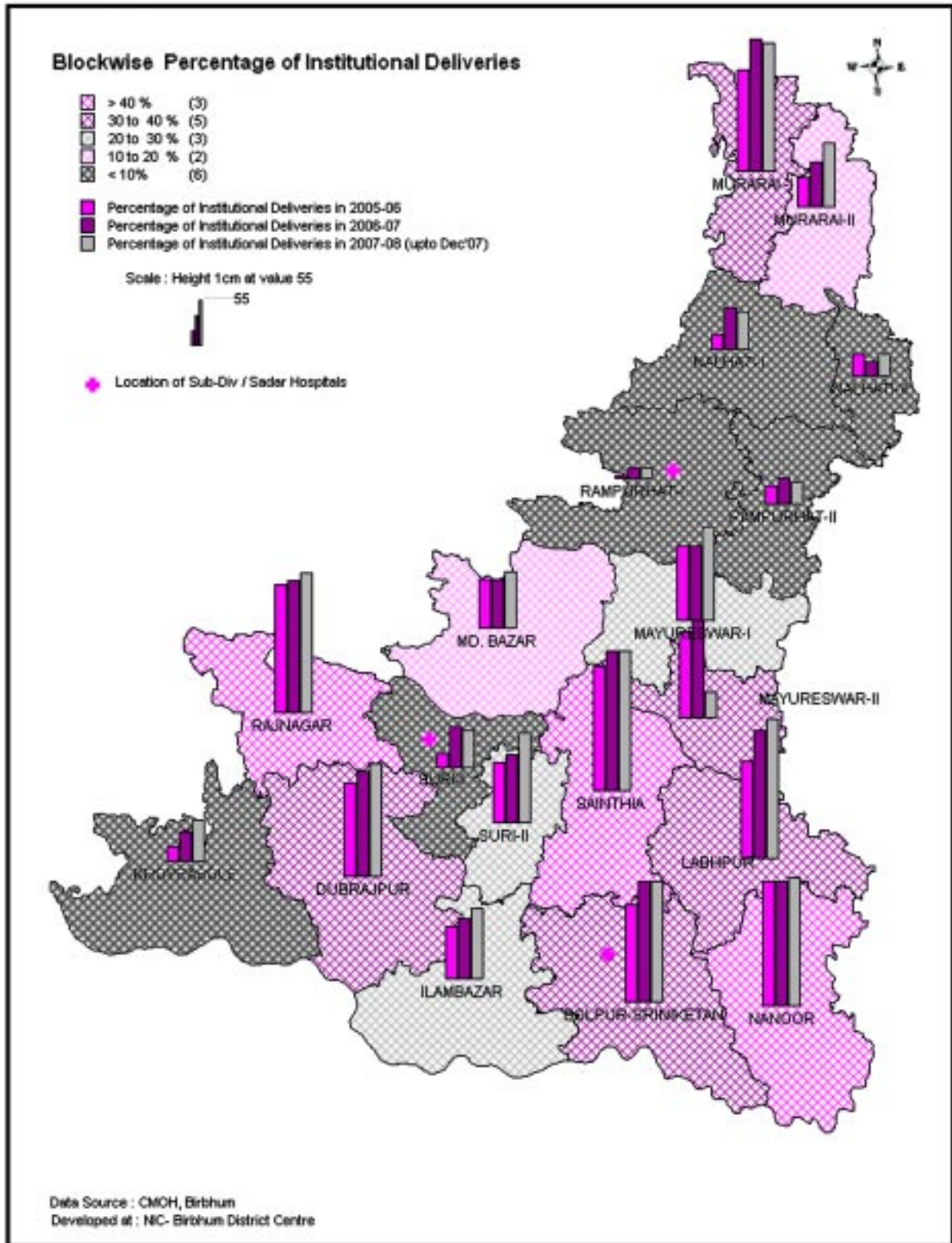
However, since institutional facilities in the highly populated blocks are inadequate for conducting large number of deliveries that takes place annually, immediate expansion of public health care system is necessary in those blocks on the one hand and conducting deliveries by trained professionals or trained *dais* at the headquarter sub-centre on the other in order to enhance safe delivery in these blocks.

Data on the total number of pregnancies in a year are not available from CMOH office. For this reason, percentage of pregnancies that have not been registered for ANC cannot be calculated. The data on utilization of PNC services are also not available. But it is one of the important components of maternal health care services, which emphasizes detection and treatment of any post-delivery complication, RTI/STI etc. Like in India and West Bengal as a whole, utilization of PNC services is believed to be low in Birbhum. From the way the data are being kept and maintained, it seems that ANC, delivery care, child immunization and other maternal and child health services i.e. the whole cycle of RCH services are separate compartments and have no relation with one another. For instance, from the given data set one can not calculate out of those who have availed (or not availed) ANC services how many did not deliver in healthcare institutions. The data on Tetanus Toxoid injection is kept as *target* and *achieved* – in the same manner as seen in the case of child immunization. Numerous examples of this kind can be cited. All these discrepancies and non-availability of various important data on maternal and child health services reiterate the need for building up a sound demographic surveillance system on the one hand and accountability of the Health Department to provide services and to maintain data in proper way, on the other.

Integrated Child Development Services in Birbhum

The Integrated Child Development Services (ICDS) provide services through its network of Anganwadi Centres (AWC) with the objectives of improving nutritional and health status of pregnant mothers and children (0-6 years age group) and reducing school dropout. The activities of the AWCs include supplementary nutrition programme, pre-school education, immunization, mothers' meeting and weighing of children. The objective of pre-school education (provided to the children in the age group

7

3-6 years) is to strengthen psychological, physical and social development of children and to develop school going habits among the children in order to reduce school dropout in future.

There are 3805 AWCs operational across 19 blocks of Birbhum. Except in one block (Nalhati-I)[2], all AWCs are run by the government. Since there is no reliable estimate of the target number of children that a block-level project of ICDS or an AWC is supposed to cover, one is compelled to use the number of children in the age group 0-6 year as given by Census 2001. The average population of children of age group 0-6 years covered per AWC is about 120 in Birbhum district as a whole (Table 7.11). Since the number of children belonging to the age group 0-6 years has increased after the last Census (2001), the actual number of average children covered per AWC will be higher than what is presented in the Table. It is expected that the quality of service is adversely affected when an AWC has to provide services to a large number of children and pregnant mothers. Table 7.12 shows that there are six blocks where the average number of children covered per AWC is more than 140. These blocks are Bolpur-Sriniketan (178), Dubrajpur (170), Illambazar (141), Khoyrasole (144), Sainthia (141) and Suri-II (150).

In Birbhum, the percentage of AWCs that function in their own buildings is rather low. Having its own building is crucial for an AWC as it helps unsure smooth and continuous service to children and pregnant mothers. In Birbhum as a whole only 14 per cent of the AWCs operate in their own buildings. There are 9 blocks where the percentage of AWC running in their own buildings is less than 10 (Table 7.11). These blocks are Mayureswar I (4 per cent), Mayureswar II (6 per cent), Murarai I (4 per cent), Murarai II (1 per cent), Nalhati I (4 per cent), Nalhati II (3 per cent), Rampurhat I (3 per cent), Rampurhat II (5 per cent) and Suri II (6 per cent). Rajnagar has got remarkable distinction of having run 63 percent of the AWCs in own building.

As far as providing the very basic facilities like drinking water and sanitation at AWCs are concerned, the record is rather unimpressive. The percentages of AWCs having drinking water and sanitation facilities are 28 and 5 respectively. Although in seven blocks the percentage of AWCs having

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[2] ICDS Project in Nalhati I block is run by an NGO.

drinking facility is higher than 50, there are four blocks where none of the AWC has any drinking water facility. These blocks are Khoyrasole, Murarai-I, Murarai-II and Nalhati. All these four blocks are backward blocks in terms of higher concentration of socio-economically disadvantaged population. Data on toilet or sanitation facilities at AWC reveal similar shocking stories. Out of 19 blocks, in 12 blocks none of the AWCs is having sanitary facility (Table 7.12). Out of the remaining 7 blocks, 4 blocks have less than 5 per cent of its AWCs having sanitation facility.

Based on the four indicators mentioned above, we have constructed an ICDS infrastructure (composite) index at the block level (see Appendix). The blocks are then ranked according to their values of composite index (see Table 7.13). Rajnagar is on the top of the list, followed by Nanoor, Illambazar and Bolpur. The bottom five blocks are Murarai II, Saithia, Khoyrasole, Nalhati I and Murarai II. We have observed elsewhere that Murarai I and II, Nalhati I are among the backward blocks of Birbhum in terms of concentration of socio-economically disadvantaged population.

Monitoring the health status of children, identifying the malnourished children and providing supplementary nutrition to the needy children and pregnant mothers are among the major responsibilities of AWCs. Since the number of Anganwadi worker and helpers are more or less same across the AWCs, the quantity and quality of service delivered by a AWC definitely gets affected where it has to serve higher number of children and pregnant mothers. For example, simple service like weighing of children (which is probably the first step of monitoring the health status of the children) may get affected if there are higher number of children than what can be managed at a AWC given the human resource (i.e. anganwadi worker and helper) and other complementary inputs. The available data also confirms our apprehension. Data show that about 70-72 per cent of the children were weighed at the AWCs (Table 7.12), which is almost 30 per cent lower than the full coverage. If we plot the percentage of weighed children (age group 3-6 years) against child population per AWC, we find a clear negative relationship (Figure 7.6).[3]

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[3] Similar negative relationship is also observed between percentage of children (0-3 years) weighed and child population covered per AWC, except few blocks.

**Figure 7.6: Scatter showing relationship between percentage of children weighed and child popula-
tion served per AWC.**
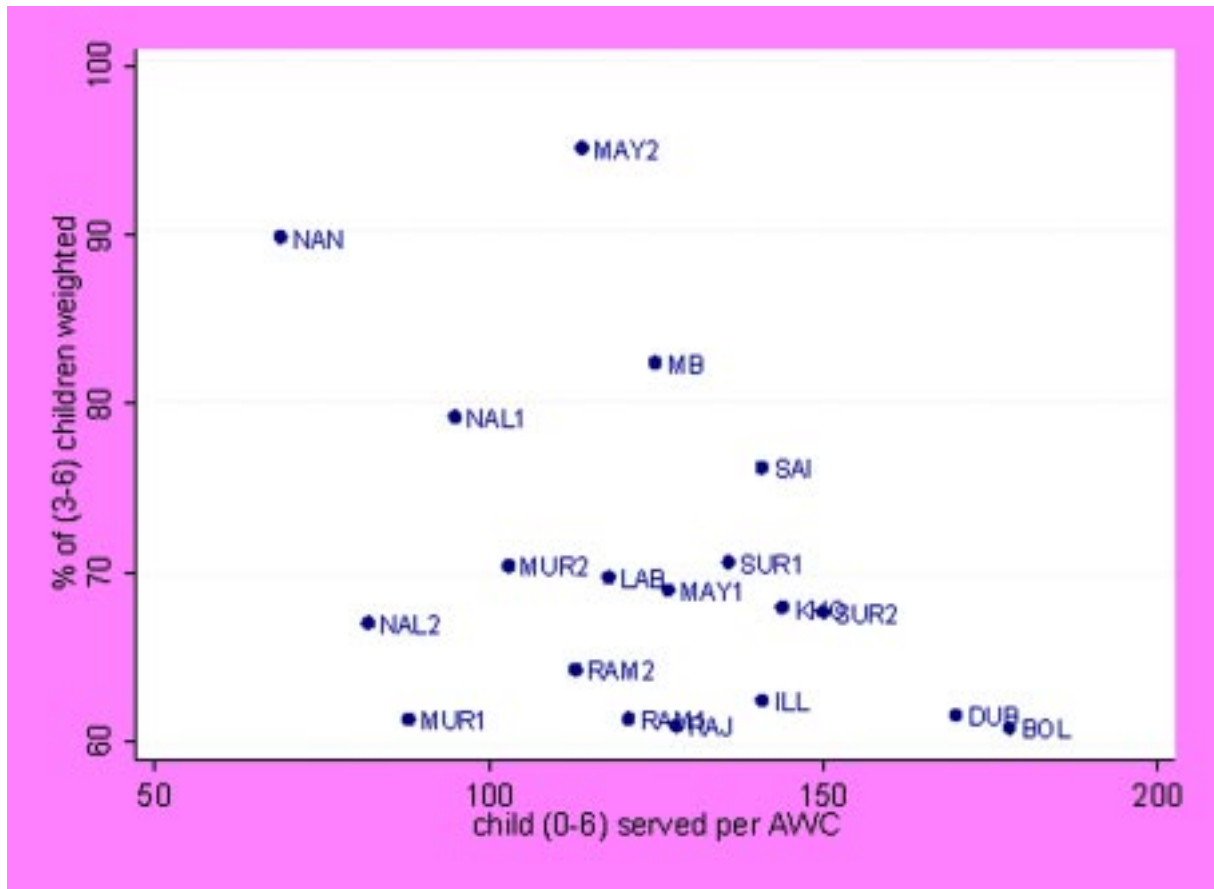
The percentage of moderately or severely malnourished children, which is considered as a strong indicator of children's health status is presented in Table 7.13 for all the blocks of Birbhum. The table shows that about one-fifth of the children in Birbhum are malnourished (moderately or severely), 0-3 years group showing marginally higher level of malnourishment than the 3-6 years group. Nanoor block needs special attention in this context as almost one-third of Nanoor's children are malnourished. Our graphical exploration again points out the important fact that adequate number of AWC is crucial in improving the outcome indicators. If we exclude Nanoor, the child population covered per AWC and percentage of malnourished children show a clear negative relationship (Figure 7.7).

Figure 7.7: Scatter showing the relationship between child population served per AWC and percentage of malnourished children (0-3 years)

In order to monitor and improve the health status of children and women in a more effective way, steps have been initiated under the Community Health Care Management Initiative to bring about effective coordination between ICDS and other government department (such as Health), PRIs and NGOs with a view to deliver better services to improve the health status of mothers and children. Apart from that, various other initiatives have been taken from time to time to improve the quality and coverage of ICDS (see Box 1).

7

Table 7.11:   Some indicators on AWCs across blocks of Birbhum

Name of the ICDS project	No of AWCs operational	Child population served per AWC*	AWCs running in own building (%)	AWCs with drinking water facility (%)	AWCs with toilet/sanitation facility (%)
Bolpur-Sriniketan	230	178	26	70	3
Dubrajpur	200	170	16	69	0
Illambazar	176	141	19	4	69
Khoyrasole	135	144	16	0	0
Labpur	211	118	19	19	0
Mayureswar-I	190	127	4	51	23
Mayureswar-II	138	114	6	62	0
Md. Bazar	279	125	20	3	0
Murarai-I	179	88	4	0	0
Murarai-II	203	103	1	0	0
Nalhati-I	257	95	4	0	0
Nalhati-II	139	82	3	60	2
Nanoor	243	69	30	11	0
Rajnagar	107	128	63	9	21
Rampurhat-I	223	121	3	43	0
Rampurhat-II	209	113	5	74	0
Sainthia	372	141	11	3	0
Suri-I	160	136	23	36	1
Suri-II	154	150	6	58	1
Birbhum	**3805**	**120**	**14**	**28**	**5**

Note: *0-6 child population pertaining to the census year 2001.

Source: ICDS Cell, Birbhum District, Census 2001

Table 7.12: Composite index of ICDS Infrastructure and ranking of projects block

Block	Child served per AWC*	AWC in own building	AWC having drinking water facility	AWC having toilet	Composite Index	Rank
Weightage	*20%*	*40%*	*20%*	*20%*		
Rajnagar	0.4587	1.0000	0.1216	0.3043	0.5769	1
Nanoor	1.0000	0.4677	0.1486	0.0000	0.4168	2
Illambazar	0.3394	0.2903	0.0541	1.0000	0.3948	3
Bolpur Sriniketan	0.0000	0.4032	0.9459	0.0435	0.3592	4
Nalhati II	0.8807	0.0323	0.8108	0.0290	0.3570	5
Rampurhat II	0.5963	0.0645	1.0000	0.0000	0.3451	6
Suri I	0.3853	0.3548	0.4865	0.0145	0.3192	7
Mayureswar I	0.4679	0.0484	0.6892	0.3333	0.3174	8
Mayureswar II	0.5872	0.0806	0.8378	0.0000	0.3173	9
Dubrajpur	0.0734	0.2419	0.9324	0.0000	0.2979	10
Labpur	0.5505	0.2903	0.2568	0.0000	0.2776	11
Suri II	0.2569	0.0806	0.7838	0.0145	0.2433	12

Rampurhat I	0.5229	0.0323	0.5811	0.0000	0.2337	13
Md Bazar	0.4862	0.3065	0.0405	0.0000	0.2279	14
Murarai I	0.8257	0.0484	0.0000	0.0000	0.1845	15
Nalhati I	0.7615	0.0484	0.0000	0.0000	0.1716	16
Khoyrasole	0.3119	0.2419	0.0000	0.0000	0.1592	17
Saithia	0.3394	0.1613	0.0405	0.0000	0.1405	18
Murarai II	0.6881	0.0000	0.0000	0.0000	0.1376	19

Note: *0-6 child population pertaining to the census year 2001.

Source: ICDS Cell, Birbhum District, Census 2001

Table 7.13: Project block-wise percentage of weighed and malnourished children

Projects (block wise)	Children weighed (%)		Moderately and severely malnourished children (%)	
	0 – 3 years	3 – 6 years	0 – 3 years	3 – 6 years
Bolpur-Sriniketan	64	61	25	22
Dubrajpur	66	62	22	22
Illambazar	65	63	22	18
Khoyrasole	77	68	21	25
Labpur	61	70	25	24
Mayureswar - I	79	69	25	19
Mayureswar - II	83	95	16	13
Md. Bazar	85	82	18	18
Murarai - I	62	61	22	22
Murarai - II	72	71	17	15
Nalhati - I	72	79	12	11
Nalhati - II	62	67	21	20
Nanoor	90	90	33	33
Rajnagar	62	61	26	26
Rampurhat - I	78	62	16	15
Rampurhat - II	64	64	19	18
Sainthia	76	76	24	22
Suri - I	71	71	20	21
Suri - II	68	68	19	15
Birbhum	**72**	**70**	**21**	**20**

Source: ICDS Cell, Birbhum District

7

Box 1: Some initiatives

Development Activities (nfrastructure Development)

- 128 Anganwadi Centres have been constructed under **RIDF** VIII and 26 are under construction. Steps have been taken up for construction for another 87 Anganwadi Centres. Total 64 AW centres have also been taken up for construction under **RSVY**.
- All CDPOs, Supervisors and AWWs are provided training phase by phase through **UDISHA**. Continuous capacity building support has been provided to the CDPOs, Supervisors and Anganwadi workers on Essential New Born Care, Essential Nutrition Action and Food Commodity Management in collaboration with CARE India, West Bengal.
- Each Anganwadi worker is nurturing at least two Self-Help groups to empower them socially and economically.

Future Important Action Plan

- Positive Deviance have been launched in Md. Bazar & Murarai I as Pilot. All the ICDS projects/ Panchayats will be covered under PD phase by phase to combat malnutrition of 1st grade to 4th grade children.
- 1000 special Mother's Meeting and Health camps are organized in 1000 backward villages/Anganwadi Centres to up grade health status of comparatively backward areas within March 2006.
- 80,000 adolescent girls will be provided training and IFA tablets through ANM / AWWs to address to problems of malnutrition and to overcome the crisis of adolescent stages within March2006 under RCH.
- Decentralized Information Management Initiatives (D.I.M.I) has been introduced in Illambazar & Rampurhat I as pilot. It will cover all 19 ICDS projects/Panchayat/Health with a view to have well-knit vibrant information system which is very much needed for the planning of all social and developmental activities.
- One hand book for AWWs for conducting the mothers meeting effectively is under preparation. It will help Health, ICDS, Panchayat and NGOs to disseminate knowledge to the actual beneficiaries.

CARE and ICDS

- Integrated Nutrition and Health Project has been launched with the support of CARE in the eleven blocks of Birbhum where 1498 Anganwadi Centres are covered. The main objective of this project has been to further strengthen the ICDS to reduce malnutrition and infant mortality at the community level.

Source: Official website of the District ICDS Cell (http://birbhum.gov.in/ICDS/icds.htm)

Appendix

For the construction of ICDS infrastructure index we have considered four indicators at the block level: (i) average number of children covered per AWC; (ii) percentage of AWCs having own building; (iii) percentage of AWC having drinking water facility; and (iv) percentage of AWC having toilet or sanitation facility. Each of these indicators was normalised using the formula: (value – minimum value)/

7

(maximum value – minimum value). Finally, the normalised values of these four indicators were added up by giving appropriate weightage to each of them. Since having own building seems to be the most important factor for a AWC's smooth and continuous service, we have given 40 per cent weightage to this indicator and the rest three indicators were given equal weightage of 20 per cent each.

8

| Chapter VIII | Governance for Human Development |

8.1   *Decentralisation and service delivery*

There is a general feeling that the basic services, such as health care, education, water and sanitation – all of which are the responsibility of the state – are better delivered in a decentralized system of governance than in a centralized one. Hence, improving service delivery has been one of the implicit motivations of decentralised efforts in most of the countries that have gone for decentralisation of governance to different extent. Increase in public spending by itself does not guarantee that people's health would improve or all the children would complete at least elementary education of reasonable quality. Public expenditure often fails to reach the poor as much as we expect it to do. One of the reasons why improving service delivery is behind most decentralization efforts is that these services are consumed locally. It is hoped that decentralization would strengthen the relationship of accountability between people and their political representatives, which in turn would strengthen other relationships of accountability between various levels of the government for service delivery.

Two problems are most frequently cited in the context. First, the lack of capacity at the level of local government to exercise responsibility for public services may constrain decentralization efforts; and second, decentralization often leads to misaligned responsibilities. Misalignment between the structure of the government bureaucracy and the assignment of service responsibilities to different tiers of the government often creates confusion regarding accountability and conflicts of interests. While the local officials of 'line departments' continue to respond to the incentives provided by upper-tier governments, local elected governments have little effective power to ensure accountability for service delivery.

Clearly, the higher level government has a key role in building local capacity. It can provide training in traditional, top-down ways, or it can create an enabling environment by responding to the needs of the local governments their experiences as decentralization proceeds. Decentralization to locally elected governments is likely to improve political incentives and service delivery outcomes if people are better informed and likely to use information about public services in their voting decisions for electing local governments.

8

In West Bengal, the three-tier Panchayat system is responsible for implementing various schemes related to poverty alleviation and livelihood security, besides its responsibility to provide a limited range of public goods. However, until recently, their involvement in delivery of such services as health care and education was negligible. Recent initiatives, such as Community Health Care Management Initiative (CHCMI), need careful attention in this context. In this chapter, based on a field study conducted by the students and faculty of IDSK, we present a few observations on how the Panchayats are managing on ground implementation of the most important employment scheme that the Government of India has recently launched, viz. National Rural Employment Guarantee Scheme (NREGS), and how the intended beneficiaries perceive the implementation process.

8.2   *Awareness, participation and service delivery: observations from field*

An attempt is made here to understand the level of awareness of the people as well as the elected representatives with regard to services provided by the local government, their participation in the decentralised governance and the quality of service rendered by the decentralised governments by studying two *Gram Panchayats* from Birbhum district as case studies.

Like in many other Indian states, in West Bengal the decentralised (local) governance which functions below the sub-national government has three tiers. At the top, there are district-level local governments, known as Zilla Parishads. Below the Zilla Parishad, there are block level governments, known as Panchayat Samiti, at the lowest tier, there are Gram Panchayats. The rural part of Birbhum comprises 167 Gram Panchayats spread across 19 Blocks. Since Gram Panchayats are the lowest tier of local government and in charge of implementing most of the state and centrally sponsored welfare programmes on the ground, taking Gram Panchayats as basic units of investigation seems reasonable. Two Gram Panchayats were selected for the study – one backward and the other somewhat better off. The details of the criteria for selection of the GPs and households are given in the Appendix.

Households' profile

8 Alhough Talowan is more backward than Chandrapur[1], the GPs are comparable in terms of their household occupational composition (see Table 8.1). The share of agricultural labour households is 42 per cent in Talowan compared to 38 per cent in Chandrapur. Chandrapur has slightly higher share of self-employed in agriculture (38 per cent) as against Talowan (34 per cent). Surprisingly, share of agriculture dependent households is almost same (76 per cent) in both the GPs. Though average landholding is higher in Chandrapur (48 kathas per household) compared to Talowan (30 Kathas per household), the percentage of landless households is slightly higher in the former. The average household size is 5 in Talowan compared to 4 in Chandrapur. Substantially higher percentage of households (35 per cent) in Chandrapur has family members who are members of Self Help Group compared to only 9 per cent in Talowan. The level of education seems to be slightly better in Talowan. The average years of schooling of the highest educated male in the family is 7 in Talowan compared to 6 in Chandrapur. Similarly the average years of schooling of the highest educated female in the family is 6 in Talowan compared to 4 in Chandrapur.

Table 8.1: Percentage distribution of households by occupational categories in Talowan and Chandrapur

household occupational categories	Talowan	Chandrapur
self employed in agriculture	34	38
self employed in non-agriculture	3	5
agricultural labour	42	38
other labour	13	9
others	8	10

Source: Primary Survey, IDSK

Awareness

Table 8.2 shows respondents' exposure to print and electronic media. In both the GPs a very small percentage of respondents have regular exposure to radio, newspaper and television. It is interesting to observe that with relatively lower average level of education, Chandrapur fares much better than Talowan in terms of people's awareness about the schemes and programmes that their respective Gram Panchayats implement. In Talowan only 58 out of 102 households could name any scheme or programme, whereas in Chandrapur, out of 117 households, 86 households could name at least one scheme or programme that their panchayat was implementing.

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[1] The share of socio-economically disadvantaged households is 71 per cent in Talowan compared to 61 per cent in Chandrapur.

Table 8.2: Household's exposure to electronic, print media and other information

Percentage of respondents	Talowan	Chandrapur
Regularly listen to radio	7.2	16.1
Regularly read news paper	4.7	6.7
Regularly watch TV	22.8	19.0
Know about cheap toilet	68.3	87.6

Source: Primary Survey, IDSK

Almost all the people know about NREGS in two study GPs, though NREGS is known to people as *100 days work* or *Job Card*. Many individuals, who worked under NREGS, do not know such details as the application process, the provisions for compensation for delay in paying wages or about facilities to be provided in places of work. Only 26 per cent of the respondents (30 per cent in Chandrapur and 24 per cent in Talowan) have some vague ideas about how much money the Panchayat has received under NREGS. About 22 per cent of the respondents have some idea about how Panchayat spends the money received under NREGS.

Almost three-fourths of the respondents in both the GPs reported that they were interested to know how much money panchayat received for various programmes. A higher percentage of respondents were interested to know how their panchayats spent the amount in Chandrapur (88 per cent). In Talowan they are fewer (68 per cent).

The purpose of various comparisons made here is not to demonstrate how good is one panchayat vis-à-vis the other. It is expected that the level of awareness in Talowan will be lower than Chandrapur because of its relative backwardness. However, it may be interesting to see if the same marginalized group is better off in terms of awareness in a relatively better GP. Take for example STs and Muslims and their knowledge about schemes and programmes implemented by GPs and feasibility of building cheap toilet with assistance from GP. It is observed that they are more aware in Chandrapur than in Talowan (see Table 8.3). The point that we make here is that the population sub-groups which are known as disadvantaged are better informed in the advanced GP than in the backward GP, although their socio-economic status may be more-or-less the same.

Table 8.3: Households' knowledge of GP schemes and NREGS
by socio-economic classes

		SC (%)	ST (%)	Muslims (%)	Others (%)
Some knowledge about Panchayat's funds for NREGS	CHAND	76	83	67	60
	TAL	74	86	71	83
Some knowledge about Panchayat's spending on NREGS	CHAND	78	88	74	71
	TAL	70	90	71	90
Interested about Panchayat's funds and spendings in:	CHAND	71	54	67	88
	TAL	83	67	71	77
Knowledge of cheap toilet	CHAND	90	63	89	96
	TAL	65	14	75	80
Knowledge of schemes and programmes in the Panchayat	CHAND	76	71	70	76
	TAL	61	52	54	60

Source: Primary Survey

Many of the respondents from households did not have clear idea about the duties and responsibilities of the Panchayat. In many cases they mentioned certain services and assistance, which Panchayats cannot provide in reality, for example, helping them in case of daughter's marriage.

Panchayat members are more or less clear about their duties and responsibilities in both the GPs. It is clearly evident from the interview of panchayat members that poor access to health care, poor road conditions, problem of drinking water, problem of housing are the major problems in both the panchayats. The situation worsens during rainy season. However, on opinions about major problems, we observe more convergence among the members in Chandrapur than in Talowan. Lack of convergence between what people think about the major problem of the Panchayat and what members think can jeopardise the very basic objective of decentralised governance.

There is a convergence of opinion among male and female members on the problems related to women and children. Members feel that lack of health care facilities is the major problem faced by women. Low literacy rate among women is major cause of concern to many members. Members of both

8

the panchayats feel that drop out rate among girls at primary level of schooling is unacceptably high. Early marriage, household activities and poverty are the main reasons for drop-out. Parents in rural areas consider marrying off their daughters as more important than education.

Participation

Nobody from a significant percentage of households did participate in the last Gram Sansad meeting (68 per cent in Talowan and 50 per cent in Chandrapur). The reason for not attending meeting is multiple. In Talowan the most frequent cited reason was not getting information about the meeting. However, in Chandrapur the most frequent reason was non-availability of time for attending such meetings. Many people in both the GPs did not attend the meeting as they perceived it useless and wastage of time.

Since Gram Sansad meetings are an important event where people get to know more about programmes and schemes implemented by the Panchayat, staying away from such meetings not only make them unaware of government programmes and schemes, it also undermines an important process of the functioning of decentralised government, that is participation. In a system of democratic decentralised governance, participation itself is perceived as an important outcome indicator. A Gram Sansad meeting is also a place where beneficiaries for various schemes are selected on the basis of discussions and some sort of agreement. However, a particular Panchayat or Gram Sansad cannot always be blamed for people's non-participation in Sansad meetings. There can be other reasons such as political factors, people's preoccupation with income earning activities which make people away from attending those meetings.

The Gram Sansad meetings are supposed to be the place where people of the Sansad areas raise the problems they are facing. As far as raising issues are concerned, it was observed that Muslims in Talowan and SCs in Chandrapur were more vocal in raising issues in the meeting. Here we need to remember that Muslims in Talowan and SCs in Chandrapur are relatively more powerful groups in terms of their share in the population.

Amendment to the Panchayati Raj Act has ensured reservation of seats for the women. It is disappointing to observe that the presence of women is remarkably low in the Gram Sansad meeting. It seems

8

that the majority of them have to give domestic work the highest priority. Even if they attend the meeting, they are remarkably less vocal in raising issues in the meeting. There could be multiple reasons for behaviour on the part of the women. Many of them are either shy of speaking in male dominated Gram Sabhas or even when they raise their voice due importance is not given to their concerns. It is observed that the pro-active role played by women self help groups have helped increase women's participation in the Gram Sansad meeting.

NREGS on ground

The most important feature of NREGS as a demand driven employment programme is exhibited by its capacity to provide work for those who demand along with an open-ended nature of resource support from the state. In both the study GPs, the coverage of households under NREGS in terms of providing job cards to households belonging to vulnerable socio-economic groups appears quite inclusive and impressive. However, if we move from 'coverage' to 'creation of person days of work', then results show a different reality.

In Talowan the landless section of the sample households have on an average worked for only about 11 days. The marginal farmers got work for around 9 days. There is not much variation in average mandays for different socio-economic categories. For example, the average number of days worked by the SC, ST, Muslim and other communities are 9, 10, 11 and 11 days respectively. The situation is much better in Chandrapur. On an average the landless households reported to have worked for 38 days and marginal farmers 30 days. The average number of days worked by SC, ST, Muslims and others are 38, 23, 33 and 33 days respectively.[2]

From discussions with villagers it became clear that when introduced the beneficiaries had welcomed the scheme with expectations and enthusiasm. However, availability of only a few days of uncertain work has dampened the initial enthusiasm and trust. Poor or sub-optimal implementation of NREGS can be due to a number of factors apart of non-availability of funds in proper time. The reasons behind sub-optimal implementation of NREGS range from lack of planning and inappropriate planning to inadequate staff and infrastructure.

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[2] Averages are calculated based on households' reporting of number of days they have worked under NREGS. We are aware of the possibility that households may have a natural tendency to understate the number of days they have got employment, especially in a situation when they are not happy with the work of the Panchayat. Another problem is that households' reporting may not be confined to a single financial year. However, the estimates on an average are fully in line with the data we have gathered from the Panchayat with minor difference.

Table 8.4: Some selected indicators of NREGA performance from households' point of view in the selected GPs in Birbhum

	Backward GP (Talwan)	Advanced GP (Chandrapur)
Percentage of household applied for job card		
SC	90	68
ST	67	71
Muslim	81	73
Others	79	80
Percentage of households reported to have applied for work		
SC	26	43
ST	21	24
Muslim	45	26
Others	33	35
Percentage of job card holders keeping the job card at home		
SC	73	70
ST	5	35
Muslim	29	81
Others	68	72
Percentage of households worked continuously for two weeks		
SC	5	28
ST	6	21
Muslim	8	40
Others	9	11

Source: Primary survey, IDSK, 2007

"Too much paper work for NREGS" was cited as a problem by many GP members including the Sachibs. Schemes like NREGS involve huge amount of paper work which require dedicated technical (computer literate) staff, computer and photocopying machines. NREGA stipulates that GPs are required to prepare annual report containing the facts and figures on achievements regarding implementation of the scheme within its jurisdiction and a copy of the same is to be made available to the public on demand. All accounts and records related to the scheme are to be made available for public scrutiny. Also a copy of the master rolls of each scheme or project under NREGS must be made available in the office of the GP for inspection.

Table 8.5: Households' response to different aspects of NREGA implementation in the two study GPs in Birbhum

	Backward GP (Talwan)	Advanced GP (Chandrapur)
Percentage of people came to know about '100 days work' for the first time		
Media	17	17
Panchayat Office or Panchayat Member	44	66
Others	39	16
Percentage of households applied for job card	81	74
Percentage of job card holder who actually applied for work	33	35
Percentage of people who went to enquire with Panchayat	41	10
Attitude of the GP staff in providing necessary information and other help		
Very cooperative	25	41
Moderately cooperative	41	43
Not cooperative	34	16
Who filled up the form		
Applicant / somebody from applicant's family	31	16
Panchayat officials or members	50	62
Others	19	22
Percentage of households keeping job card in the house	46	66
Percentage of respondents continuously worked for 15 days	7	21
Percentage of respondents reported delay in disbursing wage beyond 15 days	57	49
Percentage of respondents who said work provided within 15 days of applying for work	15	37

Source: Primary Survey, IDSK, 2007

It is not the only failure of NREGS that all households were not offered 100 days of work. There are other failures too, such as the failure to provide unemployment benefits in case the Panchayat could not provide within a stipulated time the job demanded. It was also reported that wages were often disbursed long after the work was done thereby violating the stipulation of the maximum permissible time lag.

In Chandrapur out of the 161 recorded responses, 37 per cent of the respondents said that employment was provided on time, but in cases of delay, unemployment allowance was not provided. In Talowan too, out of 88 responses, 82 per cent said that there was no provision of unemployment allowance. Compared to Chandrapur, Talowan was less prompt in providing work after receipt of application.

8

In Talowan the beneficiaries were disadvantaged in terms of not only being deprived of unemployment allowance but the average number of mandays created was also low.

A particular clause of NREGA (Clause 7.5 which is based on Payment of Wages Act 1936) entitles the beneficiaries to demand compensation in case there is any delay in payment of wages. Though a significant number of respondents reported delay beyond 14 days in getting wages, none of them reported receiving any compensation. Sachibs of the Panchayats admitted that the delay was due to the delay in receiving funds and longer time taken by the bank to en-cash cheque, not a fault on the part of the Panchayat as commonly assumed.

Facilities at the work place

According to the NREGA guidelines, certain basic facilities should be provided to the workers at the worksite. For example, there should be arrangement for drinking water, rest shade for the workers, crèche for children and first aid box. Figure 1 shows availability of facilities at the work place (the last site they worked) as described by the respondents.

Figure 8.1: Facilities at the worksite
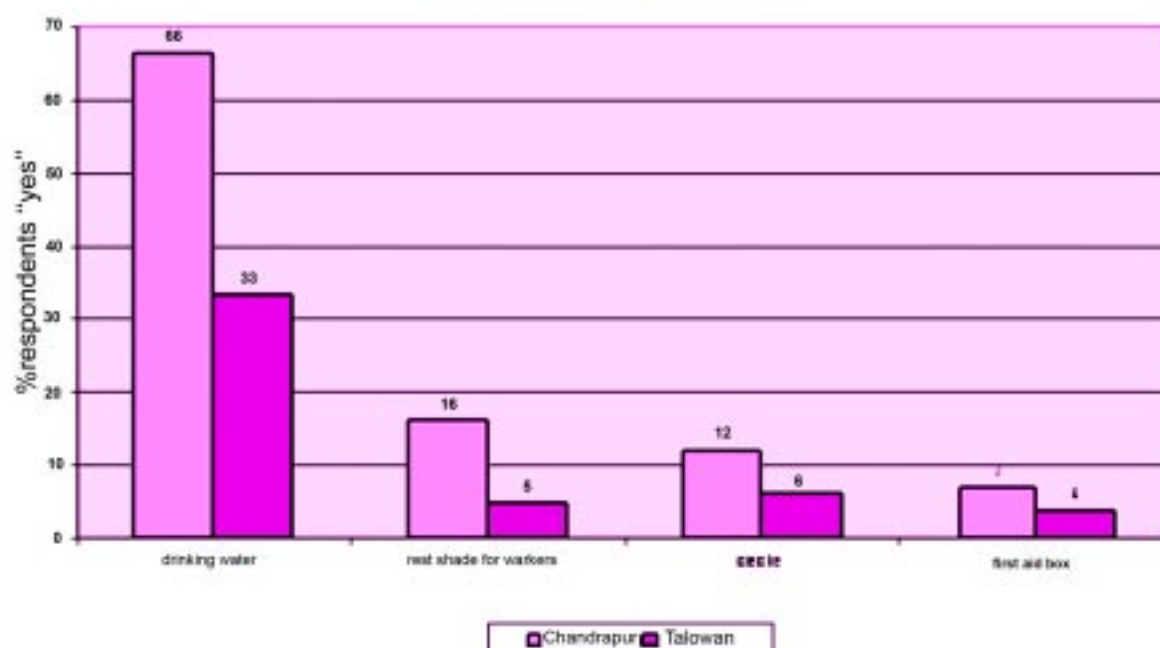
The near absence of crèche facilities for infants (even in an advanced GP like Chandrapur) is really a matter of concern. This could probably result in low participation of poor women having young children. If older children are taken to the worksite for looking after their younger siblings, it definitely

8

affects the education prospects of the former. The absence of a rest shade and a first aid box reflect that such simple provisions are not valued by the GPs. It could not have cost much but it could make the workers feel that they are well taken care of and that the Govt. has been sensitive to such requirements. Manual work is strenuous and sometimes hazardous. Rest shades to relax in the Indian summer between work and first aid in times of emergency should not be compromised. GP functionaries said that scarce funds could not be used to construct rest shades in worksites where work would not continue for long.

Creation of assets under NREGS

The respondents' general remarks on the usefulness of asset creation are found to be more or less positive. In Talowan nearly 73 per cent of the respondents credited the creation of assets under NREGS. They also expressed in the interview that the work done on a road under '100 days work' has helped to make the road suitable for all weather. They expect the panchayat to undertake many such useful projects. However, the construction of a small bridge could not be completed due to exhaustion of funds and that has caused discontent among the workers. There were not many projects undertaken in Talowan and the respondents do not have much to share but they do believe there are good potentials for much more work which will be useful to the area and people. In Chandrapur, the response is much more positive. As Chandrapur ranks among the top ten GPs in terms of its performance in the implementation of NREGS, the number of projects completed under NREGS is also higher in number. The respondents were happy to have the new ponds dug, the old ones renovated and guard walls constructed around the ponds. They said more water was now available for irrigation and the problem of water logging due to overflowing of ponds during rainy seasons was solved. Projects of aforestation and maintenance of roads were undertaken in the villages of Chandrapur and such programmes have been welcomed by the residents. People of the Panchayat expressed satisfaction that '100 days' work' not only provided employment but also improved the infrastructure and amenities of the villages.

In short, residents of both GPs appreciated the projects undertaken under NREGS for their twin values – creation of employment and creation of assets for the community. The experience and evidence suggest that to get better results, the GP members must themselves choose projects which most accurately address the problems of the villages, so that the limited resources and funds are utilised in the best possible manner. Excavation of old and new ponds could be combined with cooperative effort in sustainable use of the ponds for income generation. For example, those who worked on the

pond could be given the same pond on lease so that they can use it for fish production. The NREGS can be aimed at other burning issues of the village such as poor road connectivity, poor or lack of infrastructure for primary schools and ICDS centres.

NREGS and migration

Studying migration and the impact of NREGS on migration at the district level would require a different type of sample design and large sample size, which is obviously beyond the scope of the present report. In the absence of the feasibility of having direct estimates on migration and impact of NREGS on migration, we tried to gather indirect evidence in the form of people's and panchayat members' impression/perception about migration and NREGS's impact on migration.

Most of the household respondents have fair idea about the status of migration taking place in their localities. They also have rough idea about where people are migrating to and what kind of work the migrated people do at the destination place. Though it is found that people migrate to within West Bengal as well as outside West Bengal, the former (within West Bengal) seems to be the pattern for the majority of the workers. Migration is not only confined to the unskilled agricultural labourers but also to the skilled or semi-skilled labourers (especially, stonemasons and bricklayers). In West Bengal, apart from Asansol, Midnapur, Kolkata, the district of Burdwan is the most frequently cited destination place, especially for the agricultural labourers. Outside West Bengal, people go to Mumbai, Bangalore, Surat, Benaras and Delhi. In Chandrapur GP the most of the people who migrated belong to SC community. They migrate seasonally to work as agricultural labourers in places like Suri and Burdwan. On the other hand, in Talowan GP, a good number of migrant workers are from Muslim community and many of them migrate to cities like Mumbai, Kolkata, Delhi, Surat to work as skilled and semi-skilled workers in the construction sector.

Opinions of the households and Panchayat members in two GPs suggest that migration has not come down significantly after the introduction of NREGS, though the impact seems to be slightly stronger in Chandrapur GP (see Table 8.6). Uncertain and fewer days of work under NREGS and higher wages at the places of migration are major reasons why unskilled and semi-skilled workers still continue to migrate even after the introduction of NREGS. In Talowan, NREGS could not generate workdays adequate to meet the demand of its large population. Therefore, it was obvious that it would have little impact on the 'migration for work.' In Chandrapur too, despite its success NREGS could not

significantly bring down distress migration to a significant level. Most of the GP members are of the opinion that NREGS is less likely to bring down distress migration as it does not offer regular job. It is observed that both regular and seasonal migration take place in both the GPs, although the share of seasonal migration is significant. Though it is expected that NREGS will not be able to curb the migration of the skilled or semi-skilled labourers, insignificant change in the quantum of unskilled agricultural labourers is a matter of grave concern. Comparison between Chandrapur and Talowan with regard to NREGS performance and impact of migration clearly shows that NREGS has the potential to bring down migration of unskilled agricultural labour if it is implemented more effectively. However, it is interesting to observe that higher wage and more certain work are not the only consideration for migration of agricultural labourers (especially ST agricultural labourers who migrate to the district of Burdwan and Hoogly every year during sowing and harvesting season). For them, these are the only two occasions in a year they could go in a group outside their villages. This kind of non-monetary pleasure value should not be ignored.

Table 8.6: Views of households, GP members and Sachibs on the effect of NREGS on migration

Views	Talowan		Chandrapur	
	Households	GP Members	Households	GP Members
Great Effect	6	0	19	13
Some Effect	11	27	38	38
Insignificant Effect	15	18	19	13
No effect	60	45	20	13
No idea/ No response	8	9	5	25

Figures along a column indicate percentages to total respondent households; they may not add up to 100 because they are rounded off
Source: Primary Survey

8.3   *Impact of Community Health Care Management Initiative*

The Panchayats and Rural Development Department (P&RD), Government of West Bengal, launched the Community Health Care Management Initiative (CHCMI) with support from UNICEF and the Department of Health and Family Welfare, Government of West Bengal, in 2004, with the overall aim of promoting community involvement in improving people's health. It has been three and a half

years since the initiative was formally launched. Even though the impact of such an initiative should ideally be judged in terms of its consequences on people's health, three-and-a-half years seem rather short for the intervention to have its full effect , especially because in this kind of programme a good deal of time is required for the programme to be implanted. However, one can take a rigorous analytical look at the achievements and pitfalls at this point in order to inform the policy makers while planning the future course of action in the area of decentralized governance and health.

The CHCMI follows a well-formulated set of objectives. If the ultimate objective is to improve people's health, there is no obvious way in which strategies can be designed to achieve that goal. Until recently the focus of the government's health policy had almost exclusively been on the financial allocation through government departments, such as the department of health and family welfare, to directly provide health care services of curative as well as preventive and promotive kind, on the presumption that it would be automatically translated into improved health of the people. With the advent of the Panchayati Raj as the formal institutional form of decentralized governance it was increasingly realised that the Panchayati Raj Institutions (PRI) could be involved in delivery of public health services. Yet the conventional wisdom has so far not gone beyond using the Panchayats only for occasional campaigns such as Pulse Polio programmes which require mass participation.

Perhaps for the first time in the history of decentralised governance in West Bengal such a comprehensive programme as CHCMI has been planned with the aim of involving the community in monitoring its own health. To involve the community, specific steps had to be designed, the first and foremost of which was identification of the key agency at the local community level. The key agency here is the elected *Gram Panchayat* (GP), and the specific steps include regular meetings of GP functionaries with health care delivery workers, including ICDS workers and supervisors, training GP functionaries to sensitise them about health issues and develop capacities to manage the system of monitoring. The meetings are held on the last Saturday of every month, and are supposed to deliberate on the important health issues and concrete steps that need to be taken to address those issues. The discussions, and the decisions that follow, must be based on quantifiable data on nutritional status, mortality, morbidity, different aspects of safe motherhood, and various public health issues such as sanitation, drinking water and so on. Special emphasis has been on safe-motherhood-related awareness generation and capacity building in the community.

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The most important aspect of CHCMI is that the monitoring initiative is supposed to be based on a comprehensive *population-based* set of data. The data generated by the government departmental sources are essentially supply side data on facilities and the numbers they serve. Solely from the information on how many have availed the government facilities it is impossible to draw a complete health profile of a population, and hence make specific plans covering the whole population. CHCMI seeks to remedy this by focusing on the need for population-oriented data base. To achieve this, progress has to be made in the direction of institutionalization of the system of monitoring, which, in turn, requires identification of key functionaries and assignment of specific tasks and responsibilities. To what extent CHCMI has progressed in this direction is what the IDSK study examined[3].

The study was based on primary data collected from six districts: Dakshin Dinajpur, Malda, Murshidabad, Birbhum, Purulia and Bankura. From each district, six GPs were selected from those which had prepared Action Plans on CHCMI ('focus group'), and three GPs were selected at random as 'control' where Action Plans are yet to be prepared. Altogether fifty four GPs were thus selected. Separate questionnaires for the following informants were used: GP *Sachib*, *Sanchalak* (Convener) of *Swastha O Siksha Sthaee Committee* of GP, ANM, *Dai*(s), ICDS supervisor(s), and ten randomly selected women who are currently pregnant or have children aged below one year. Both the process of implementation and the outcome of the initiative have been analysed.

A composite index of achievement on implementation ('process score') was constructed from select indicators and GPs were ranked. There are well-performing GPs and poorly performing GPs in all the study districts, and none of the districts seems to have a disproportionate share of either. Among the top twenty GPs fifteen belong to the focus group and five belong to the control group. It implies that preparation of the Action Plan is a necessary first step in the implementation process, and the GPs that have prepared their Action Plans are more likely to make progress on other parts of the implementation process.

No common explanation can be found as to why some GPs have taken more interest in CHCMI than others. It ranges from motivated GP leadership combined with active SHGs to existence of a good NGO as facilitating agent. The correlation between the process score and an outcome indicator,

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[3] For details see Chakraborty, Achin, Subrata Mukherjee and Bidhan Kanti Das *An Evaluation Study on Advocacy of Safe Motherhood under CHCMI*, Institute of Development Studies Kolkata, 2007.

namely, the percentage of institutional deliveries, is found to be positive and not too low (0.39), which shows that a GP with a high process score is likely to show a high percentage of institutional births.

The most prominent element of CHCMI is the 'Last Saturday Meetings' that the GPs hold every month to discuss public health issues. The meetings are being held regularly in all the 54 GPs. The minutes of the recently held meetings show that a variety of health related issues, most of which on safe motherhood, have been discussed. However, there are indications that not all the GPs and GP members are equally involved in the meetings. In most of the meetings either the *Pradhan*, or *Upa-Pradhan*, or the *Sanchalak* is present, besides the almost regular others from the Health Department, and sometimes ICDS. In a very few GPs more than one GP member was present at a time in the meeting.

The proceedings of the meetings in most cases are recorded in very general terms such as "people should be made aware of the health and hygiene practices". If specific points are not noted, it is not possible to record in the subsequent meetings the 'actions taken'. However, no matter how casually they are done, the last Saturday meetings undoubtedly have influenced the PRI functionaries. They now at least feel the importance of having information on birth and death, safe motherhood and other health related information including child under-nutrition.

GPs are supposed to set up a Sadar Sub-Centre with certain facilities close to the GP office. In 18 out of 54 study GPs were the Sadar Sub-Centre set up. Out of these 18 only 7 have electricity and 6 have water facility. In none of them child delivery has taken place, even though the idea was to equip them for child delivery. In 40 GPs information on institutional delivery was available. Only 12 GPs could provide information on number of deliveries attended by trained Dais, and 24 GPs could report how many trained Dais the GP had. In the data compilation and transmission process many GP functionaries are yet to take active interest. Even though 68 percent *Sanchalaks* said baseline surveys by SHGs were conducted in their GPs, most of them failed to say anything about the findings of the surveys.

On the outcome side, when asked about what the ideal age at marriage is, 32 percent of women reported an age less than 18. There is no significant difference between the focus and control GPs on this. However, if we focus only on the non-literates among them, women in focus GPs seem more

8

aware than their counterpart in control GPs. Similarly, the percentage of illiterate women who said that a family should have two or fewer children is 51 in focus GPs compared to 43 in control GPs.

NGO as facilitating agent: How Abinashpur GP did it?

Abinashpur GP in Suri II block of Birbhum district has 10 gram *Sanshads* for 13 villages under its jurisdiction. Out of the 13 villages, 5 are Integrated Tribal Development Project villages. This GP has a total population of 11,954 (as per 2001 Census) out of which 34 percent belong to SCs and 32 percent to STs. There are 17 Anganwadi centres. The GP tries to ensure 'spot feeding' at the centres.

The base-line survey in this GP had been conducted even before CHCMI was formally launched in other GPs in the district. The Action Plan was prepared with active assistance from CARE – an NGO working in the area. The NGO organized training for members of the SHGs, GP members and officials on survey procedure, compilation of data and how to write report. The action plan has very detailed information on problems of public health, education, early marriage, and so on. The action plan clearly spells out the possible ways to address the problems that emerged out of the survey, and how the responsibilities for action and financial sources can be fixed.

From the base line survey, several important issues emerged, such as problems of drinking water sources, status of sanitation facility and drainage system, prevalence of marriage at below 18, early pregnancy, very low rate of institutional deliveries, incomplete vaccination in children, family planning, fewer than normal prenatal and post natal check ups, incomplete birth and death registration, problem of malnutrition and basic infrastructure. The GP seems to be good at keeping records and information dissemination is one among its important activities. For example, at the entrance of the GP office, the chart on the public health status in the GP is prominently displayed with most of the cells filled in.

As far as achievements go, the condition of antenatal care is now satisfactory in this GP. Most of the pregnant women are getting up to the third check up. A part of the money for *Janani Surakshya Yojana* is given to the mothers to improve their nutrition. This is one of the very few GPs where the expenditure on specific items of public health is clearly identified and easily obtainable. In the last financial year (2006-07) this GP spent around 25 per cent of its untied and Finance Commission funds on public health. Furthermore, this GP has provided a Trolley Van to one person in each village with an innovative arrangement. The person is responsible for carrying the patient to the nearest facility whenever such need arises, and during the rest of the time he can earn a livelihood by using the van for transportation.

Although the observations made above relate to all six study districts, they are applicable to Birbhum as well as it is one of them. In our overall assessment, the record of success of CHCMI has so far been somewhat mixed, which is not surprising, since it is too early to have the full effect of the

initiative felt. The amount of work that has gone into planning and designing the initiative is quite remarkable. If one goes through the series of notifications containing detailed instructions on various components of CHCMI one can hardly doubt the internal consistency of the design and the assumptions on which various components have been built. The study, however, identifies a few key areas where some rethinking combined with a bit more effort at implementation can bring about better results.

Suggestions

The main challenge is to motivate those PRI functionaries who are yet to take active interest. At the core is of course the general lack of capacity to comprehend and implement various instructions flowing down from above, which is not specific to CHCMI. Apart from the general capacity building, which is perhaps beyond the scope of CHCMI, sensitisation workshops should be strengthened by involving *experienced motivators*.

However, sensitization alone cannot be effective unless they are combined with some incentives. While in the orientation programmes successful cases should be repeatedly mentioned to instill a sense of competition among the GP functionaries, a small number of specific targets can be thought of, which are somewhat feasible to attain. The GP may be rewarded if certain targets are reached.

To institutionalize the initiative adequate financial provisioning is necessary. The overall financial allocation for the programme has so far been rather small, and much of the resources had to be managed from sources other than the standard earmarked government budgetary sources. Some of the stated goals of the National Rural Health Mission are quite in line with the objectives of CHCMI. While the NRHM has made substantial financial allocation to achieve the stated objectives, CHCMI provides a kind of blueprint for working towards these objectives without financial backing. The complementarities between the two are so obvious that it would be unfortunate if it remained unexploited for a lack of initiative at the upper echelons of the government to transcend the departmental boundaries.

Money is needed for financing additional manpower needed to build capacity at various levels. There is clear indication that the presence of a Programme Coordinator in a district makes significant difference, as it is evident from the record of progress that Murshidabad and Birbhum have made. Neither has

8

a Programme Coordinator, and in terms of our process scores they lag behind others, despite sincere efforts by the Secretary to Zilla Parishad in the former and the Nodal Medical Officer in the latter.

Money is also needed to sustain motivation of the SHGs as well. An honorarium is more a symbol of recognision than anything else. It is almost impossible for anyone to keep up motivation on a sustained basis if one's work is not recognized as valuable. SHG members may be motivated by the recognition that they are doing valuable work for the community. But this feeling of pride and self-respect has to be nurtured by the GP leadership. Some GP members tend to think of the SHG members as inferior beings incapable of delivering the job they are expected to. The sensitization programmes should address this too.

The cascade mode of training and sensitization does not seem to have been working the way it should be. This does not mean that the cascade mode itself is flawed. This mode of training would be more effective if the goal of training was to impart *well-defined technical knowledge*. But in the case of CHCMI the training programmes must be aimed at arousing interest in the GP level functionaries about community orientation in matters of people's health. The district coordinators or the persons in charge of organizing the training programmes should be given the freedom to deviate from the norm about who can be the district level trainers and invite people who are known for their abilities to motivate. A CMOH – II, for example, having a good stock of knowledge on safe motherhood but poor ability to communicate is no better than a well-respected local school teacher who knows how to motivate and sensitise. But a strategic balance has to be made. Involving CMOHs and DPOs of ICDS in the training programmes makes good strategic sense, for CHCMI cannot succeed without the involvement of these officials from different departments.

In Blocks the Joint BDOs are usually in charge of CHCMI. This middle tier seems the weakest link in the chain, as the Joint BDOs seem rather overburdened with various other responsibilities. A Block level coordinator similar to the District Coordinator may be a possible solution.

The data on population health collected and compiled at different levels must attain the desired standard of quality. With more effort in monitoring at different levels it is possible and most desirable to improve the quality of data. More importantly, the GPs are yet to be sensitized about the difference between the nature of data that the health department would provide and the kind of data they need for planning

8

action. The crucial difference is between 'client oriented' and 'population oriented' data. GPs must be sensitized to keep as much information as possible on the *excluded* people.

In one district, the *Zilla Parishad* on its own initiative conducted a small survey of children and found that the data on undernutrition routinely reported by ICDS centres frequently suffer from gross underestimation. The ZP then introduced a nutrition supplement programme and in six months' time obtained impressive results. This type of questioning of the data received from ICDS and Health Department sources and reworking on them for effective intervention must be encouraged in other districts.

Appendix

Selection of GPs and households

Two Gram Panchayats were selected based on the following three criteria: (a) their performance in the implementation of NREGS; (b) backwardness assessed in terms of concentration of socio-economically backward population, and remoteness - measured by the distance from district/sub-divisional headquarter; and (c) prevalence of migration as perceived by the block and district offices.

Performance of a GP in the implementation of NREGS was measured using three indicators (i) average number of man-days created per job card issued; (ii) percentage of completed schemes out of total number of schemes proposed; and (iii) utilised funds as a percentage of available funds for NREGS. All these three indicators were considered for the financial year 2006-07. These indicators were then converted into scores using the method which UNDP uses for ranking the countries according to their human development indicators. In the next stage three individual scores were added up to get the final scores giving 50 percent weightage to the first indicator and 25 per cent weightage to each of the other indicators. Finally GPs were ranked in ascending order according to the value of the total scores.

Once all 167 GPs were ranked, we picked up 10 best performing GPs and 10 worst performing GPs. Chandrapur was chosen from the list of 10 best performing GPs considering other factors such as its close proximity to Sadar Sub-division and lower degree of backwardness. Talowan was chosen from the list of 10 worst performing GPs considering the same factors as in the case of Chandrapur. Unlike Chandrapur, Talowan is quite remotely located, very poorly connected by road transport and

it is a backward GP too. Chandrapur GP belongs to Rajnagar block and Talowan GP is in Mayureswar block. There is some evidence that a good number of people from these two blocks migrate out for work. This gives us an additional advantage of studying some migration related issues in these two GPs.

In each GP we identified with the help of GP functionaries Sansads with a good number of people from SC, ST and Muslim community, and which could also be considered as representative. In each GP, we stratified the representative Sansad's households into four strata: SC, ST, Muslims and others. Attempts were made to interview 30 households from each strata in two GPs. Sample households were selected from sample frame using random number generated by MS Excel (this is considered as substitute of random number tables). Although attempts were made to interview 240 households, we ended up interviewing 219 households due to unavoidable reasons. Table ** shows total number of households and sample households belonging to each stratum in two study GPs. Since the strata vary from each other in terms of their share in the population, taking equal number of households from each stratum imposes the problem of over-representation / under-representation of some groups in the sample. This problem was corrected by calculating appropriate weights for each stratum in two GPs so that the effect of over or under representation in the sample is neutralised. It is evident that while Muslims dominate in Talowan GP, both SC and others have almost equal share (in terms of number of households) in Chandrapur GP. Apart from interviewing the selected households, we interviewed all GP members who were available and GP Sachib.

Table 8A1: Total and sample number of households and weights in two GPs

No. of households	SC	ST	Muslim	Others
Talowan				
Population	922 (22)	417 (10)	1605 (38)	1231 (29)
Sample	23	21	28	30
weight	40.09	19.86	57.32	41.03
Chandrapur				
Population	1104 (39)	500 (18)	122 (4)	1115 (39)
Sample	41	24	27	25
Weight	26.93	20.83	4.52	44.60

(1) Figures in the parentheses stand for share in total number of households in the GP; (2) weight for i^{th} stratum in th j^{th} GP = (Population size of ith strata in jth GP)/(sample size of ith stratum in the jth GP).
Source: Data provided by the respective Panchayat officials and Primary Survey

Chapter IX: Conclusion and way ahead

In terms of most human development indicators Birbhum trails behind most of the other districts of West Bengal. If the recent trends in these indicators showed signs of acceleration we could predict with some confidence that the relative distance between the district and the rest would soon come down. Unfortunately no such trend is discernible.

One of the important issues that have bearing on the progress of human development indicators is the pace of urbanization. Birbhum has experienced almost no growth in urbanization in the recent period. As it is the case for the entire country, except perhaps for Kerala, there are substantial rural-urban gaps in human development indicators in West Bengal. As a consequence, districts with higher percentage of urban population usually show up better human development achievement.

Another specific demographic feature that influences Birbhum's progress in human development is high proportion of traditionally disadvantaged people, viz. SC and ST in total population. Specific blocks with very high population of any of these groups need special attention. It is heartening to observe that the benefits of the redistributive mechanisms, such as various poverty alleviation and other livelihood security oriented schemes have largely gone to these groups. The distribution of land patta, for example, benefited more SC and ST households than their share in total households.

On literacy and elementary education much progress has been made in the recent past. However, to reduce the relative distance from other districts, faster progress has to be made. One worrying aspect of illiteracy is that a substantial number of persons in the age group 15 to 24 were found to be illiterate in 2001, which means that they are now in the prime of their working life being in the age group 22 to 31. Unless a concerted effort is taken to impart basic literacy skills at least to this group of adults, they will be figured as illiterate in the next couple of Censuses. In other words, there will remain a large residual group of illiterates in the years to come, even if we assume that no new addition to the number of illiterates occur in future.

9

In development policy discourse education has a primacy of place as it is believed that education has a fundamental role in income generation and there are many other ways in which education is thought to promote and sustain human development. To understand the possibility of better educational attainment, it is important to understand various inputs as components of education infrastructure and their potential contribution to education outcome. We have presented an analysis of education infrastructure and ranked blocks in term of these indicators. It throws important insight into what need to be done in different parts of the district. While overcrowding of classrooms and inadequacy of teachers is the problem in blocks like Murarai-I and II, in Rajnagar the small class size makes it too expensive to provide adequate number of teachers in each and every school, which makes the task of reducing inter-block disparity more difficult than it seems.

As far as the health care sector is concerned, what really comes in the way of objective evaluation of the state of affairs is a serious lack of adequate and usable data. The progress in the technology of data storing and analyzing has not been matched by a systematic thinking on how and in what form the data should be collected and collated so as to facilitate analysis of population health. Despite all the limitations of the data, we could be able to make a few important observations on the overall health infrastructure, its distribution across space, and relate them to a select number of indicators of health outcome. It has been found in the analysis that there is a substantial gap between demand and supply of healthcare infrastructure, both physical and manpower, especially among the blocks of Rampurhat sub-division. Though the percentage of institutional deliveries has been increasing during the recent years, other aspects of maternal health such as provisioning of ante-natal care, post-natal care have to be improved and require special attention from the Health Department of the district. Due to paucity of time-series data, the trend of infant death per 1,000 live-births could not be established, the present trend of other child health indicators such as incidence of low birth weight, achievement of complete immunization etc. suggest that there has not been much improvement on infant and child health in the recent years. Special effort from Health Department is needed to improve maternal and child health indicators in the district. Though the prevalence of communicable diseases has been declining consistently during the recent years, the data suggest that prevalence of some of the communicable diseases such as leprosy, tuberculosis, filaria and malaria are still significantly high.

There is an impression among the concerned people that dependence on agriculture has come down and people are now engaged in more diverse activities than before. While it is indeed the case that the dependence on agriculture has reduced, the extent of this reduction is not as large as one tends to believe. What is really worrying is that while work participation has increased over the past decade, the increase is largely in the category of agricultural workers. What is, therefore, needed is an effort in diversification of economic activities. Even the agricultural activities are overwhelmingly rice-based. From the cultivator's point of view it makes rational sense to continue with rice given the uncertainties involved in new initiatives. The agrarian people have to be safeguarded against the higher risk in switching to alternative income generation activities.

Birbhum has a potential for development in certain areas that could provide livelihood to a wider range of people. The three areas that have been identified are horticulture, cottage and handicrafts, and tourism. Although a human development report is not expected to enter into the area of economic planning, we discussed these possibilities in the context of people's livelihood opportunities.

We finally discussed a very important issue in the context of human development, viz. governance and service delivery. We analysed various initiatives in achieving better coordination among different government departments. One such initiative is Community Health Care Monitoring Initiative, which is intended to involve the local community through the Panchayati Raj Institutions to monitor public health issues at the community level. This should be further strengthened.

Finally, with much hesitation, we conclude with the presentation of an overall assessment of blocks in terms of certain indicators. For education outcome we have taken a composite index of literacy rate and enrolment; for health, we have taken a composite index of infant survival and institutional delivery; and for living standard we have taken the percentage of agricultural worker in total workers (main plus marginal). By applying the UNDP methodology we have computed the composite index of achievement which can roughly be called the Human Development Index (HDI). The ranking that we have obtained do not conform to our understanding based on the detailed analysis

9

presented in the previous chapters. The data on enrolment have been indirectly calculated from the information on the number of out-of-school children. The values of all the component indicators have been presented in Table 9.1.

Table 9.1 Select indicators for construction of composite index of human development

Blocks	Literacy Rates	Percentage of Children Out of School	Net Enrollment	Percentage of Institutional Delivery	Infant Death / 1000 LB	Percentage of Agricultural Workers
MURARAI-I	46.6	30.83	69.17	51.2	5.2	35.1
MURARAI-II	46.2	18.9	81.1	17	17.8	38.5
NALHATI-I	63.7	13.27	86.73	15.3	5	38
NALHATI-II	61.7	9.27	90.73	6.1	2.3	40.6
RAMPURHAT-I	61.9	18.05	81.95	3.7	19.4	38.4
RAMPURHAT-II	63.5	14.47	85.53	10.4	15.1	39.4
MAYURESWAR-I	65.4	15.79	84.21	29.5	33.4	44.0
MAYURESWAR-II	62.8	12.69	87.31	46	5.9	39.2
Md. BAZAR	55.1	25.02	74.98	18.5	20.5	40.6
RAJNAGAR	58.3	27.07	72.93	50.6	17.9	34.0
SURI-I	62.5	20.8	79.2	15.2	28.4	28.0
SURI-II	63.9	15.9	84.1	26	24.1	40.3
SAINTHIA	64.4	18.89	81.11	54	18.4	46.8
LABHPUR	62.1	20.06	79.94	49.6	18.3	38.8
NANOOR	61.2	19.68	80.32	48.2	12.4	40.1
BOLPUR-SRINIKETAN	60.0	16.46	83.54	45.7	28.8	43.9
ILLAMBAZAR	63.0	21.2	78.8	23.8	27.7	44.2
DUBRAJPUR	56.8	29.06	70.94	40.9	4.7	40.2
KHOYRASOL	60.6	32.24	67.76	11.3	13.5	34.3

It seems that the out-of-school children data and the information of infant survival are somewhat imperfect. While for some indicators, viz. literacy rates, net enrolment and percentage of institutional delivery, higher the value of the indicator higher is the level of achievement, for the other indicators, such as percentage of children out of school, infant death per thousand live birth and

percentage of agricultural workers, higher the value lower is the level of achievement. While preparing the composite index we kept this in mind. The aggregation of three components of this kind to rank blocks, in our judgment does not make much sense. Amartya Sen repeatedly cautioned us against pointless aggregation: "The passion for aggregation makes good sense in many contexts, but it can be futile or pointless in others. Indeed, the primary view of the living standard is in terms of a collection of functioning and capabilities, with the overall ranking being the secondary view" (Sen, 1987).

Table 9.2: HDI ranking of blocks

Blocks	Index of Education	Index of Health	Index of Living standard	HDI	Rank
MAYURESWAR - II	0.81	0.86	0.36	0.68	1
NALHATI - I	0.94	0.57	0.43	0.65	2
RAJNAGAR	0.52	0.72	0.62	0.62	3
SURI - I	0.73	0.19	0.90	0.61	4
NANOOR	0.71	0.78	0.32	0.60	5
LABHPUR	0.70	0.7	0.39	0.60	6
MURARAI - I	0.28	0.93	0.56	0.59	7
NALHATI - II	0.92	0.52	0.30	0.58	8
RAMPURHAT - II	0.95	0.36	0.35	0.56	9
DUBRAJPUR	0.48	0.83	0.32	0.54	10
SURI - II	0.90	0.37	0.31	0.53	11
SAINTHIA	0.76	0.74	0.00	0.50	12
RAMPURHAT - I	0.75	0.23	0.41	0.46	13
KHOYRASOL	0.37	0.4	0.60	0.46	14
BOLPUR-SRINIKETAN	0.71	0.49	0.14	0.45	15
MAYURESWAR - I	0.88	0.26	0.14	0.43	16
ILLAMBAZAR	0.72	0.29	0.13	0.38	17
MOHAMMAD BAZAR	0.49	0.35	0.30	0.38	18
MURARAI - II	0.34	0.38	0.40	0.37	19

9

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