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**Geographical Access and  
Quality of Primary Schools  
- A Case Study of South  
24 Parganas District of  
West Bengal**

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# GEOGRAPHICAL ACCESS AND QUALITY OF PRIMARY SCHOOLS – A CASE STUDY OF SOUTH 24 PARGANAS DISTRICT OF WEST BENGAL

**Jhuma Halder\***

## **Abstract**

*Provision of schooling facilities within walking distance is one of the key components of universal elementary education. Schooling facilities do not indicate only set up of schools but also provision of infrastructure in the schools. Even after twelve years' of implementation of Sarva Sikshya Abhiyan (SSA) and five years implementation of Right to Education Act, there are still widespread disparities in terms of both school set-up and infrastructure in primary schools. Enrolment has increased manifold indicating parental aspiration to send their children to schools. But supply related variables have lagged behind. This disparity is very prominent in the regions which are geographically backward. Using primary and secondary data, a case study has been carried out to explore the scenario of location of schools, habitation wise distribution of schools, infrastructure of schools and attainment of students in schools. The study finds that attainment of children in schools is very much related to quality of schools.*

## **1. Introduction**

India is a land of diversities in its geographical features, in terms of its mountain ranges, valleys, desert regions, forests, fertile plains, dry plateaus, coastal areas etc. It is a country with the second largest population in the world. Due to the burgeoning numbers of population, density of population in the country is rising leading to much population pressure, and the remote geographical areas of the country are no exception. Understandably, in these remote geographical areas, mostly inhabited by socially deprived sections, the performance of students is much below the levels elsewhere.

The dictionary meaning of geographical access indicates the ability to reach a particular place from another place. These two ends in this study are; children and primary school or specifically, the location of the school and location of the habitation where the students reside. Geographical accessibility to schools is related to three variables—location of schools, location of habitations and intermediated road network. Several studies have revealed the negative link between remoteness of habitations and educational development (Duflo, 2001; Jalan and Glinskaya, 2003; Filmer, 2007). Worldwide, there are millions of people who do not have access to basic services and education, which comes from having a higher degree of accessibility and mobility (Shyam, 2007). Geographical distance to school is cited as a major barrier to schooling of rural children in India (UNICEF, 2006; Ward, 2007). The time and the physical discomfort especially in hot summers and monsoons involved in accessing schools cannot be used either for productive activities or for leisure (Mukherjee, 2011). Therefore, the basic question is: how far does a child travels to access good schooling.

The access norm as mandated by RTE Act is to ensure that all children have access to primary school within one km of their habitation, and all children have access to upper primary school within three kilometres of the habitation. There are state level modifications in the RTE norm, such as in West Bengal, where the area or limits of neighbourhood within which a school has to be established by the State Government shall be 1 km for primary schools and 2 km for upper primary schools in rural areas.

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There is no bar to having more than one primary school within the radius of 1km from the habitation provided it is justified in terms of accessibility and need based requirement (Kolkata Gazette, Extraordinary, March 2009). The maximum number of student strength shall not exceed 300 for a primary school and 500, for an upper primary school. The implementation of this policy depends on residential pattern and geographical accessibility of the area.

The term schooling indicates not only having a school in a nearby location but also the quality of infrastructure in the schools, and most importantly whether the school can attract children or not. However, having a school within the stipulated distance cannot attract children for schooling. Parental decision to send their children to school is governed largely by the supply related variables like provision of physical infrastructure in primary schools. Several studies have revealed that poor quality of schools is pushing children out of the folds of formal learning (Lewin, 2007; Sinha and Reddy, 2010; Govinda and Bandyopadhyay, 2011). Many children, who have initial access to school, attend irregularly due to inadequate infrastructure, facilities and resources (Govinda and Bandyopadhyay, 2008). Some of the basic facilities needed to facilitate effective education in an institution are classroom, drinking water facility, toilet facility, library and other ancillary facilities. Without basic infrastructure, a school cannot run. The RTE Act has mandated some of the infrastructural factors for running quality school. Therefore, it is important to investigate the gap between actual and optimal conditions of infrastructure in any primary school.

This paper is part of a broader study that aims to investigate the situation of school location and their infrastructural quality. The objective of the study is to understand the actual spread of schools, infrastructural quality and student's attainment in different schools.

### **1.1. Data and Methodology**

Data for the present study have been collected from District Report Cards, School Report Cards published by DISE (District Information System on Education) for the years of 2006-07 and 2013-14 and Census of India reports. In order to study geographical access, school mapping exercise was carried out. The location of all schools in the selected panchayats was collected through GPS survey and later plotted on the satellite imagery through GIS mapping.

To study the physical infrastructure in primary schools, data regarding the different components of physical infrastructure (e.g. classrooms, common toilet, girl's toilets, blackboards, etc.) have been reduced to a comprehensive 'Index of Physical Infrastructure.' Ranking method has been used to create a composite index of Physical Infrastructure with the aid of SPSS software. Appropriate bivariate analyses like Spearman's ranking Correlation have been used to show the relation between educational attainment and the aggregative index of physical infrastructure.

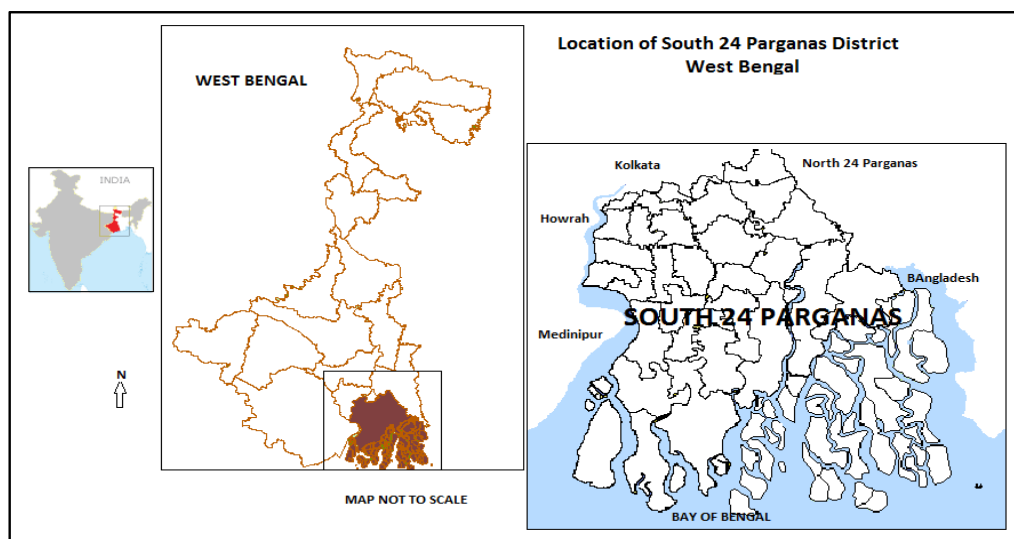
### **1.2. Study Area**

The area selected for the study is the South 24 Parganas district of West Bengal, which stretches from the metropolitan Kolkata to the remote riverine villages up to the mouth of the Bay of Bengal (Figure 1.1). Apart from its staggering size and population, the district administration has to contend with problems typical to metropolitan life in the urban area—such as high population density and overloaded

civic infrastructure—and in complete contrast, in the rural areas, the lack of transport and communication facilities and weak delivery systems. Spread over an area of 8165 sq. km, the district of South 24 Parganas covers almost 9 per cent of the total landmass of the state of West Bengal. The southern part of the district is covered by thick mangrove forest named 'Sundarban'. This region is mainly a delta region of Hugli River and contains 37 islands. The tract of Sundarban has experienced calamities and devastation due to natural disaster and human interventions, many a time resulting in de-population. However, the very rich natural resources have always attracted people not only from neighbouring tracts but also from countries abroad. The district has challenging geographical features and over 84 per cent of the population lives in rural areas. Since 27.02 per cent of the population in this region is in 0 to 14 years of age group, it is imperative to investigate its schooling situation.

The district has two types of geographical areas- forested blocks (13 blocks) and non-forested blocks (16 blocks). Taking this into consideration, four blocks have been selected for the study consisting of two blocks from the forested area and two blocks from the non-forested area. The selected non-forested blocks are Diamond Harbour-I and Magrahat-I and the selected forested blocks are Mathurapur-II and Basanti. From these blocks, 11 panchayats have been selected randomly for detailed study.

**Figure 1.1: Location of Study Area**



### 1.2.1. Growth of Primary Schools in the Study Area

Primary education in West Bengal is mainly served by two types of institutions – regular primary schools and Sishu Sikha Kendras. The primary schools are run by the Department of education, and the SSKs are run by the Department of Panchayat and Rural Development, Government of West Bengal. The SSKs are a special programme designed by the State Government in 1997-98 in these areas to cater to the disadvantaged children. The SSKs are located in Scheduled Caste, Scheduled Tribe and Muslim inhabited areas.

Among the two types of geographical regions in the study area, there has been higher expansion of government schools in the forested region, particularly in the Basanti block in the last few years (Table 1.1). Twenty-two new schools were added in the selected panchayats of Basanti block between 2005-06 and 2013-14, followed by Mathurapur-II (15 schools), Magrahat-I (11 schools) and Diamond Harbour-I (7 schools). Further analysis of the government schools reveals that increase in the number of regular primary schools has been very low in the last 8 years; only one new regular primary school was established in the non-forested region and 4 schools in the forested region consisting of two in each block. However, a large number SSKs were established during this period; a much higher number of SSKs were established in the forested region (33 SSKs) as against 17 SSKs in the non-forested region. On the other hand, private players prefer the more developed localities of the non-forested regions, and hence the increasing number of private schools in the area. In the non-forested region, every panchayat has 3-4 private schools. However, in panchayats in the forested region, private schools are a rarity, particularly in the remote villages surrounded by the forest.

Further, the study has estimated the size of the schools in terms of enrolment. Table 1.2 maps the changes in school size over time. The number of government schools increased from 38 to 58 in the non-forested region and 63 to 102 in the Sundarban forest region in the period under review. It may be observed that the proportion of schools with less than 50 enrolments has doubled in the non-forested blocks. There were no schools with less than 50 enrolments in 2005-06 in the forested blocks but within 8 years, there appeared a 35 per cent increase in the number of schools in this category. It may be further observed that most of these schools with below 50 enrolments were SSKs. In the non-forested region, 56 per cent SSKs have enrolments below 50. Specifically, in Diamond Harbour-I block, 88 per cent SSKs have enrolment below 50. In the forested blocks, 28 percent fall in this category. But within the forested region, Mathurapur-II block has 73 per cent schools fall in the small category, below 50 enrolments.

### **1.2.2. Road Network**

There is a sharp disparity in road network between the two types of region in the study area. The forested blocks are primarily island blocks with hardly any surface road network. Recently, there has been some improvement in mainland connectivity in Basanti, with the building of a bridge, but the overall the situation however is not good. The non-forested blocks are better endowed than forested blocks, in that these have at least kutchra (non-metalled) roads within the villages and metalled roads connecting the other villages.

The south 24 Parganas Human Development Report (2009) has identified some of the blocks (5 blocks) in the forested region as deserving special understanding of the disposition of the people here, their livelihood and threat perceptions. Basanti, a sample block in the study is one among them. The same report also states that some of the blocks (7 administrative blocks) are now part of the mainland. These blocks have been gradually linked with the mainland over time, and are now connected by roads and also have some infrastructural facilities. But in comparison to the rest of the blocks in the district, the infrastructure in these 'not-so-remote' Sundarban blocks is poor and sample block Mathurapur-II is one such block with below par infrastructure. Hence, there are inter-regional disparities

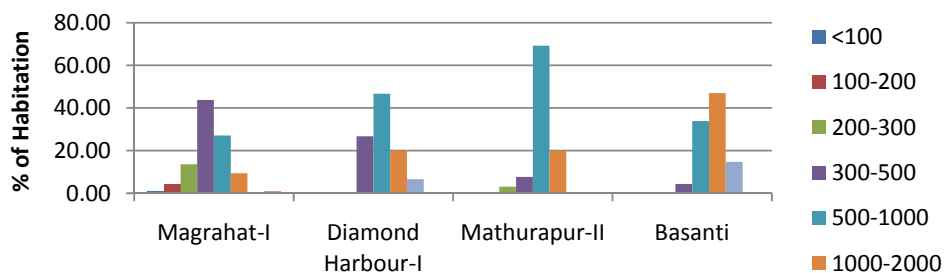
between non-forested region and forested region and there is also substantial intra-regional variation in accessibility level within blocks in the forested region.

The road network of the study area can be summed up as follows: All villages in the sample have paved approach road and mud approach road. In the island block Basanti, 35 percent villages are bordered by river and have navigable river approach. The length of surface road in non-forested region of the sample is 4.03 km. per sq. km. and in forested region is 1.40 km. per sq. km. Block wise, the highest surface road length is in Magrahat-I Block (5.00 km.per sq.km) and lowest in Basanti block (0.80 km. per sq. km). Basanti block is situated on the boundary of the reserve forest. There was no road communication connecting Basanti blocks to the mainland till 2011. River channels were the only mode of transport. In 2011 a bridge was built connecting the block to the mainland. Other modes of transport in this island are cycle-van and motor-van. Many habitations do not have any mode of transport at all.

### 1.2.3. Habitation Pattern

There were 11 panchayats with 55 villages and 259 habitations in the sample survey. On an average, each village contains more than four habitations. Out of total number of habitations, 25 percent are classified as scheduled caste or scheduled tribe habitations. This percentage is higher in forested blocks (33 percent) than non-forested blocks (16 percent). Block wise, Basanti block has the highest proportion of SC/ST habitation (36 percent) followed by Magrahat-II (29 percent), Magrahat-I (26 percent), and Diamond Harbour-I (9 percent). Figure 1.2 shows the distribution of habitations by size of population (2011 census). The data reveals that in Magrahat-I block the highest percentage of habitations have 300 to 500 population. In Diamond Harbour-I block, the highest percentage of villages have 500 to 1000 population. These two blocks are non-forested blocks. Being closely located to Diamond Harbour town, the habitations of Diamond Harbour-I block are larger than Magrahat Block-I block. In Mathurapur-II block, the habitations are large with 69 percent habitation in 500 to 1000 population category. In Basanti block, the habitations are even larger than Mathurapur-II block with 47 percent habitation in 1000-2000 category and 34 percent in the 500-1000 category.

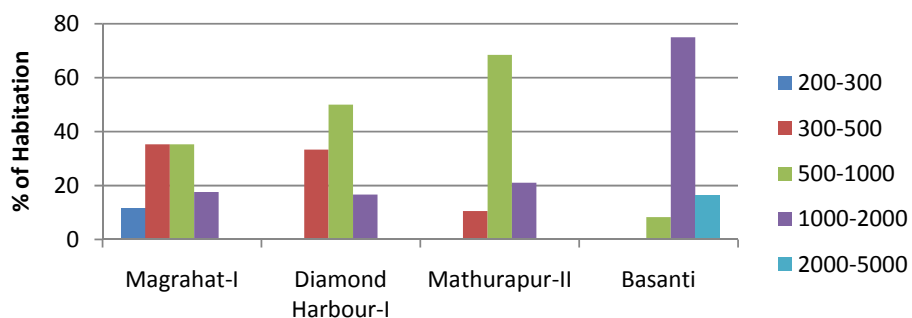
**Figure 1.2: Distribution of Habitations by Population Size**



Source: Census, 2011

The size of SC/ST population across habitations in the entire area under study varied between 200 to 2000. The SC/ST habitations are relatively smaller in the non-forested blocks of Magrahat-I and Diamond Harbour-I. But in the forested blocks these habitations are quite large. The SC/ST habitations with a population size 1000 to 2000 are found high in (75 percent) Basanti Block (figure 1.3). Thus the average SC/ST child is likely to be found in larger habitations in the forested blocks.

**Figure 1.3: Distribution of SC and ST Habitations by Population Size**



Source: Census, 2011

## 2. Geographical Accessibility of Schools

A common measure of accessibility in terms of schooling is the average distance to the nearest schools or travel time, on enrolment. Studies revealed that there is strong negative relation between interior location of villages and enrolment (Filmer, 2007; Handa, 2002). In the sample villages, most schools are located within villages and also within one km of distance. But the nature of the road connecting schools varied from village to village. The road connecting schools are categorised into three groups- pucca road, semi-pucca road and kutcha road. Pucca road is metalled road, semi-pucca road mostly a mixture of kutcha and pucca roads (made up of bricks in some portion and mud in some portion), and kutcha road is just mud road. In non-forested regions, 18 percent of school approach roads are pucca road, 50 percent roads are semi-pucca and 32 percent roads are mud road, whereas in forested regions, 23 percent roads are pucca road, 17 percent roads are semi-pucca road and 60 percent roads are kutcha roads. As revealed by our study, there is clear positive relation between enrolment rate and the nature of roads. It has been observed that in the entire sample region, wherever school enrolment was higher, the connecting road was in good condition. In the non-forested region, the relation is positive and statically significant (0.305, significance level 0.05). In forested region also, the relation is positive (0.133) but not statistically significant. The possible interpretation is that in the forested region, overall road network is poor and some of the villages are isolated, and that children have limited option in choosing a better school. Hence, children have no option but to seek enrolment in the nearest schools irrespective of the road condition. So the relation is positive but not statistically significant.



## 2.1. Density of Schools

The state of primary school density gives some idea regarding the efficient coverage in terms of distance. The density of schools has been calculated in terms of number of schools per sq. km. Non-forested regions have higher density of schools than the Sundarban forested region. Table 2.1 shows the density of school in different blocks. According to population projection (2010), Basanti block would have the highest number of children of the age group 5 to 9 years (primary school age-group children), followed by Magrahat-I, Mathurapur-II and Diamond Harbour-I block in 2013-2014. But Basanti block has the lowest density of schools. Similarly, Diamond Harbour-I block has lowest number of school age children but highest density of schools.

**Table 2.1: Density of Schools**

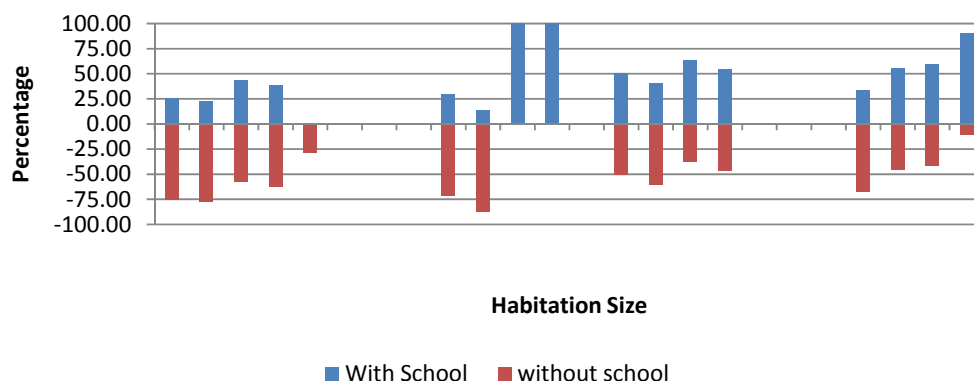
Block	Projected Population (5yrs-9yrs) 2010	2013-14	
		Primary school	Density of Schools
Diamond Harbour I	12309	103	2.54
Magrahat I	22008	144	1.5
Mathurapur II	17134	183	1.49
Basanti	29734	274	0.99

**Source:** DISE Data and Department of School Education, Govt of West Bengal

## 2.2. Habitation Pattern and Schools

The next important thing is to find out the habitation-wise schooling scenario, i.e. how many habitations had school within the prescribed norm. Figure 2.1 summarizes the availability of a school within habitations, according to which the number of school-less habitations with 500 and above population is quite high. Forested blocks had a higher percentage of school-less (24 percent) habitations than non-forested blocks (10 percent). Block-wise, Basanti had the highest share of such schools, followed by Mathurapur-II, Magrahat-I and Diamond Harbour-I. Among the SC/ST habitations, 23 percent in Basanti, 24.0 percent in Mathurapur-II, 25 percent in Diamond Harbour-I and 33 percent in Magrahat-I did not have schools within habitations with 500 and above population. The data also reveals that SC/ST habitations in the non-forested region had less number of primary schools compared to other areas. As SC/ST children are likely reside in larger habitations in the forested region, they are likely to get more opportunity for schooling than their non-forested counterparts. This shows that Government had prioritised the SC/ST habitations of the forested region over the non-forested regions in the matter of establishing primary schools.

**Figure 2.1: Proportion of Habitations With and Without Schools in Them, by Habitation Size**



**Source:** Calculated from census, 2011 and DISE 2013-14

### 2.3. Spatial pattern of schools

An analysis was conducted to find out the spatial spread of schools within panchayat, which was followed by mapping the village and habitation scenario. The maps helped to find out whether the schools were properly located. The result shows that every block has its own characteristics in terms of location of schools. However, sharp differences exist between forested blocks and non-forested blocks in the matter of school location. Non-forested blocks are much ahead of forested blocks in terms of road network, location of schools, number of primary schools as well as school infrastructures. Area-wise, forested blocks are large with difficult terrains and sparsely located habitation. In contrast, the area of the non-forested blocks is small but population density is high. In depth observation shows that there are some habitations where two schools are situated within one km while some habitations do not have any schools close by. Also, in many areas, two schools are situated in close proximity without much justification.

As discussed above, there is no restriction on having more than one primary school within the radius of 1km from the habitation, provided it is justified in terms of accessibility and need based norms. As pointed out earlier, in many areas two schools are situated in close locality without much justification. To locate these excess schools, detailed maps of the panchayat are prepared (see Maps 2.2-[1-5] in appendix). To prepare these map six criteria – distance between two schools, enrolment of the respected schools, types of habitation, population of the habitations, their social background and types of road were taken into account. In the first stage, road distance between two schools was measured (in km) and those schools which were within one km distance were identified. In the next stage, the justification of location of two schools in close proximity was probed with the help of enrolment figures, population data, social category data, type of habitation (clustered or isolated) and approaching road type.

About 20 percent schools in the forested region and about 30 percent schools in the non-forested region were identified as ones located within one km road distance, out of which over 45 percent schools in forested region and 77 percent schools in non-forested region did not have any

justification for their location. These schools were either closely located with very few students or the population of the habitation was low or were not remotely located to warrant a separate school.

Establishment of a new school depends on a number of hierarchical decisions. Most of the time, panchayat applies for a school as per requirement of the village and the higher authorities sanction schools accordingly. It has been noticed that the two types of government run schools — regular primary schools and Sishu Siksha Kendras — were located closely in many villages. SSKs are run by the Panchayat & Rural Development Authority and regular Primary schools are run by Department of School Education. However, both types of schools are under the West Bengal Board of Primary Education. These two organisations are parallel entities, and the existing location of schools suggests that they did not have any coordination in opening new schools.

The spatial distribution of schools also shows certain uncovered areas where a school ought to be provided, particularly in the forested region. This reveals that the site selection for the schools has been improper. The improper site selection results in convenience for some children and problems for others. If these schools are relocated to the deprived areas or two schools are merged and provided better infrastructure, all the students would get good schooling opportunities. The detailed analysis of infrastructure of these schools will be discussed later.

These wrong placements of schools were shared with the elected members of the all panchayat (Panchayat Pradhan) while interviewing them. About 67 percent of them did not accept the excess advantage of some areas, as it is in their interest to hide the relative deprivation of some panchayats over the others. The rest of the members who accepted the situation put the blame on former elected members. It is therefore obvious that present method of selection of sites for school lacks proper planning. The decision of panchayat is often influenced by political considerations and locations of a school sometimes become a clear political issue.

### **3. Infrastructure of Schools in the Study Area**

There might be adequate number of schools in these habitations, but it does not guarantee that minimum infrastructure facilities required for smooth classroom transaction are available. The main task of the school is to provide education which involves a series of programmes and activities. The successful conduct of these programmes and activities depends mainly upon the availability of proper infrastructure in the school. Infrastructure and facilities provide a comfortable learning environment, accelerate the learning procedure and increases the students' interest (Pritchett and Pande, 2006; Iyengar, 2004). Where the quality of infrastructure is good, enrolment and completion rates would also be good; where the condition of school facilities is good, learning outcomes also would be good.

The term 'Physical Infrastructure' stands for the physical facilities of the school. It refers to buildings, grounds, furniture and apparatus, along with equipment essential for imparting education. Different government interventions like the District Primary Education Program (DPEP) and Sarva Shiksha Abhiyan (SSA) have tried to provide better infrastructure in the schools, particularly in the last two or three decades. Some of the parameters of improvement are discussed here.

### 3.1. Class Rooms:

According to the RTE norm, the classroom requirements of the schools depends on the number of teachers in the school, and teacher requirement depends on student enrolment rate. "Thus, as per RTE, it would be perfectly within law if a primary school, with sixty students, has two teachers and two class rooms, even if the school runs all the classes" (IIMC Report, 2011). Table 3.1 shows the availability of classrooms in primary schools in the selected panchayats. As pointed out earlier, there are two types of government run primary schools in West Bengal— regular primary schools and Sishu Sikha Kendras (SSK). It is observed that all these schools have at least one classroom for students in primary level to carry out teaching and learning. The number of single room schools is the highest in the non-forested blocks. About 25 percent schools are single room schools in the non-forested block while 44 percent schools have four or more classrooms. On the other hand, 21 percent schools are single room schools in the forested region, while over 60 percent schools have four or more classrooms. Hence in terms of number of classrooms, non-forested blocks lag behind the forested blocks.

The number of classrooms is further compared between regular primary schools and SSKs. Most of the SSKs are found to be running in single rooms. As can be seen from Table 3.1, 78.0 percent SSK schools are single room schools in the non-forest area against 59.4 percent in the forested area. Further, 20% of the total number of schools was visited by the researcher to make cross verification of the DISE data. As revealed during our visit, the condition of rooms in SSKs is very poor with very little space. The classrooms are not well-lit and hence students seated in a corner or back rows are not able to see the teacher. The rooms are not airy. In most of the schools, children were found sitting with visible discomfort. Some classes were being conducted outside the room, which would be not possible during summer or rainy season. As there is no electricity in most of the sample schools, the rooms are most often dark and stuffy.

**Table 3.1: Percentage Distribution of Schools According to Class Room for Teaching in Primary Class in the Sample Panchayat**

No. of Rooms	Non-forested (%)		Forested (%)	
	Regular Primary	SSK	Regular Primary	SSK
0	0.0	0.0	0.0	0.0
1	0.0	77.8	0.0	61.8
2	15.4	22.2	7.5	11.8
3	20.5	0.0	11.9	2.9
4	41.0	0.0	34.3	20.6
>4	23.1	0.0	42.3	2.9
<b>Total schools</b>	39	18	67	34

Source: Author's calculation from DISE Data, 2013-14

Limiting our discussion on classrooms cannot bring the actual picture of schools. A more important criterion of school infrastructure is the student-classroom ratio. During the survey, many of schools were found overcrowded. The average student classroom ratio in non-forested blocks is 34 and in forested blocks, 45. It is a little higher than the RTE stipulated norm (1:30 students) for non-forested

areas, and much higher for forested areas. A careful look at the variations even across schools within each panchayat indicates the gravity of the problem. The variation in the number of classroom available across blocks is wide; in Diamond Harbour-I, it varied from 1:9 to 1:46; in Magrahat-I from 1:6 to 1:81; in Basanti from 1:12 to 1:102; and in Mathurapur-II from 1:12 to 1:78. Further classrooms are categorised into three on the basis of student strength: those with less than 30 students, those with 30 to 60 and those with over 60 students. It has been observed that 63 percent of the schools in the sample panchayat of non-forested area and 57 percent of forested area have less than 30 students per classroom. Significantly, 15 percent schools in the forested area have 60 students per class.

### **3.2. Ancillary Facilities**

Even when a school has the required number of instructional rooms, the absence of the minimum ancillary facilities there can make teaching meaningless. Research evidences show that availability of these facilities in schools improves enrolment especially of girls and also helps in retaining children in the system.

Ensuring supply of drinking water to the children is an important criterion because school is the place where students spend a lot of time, and non-availability of drinking water can drive them away. This study finds that drinking water facility is available in most schools of the sample panchayats. As revealed by the study, all the sample schools have drinking water facilities in Diamond Harbour-I, Magrahat-I and Mathurapur-II blocks, while in Basanti block, all primary schools except 5% of SSKs have drinking water facilities.

The next important criterion is toilet facilities in the schools. Having toilets for boys and girl is one of the minimum infrastructure facilities required as per the RTE norm. In thenon-forested region, about 97 percent primary schools have separate toilets for boys and girls. Likewise, in the forested region, 92 percent regular primary schools have separate toilet for girls and 94 percent schools have separate toilet for boys. The situation of SSKs in this respect is very poor in the entire region. Not even 30 percent of the SSKs have separate toilet for girls in both forested and non-forested regions. Similarly, less than half of the SSKs have separate toilet for boys. Field verification of the sample schools has revealed that in many cases there was no water in the toilet, toilets were smelly and unhygienic, and often toilets were kept under lock and key and only used by teachers (For example, in Bolsiddhi village of Diamond Harbour-I block during household survey parents complained that the teachers of Haskhali SSK used to lock the toilet and students were not allowed to use it).

The other minimum required school infrastructure facilities as per the RTE Act include an office-cum-store-cum Head Master room, boundary wall or green fencing, kitchen for cooking mid-day meal, library, playground etc. It implies that all schools should be composite schools, i.e., they should have put in place all these facilities within three years of the coming into force of the RTE Act. The provision of the above infrastructural facilities is far from satisfactory in the entire region, especially in the Sundarban forest region. The condition of the SSKs in this respect is extremely poor. One-fourth of the regular primary schools have an office-cum-store-cum Head Master room in the non-forested region while only one-third of the regular primary schools have an office-cum-store-cum Head Master room in the forested region. While just 5 percent of SSKs in non-forested region have these facilities, none of

the SSKs in forested region has these facilities. Only one third of the regular primary schools in both forested and non-forested regions have boundary wall or green fencing; and 5 percent non-forested and 9 percent forested SSKs have boundary wall.

Another required school infrastructure is library facility. However, there is no such norm for availability of books or newspapers in the library. If a school has so much as few books in one rack of a cupboard, the school would be deemed as having library facilities. With the above criteria, 97 percent regular primary schools in non-forested blocks and 72 percent regular primary schools in forested blocks can be considered as having library facility. However, none of the SSKs have library facilities in the study area even in terms of the above criterion. Further, none of the schools have computer facility and only a few primary schools have electricity supply (44 percent in non-forest region and 15 percent in forested region).

Studies have shown that school level games play an important role in child's personality development. But data shows that just 47 percent regular primary schools in non-forested area and 34 percent regular primary schools in forested area have playground. The condition of SSKs is very unsatisfactory as just one out of ten SSKs has playground in both regions.

Table 3.2 provides important comparative statistics of school infrastructure in the study area. Except drinking water facility, the condition of all other infrastructure facilities in West Bengal is very poor compared to the other states of India. There is a huge gap between the topper states and West Bengal in terms of basic infrastructure in schools, and the sample blocks are way behind the other regions of West Bengal. Some of the states or Union Territories like Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Delhi, Lakshadweep, Puducherry, TamilNadu have almost 100 per cent infrastructure like drinking water, toilet, boundary wall, computer, electricity playground etc. Further, the state level achievement levels of West Bengal is way behind national levels, except in matters like having drinking water facility in the entire schools and having separate toilets for girls in the regular primary school. As can be seen from Table 3.3, infrastructure in primary schools in these blocks are much below acceptable levels in spheres like (1) boys toilet (except Magrahat block) (2) Electricity (3) Computer (4) Playground and (5) Boundary Wall. Nationally, availability of electricity and computer facility in primary schools has always been a matter of great concern, and the performance of not only of all the selected blocks but also the entire West Bengal on these counts has been below acceptable levels. None of the schools in the forested blocks has computer facility and only 5 percent schools have electricity. The conditions of SSKs are pathetic; these schools are running with only one or two classrooms and the only available infrastructure is drinking water.

**Table: 3.2: School Infrastructure- 2013-14**

Parameter	Diamond Harbour-1		Magrahat I		Basanti		Mathurapur II		West Bengal	India	Best State/UT	Value
	RP	SSK	RP	SSK	RP	SSK	RP	SSK				
% of schools having Drinking Water Facility	100	100	100	100	100	95.2	100	100	98.4	94.1	Chandigarh D & N Haveli Daman & Diu Delhi Lakshadweep Puducherry TamilNadu	100
% of schools having Common Toilet	46	57	56	18.2	60	52.3	46.9	38.5	93.7	92.9	Chandigarh Daman & Diu Delhi Lakshadweep Puducherry Sikkim	100
% of schools having Girls' Toilet	100	42.9	96	18.2	94.3	47.6	90.6	0.0	68.8	80.9	Daman & Diu Delhi Lakshadweep Puducherry	100
% of schools having Boys' Toilet	84.6	42.9	100	9.1	97.1	71.4	90.6	38.5	93.7	92.9	Chandigarh Daman & Diu Delhi Lakshadweep Puducherry Sikkim Tamil Nadu	100
% of schools having Boundary Wall	30.8	14.3	32	0.0	42.9	0.0	37.5	23.1	35.6	53.8	Chandigarh	100
% of schools having Computer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	9.3	Lakshadweep	100
%of schools having Electricity	38.5	0.0	48.0	0.0	14.3	0.0	15.6	0.0	34.9	41.9	Chandigarh Daman & Diu Delhi Lakshadweep Puducherry	100
% of schools having Library	92.3	0.0	100	0.0	57.1	0.0	87.5	0.0	56.51	72.4	Chandigarh	100
% of schools having separate room for Head Master	30.8	14.3	20	0.0	45.7	0.0	21.9	0.0	-	-	-	-
% of schools having playground	53.8	28.6	44	0.0	28.6	4.8	40.6	23.1	30.7	51.5	Punjab	97.3
% of schools having Kitchen Shed	100	42.8	88	18.2	82.9	9.5	90.6	53.8	81.44	75.77	Lakshadweep	100

RP- Regular Primary; Source: DISE Flash Statistics 2013-14 and School Report Card, 2013-14

### 3.3. Incentive Schemes

Like most other Indian States, West Bengal also has some incentive schemes to expand primary education, which include mid-day meal scheme, distribution of text-books, and free supply of school uniforms. The mid-day-meal scheme was introduced under National Programme of Nutritional Support to Primary Education, and it was launched as a centrally-sponsored scheme in 1995 to attain

universalisation of primary education. Its objectives were to increase enrolment, improve attendance and student-retention. Likewise, text books are being distributed free of cost to all the students of recognized primary schools up to Class IV. Besides, free uniforms are provided to all girls, scheduled caste boys, scheduled tribe boys and 'below poverty line' boys.

It is clear that the entire schools in the sample, including SSKs, provide mid-day meal to the students regularly and positively. All regular primary schools and SSKs provide MDM to the students, but many of the schools particularly SSKs don't have a kitchen shed for preparing MDM. Almost three fourth of the SSKs in non-forested region and 66 percent of SSKs in forested region don't have a kitchen shed for cooking MDM. While eliciting teacher's views, almost all the teachers complained about this lacunae. During the dry season, meals are prepared outside school buildings, but in rainy season this becomes unfeasible, and the authorities are forced to use classrooms for cooking. As has been stated earlier, most of the SSKs are single room schools, and during rainy season that room is used for cooking also. Understandably, diversion of class-room hampers the teaching-learning process.

### 3.4. Correlation between Educational Attainment and Provision for Physical Infrastructure

In order to delineate the association between levels of educational attainment and physical infrastructure provisions in primary schools, a more disaggregate analysis have been done for each of the blocks. In this exercise, the level of educational attainment as reflected in the enrolment in every school is correlated with infrastructure available in those schools for the year 2013-14. For this purpose, each of the physical infrastructure variable is ranked separately using SPSS 'rank cases' and the higher value so derived is assigned the top rank. After ranking each variable for all schools individually, school-wise infrastructure is added to get the final rank of each school. The infrastructure taken are number of class-rooms in the school, common toilet, boys' toilet, girls' toilet, availability of computer, electricity, drinking water facilities, library, number of books in library, number of black boards per school, boundary wall, playground, kitchen shed for MDM and store cum HM room. The rank indicates the quality of infrastructure in a school— higher the rank, lower the quality of infrastructure.

**Table 3.3: Rank wise Distribution of Schools Infrastructure (in percentage)**

Rank	Diamond Harbour-I		Magrahat-I		Basanti		Mathurapur-II		Non-forested		Forested	
	FP	SSK	FP	SSK	FP	SSK	FP	SSK	FP	SSK	FP	SSK
1-5	-	-	4.2	-	-	-	-	-	2.6	-	-	-
5-10	61.5	-	79.2	-	54.3	-	59.4	-	71.1	-	56.7	-
10-15	38.5	57.1	20.8	54.5	45.7	71.4	40.6	69.2	26.3	55.6	43.3	70.6
15-20	-	42.9	-	45.5	-	28.6	-	30.8	-	44.4		29.4

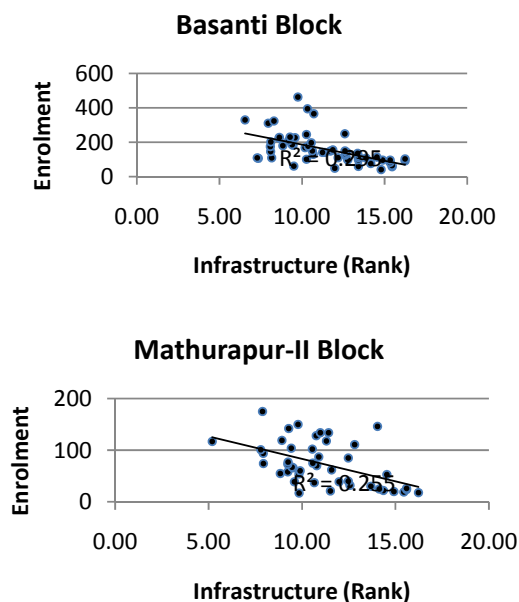
Source: calculated from DISE Data

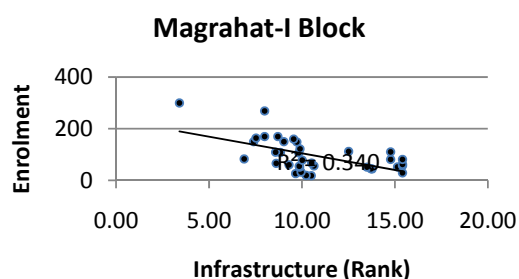
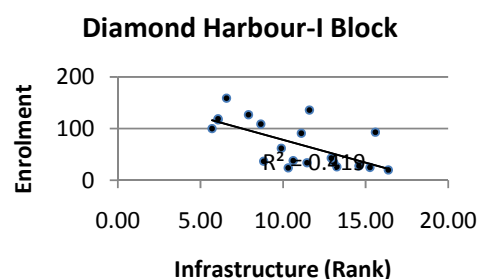


As can be seen from Table 3.3, on the whole, the non-forested region has better infrastructure than the forested region. In the non-forested region, schools that ranked in the 5-10 categories were the highest in number (71.1 per cent). In the non-forested region, Magrahat-I block scored better than Diamond Harbour-I block. The SSKs are predictably lagging behind the regular primary schools. In fact, the SSKs of the non-forested region (43.3 per cent in 10-15 rank category) lag behind the SSKs of the forested region (70.6 per cent in 10-15 rank category). The regular primary schools of the forested region lag behind the non-forested region, with 56.7 percent schools in the 5-10 rank category and 43.3 percent schools in the 10-15 rank categories. Similarly, SSKs of the non-forest region lag behind even the regular primary schools in the forested region. But the SSKs of forested region have better infrastructure than those in the non-forested region.

Any discussion about infrastructure makes sense only when it includes a comparison of student attainment in schools. To find out the gap between infrastructure and student related factors, Spearman's Rank correlation between infrastructure and enrolment has been performed. The 'r' values of correlation co-efficient for the bivariate association between the physical infrastructure supply in the primary grade and the enrolment are shown in Figure 6. It can be deduced from Figure 6 that the rank of infrastructure and enrolment rate in the entire sample blocks are inversely related, i.e. higher the rank of infrastructure, lower is the rate of enrolment in schools in the sample blocks. Hence, there is a negative relation between the schools with lower quality of infrastructure and enrolment. In all the blocks, students prefer schools where infrastructure quality is good.

**Figure 3.1: Relation between Infrastructure and Enrolment**





**Source:** Calculated from DISE Data

This association is also true for both regular primary schools and SSKs. A strong negative link with statistical significance is observable between position of SSKs of forested area (Basanti and Mathurapur-II block) and regular primary schools of non-forested area (Diamond Harbour-I and Magrahat-I block) (Table 3.4). With the exception of few SSKs, overall enrolment is higher in the regular primary schools in the entire region. Hence, with higher enrolment in regular primary schools, coefficient values become negative but not statistically significant. That means students prefer regular primary school even if the infrastructure is not sufficient. Similarly, in the forested region due to inaccessible location of their habitations, some students are likely to take admission in a nearby school. Hence, coefficient values are not statistically significant.

**Table 3.4: Correlation between Infrastructure and Enrolment**

Block	'r' values	
	Regular Primary	SSK
Basanti	-.731	-.653**
Mathurapur-II	-.728	-.869**
Diamond Harbour-I	-.648*	-.393
Magrahat-I	-.699**	-.089

**Note:** \*\* - significant at 0.01 level; \* - significant at 0.05 level; Source: Calculated from DISE Data

#### 4. Conclusions

The above analysis offers critical insights for understanding and locating the inequalities in primary education in certain rural areas of West Bengal. The distribution of two basic resources of primary

education viz. location of schools and infrastructure, have been analysed above, and it has been observed that these resources vary across administrative blocks, gram panchayats and schools within the same panchayats. From the current situation of schooling at village level, the following issues are observed.

Location of the school plays a vital role in taking education closer to children in rural areas. However, even today there are many habitations in the study area without a single primary school, despite having a large population. Habitations without schools are found in large numbers in the forested panchayats. It has been observed that type of roads plays an important role in the schooling system. Obviously schools with good road connectivity are preferred by the parents. The problem of roads is very severe in the forested region. As this region is criss-crossed by water bodies and rivers, during monsoon season, flood water of these water bodies inundate the kutch roads and make the roads unusable, particularly for young children. Hence, monsoon season witnesses a serious dip in school attendance.

Another factor that the analysis has highlighted is the spatial distribution of schools. It is found that often two schools are located within one km radius in spite of lower enrolment; often while one school attracts huge enrolment, the other suffers from poor enrolment. If the students are distributed equally between the two schools, the pressure on infrastructure as well as requirement of teachers will automatically come down. Hence, the habitation level plans should be drawn up on the basis of micro-planning and school mapping exercises.

There exist sharp disparities between regular primary schools and SSKs. It is very disappointing that schools for underprivileged children are under equipped. In the last eight years, the spread of primary education in the entire region has been promoted by setting up higher number of SSKs than regular primary schools. These schools are now functioning in a single classroom and indeed have drinking water and common toilet facilities, though most of these are inadequate or unhygienic. It is understandable that if a remote habitation or an underprivileged section has lower quality schools, the educational outcome will also be poor, and given these handicaps, securing universal primary education is not an immediate possibility.

It is evident from the study that parents prefer schools which have good infrastructural facilities for children. This is true for the entire region. Enrolments in the schools are quite high in better ranked schools. Further, enrolment in regular primary schools is much higher than in the SSKs. However, in the remote areas, parents do not have the option of sending their children to better schools.

Finally, there is a sharp disparity between non-forested region and forested region. Non-forested regions being close to the Kolkata Metropolis and being geographically non-vulnerable, the overall development here is much better than in the Sundarban forested region. Expectedly, school enrolment in this region is high and overall infrastructure is also good. If the forested region is found lagging behind in all developmental parameters including school enrolment, it is definitely due to its unfavourable geographical position and inaccessibility as also for want of meaningful landforms. For the same reason, this region is one of the underdeveloped regions of West Bengal.

## References

- DISE School Report Card, 2006-07, 2009-10, 2011-12, NEUPA, New Delhi.
- District Human Development Report (2009). *South 24 Parganas*. West Bengal: Development and Planning Department, Government of West Bengal.
- Duflo, E (2001). Schooling and Labour Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment. *The American Economic Review*, 91 (4): 795-813.
- Filmer D (2007). If You Build It, Will They Come? School Availability and School Enrollment in 21 Poor Countries. *Journal of Development Studies*, 43 (5).
- Govinda, R and Bandyopadhyay M (2009). Educational Access In India Country. *Policy Brief*. NUEPA. [www.nuepa.org/Download/Publications/Create/policybriefindia.pdf](http://www.nuepa.org/Download/Publications/Create/policybriefindia.pdf)
- (2011). Overcoming Exclusion through School Quality. *CREATE Pathways to Access Research Monograph, No. 66*. NUEPA.
- Handa, S (2002). Raising Primary School Enrollment in Developing Countries: The Relative Importance of Supply and Demand. *Journal of Development Economics*, 69 (1).
- IIMC Interim Report (2011). Restructuring of School Education System in West Bengal. <http://www.wbsed.gov.in/wbsed/default.html>
- Iyengar, R (2004). Why Do Children Go To School? *Economic and Political Weekly*.
- Jalan, J, Glinskaya, E (2003). *Improving Primary School Education in India: An Impact Assessment of DPEP-Phase I*. ISI (New Delhi) and The World Bank.
- Lewin, K M (2007). Improving Access, Equity and Transitions in Education: Creating a Research Agenda. *CREATE Pathways to Access Research Monograph No. 1*. University of Sussex
- Mukherjee M (2011). Do Better Roads Increase School Enrolment? Evidence from a Unique Road Policy in India. Department of Economics, Syracuse University. [www.isid.ac.in/~pu/conference/dec\\_11\\_conf/Papers/MuktaMukherjee.pdf](http://www.isid.ac.in/~pu/conference/dec_11_conf/Papers/MuktaMukherjee.pdf)
- Pritchett, L, Pande, V (2006). Making Primary Education Work for India's Rural Poor: A Proposal for Effective Decentralization. *South Asia Series. Paper No. 95*.
- Shyam K C (2007). *Society and Infrastructure: Geographical Accessibility and its Effects on School Enrolment in Nepal*, (PhD dissertation). College Park, Faculty of the Graduate School, University of Maryland.
- Sinha, S and Reddy, N (2010). School Dropouts or Push Outs? Overcoming Barriers for the Right to Education. *CREATE Pathways to Access Research Monograph, No 40*. NUEPA.
- UNICEF (2006). *A Social Exclusion of Scheduled Caste Children from Primary Education in India*. UNICEF, India
- Ward, M (2007). *Rural Education*. India Infrastructure Report.

## Tables

**Table 1.1: Management wise Distribution of Primary Schools in the Selected Panchayats of the Different Blocks**

Region	Blocks		Government		Private Aided	Private Unaided	Madrasa Recognised	Total
			Regular Primary	SSK				
Non-Forested region	Diamond Harbour-I	2005-06	13	-	-	-	-	13
		2013-14	14	6	-	6	-	26
	Magrahat-I	2005-06	25	-	-	-	-	25
		2013-14	25	11	2	16	1	55
Forested region	Basanti	2005-06	33	-	-	-	-	33
		2013-14	35	20	2	1	-	58
	Mathurapur-II	2005-06	30		-	-	-	30
		2013-14	32	13	-	10	-	55

Source: DISE School Report Card

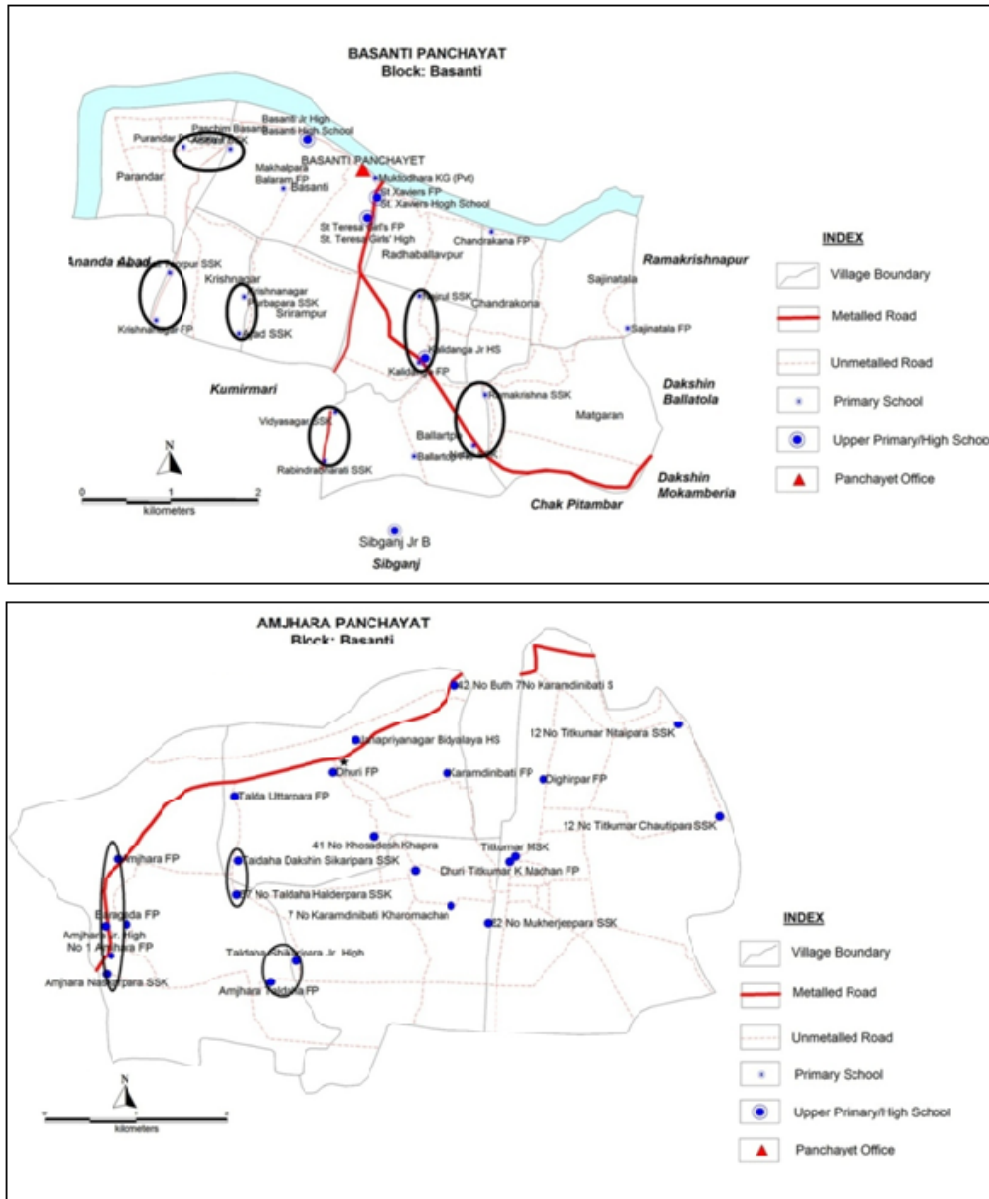
**Table 1.2: Distribution of Different Sizes of Schools According to Enrolments Across Study Area in Government schools**

Region	Blocks		Up to 50		51-100		101-200		201-400		Above 400		Total	
			RP	SSK	RP	SSK	RP	SSK	RP	SSK	RP	SSK	RP	SSK
Non-Forested region	Diamond Harbour-I	2005-06	2	-	2	-	8	-	1	-	-	-	13	-
		2013-14	4	6	4	1	4	-	1	-	-	-	13	7
	Magrahat-I	2005-06	3	-	3	-	13	-	5	-	-	-	25	-
		2013-14	5	4	9	5	13	2	1	-	-	-	27	11
Forested region	Basanti	2005-06	-	-	1	-	14	-	16	-	2	-	33	-
		2013-14	1	1	2	10	20	8	12	2	1	-	36	21
	Mathurapur-II	2005-06	-	-	7	-	15	-	8	-	-	-	30	
		2013-14	8	8	13	2	12	1	-	-	1		34	11

RP- Regular Primary;

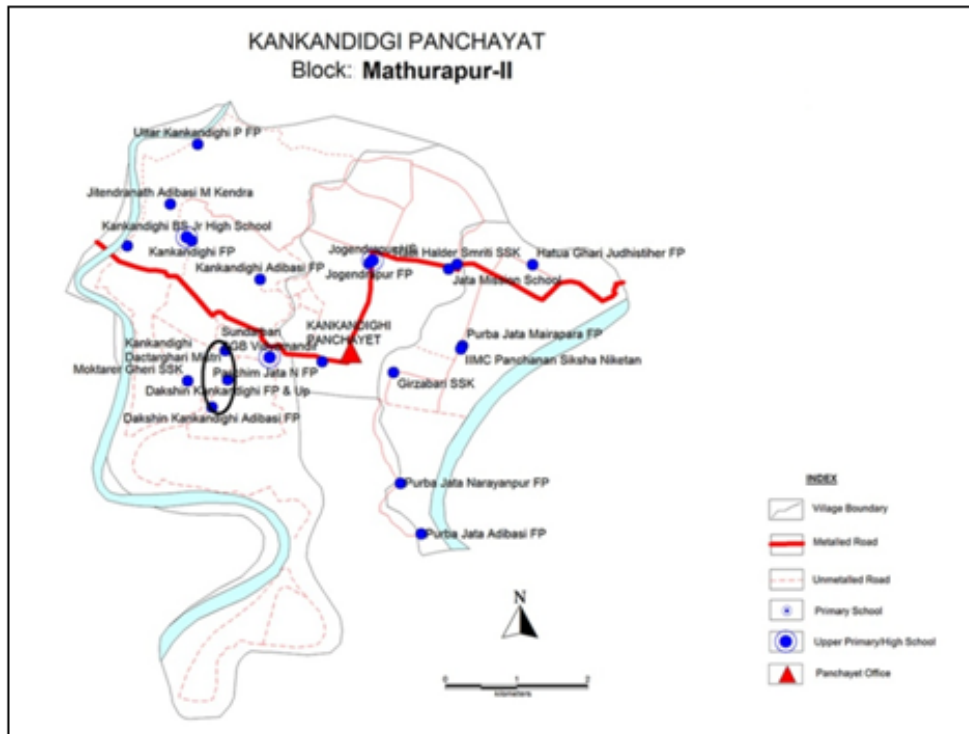
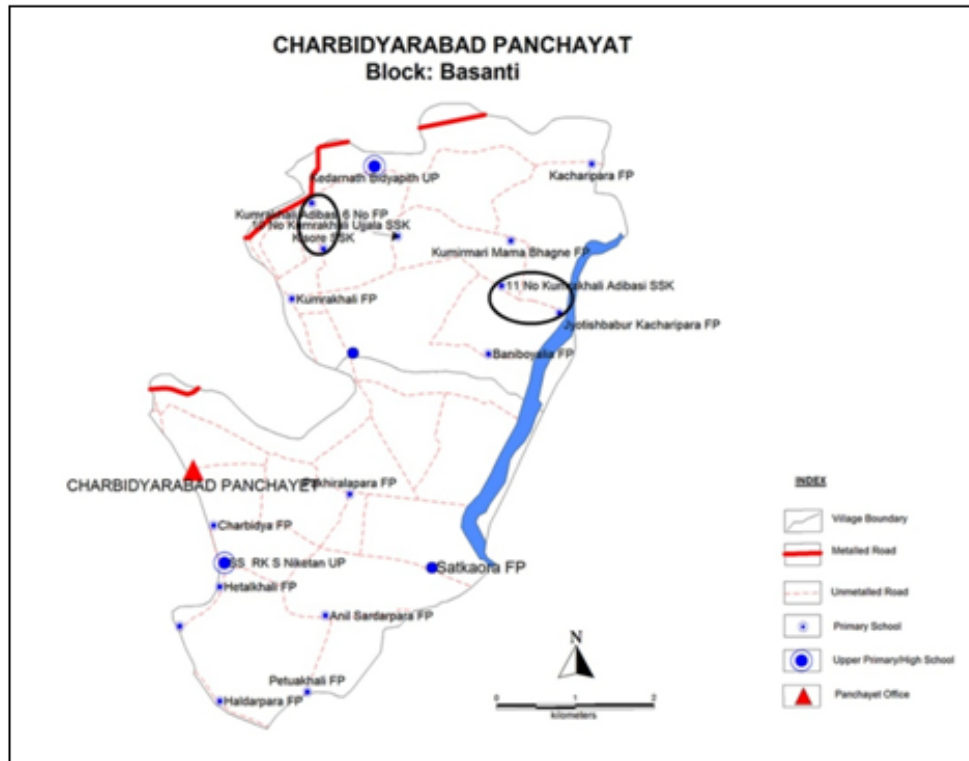
Source: DISE School Report Card

Map 2.2 (1): Clustering of Schools, Forested Region



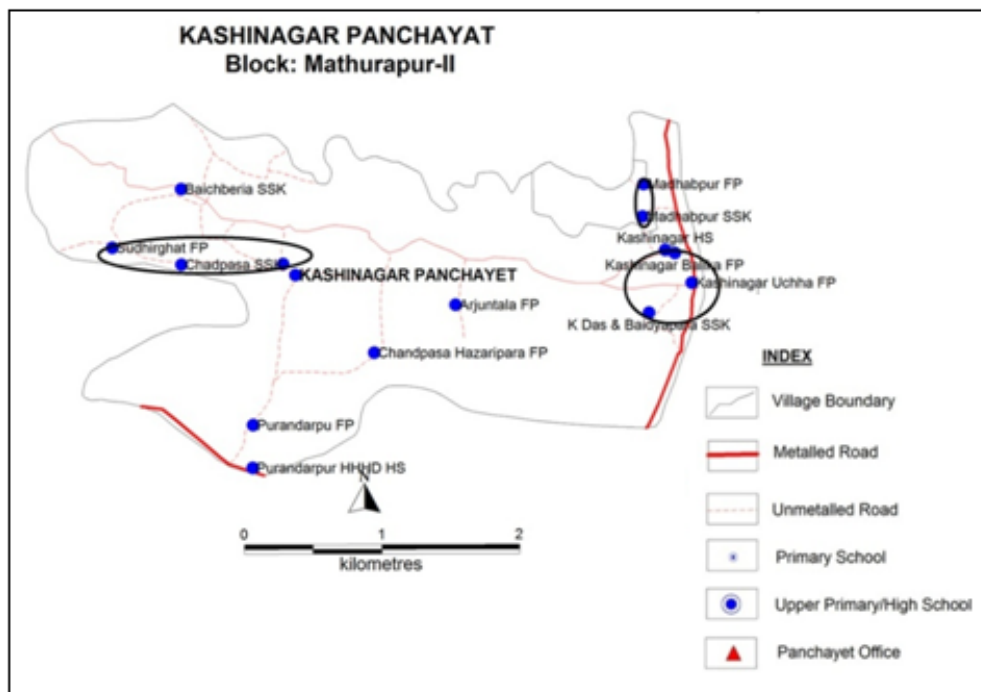
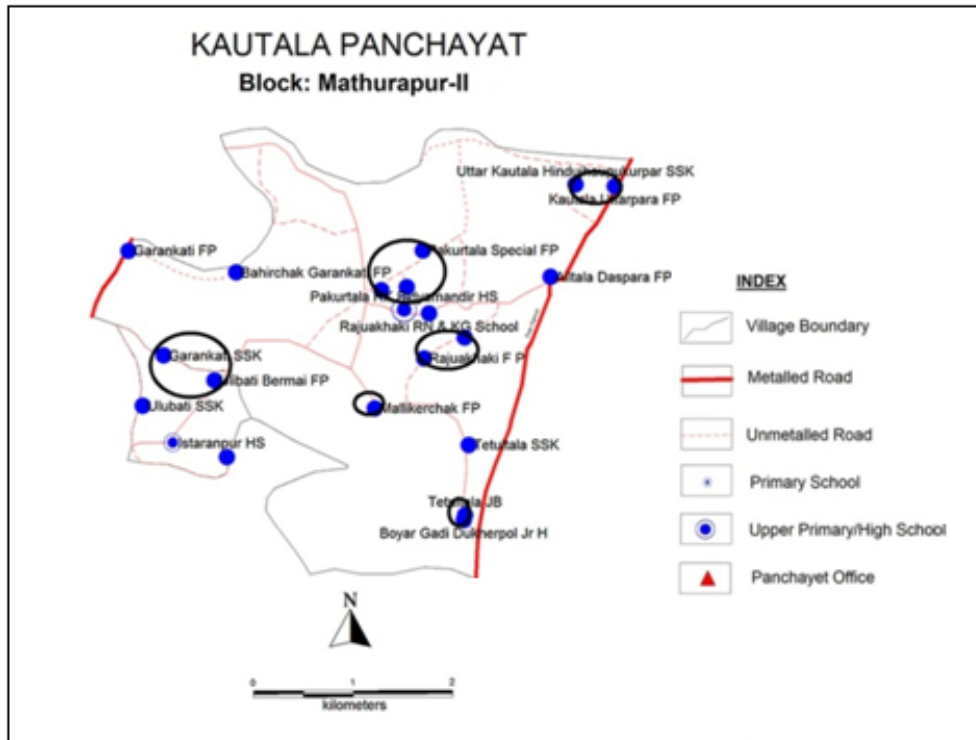
Source: West Bengal School GIS, <http://www.ssa.ind.in/school/>; Google map; Field Survey, 2013-14

Map 2.2 (2): Forested Region



Source: West Bengal School GIS, <http://www.ssa.ind.in/school/>; Google map; Field Survey, 2013-14

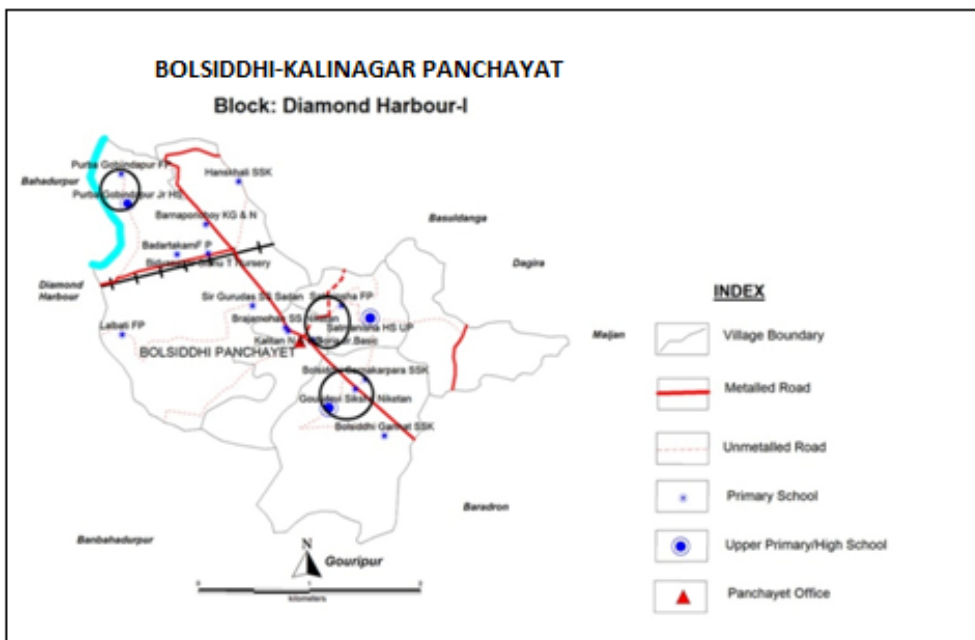
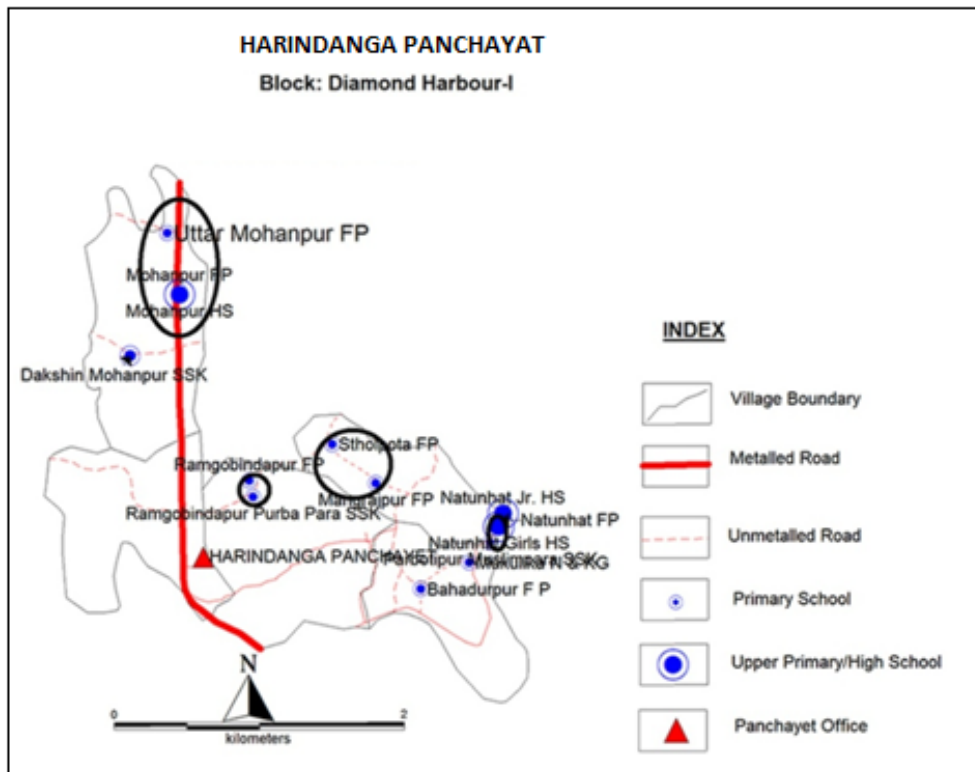
Map 2.2 (3): Forested Region



Source: West Bengal School GIS, <http://www.ssa.ind.in/school/>; Google map; Field Survey, 2013-14



Map 2.2 (4): Non-forested Region



Source: West Bengal School GIS, <http://www.ssa.ind.in/school/>; Google map; Field Survey, 2013-14



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