5

The Setting

5.1 Regional characteristics: Geographical and Social Settings

The study was conducted in Saspara Gram Panchayat, which is located within the administrative boundary of Andulia Gram Panchayat in Murshidabad district of West Bengal. The name of the district has been after the city of Murshidabad, which has probably come from the name of a follower of Guru Nanak, called Muksudan Das. He lived here around the end of fifteenth century and the town was known as "Muksusabad" after him. However, there are many other opinions offered by different historians on how the name of Murshidabad occurred. Murshidabad was the last of the Mohammedan capitals of Bengal. The district is located at the northern part of Presidency Division within the geographical boundary of lower-Ganges plateau.
5.1.1 Locational features

It is one of the 19 districts in the state, situated at the north-west part of the lower-Gangetic Bengal at Latitude between N 24°50'20" (North) and N 23°43'30" (South) and Longitude between E 88°46'00" (East) and E 87°49'17" (West) (West Bengal District Gazetteer, 2003:1). The shape of the district resembles to an isosceles triangle with its apex pointed to the northwest. The western part of the district shares border with Santal Parganas (Jharkhand) and the Birbhum district (West Bengal). North and north-east is surrounded by the rivers of the Padma and the river Ganges. The eastern part of the district shares international border with Bangladesh. In the south-east, it is demarcated by the river Jalangi and the southern part touches the districts of Nadia and Bardhaman. The river Bhagirathi, a smaller branch of the river Ganges flows from north to south of the district and divides district in two parts i.e. western and eastern, popularly known as 'Rarh' and 'Bagri' respectively.

Total area of the district is 5324 sq. kms that accommodates 2220 inhabited villages (Mouzas). Total population of the district is 58,64,291 with a high population density of 1,101 persons per square kilometer. The sex ratio of the district is about 95 females per 100 male populations. The district occupies six per cent of total area of the state with seven percent of total population of the state. The literacy rate of the district is low (50.71 per cent) in comparison to the overall literacy percentage of the state. The district literacy rate for males is 59.24 per cent and for females is 41.67 per cent. (Bureau of Applied Economics and Statistics, 2001).

5.1.2 Climatic conditions (Temperature and Relative Humidity)

The district represents the typical climatic characteristic of the Gangetic plains. The summer season is generally very hot with daily temperature averaging as high as 39.86 degree Celsius and 22.43
degree Celsius at the lower end. So far, the maximum-recorded temperature of the district has been 46.1 degree Celsius in the year 1961. During the peak winter season the daily average temperature varies from 11.9 degrees to 25.0 degree Celsius. However, due to the occasional influence of cold streams from western side the temperature dropped by 4-5 degree Celsius. Relative humidity is generally very high throughout the year; however, it is comparatively lower during the summer season (West Bengal District Gazetteers, 2003: 39-40). The maximum relative humidity in summer and winter daytime is recorded as 92 (August) and 99 (January) percent respectively and minimum is 81 and 47 per cent in the months of September and March afternoon time respectively (Agriculture Development Officer, Kandi Sub-divisional Agricultural Research Farm, 2004).

5.1.3 Rainfall

Rainfall is considered to be a very important climatic factor for this district as far as flooding is concerned. About 74 per cent rainfall in a year takes place between July and September under the influence of southwestern monsoon cloud stream. Within this again, the months of July and August gets maximum rainfall. The average aggregated rainfall in the district is 1472 millimeters in a year; however, in last few years it rained more than the average (e.g. 1738 mm. in 1998, 1589 mm. in 1999, 1753 mm. in 2000) (Bureau of Applied Economics and Statistics, 2001).

5.1.4 Soil features

As it is said earlier the district has been intersected by the river Bhagirathi (smaller branch of the river Ganges) into almost two equal parts, which are geologically a contrast to each other. Further their agriculture patterns as well as the religion of the habitants also differ. The present study will mainly deal with the problems of western part, which is
also known as 'rarh', and the full-length discussion on geographical features of the other parts of the district will be avoided here.

The rarh is a continuation of the sub-Vindhayan region of hard clay and nodular limestone. The land is high, slightly undulating and is interspersed with numerous bils and beds of old rivers. The soil is grayish to reddish, mixed with lime and oxide of iron; and the beds of nodular limestone (kankar) are to be seen scattered here and there (Hunter, 1876). This is mainly divided into three distinct areas. The upper most part is river Padma adjacent area, which is about 42.67 meter high and flat. The other two parts of rarh area are known as Mayurakshi-Dwarka basin plain lands and Bhagirathi-Dwarka basin, which is placed in between the two. The land feature of Bhagirathi-Dwarka basin is wavy, slanted towards east and made by ancient sedimentation. There are several smaller river passing through this land viz. Dwarka, Gambhira, Brahmani etc. The central part of this basin gets more river-flown sedimentation thereby gains some height. The plain lands of Dwarka-Mayurakshi basin too consists of a number of small rivers viz. Kuiya, Bele, Kana etc. These rivers contain almost no water in the dry seasons but during the monsoon swell because of the water inputs from their catchment areas. The clay around this area is sticky and contains sedimentation carried by the river water.

Depending upon these three geographical features different types of soils can be found here. These are sedimentation of Vindhayan, sedimentation of the Ganges and a variation of the sedimentation of Ganges. The former one is seen in the southern parts of the district viz. blocks of Bharatpur, Barwan, Kandi, Nabagram, Khargram and on the western side of the river Babla (Sagardighi). Vindhayan sedimentation is formed in the Gondowana province of Santal Parganas by the decay of the igneous clays with the interaction of atmospheric acids and other substances. These further get carried by the river water, particularly
District Murshidabad

Rivers and Marshes
during the rainy season onto the plain lands. This type of soil exists in the blocks of Barwan, north-western part of Bharatpur, south-western part of Kandi, Nabagram and in the southern part of Khargram. The colour of this soil varies from light yellowish brown to deep yellowish brown, having a bad to moderate water passage pores within. The sedimentation of the Ganges and a variation of the sedimentation of Ganges are generally found in the northern and eastern parts of the district. These are very different in properties as well as in physical feature from Vindhayan soil.

5.1.5 River System

The river system of Murshidabad is composed of Ganges, its tributaries and offshoots. The Ganges or Padma first touches extreme northern point of Murshidabad district and then flows in south-easterly direction. The fall of the Ganges is about nine inches per mile and the current varies from about three miles an hour in the cold season to at least double that rate during the rains. The main current was formerly in the northern side of the bed, but it started (as described by Hunter in 1872) shifting towards southern side, i.e. Murshidabad side.

The Bhagirathi branches off from the Ganges at Chhapghati near Suti, is almost due south and having a winding course. The banks of Bhagirathi are usually gently sloping on the one side, and abruptly shelving on the other. The rivers Pagla and Bansloi bring their united water into Bhagirati near Jangipur from the west. The Bansloi is considered to be one of the most important tributary of the Bhagirathi within the district. The Bhairab and the Silamari are two offshoots from the Ganges flowing towards south and empty themselves into river Jalangi, yet another offshoot of the Ganges. The direction of the river Jalangi is south-westwards and falls into Bhagirathi down the famous historical place 'Pallassey'.

134
The Setting

The Dwarka or Babla is a moderate sized stream which wonders under several names and with many tributaries and effluents, throughout the south-western corner of Murshidabad. That channel which is considered the main stream namely, Dwarka, enters the district from Birbhum. At first it flows in an easterly direction, until its waters are augmented by those of the Brahmini at Ram Chandrapur, then it turn towards the south-east and is joined on its right bank by Mor and Kuiya, two rivers which also flow down from Birbhum. Here commence the numerous backwaters and side channels around these rivers and the main flow takes the name Babla, which falls into Bhagirathi. These numerous channels cause great confusion by the change of their names. The main stream forms the eastern boundary of the Kandi subdivision and quits the district at Raghupur. Like all hill streams it has a rapid current and is liable to sudden floods.

There are number of other minor rivers namely Brahmini, Mor (or Mayurakshi or kana) and the Kuiya, which all flow from the west into the Dwarka, and are partially navigable during the rainy season. The beds of all these hill streams are formed of yellow clay and pebbles (Field photograph of silted river bed of Mayurakshi is given in Appendix ii; Plate: 5.1.5.P).

A special feature of the rivers in this part needs mention, is the fluvial actions triggered by the nature. The whole of this district is dotted with the tracts of old riverbeds, scooped out by the waters of the great rivers of yore while they gradually diverted to their present course.

5.1.6 Lakes and Marshes

There are many small lakes or lagoons, commonly called beels or jhils, most of which are the remnants of old riverbeds. These beels are scattered on both sides of Bhagirathi. Some of the well known beels in
the district are Motijhil, Telkar beel, Bhandardaha beel on the east bank and Belun, Sakora, Palan, Madgoria, Hizole on the west bank of Bhagirathi. Three other lowlands known as Nawaranga, Saulmari and Salukuria, together with other marshes, at the union of the Mor and Kuiya with the Dwarka, form a large sheet of water during the rainy season (approximately covering twenty square miles). These large beels during the rainy season serve as natural drainage basins for the hill streams. The swelled up beels gradually release water into the Bhagirathi. But for these large natural reservoirs, the southern part of the rath would be much injured by floods from the hills.

In many of the beels a process of natural reclamation is going on. Their beds are gradually being elevated by mud washed down by the streams which pour into them during the rains and to a small extent, by the dry soil blowing over them during the hot season. Owing to these reasons, the margin of tillage is steadily advancing.

Out of all these beels in the district, the Hizole beel will have a special significance for this study, therefore, a detailed pen picture of it is being given here (see the sketch of Hizole beel overleaf). It is situated in the south-west of the district near the confluence of Mor, Dwarka, Kuiya and Bele and covers approx. 80 square kilo meters in area. During the rains the Hizole is widely inundated with water and it varies to a great extent in depth. It is three feet deep mostly, however, at some places the depth goes up to twenty feet. The whole of this tract becomes completely dry in the winter season thereby increasing cultivable area of the winter crops. Considerable area of the beel is also converted into a pasture of the thatching grass in great quantities, which is celebrated for its toughness and durability (O'Malley, 1914).
5.1.7 Gher Bandhs (Earthen Embankments)

Being it a low land, a number of Gher Bandhs were put up to prevent inundation by the Nawabs and Zamindars for the purpose of cultivation during the rainy season. In total of about 225 kilo meters of bandhs are constructed in and around the Kandi block. Majority of these bandhs are poorly maintained. Before the independence, the maintenance of the bandhs were the responsibility of the Zamindars, but following the great flood in 1956, Man Singh Commission and the National Flood Commission in 1980 recommended the gradual disintegration of some of the Bandhs (National Flood Commission, 1980). Lately, no maintenance of many of the bandhs has not been carried out by the authorities (see the picture of a disintegrating gher bandh in Appendix ii; Plate: 5.1.7.P). Some of the known bandhs are Solo Bhagir Gher, Ranipur Gher, Amlai Gher, Kawkhali Gher, Hazar Bigha Gher, Hazole Thakurani Gher, Ahiri Monda Gher etc. (Map of Gher Bandhs in Kandi Block area is given overleaf; Map No. 5.1.7.M)

The economy of the district is basically agrarian and it is one of the most underdeveloped districts in West Bengal. The backwardness is characterized by a low per capita income, lack of any kind of industrial development and undeveloped infrastructure facilities. The district has no known mineral resource and agriculture remains the main stay of the people. The main agricultural products are paddy, wheat, jute and Rabi crops. Despite the backwardness, Murshidabad occupies an important place in the map of the state for the production of raw silk yarn.

The main occupational activity of the people here is agriculture, which is supported by numerous small-scale cottage industries. Total cropped area in the district is about 3,93,037 hectares, out of which about 58 per cent is irrigated. Rice and wheat are the principal crops produced in this region. Apart from these, other agricultural produce are
Map of Gher Bandhs in Kandi Block
barley, maize, gram, tur, rapeseed, mustard, linseed, jute, mesta, sugar cane, potato, tobacco, chili, ginger etc. are also produced at a smaller scale. The yields (Kilogram/Hectare) of almost all these produce are higher in the district in compared to the state yield (Bureau of Applied Economics and Statistics, 2001: 139-161).

Animal husbandry is the other main stray of the economy in this district. In the rural parts of the district, almost all the houses have some or the other kinds of cattle or poultry. There has been a marked increase in the number of all categories of cattle and poultry in the district as per the animal census of 1982 and 1994 (Bureau of Applied Economic and Statistics, 2001: 167-169).

5.2 Over view of the Gram Panchayat

Andulia Gram Panchayat (GP) is situated within the Kandi Community Development Block (Total population 1,29,622) which is one of the ten blocks in Kandi Sub-divisional area. Total area of the panchayat is 27.85 sq. km. The gram panchayat is a conglomeration of 14 smaller villages and is located at the eastern side of the block on the north-western embankment of river Kuiya and surrounded by Hizole Beel and Hizole Gram Panchayat in the east and north-east respectively, Purandarpur GP in the north and in the Kandi Municipality area in the west. Kandi-Baharampur road also defines a large part of north and north-western border of the panchayat.

Out of the 14 villages, only four are connected with a metalled road, rest others are connected by semi metalled or kutccha roads to the Block Headquarter, which are in the range of four to ten kilometers. The north-western part of the panchayat, where village Manoharpur is situated is touched by the State Highway No. 12. The nearest railhead is
about 32 kilometers away to the south at Salar and the other railhead is approx. 38 kilometers to the north at Baharampur from the Kandi town. Depending on their proximity to the highway as well as to the town, the villages have differential access to the public transport system.

Geographically, a part of Andulia—the south-eastern part is the “Hizole Tract”. The countryside is a tree less plain land with marked absence of permanent vegetation growth. On the other hand, eastern villages in Andulia GP like Govindapur, Chandpur, Durgapur, Shaspara & Santoshpur has typical physical characteristics of Rarh Bengal. Rarh surface is high and undulating and the soil is grayish, mixed with lime and oxide of iron. The rivers in Rarh have their origin in hill terrain of Bihar which are typically rain-fed rivers responsible for sudden onset of floods. Recently, the floodwater remain stagnated for longer period of time.

The chief crop is the winter rice, which is not dependent on early rain for a successful harvest, but requires a steady downfall between July and October.

Table: 5.2.A Classification of Village in Andulia GP

<table>
<thead>
<tr>
<th>Classification of villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hijal Tract</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>1. Govindapur</td>
</tr>
<tr>
<td>2. Durgapur</td>
</tr>
<tr>
<td>3. Saspara</td>
</tr>
<tr>
<td>4. Santoshpur</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

5.2.1 General profile of the Population

According to the 2001 census (Provisional), the total population of the study panchayat is 19,845. Out of this population of Schedule caste and Schedule Tribes are 2,740 and 22 respectively (i.e. 13.80 and 0.11 per
The Setting

cent of the total population) (Census, 2001). Population density of the panchayat was 799 per sq. km in the year 1991. Overall literacy rate in the panchayat is only 29.97 per cent. In absolute terms 5,436 males and 2,878 females have achieved literacy there. There are about 14 Primary schools and one Junior High School functioning in different villages within the panchayat. Other higher educational institutions like high schools, higher secondary schools and colleges are situated in the Kandi municipality area. People follow only two principal religions in this area, Hinduism and Islam. Numbers of males, females and Mouza (village) wise break up of population is as follows:

Table: 5.2.1.A Demographic profile of Andulia GP

<table>
<thead>
<tr>
<th>Name of the village</th>
<th>Male</th>
<th>Female</th>
<th>Total population</th>
<th>% of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saspara</td>
<td>2083</td>
<td>1968</td>
<td>4051</td>
<td>20.40</td>
</tr>
<tr>
<td>Andulia</td>
<td>1230</td>
<td>1121</td>
<td>2351</td>
<td>11.84</td>
</tr>
<tr>
<td>Monoharpur</td>
<td>527</td>
<td>492</td>
<td>1019</td>
<td>05.49</td>
</tr>
<tr>
<td>Chandnagar</td>
<td>856</td>
<td>720</td>
<td>1576</td>
<td>07.94</td>
</tr>
<tr>
<td>Santoshpur</td>
<td>420</td>
<td>432</td>
<td>852</td>
<td>04.29</td>
</tr>
<tr>
<td>Mahadia</td>
<td>1580</td>
<td>1440</td>
<td>3020</td>
<td>15.20</td>
</tr>
<tr>
<td>Gopalnagar</td>
<td>576</td>
<td>517</td>
<td>1093</td>
<td>05.50</td>
</tr>
<tr>
<td>Jitpur</td>
<td>214</td>
<td>187</td>
<td>401</td>
<td>02.02</td>
</tr>
<tr>
<td>Rajarampur</td>
<td>385</td>
<td>371</td>
<td>756</td>
<td>03.80</td>
</tr>
<tr>
<td>Gobindapur</td>
<td>1188</td>
<td>1021</td>
<td>2209</td>
<td>11.12</td>
</tr>
<tr>
<td>Durgapur</td>
<td>538</td>
<td>493</td>
<td>1031</td>
<td>05.19</td>
</tr>
<tr>
<td>Laksmikantapur</td>
<td>783</td>
<td>703</td>
<td>1486</td>
<td>07.48</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10380</td>
<td>9465</td>
<td>19845</td>
<td>100.00</td>
</tr>
</tbody>
</table>

5.2.2 Occupation of the people

People in this area are engaged in both farm and non-farm activities. Majority of them depend on the agricultural activities. Apart from these, there is a very significant percentage of population migrating to the cities to find livelihood. A very small number of people also migrate
abroad, mainly to gulf countries as skilled and unskilled labourers. This phenomenon is mostly prevalent among the Muslim population. Jobs in the Government sector is yet another source of income for few families in the study panchayat.

5.2.3 Farm related activities

Agriculture is the main occupation in this area and about 90 per cent of the population depend on it and other related activities for their livelihood. Aman rice (monsoon rice) is the most important crop of the area but it has become difficult as well as risky to cultivate during kharif season due to the repeated inundation of the paddy fields. As a result boro rice (Winter rice) has gained the popularity as an alternate crop during the rabi season. Other crops like potato, mustard, pulses etc. are also cropped during the same season.

5.2.4 Cropping Pattern at Andulia

The crop season is given in the following table. The table shows clearly that kharif season crops particularly aman in low land has become absolutely extinct from Hizole area. Moreover during the last decade, jute and aman in high land are getting damaged by the recurrent floods almost every year. The farmers are trying to cope by cultivating bhadu (aus) in pre kharif season rather than kharif aman eventhough both the productivity and price of bhadu is very low (4-5 monds / bigha and Rs. 7 per kg) compared to both aman. This shift is resulting in reduced food security for the farmers.

Table: 5.2.4.A  Crop Season and produces in Andulia GP

<table>
<thead>
<tr>
<th>Sl</th>
<th>Crop Season</th>
<th>Mid Land</th>
<th>Low Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Pre kharif (April - July)</td>
<td>Mix crops: maize with ladies finger, bean and jhinge</td>
<td>Aman</td>
</tr>
<tr>
<td>02</td>
<td>Kharif (August - Oct.)</td>
<td>Jute &amp; aman</td>
<td>Nothing due to flood water</td>
</tr>
<tr>
<td>03</td>
<td>Rabi (Nov. - March)</td>
<td>wheat, boro, dal - musur, chola, Oil Seed: mustered, lentil (tishi)</td>
<td>Boro</td>
</tr>
</tbody>
</table>
The recurrent floods has greatly damaged the agrarian economy of the area in the last few years. The meager infrastructure (road, small bridges etc.) created over the years is inadequate for this panchayat which is often destroyed in the floods further deteriorates the roads and other communication networks affecting adversely availability of extension services and inputs market to the agricultural products. The recurrent flooding has reduced productivity of crops in this region. This has left the small and marginal farmers quite vulnerable as they often come under the clutch of middleman for marketing their farm produce at throw way prices. Further this has also led to dependency of the small and marginal farmers on the moneylenders at exorbitant rate of interest, for example, at not less than 120% per annum.

5.2.5 Livestock

Almost all the houses in the study village have some or the other types of livestock. Mostly the poorer households use the livestock and its produce for home consumption. There are few cattle owning families which do not belong to the poorer sections, as they own 4-6 buffalos. One buffalo price is nearly about Rs. 12000/- and it gives about 8-10 liters of milk per day, which is easily sold. Shortages of fodder during and after flood is felt by all these families even after having some stocks of it with them according to the respective household’s storage capability.

Rearing Cattle is another occupation in Andulia as sweets making business is the main non-farm activity, further bolstered by the adjacent Hizole tract that provides plenty of grazing lands. Fishing is yet another main occupational activity for some people here. The availability of big and small ponds, water bodies, channels etc. are made use by the people to grow fishes and supply it to the near by markets.
5.2.6 Off-farm activities

Sweet making, Chachi making, bidi making, pre-boiled rice making, pottery and bamboo basket making are the major off-farm activities in the study villages. Those who are engaged in these occupations in our study area depend partially on these occupations for supplementing their income from agriculture. The census depicts the former as their principal means of livelihood. Women are mostly engaged in this occupation.

5.2.6.1 Preparation of par-boiled rice

As most of the Muslim and Hindu women from higher castes in Andulia GP are homebound they are engaged in various activities like dhan jhara, threshing, drying, boiling, puffed rice preparation, etc. Mandol and Ghosh families are not seen in the fields usually. SC/ST women are often seen sowing and harvesting in the fields. Homebound women of course take active part.

5.2.6.2 Chachi Making

Chachi is made from milk by boiling it for long time for removing water content from the milk and then used for sweets making (Sandesh). Murshidabad is well known for good quality sweets. This small enterprise is mostly confined in Jitpur & partially in Rajarampur of Andulia GP. There are two types of families engaged in this occupation, landless who rear milch buffalos and small landowners (owning land of 2 - 3 bighas) who also rear milch buffalos. For the latter, chachi making is a subsidiary occupation but for the land less families, this is their only source of income.
5.2.6.3 Bidi making

In almost all Andulia GP’s 14 villages, Bidi making is another means of subsistence as well as a subsidiary occupation for many households. Generally women have taken more to this occupation because of the prevailing contract system. Under Dadon, the contract system, the mahajan supplies the tobacco flakes and leaves to the families who make these at home and return back to him. The wage is paid on piece rate basis—Rs. 40-50/- for 1000-1200 bidis. Women and teenagers are paid less. The rate is at least 20% less in villages far away from Kandi Town.

5.2.6.4 Pottery

Potters mainly make domestic utensils (rice bowl, pitcher & country oven, etc.). This occupation is mainly concentrated in Andulia village in our study area. Men and women share the division of labour; while men make the soil ready and turn the wheel, women do the coloring job. Kandi Bazar is the nearest market place while; traders from other markets also buy out a part of the produce. The traders come in to the village for procurement. The potters usually earn Rs. 90 - 100/- per day. One can easily see from the production process (please see the chart) that much of the activity is closely linked to good climate, which means no production during the rainy season.

5.2.6.5 Basket making

Basket making families are less in number than the potters and are concentrated in Manoharpur and Jitpur villages. These families are all land less and both men and women are involved in basket making. While men folk process the bamboo sticks to cutting into pieces of appropriate size women do the actual knitting job. The families make the products at home, part of the produce is sold at the doorstep and the rest is taken away by the men folk to the nearby bazaar at Kandi.
5.2.7 Settlement Pattern

There are narrow lanes and footpaths in the villages between the ‘para’, a cluster of houses defined by caste and religion. Almost all the villages have more Hindu families but for some villages namely, Saspara, Chandnagar, Lakshmikantapur, Durgapur, Santoshpur which have more number of Muslim families. In all the villages there has been no enmity between the two communities but live in clearly demarcated areas in the village. Among the Hindus, there are several castes and people from the same caste live in clusters called ‘para’. In some villages there are mixed settlement also. The ‘paras’ are named after geographical characteristics and religious and caste affiliations. For e.g. Mollapara, Namupara (lowlands), Ghoshpara, Chutarpara, Dangapara, Bagdipara, Bamunpara etc.

5.2.7.1 Housing Pattern

Traditional houses in the villages are made of mud walls and thatched roof and are built on the elevated mud platforms to avoid submergence at the time of low level flooding. These kinds of houses are seen more in the villages adjacent to Hizole tract, which are more prone to flood every year. As it is difficult to maintain a kachha (Mud) houses people are now building concrete houses. Villagers try to replace them with pukka houses. They also concretise it in phases as and when they have resources to do that. Thus the poor section lives in mud and thatched house while the well-off and middle households prefer modern and concrete construction.
5.2.8 Health Facilities

The panchayat has three Sub-centres and one Primary Health Centre (PHC) within its geographical region. One of the sub-centres is located in Saspara, the study village. The PHC is located in the Laksmikantapur, only half a kilometer away from the panchayat office and is almost centrally located in the panchayat. The Block PHC (BPHC) is located at Gokarna and is about 18 kilometers away from the panchayat towards Baharampur. Kandi Sub-divisional Hospital, considered as a secondary level referral unit is located at the Kandi town, is about 5 to 10 kilometers from different villages in the study panchayat. Apart from these government run medical facilities there are numerous number of private clinics, nursing homes, pathological laboratories, x-ray clinics etc. located in the Kandi town. In some cases, these are even run by the doctors employed for the government medical facilities.

There are six RMPs practising in some of the villages here. They are usually quacks practising allopathic medicine mostly but some of them practise homeopathy as well. The RMPs have their own clinics and offer services like treatment for small ailments and administer injections prescribed by the hospitals and also give saline drips to the patients as and when required. The odd hour services offered by them and the flexibility in the payment of consultancy fees in terms of late payments and payment in instalments make them very popular to the villagers. These practises are common in most of the villages in the area and are the important reasons they do flourishing practices even in the remote villages. Further it allows the female members of the houses of migrant labours to avail the health services on credit and the payments are made when the migrating labourers come back home or send money.
5.2.9 Physical Handicap of the area

Natural drainage and human intervention both make the area handicapped for flood occurrence. Kana Mayurakshi and Mora Mayurakshi are only half Km to even lesser distance in this area. Both these streams are generally moribund but during July to October and take the excess water from Mayurakshi (More) to the Hijol Beel. Mayurakshi is also within 2-3 Km from Andulia GP. The GP being adjacent to Hijol is flood prone for the following reasons:

1. Embankment breaching of Kana Mayurakshi at Purundapur overtop the Kandi - Bharampur Road & inundate the entire GP (Silted riverbed of Kana Mayurakshi is displayed in the overleaf; Plate: 5.2.9.P).
2. River Kuiya & Mora Mayurakshi moves easterly and inundate the southern villages while overflowing.
3. Right bank of Dwaraka is Hijal which is a natural low-lying area and when it overflows it inundates the western villages of Andulia GP.
4. When Bhagirathi is in spate during August-September, Dwaraka flows backwards in its course and inundates the entire area. Low lying area becomes water logged for 2-3 months.
5. Water release from Tilpara Barrage overflows the entire drainage system of Andulia and its results in floods in the low-lying areas of the GP.

5.3 Floods of Past and Present

It has been stated that the fury of flood have increased during last two decades and the evidence is there in the Table. Flood occurred six times during 1950 - 1991 period whereas it occurred seven times during
the last decade. Flood has become an annual feature in Andulia GP. It has been found in our study that 10 villages out of 14 are most vulnerable to flooding. The increased ferocity of the floods has led to manifold impact on life & livelihood. To study the impact of flood in depth on the panchayat analysis of empirical data has been carried out and the details have been provided in the chapter 6.

Table: 5.3.A Chronology of Flooding in the area

<table>
<thead>
<tr>
<th>Decades</th>
<th>Year of the Flood</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951 - 60</td>
<td>1956, 1959</td>
</tr>
<tr>
<td>1961 - 1970</td>
<td>No major flooding</td>
</tr>
<tr>
<td>1971 - 1980</td>
<td>1978</td>
</tr>
</tbody>
</table>


5.3.1 Causes of flooding in the area

The geophysical feature of Kandi Block is low-lying concave land area with network of water streams all around. The location of this area is around the lower end of the rivers like Dwarka, Kuiya and Bele. The place was naturally made in such a way that it could hold the excess water of monsoon rain when it was pumped into these river channels, before gradually released into the River Bhagirathi. Therefore, it is naturally inundated during the monsoon. Since the monsoon season of 4 months delivers nearly 75 to 80% of the annual rainfall, it is obvious that floods occur around the end of monsoon, i.e. in the month of September-October.
5.3.2 Impact of flood on livelihood

5.3.2.1 Damage to Agriculture

Depth & period of inundation is not uniform in all the villages of Andulia GP. The villages adjacent to Hizole (N) tract get under more water & period of inundation is also longer than the villages falling under ‘Rarh’. This situation has resulted in unfavorable environment for growing crops due to risk of crop damage. The data represented in table 5.6 would reveal the extent of variations in land submergence of the Andulia Gram Panchayat in different flood year.

Table: 5.3.2.1.A Percentage Inundation of Andulia GP

<table>
<thead>
<tr>
<th>Land type</th>
<th>Flood Year</th>
<th>Medium land</th>
<th>High land</th>
<th>Low land</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1995</td>
<td>80%</td>
<td>40%</td>
<td>100%</td>
</tr>
<tr>
<td>1999</td>
<td>50%</td>
<td>1%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Source: SPADE Study

Aman rice is the most important crop of the area, but it has become difficult & also very risky to raise the crop during kharif season in chronically flood-affected villages in Andulia GP. Flooding in the consecutive years in the 90's followed by the devastating flood in the year 2000 has made Andulia an almost aman free area.

On the other hand Boro may compensate the losses of Aman in terms of quantity for the farmers having more than 3 bighas of land. Traditionally Boro used to be cultivated in villages adjacent to the rivers Kuiya and Kana Mayrakshi. But due to the loss of Aman rice every year in the Hizole area people have become aggressive to get at least one rice crop and boro is virtually cultivated in every inch of land in the Hizole tract. However, immediately after the rainy season, due to the non-
availability of any water storing facility the whole area go dry and people find severe crisis of water for the cultivation of the boro rice. In general the farmers having less than 3 bighas of land cannot go for Boro despite of it being more remunerative because of their landform as well as their inability to meet input cost particularly irrigation cost. Irrigation here is done by extracting water from the underground using submersible pumps or deep tube wells. During the winter the crops like mustard and kalai, is being harvested in only few pockets in Andulia as alternative crops utilization of shallow ground water during flood free period is very expensive and virtually out of the reach of the marginal farmers.

5.3.2.2 Damage to Cattle & Fishery

Cattle population is important in Andulia's livelihood as sweet business is the main non-farm activity here. Water logging in the grassland area leads to scarcity of fodder during flood. Further the cattle loose shelter in the poorer homes that lack enough space in the households. This makes cattle weak and diseased during flood resulting into decreased milk yield. This makes obvious disruption in the sweet making business and also deprives the family, especially the children from adequate nutrition.

Similarly fishermen also get affected during flood due to over flowing of water, which sweeps away the fish population. In last few years, recurrence of flood has taken a heavy toll particularly in the areas falling under Hijole tract which is rendering fish cultivation economically non-viable.

5.3.2.3 Off Farm Activities

Sweet making / Chachi making, bidi making, pottery and bamboo basket making are the major off farm activities in the study panchayat. These occupations are subsidiary for the households who are engaged in
Women are mostly engaged in this occupation. The impacts of the flood on these activities are discussed below.

5.3.2.3.1 Problems in Sweet / Chachi making

The chachi makers suffer in two ways in flood. People lose the buffalos or sell them under distress conditions (almost at minimal value). Even when the buffalos are not lost, they catch diseases very quickly due to eating from garbage and / or from prolonged wetting from rains. The diseases could be fatal, but will definitely lead to no milk production. They have to procure cow or to procure milk from others on daily basis to maintain the business. The situation adversely affects the families, particularly land less ones as they lose their main occupation and will have to try other livelihood options. This is one of the many factors for forcing migration of these landless labourers. They mostly become engaged in pulling van rickshaw (for goods) and Cycle Rickshaw for transporting. They also try to become kuli (porter) at Kandi bazaar. This is feasible because Kandi Town is close to the GP (about 4-5 kms). A few migrate to Bardhaman, Hoogly and Nadia during sowing and harvesting times.

It is very interesting to observe that such change in occupation does not ensure equal or more income. Another important consequence is that rickshaw pulling or kuli (Head load worker) job is considered a low-grade job in the neighbourhood, and has discriminatory social interactions to follow.

5.3.2.3.2 Interruptions in Bidi Making

Bidi laborers suffer from non-availability of work in the aftermath of flood. Depending on the scale of devastation the period varies from a month to more than two months. The wages also come down due to distress condition and surplus labor. The situation becomes pathetic, for
the families who lose their crop and wages all at the same time and Kandi being water deficient area (Rarh), agriculture in rabi season provides little hope to these families resulting in perpetual debt.

5.3.2.3.3 Pottery

This occupation is. Potters who mainly make domestic utensils (rice bowl, pitcher & country oven, etc.) are worst hit due to the recurrent flood. The extent and intensity of the recurrent flood accentuate their susceptibility/vulnerability day by day. The average non-remunerative time span in a year is approximately two in a non-flood year whereas in a flood year, they remain out of operation for more than three months. As Kandi faced flood in last 3 consecutive years, these families are in utter distress and are on the look out for other means of subsistence. Many families are going to other districts during Aman sowing and harvesting time and this has relegated pottery (which was their mainstay) to a subsidiary means of livelihood.

5.3.2.3.4 Basket making

For the families engaged in non-farm livelihood of basket making, the recurrent and sometimes sudden floods cause problems in Kandi's as they invariably loose their stock, tools and implements, large quantity of raw materials. Further, the markets recover very slowly. All of these are results into gradual destitution of the families who have basket making as their main occupation. Thereby, increasingly these families are shifting towards other occupations.

5.3.2.4 Impact on Education

A glimpse of the literacy status in the study village is given in the following chapter (Table No. 6.1.2). Recurring floods have affected Education of the people in the area in a number of ways: 1) School infrastructure gets damaged - the benches, the tables, the black boards,
the books, registers and so on. 2) The students lose their books, exercise books, notes, uniforms, and so. 3) Study hours of the students are reduced. 4) Failure rates in examinations increase. 5) Drop out rates increase particularly among girl children. All these factors together with general post-flood monetary stress make it extremely difficult for people to send their children to school. So, education in the flood prone villages suffer a great loss.
References


Census (2001), Population Register of (Provisional), Block Development Officer's Office, Kandi.


SSUP Study and Documentation (2003), Situational Analysis of Life and Livelihood in Flood Prone Districts of West Bengal: Towards Holistic Flood Management, Kolkata, Chapter 5 p.53.