

## Site analysis for exploring the role of key factors in redevelopment of urban village: a study on Majherait village, Kolkata, West Bengal

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### ABSTRACT

Due to rapid industrialization and economic growth, the city area is being expanded continuously by gradual inclusion of villages situated in suburban areas thereby forming "urban villages". Redevelopment of any urban village is inevitable for their necessary growth to make it more potential for better service to the city. In this context, there are several key parameters which are necessary to explore before making any redevelopment model for the growth of such villages.

Majherait, is one of such urban villages that has been included recently in the development of Rajarhat area adjacent to Kolkata, West Bengal. A field survey was carried out and SWOT analysis was done. The study reveals that the absence of proper road & drainage system, lack of health care facility, illiteracy, dilapidated houses, unplanned as well as illegal construction of houses are the major factors for poor growth and poor living environment of this urban village. These findings will eventually be helpful in designing and formulating an appropriate redevelopment strategy for making a provision for better living condition and overall growth of this urban village.

**Keywords:** *Urban village, redevelopment, SWOT Analysis*

### Introduction

Urban village is defined as the village transformed from the native village because of rapid urbanization and industrialization particularly in economically advanced regions or cities. Urban village, as the name implies, is the village located within built-up area, but still preserving some features of native villages. Urban village has been defined in many ways focusing on the different aspects including land use, sociology etc. [1-3]. The developers, governments, and the planning professionals have described it as a new patterning of human settlement.

Basically villages in the rural-urban fringe zone are included to the city to make urban village. Farmlands of these villages have been dispossessed into urban construction land. The original residential land and the land delineated by government for future development composed of main land of these villages. However, these urban villages often associated with lot of problems concerning construction, establishment and society such as low environmental condition, low leaving condition, high density of population, bad social discipline and so on. These problems influence the whole urban environment

negatively. Therefore, the redevelopment of urban villages is very important and essential to address and provide solution to these problems and this will eventually improve the quality of urban village life. Redevelopment means to bring some locations in line with comprehensive urban development planning through urban renewal projects, road extension & road networking and the construction of big public facilities. The benefit of creating or renovating the urban village is many folds that include the retention of residence, creation of higher density thereby enhancing the quality of life of residents and business owners in and around the site, better use of lands thereby provides newer buildings with an increased number of apartments and condominiums, as well as new commercial space, reuse of the empty or underutilized older buildings on the site by renovation and remodelling with authenticity, strengthening real estate market, reduction of car reliance thereby promoting cycling, walking and transit use, provides a high level of self-containment, facilitates strong community interaction and so on.

Recently, the urban village redevelopment has become a hot topic that is concerned by the government and academia. There are number of published reports that describe the various strategies, guidelines and approaches for the redevelopment of urban villages. The guideline emphasized the balancing benefits of different groups, especially low-income and vulnerable groups through the provision of foodstuff, education, employment, housing, health care, and other social welfare to urban village residents. The prime spirit behind this redevelopment is to improve the living conditions of temporary populations and not to exacerbate the environment.

The redevelopment often typically characterized by medium-density housing, mixed use zoning, good public transit and an emphasis on pedestrianization and public space [4,5]. During the process of urban village redevelopment, the interest of original farmers is most likely to be damaged. Many original farmers living in urban village do not have the permanent residential permission, which let them to be represented as second-class citizens. So government would grant them as a kind of compensation. Meanwhile, the annuities, employment opportunity and relevant social welfare would be another way to compensate the loss of farmers. On the other hand, in terms of regulation, the developers have obligation and responsibility to give the losers physical compensation, they should provide new dwelling flats or compensation fees to farmers[6].

The redevelopment of urban village should be done not only to make provision for basic amenities thereby improving the quality of life of the residents but also make use of such villages for fulfilling the greater need of the city. To achieve this goal, an appropriate strategy and redevelopment plan are must case to case to basis. To this effect, it is necessary to explore the key parametersthrough detail SWOT analysis of specific site and their influence in redevelopmentstrategy.

Majherait village has been considered and included in the development planof Rajarhat area of Kolkata city of West Bengal for its redevelopment. However, there is no study or report available so far to assess the present state of art of this village on the basis of which any redevelopment strategy can be adopted. Keeping this in view, the present paper focuses on thedetail site analysis ofMajherait village to assess its

potentiality as an urban village and explore the key issues involved and their influence on the growth of this village.

### **General Concept & Characteristics of Urban Village**

The urban village is not a new concept, though it has been rejuvenated in the last two decades. Creating urban villages was a focal point of urban design and planning in the early twentieth century, as advocated by Ebenezer Howard<sup>3</sup> (Garden City Concept<sup>4</sup>) and Clarence Perry (Neighbourhood Unit<sup>5</sup>) among others. The concept of urban village development is redefined keeping in view of the sustainability issue and most of authorities consider the solution of designing a sustainable city by the principles of urban village [7].

This idea was created to reject modern single-dimensional urbanization. In modern urbanization, work spaces, recreation and residency were separated from each other, while dull and cold environment were dominant in these areas and more cars reduced human relations leading to environment pollution and reduced sustainability in residential areas. In this concept, the term urban village is a response to the problems of development with some features as zoning, with environmental, social and economic objectives. The term “Urban Village” is currently being used by developers, governments, and the planning profession to describe a new patterning of human settlement that fosters a genuine synergy of ecology and urbanism [8]. The important characteristics of an urban village are small and intimate, traditions and collective memory, unique spatial identity, designed for social interaction, locally driven and locally responsive, functional and a mixed community[9,10]. These aspects of urban village encourage design that can promote, not only a sense of community, but also diversity and environmental sustainability.

**General issues:** The following are the general issues often considered to exist in the urban villages-

- **Location issues-**Population pressure and thus haphazard construction leading to unplanned settlements
- **Demographic issues-** Low literacy rate, High population density
- **Legal issues -** Illegal encroachments and thereby illegal occupancy of the land and built up houses, uncertain property taxes, narrow streets flanked with unauthorised shops, villagers expanding their housing illegally
- **Infrastructural issues-**Poor living conditions (spatial), structurally weak and unsafe, narrowing lanes in a very bad condition (kuccha roads), no space for parking, the residents park their vehicles on the roads, household size is comparatively small. unaffordability of housing, etc
- **Environmental issues-** Unorganised waste disposal, no proper area for dumping the garbage, ill-maintained green spaces. improper circulation pattern, etc
- **Economical-** Fragmented commercial situation (economical)

## Methodology

The following methodology was adopted to carry out detail site analysis of the selected urban village-

A. **Preliminary stage:** Collection of data & information: The required information was collected from various sources such as references from library and internet (**Literature Review**), from various government and private authorities (Gram Panchayat, Block Development Office, authorised developers e.g. HIDCO).

### B. Study and analysis of the proposed site

A thorough study of the proposed area was done based on the following aspects-

(a) **Site analysis-** This includes: (i) Site parameters/field visits and study (ii) Data required for site planning (iii) Assessment of locally available building materials, climatic analysis, personal interrogation with the villagers and surrounding villages along with questionnaire survey, Demography & Socio-economic Characteristics and so on.

(b) **SWOT Analysis-** Strength, weakness, possible threat and opportunity for further improvement of the proposed site was thoroughly studied and analysed and thereby major problems were enlisted.

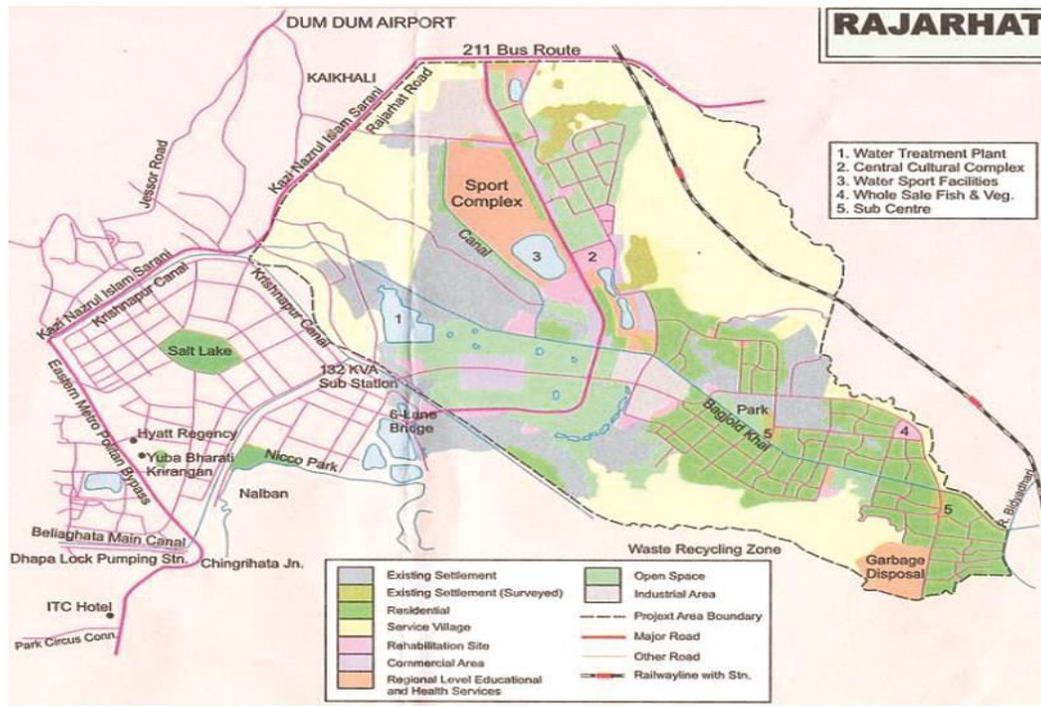
Based on the above information and site analysis, the key parameters and potentiality of the village for redevelopment was suggested.

## Study of Planning Area

### Site Analysis

#### (a) Site Location and Area:

The Majherait village is located in Reckjoani, Rajarhat, Newtown, Kolkata, West Bengal as shown in Map 1. The total area of the village is 45 acres.



**(c) Site Surrounding (Accessibility)**

The proposed site is well connected to the surrounding areas. These are categorized as follows-

- **Peripheral connection:** Figure 1 depicts that the village is surrounded by the important establishment like (i) Bengal Park Chamber consisting of Sunrise Symphony apartment adjoining the site in the South-East (ii) Bengal Belanithat consists of Highland Willows apartment with shopping complex and PHE Pump House of Action Area II adjoining the site in the east, (iii) Eco Urban Village – a tourism park established under HIDCO project adjoining the site in the south (iv) Naipukur Village adjoining the site in the West, North and North-East.



**BENGAL PARK CHAMBER - SUNRISE SYMPHONY APARTMENT, ADJOINS THE SITE IN THE SOUTH-EASTERN PART.**



**BENGAL BELANI - HIGHLAND WILLOWS, AN APARTMENT WITH SHOPPING COMPLEX ADJOINS THE SITE IN THE EASTERN PART.**



ECO URBAN VILLAGE - A TOURISM PARK ADJOINING THE SITE ON SOUTHERN PART. HIDCO PROJECT - ATTRACTS MANY TOURISTS.



PHE PUMP HOUSE OF ACTION AREA II ADJOINING THE SITE'S BOUNDARY ON THE EASTERN SIDE.

*Figure 1: Showing the important establishment near the site.*

**Accessibility:**The site is well accessible to the essential facility as follows-

Reckjoani Hospital – 850m. (ii) Two police stations-Rajarhat Police Station - 2.5 km & New Town Police station - ...km (iii) Devaki Memorial School - 1/2 km. (iv) Banking facility -Axis Bank - 1.1 km., United Bank of India - 1.4 km, Corporation Bank ( Rajarhat Branch) - 1.2 km.SBI - 6 km.ATM( HDFC, Bank of Baroda) - 6 km. (v) Rajarhat Post Office - 1.4 km.(vi) Rajarhat Block Development Office - 3 km. (vii)BLRO Office (Naipukur) - 1.5 km., (viii)Panchayat Office - 1.5 km. (ix) Market/Bazar- Open Market (Hat) - 1.5 km.&Rajarhat market complex - 1.3 km.Shopping Complex- Bazaar Kolkata < 6 km. (x)Derozio College, Tali Park - 3.5 km. (xi) Orchid < 7 km.



DEVAKI MEMORIAL SCHOOL - 0.5 KM THE ONLY ENGLISH MEDIUM SCHOOL IN RECKJOANI MOUZA.



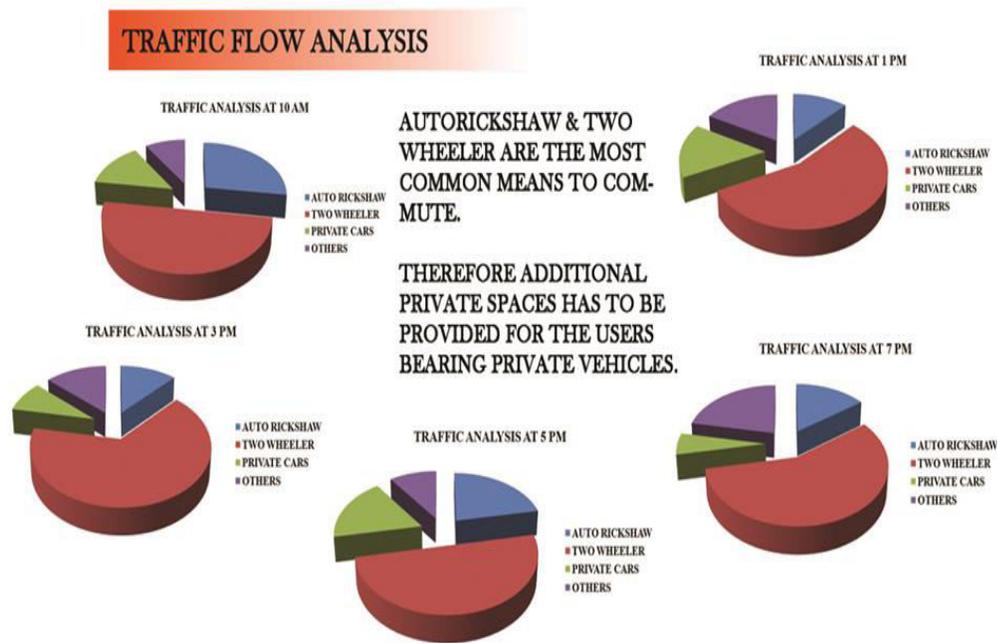
UNITED BANK OF INDIA - 1.4 KM THE MAIN BANK IN THE VICINITY SERVING THE POPULATION.



RAJARHAT POLICE STATION - 1.5 KM SERVES FOR ALL THE VILLAGES UNDER RAJARHAT BLOCK.

*Figure 2: Accessibility to basic requirement*

- **Transportation:**The site is well connected to the road, railway and air transport namely Road - Vibuti Bus stand - 1.2 km. and Malancha Bus stop - 1 km. Auto Stand – 0.5 km.Railway station- Jessore Road railway station andDumdum Metro Railway within< 9 km.Dumdum cantonment - 11.6 km.andDurga Nagar Railway station - 11.1 km.Airport- Dumdum Airport - 9.2 km.



*Figure 3: Transport facility and traffic flow analysis*

➤ **Climate:**

The climate of the planning area is humid and tropical. The mean monthly rainfall is about 1880mm. The maximum temperature during summer is about 35°C and minimum temperature during winter season is about 13°C. Humidity is fairly high through the major part of the year. The average annual wind speed is 5.2km/hr. The wind direction in summer is predominantly from south to south west and during winter mainly from north to north east.

➤ **Vegetation:**

Agricultural lands predominate the area with some orchards (off seasonal fruits and bamboo) and spaces with evergreen trees. During rainy and winter green, grasses cover the open spaces.

➤ **Land Form:**

**Geology:** The planning area is blanketed by an alluvial cover. A significant feature of the lithology is present in basal clay and top clay bed.

**Contour:** The slope of the area is mainly from south to north with some low lying depressions (ponds and beels). Predominantly the area is a residential land with a maximum height of 8 M from the Mean Sea Level (MSL) to a minimum of 1 M from the same.

**Drainage:** Since the study area is predominantly rural in character, there is no drainage system in the area. Mostly low lying agricultural lands and local small ponds help to drain out the storm water of the area. The water logging is most common especially during rainy season.

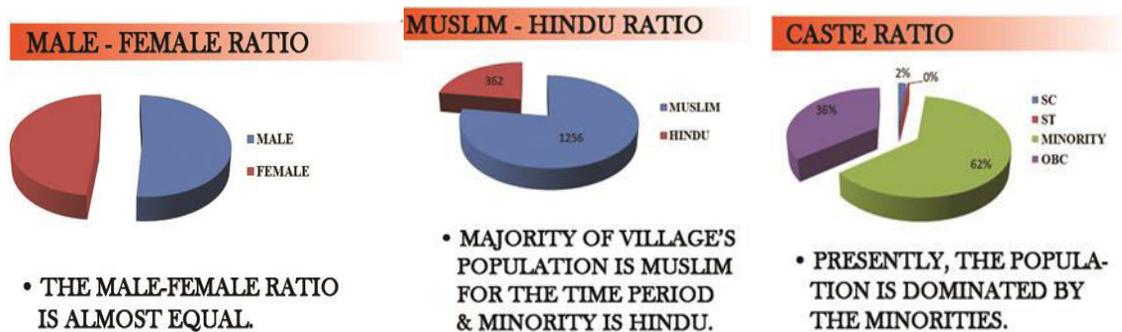
## DEMOGRAPHY & SOCIO-ECONOMIC CHARACTERISTICS

### Population:

The total household of the site is 330. The total population of the village is 2016 out of which 1030 are male and 986 are women. The various categories of the people are as follows:

- Schedule Cast (SC) -32
- Schedule Tribe(ST) - 10
- Minority -1256
- Other backward class (OBC) – 718
- Muslim – 1654
- Hindu - 362

Figure 4 shows the male female ratio and caste ratios. As indicated the Male-Female ratio is more or less equal. However, the majority of the population is Muslim that lead to Hindu as minority. The village population is dominated by the minority class.



*Figure 4: The pie chart representing the category of distribution of population and caste ratio*

**Occupation & Status of Income:** The occupation of the residences is mostly temporary in nature. The nature of their job are mainly daily wage labour, masonry, carpentry work and auto-rickshaw driver. There are a very few low paid service holders and their number is approximately 12-13. The ratio of occupation as depicted in Figure 5 indicates that most of the occupation belongs to daily wage labour followed by auto driver. It was also observed that women of the village are illiterate and unemployed. Therefore, the study suggests that permanent employment opportunity for villagers needs to be given priority. Women and unemployed youth may be provided opportunity for vocational training. The carpenters have good skill and hence a suitable platform may be provided to showcase their talent which also create opportunity for better income generation.

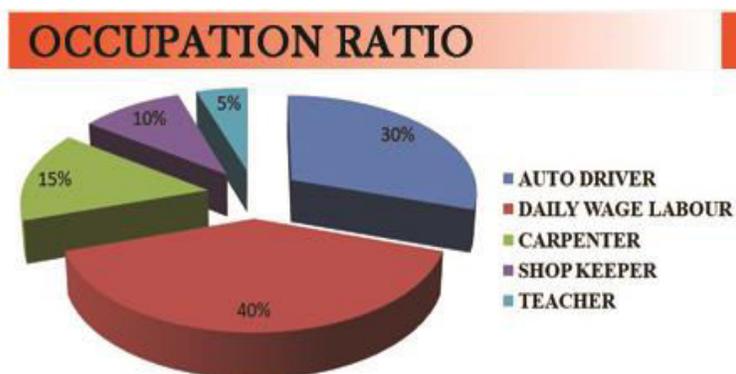


Figure 5: Pie chart showing the occupation & income generation status of the Majherait Villagers

**Literacy rate :** The literacy rate of the residents is depicted in Figure 6. The highest literacy is possessed by children which is 92% followed by male of 48%. The literacy rate of female is found to be very poor which accounts for only 10%. So, the study suggests that the adoption of 360° education facility is of prime consideration to bring about a change in the entire village so far as literacy and hence growth of the village.

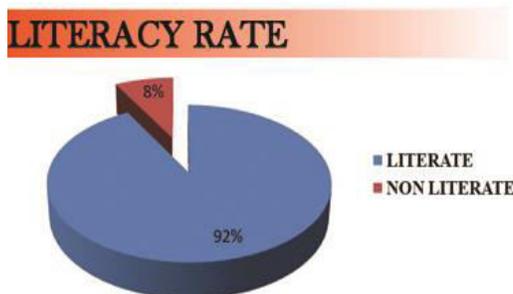


Figure 6: Represents the literacy status of the villagers of Majherait.

**Settlement Structure:**

**Land Use:** Table 1 indicates that there is a wide variation in land use currently prevalent in the study village. This includes residential, commercial, public & semi public, institutional, transportation & communication and others.

Table 1: Present status of the category of land use in Majherait village

| Category of use    | Function  |
|--------------------|---|
| Residential        | Dwelling houses   |
| Commercial         | Small shops, timber yard, motor garage, packaged drinking water plant |
| Public-semi public | Pharmacy, Dargah (shrines of pirsahab), mosque, bathing               |

|                                |  |
|--------------------------------|--|
|                                | ghats, etc   |
| Institutional                  | Madrassah and primary school                             |
| Public utilities & services    | Public toilet, time tap (water supply)                   |
| Transportation & Communication | Rickshaw garage (individual houses), telephone booth etc |
| Agricultural                   | Land for cultivation, orchard                            |
| Open Spaces                    | Play field   |
| Vacant                         | Vacant land (both developed & undeveloped)               |

**Residential:** From the study of the existing settlement, a frog leaping sprawl of residential plots along the roads with some less accessible and sparse settlement can be observed. The settlements developed are within the agricultural lands without any planning. The residential houses are not only haphazardly built up, but also without having minimum infrastructure and facility. During study, there are some dilapidated houses were also found.

**Commercial:** A minimal commercial establishment in the planning area is existing in the study site. The most important of such establishment includes Lathe Factory, Caplet Pharmaceuticals, packaged drinking water plant and a few small groceries.

**Agriculture:** There is hardly any crop production was observed in the study site in spite of the majority of the area being agricultural land except a few green crops which are maintained by individual. However, a variety of crop is produced throughout the year in the adjacent area.

**Water Body and Greenery:** A few orchards are found to exist in the site. Trees of various seasonal fruits like - mango, jackfruit, guava, black berries etc. are common in these orchards. Bamboo and coconut trees can also be found. A number of ponds and beels embedded with existing settlement are existed. In addition to these, a huge area of marshy land exists in the village.

## SOCIAL INFRASTRUCTURE

**Education:** In the study area, there is only one primary and a secondary school (Madrassah) without having much infrastructural facility. Moreover, these two schools are not adequate enough to cater the need of entire population for their education. Though there are dormitories for male students, the female students are not having such kind of provision which could probably facilitated their education at least upto school level. Further, the highest rank of educational facility that provides college education at graduation level is existed 2.5 km. away from the study site. Therefore, the study suggests that adequate infrastructural facility must be provided on priority basis for the improvement of the literacy which will eventually lead to the overall growth of the village. Furthermore, much emphasis must be given for female education.



*Figure 7: Showing the Madrassah school along with its infrastructural facility.*

**Religious Status:**As already mentioned, the study site is dominated by Muslim community. As a result we can find their worship place like a Dargah and a mosque that was established in 2010 within the site as shown in figure 8. During survey, unlike Muslim, no religious establishment could be observed for Hindus. Keeping the importance of all community in mind, emphasis may be given not only for introducing better facility in terms of sufficient space for prayer, parking etc for the existing Mosque, but also establishing temples for Hindus. It is also suggested to introduce a prayer hall for Muslim women within the Mosque premises.



*Figure 8: Showing the images of the existing Mosque Dargah of PirSaheb for Muslim Community in the study site.*

**SWOT ANALYSIS:**

A detail SWOT analysis was carried out to understand the present scenario of the strength, weakness, threat, if any and ultimately to define the scope for further improvement (opportunity) in enhancing the living condition, education and income generation of the residents of the village and is presented as follows -

**Strength**

- Availability of workers within and adjacent to the site
- Situated in proximity to the new developing towns like Rajarhat & New Town
- Locally available building materials like – Bamboo, bricks, clay tile, shipping containers, etc
- Location is next to Ecourban village
- Pir Sahib's Dargah attracts tourists
- No communal disputes
- Presence of adequate vacant land that can provide opportunity for new proposal with appropriate plan
- Good accessibility
- The redevelopment of the village with appropriate plan may be a model for other urban village projects

### **Weakness**

- Low per capita income
- High population density (demand)
- Inadequate transport network
- No proper drainage & sanitation system, which are mainly governed by natural drainage course & surrounding taps
- Water logging during rainy season leading to deterioration of road condition
- Pressure on urban infrastructure and subsequent degradation of urban resources
- Site is bit remotely located from all major roads and connectivity
- Presently accessible through kuccha road only

### **Threat/challenges**

- Rapid population growth
- Fast changing scenario of Indian economy should comply with the urbanization substantially
- People are using site for accessibility from the areas adjacent to the site as there is no other route
- Compatibility with the people from adjoining communities

### **Opportunity**

- Commercial development to alleviate the regional poverty
- Conservation of resources by creating water supply, sewage disposal with the construction of drainage and roads
- Central location of all amenities making maximum requirement within walkable distance thereby conserving energy
- Suitable population density for a balanced community life with adequate facilities
- Implication of eco-friendly and conservation of existing natural features
- Employment opportunity for local people especially Women and youth
- Upliftment of present condition of education thereby improving literacy

### KEY PROBLEMS OF THE STUDY AREA:

Though there are several strengths as evident from the above site analysis, the village still has several major problems and hence challenges that are enumerated as follows-

- **Haphazard growth:** There is no planning for residential establishment, illegal occupancy of the land and built up houses, dilapidated houses and so on.
- **Lack of Education:** Overall literacy rate is poor except children, and no cultural growth. Female education is severely neglected.
- **Lack of infrastructure:** Lack of basic infrastructure like pukka road with proper pattern, electricity supply and poor housing condition.
- **Drainage & Sewage Problem:** Mostly low lying agricultural lands and local small ponds help to drain out the storm water of the area. The water logging is the most common problem especially during rainy season.
- **Lack of steady resource of surface water & drinking water:** no water supply to the houses, only tube wells and time taps are the sources of water. Though surface water is available but not maintained leading to unhygienic condition.
- **Lack of employment opportunity:** The overall economic condition of the villagers is poor. The occupation of the residents is mostly temporary in nature and poor income generation which is mostly based on daily wage basis. There is no much commercial establishment.

### CONCLUSION

The present paper deals with the detail site analysis of the Majherait urban village that belongs to the under developing Rajarhat area adjacent to Kolkata, West Bengal, a hotspot for the urban poor. The socio-economic status of the villagers, their living conditions including housing, road, drainage system etc. were assessed by the detail site analysis based upon the field study and information gathered through personal interaction, serving questionnaire and collecting information from the government offices. The study has demonstrated through SWOT analysis that the village has the potentiality for redevelopment because of its several strengths including good accessibility, proximity. There are several problems some of which are of critical in nature. The major problems of this village that have been enumerated are inadequate basic infrastructural facilities, no proper road & sewage system, poor health care facility, low illiteracy rate, dilapidated houses, haphazard & illegal construction and occupation of houses, poor employment opportunity & income generation and poor social activity. Overall, the findings of the present study will be eventually helpful in developing an appropriate redevelopment plan and strategy for overall growth of the Majherait village thereby making it a potential urban village.

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