

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Urbanization is considered as an important indicator of development. Cities, irrespective of their size, provide varied services viz. health, education, cultural, technological, industrial activities, employment, and other opportunities to the people. Riesman interprets urbanization as the whole process of change and its consequences when a society gets transformed from an agrarian economy to an industrial economy and from a small homogeneous society to a large heterogeneous mass (Riesman, 1964, pp. 207- 209). According to World Urbanization Prospects 2018, United Nations 2019, urbanization is a complex socio-economic process that transforms the built environment, converting formerly rural into urban settlements, while also shifting the spatial distribution of population from rural to urban areas. It includes changes in dominant occupation, lifestyle, culture, and behaviour, and thus alters the demographic and social structure of both urban and rural areas. A major consequence of urbanization is a rise in the number, land area, and population size of urban settlements and in the number and share of urban residents compared to rural dwellers. Urbanization refers both to the increase in the percentage of population residing in urban areas and to the associated growth in the number of urban dwellers, the size of cities and the total area occupied by urban settlements.

Thus, urbanization can be considered as the factor in changing the living conditions, attitudes and social life of the people. Lampard, 1965, highlighted three aspects of the process of urbanization namely behavioural, structural and demographic. The behavioural aspect of urbanization deals with the experience of elders through time and the changes in the pattern of their behaviour. The structural aspect deals with the change in economic structure and the economic activities of the whole population. It emphasizes the transformation of a primarily agrarian economy to a primarily industrial economy. Lampard interprets this aspect as a product of increasing specialization and advancing technology. The demographic aspect visualizes the process in terms of increasing the degree of population concentration. It is a way of ordering a population to attain a certain level of subsistence and security in a given environment. Mitchell (1956) observes urbanization as the process of becoming urban through the movement of people and processes to urban areas and identifies dual aspects of urbanization, first is the demographic aspect implying the movement of people to urban areas and the second is the sociological frame of reference implying a change in behaviour as a result

of living in town.

Urbanization is the function of socio-economic changes that take place through time (Chandna, R.C, 2010, p. 380). The determinants of urbanization can be categorized into three broad categories, first is the economic determinant incorporating the type of economy, the degree of commercialization of agriculture, the extent of diversification of economy, changing size of agricultural landholdings, the stage of economic advancement and the degree of development of means of transportation and communication. Second is the social determinant taking into account the degree of socio-economic awakening, the social value system, and the stage of technological advancement and government policies. Third is the demographic determinant implying the rate of population growth, magnitude of migration and pressure of population.

The report on World Urbanization Prospects of 2018, United Nations 2019, has considered three components of urban growth viz., (a) Natural increase which results from an excess of births over deaths in urban areas and the balance depends on levels of fertility, life expectancy etc. (b) Migration when the in-migrants exceed the number of out-migrants and migrants are often younger on an average compared to the population of the place of origin (c) Reclassification which contributes to urban growth by enlarging the size of urban areas eventually incorporating neighbouring settlements and their population which were formerly classified as rural thus accelerating the pace of urbanization.

Increasing urban population is a major trend in different countries, natural growth rate is surely a reason but reclassification of previously rural population centers as urban and net migration from rural to urban areas are other major reasons that play a dynamic role in deciding urban population. Tumble, C. (2016) examines the nature and growth of urbanization in India since the late 19<sup>th</sup> century and provides four important features of the process (a) Masculine urbanization: As the streams of migration to cities are male-dominated in nature and younger cohorts of migrants often replace older cohorts of migrants who leave the cities to retire in the native regions with their left-behind families. Due to this return migration, the net rural-urban migration flows are considerably smaller than gross rural-urban migration. (b) Service sector urbanization: The share of the service sector between 1901 and 2016 in Gross Domestic Product rose substantially from 25% to 70% while the share of the manufacturing sector rose from less than 5% to around 15% (c) Strong linkages between economic growth and urbanization: There is a positive relationship between per capita income levels and urbanization rates between 1971 and 2011. The correlation coefficient between growth rates of per capita income and urbanization rates at the state level is +0.8. (d) Relatively low level and slow pace of urbanization in India: India's urbanization rate increased from 20% to 31% between 1971

and 2011 while many Asian and African countries doubled their urbanization rates from similar starting points. The reason for such a scenario is best explained due to the interplay of a number of factors like India using a conservative urban definition that assigns many settlements to be rural when they would have been classified as urban in other countries. Secondly, the relatively low level and slow pace of urbanization is also because of migration restrictions. The dynamics of urbanization require careful examination of urban and rural conditions as rural prosperity is demographically linked with greater urbanization which is connected with boosting agricultural productivity and rural literacy levels and by narrowing the rural-urban fertility differential. According to Bhattacharya, P.C (2002) a net gain of migrants from other countries also could be important in some contexts and the relative contribution of each component varies by place and for any given location over time. In countries that are already highly urbanized natural growth rate of the urban population is more important, since even if rural outmigration rates are high there are relatively few rural residents to migrate and by contrast, a fairly low rural outmigration rate may translate into a very high urban immigration rate in countries with low levels of urbanization.

The share of urban population in the world to total population has been increasing, in 1800 only 2.5 per cent of the world's total population living in urban areas which has grown to over 40 per cent in 1980. In 1950 the world's urban population accounted for 29% while in 1995 the corresponding figure increased to around 45%. In 2012 the share rises to 51% and by 2025 the proportion of the urban population is expected to reach 61% (Chandna, R. C, 2010, pp. 381). This rapid urbanization in the recent past is attributable to a high rate of natural increase, particularly in less developed countries and also to substantial rural-to-urban migration. The industrially advanced countries of the more developed world are more urbanized than the less developed countries where the mainstay of economy is agriculture and it is proved by the fact that in the more developed realm, 75% of people have an urban residence whereas less developed realm only accounts to 46% in 2012. The world is likely to witness rapid urbanization in near future and for developing and less developed nations this is going to be a huge leap forward due to the higher rate of growth of urban population in these nations. For instance, during 1994-2000 the urban population in the less developed nations grew by 3.7% per annum while that of in the developed nations it is recorded as 0.8% per annum. Thus, the less developed nations are experiencing rapid growth in urban population but there is no significant economic upturn and the base of manufacturing activities along with capital accumulation is feeble however there is a significant occurrence of rural-urban migration due to government functions and increasing trade and commerce. Among the various continents,

South America with 88% is expected to be the most highly urbanized continent followed by Europe with 83%, North and Central America with 79%, Oceania with 75% and Asia with 54% by 2025. It means even in the least urbanized countries of Africa and Asia more than half the population will reside in urban areas by 2025 which will be a huge leap by the less developed realm as the rate of growth of urban population as mentioned earlier will be higher (Chandna, R. C, 2010, pp.383).

The global urban population is projected to grow by 2.5 billion urban dwellers between 2018 and 2050 with nearly 90 per cent of the increase concentrated in Asia and Africa. In many regions, the share of the population living in cities as well as the number and size of cities will continue to grow driven by a combination of factors including a surplus of births over deaths in urban areas, migration from rural to urban areas and from abroad (Lerch, 2017) as well as the urbanization of formerly rural areas. Cities are major gateways for internal and international migrants and migration needs to be integrated into the strategic planning and management of cities and urban systems (World Urbanization Prospects, 2019).

According to Census of India 2011, the definition of urban area is as follows:

**Statutory towns:** All places with a municipality, corporation, cantonment board or notified town area committee, etc.

**Census towns:** All other places which satisfy the following criteria-

- i) A minimum population of 5000
- ii) At least 75 % of the male main working population engaged in non-agricultural pursuits; and
- iii) A density of population of at least 400 persons per sq. km.

**Out Growth (OG):** It is a viable unit such as a village or a hamlet or an enumeration block made up of such village or hamlet and clearly identifiable in terms of its boundaries and location. Some of the examples are railway colony, university campus, port area, military campus etc., which have come up near a statutory town outside its statutory limits but within the revenue limits of a village or villages contiguous to the town. While determining the outgrowth of a town, it has been assured it possesses the urban features in terms of infrastructure and amenities such as pucca roads, electricity, taps, drainage system for disposal of wastewater etc. educational institutions, post offices, medical facilities, banks etc. and physically contiguous with core town of the urban agglomeration.

**Urban Agglomeration (UA):** An urban agglomeration is a continuous urban spread constituting a town and its adjoining outgrowths (OGs), or two or more physically contiguous towns together with or without outgrowths of such towns. An urban agglomeration must consist

of at least a statutory town and its total population (i.e., all constituents put together) should not be less than 20,000 as per the 2001 census.

Urbanization in India is not only the outcome of merely the growth potential generated within urban settlements but also has been largely due to the backwardness of rural areas, where land is the essential resource and is so critically balanced that even a small addition to population is pushing people out of agriculture to nonagricultural services. Thus, people are migrating from rural and backward areas to towns and cities creating pressure on the existing resources of the latter. This process leads to the emergence of a number of imbalances and problems in urban areas.

The rapid growth of population in urban centers through natural increase and migration accretion has attracted attention not only to geographers but economists, sociologists, demographers, planners and politicians too. Nowadays in most countries of the world, the rapid growth of population has nullified the planning prospects of the national government. This has also dampened the environmental situation through carbon dioxide build-up and increased the occupancy rate in urban areas (Mandal, R. B. 2000, p.351). The growth of urban centers results in the formation of a large number of new social groups which consummately involve a rise in urban poor. The growing urban poor is the paradox of economic growth in urban areas. Urban settlements suffer from improper and haphazard development, the absence of basic infrastructure and services leading to the proliferation of both notified and non-notified slums. The growth of squatter and informal housing and the burgeoning of new kinds of slums in the rapidly expanding cities of the developing world contributes to speedy urbanization which is largely taking place in developing nations. The spread of slums not only augments the indigent status of the urban landscape but also reveals urban poverty that freely prevails in the economy. According to Mandal, R.B. (2000) the excessive migration of labourers in the industrial sectors has created the problems of slums and squatter settlements which results in attracting the attention of urban geographers to arouse consciousness among the public for elevating the awful situation.

According to the NSSO (2010): “A slum is a compact settlement of at least 20 households with a collection of poorly built tenements, mostly of temporary nature, crowded together usually with inadequate sanitary and drinking water facilities in unhygienic condition”.

The Census of India has defined slum as residential areas where dwellings are unfit for human habitation by reasons of dilapidation, overcrowding, faulty arrangements and design of such buildings, narrowness or faulty arrangement of the street, lack of ventilation, light, or sanitation facilities or any combination of these factors which are detrimental to the safety and health.

The Census of India has defined and classified slums into three categories, notified, recognized and identified slums. All notified areas in a town or city notified as 'slum' by state, union territories, administration or local government under any act including a 'Slum Act' may be considered as *Notified slums*. All areas recognized as 'Slum' by state, union territories, administration or local government, housing and slum board, which may not have been formally notified as slum under any act may be considered as *Recognized slums*. A compact area of at least 300 population or about 60-70 households of poorly built congested tenements, in an unhygienic environment usually with inadequate infrastructure and lack of proper sanitary and drinking water facilities may be considered as *identified slum*. Such areas should be identified personally by the charge officer and also inspected by an officer nominated by the Directorate of Census Operations and this fact must be duly recorded in the charge register.

According to UN-Habitat, a slum is a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services.

UN-Habitat defines a slum as an area that has one or more of the five characteristics viz. poor structural quality of housing, overcrowding, inadequate access to safe water, inadequate access to sanitation and infrastructure and insecure residential status. Therefore, a slum consists of a household or a group of people living under the same roof lacking one or more of the five above-mentioned amenities.

Under Section-3 of the Slum Area Improvement and Clearance Act, 1956, slums have been defined as mainly those residential areas where dwellings are in any respect unfit for human habitation by reasons of dilapidation, overcrowding, faulty arrangements and designs of such buildings, narrowness or faulty arrangement of streets, lack of ventilation, light, sanitation facilities or any combination of these factors which are detrimental to safety, health and morals. The West Bengal Slum Areas (Improvement and Clearance) Act, 1972 states: "If the State Government is satisfied with the conditions of the land, huts or other structures in any area in such that the continued existence of such conditions would be injurious to public health or safety or to the health, hygiene or morals of the inhabitants of such area, it may, by notification, and in such other manner may be prescribed and declare such area to be slum area".

The formation of slums is encircled by a number of reasons and superfluous services. The rural-urban migration leading to housing shortage is a serious reason behind the formation of slums. According to UN-Habitat, 2014, the government fails to anticipate and meet the housing demand of the vast number of migrants who arrive in a relatively short space of time and the majority tend to be poor and are unable to compete successfully for good quality housing and land. Thus, they are compelled to accept sub-standard accommodation and seek relatively cost-

free solutions such as squatting. Stokes, C. (1962) proposed a distinction between “slums of hope” and “slums of despair” where the former represented poor neighbourhoods in which the residents were aspirational and over the course of many years made measurable progress in improving their homes and environments. The latter were slums which were in continued decline for a number of social or economic reasons (UN-Habitat, 2014, p. 10). The review of 29 case studies of cities worldwide provided by the 2003 Global Report on Human Settlements distinguished two types of slums, slums proper on one hand and shanties or spontaneous housing and urban development on the other and the report noted that the distinction was made on basis of combinations of physical location and legality. It has been further mentioned the term slum frequently refers to inner-city residential areas that were originally legally built several decades ago but which over time have progressively become physically dilapidated. This can be compared as “slums of despair” by Stokes and the category of spontaneous housing refers to squatter invasions and illegal or semi-legal urbanization on the urban periphery.

The slums have a direct impact on the urban environment, its people and planning. They are often illegally occupied; create nuisance and environmental pollution and degrade the urban living conditions. Slums are dirty urban areas where the drains are full of mud and refuse water of the houses, full of flies, mosquitoes and insects abound. The roads are very narrow, mostly unmetalled and full of potholes where even passers feel dirty. The slums are devoid of street lamps, mostly without proper sanitation facilities and the road corners are filled with heaps of garbage. Most of the houses are occupied illegally without land ownership and houses are being constructed without obtaining legal permits from the municipal authority. It has been a serious issue for the town planning.

Cities function as areas of economic growth along with intermixing social cultures that attract unemployed people from surrounding regions, rural people with very low income or people with high earning desires or to avail different employment opportunities. The rural masses or the streams of people from surrounding regions thus migrating to urban areas occupy any vacant land close to their place of employment near the central part of the city. This continuous influx of low-income group people in urban areas leads to construction of poor shelters, built haphazardly in unhygienic condition and result in the formation of slums.

<b>Table no. 1.1 Recent scenario of urbanization in India and West Bengal</b>				
Parameters	India		West Bengal	
	2001	2011	2001	2011
Number of statutory towns	3799	4041	123	129
Number of census towns	1362	3892	252	780

Number of urban agglomerations	384	474	21	38
Urban population	286119689	377106125	22427251	29093002
Total population	1028737436	1210854977	80176197	91276115
% of urban population	27.82	31.14	27.97	31.87
Slum population	52371589	65494604	4663806	6.4 million
% of slum population to urban population	18.32	17.37	20.98	21.99
Number of statutory towns reporting the existence of slums	1743	2613	89	122
Source: Census of India 2011, Handbook of Urban Statistics, Ministry of Urban Development, 2016				

According to the 2011 census, the size of the urban population in India grew to 377.1 million from 286.1 million in 2001 showing an annual exponential growth of 2.76% per annum during 2001-2011. The level of urbanization in the country increased from 27.82% in 2001 to 31.14% in 2011, an increase of 3.34 percentage points. The slum population in India has increased during 2001-2011. Out of 3799 statutory towns in 2001, 1743 towns reported the existence of slums with a total slum population of 52.4 million. In 2001, the share of the slum population to the total urban population was 18.32%. Moreover, in 2001, 45.88% of statutory towns reported slums. In 2011, out of 4041 statutory towns, 2613 towns reported slums with an estimated population of 65.5 million living in slums. Thus, the share of the slum population to the total urban population in India in 2011 was 17.37% which signifies a decline of 0.95% from 2001 to 2011 and 64.66% of statutory towns reported slums in 2011. Therefore, not only the absolute population living in slums increase by 13.1 million during 2001 – 2011 but also the percentage of statutory towns reporting slums has gone up by 18.78% during the same period. However, the percentage of the urban population living in slums has marginally decreased from 18.32% in 2001 to 17.37% in 2011.

For West Bengal, in 2011 the size of the urban population was 29.1 million which increased from 22.4 million in 2001 showing an annual exponential growth of 2.62% per annum during 2001- 2011. The level of urbanization increased from 27.97% in 2001 to 31.87% in 2011 i.e., an increase of 3.9 percentage points. The total population living in slums have also witnessed a considerable increase during 2001 – 2011. In West Bengal out of 123 statutory towns in 2001, 89 towns reported the existence of slums with a total slum population of 4.7 million. Thus in 2001, the slum population accounted for 20.98% of the total urban population in West Bengal and 72.36% of all statutory towns reported slums. In 2011 the situation deteriorated further with 122 statutory towns out of 129 reporting slums with a total slum population of 6.4 million. Thus 94.57% of statutory towns in West Bengal reported slums in 2011 and the share of slum

population to total urban population increased to 21.99% showing an absolute change of 1.01% during 2001-2011. Therefore, in West Bengal not only the absolute population living in slums increased by 1.7 million during 2001 – 2011 but also the percentage of statutory towns reporting slums has gone up by 22.21% during the same period. Thus, it can be noted that the process of urbanization leads to the emergence and proliferation of slums.

The people in slums live under the most deplorable conditions with little access to effective social and health care services, potable water, or sanitation facilities and are therefore more vulnerable to epidemics, diseases and developmental challenges. Their lower socioeconomic status, low level of education, high fertility and mortality indicate that they need special attention in terms of public health, family planning and reproductive health programs.

Probable reasons for the proliferation of slums are urbanization, industrialization, and higher productivity in the secondary/tertiary sector against the primary sector making cities and towns as center of economic growth and jobs. The negative consequences of urban pull result in the upcoming of slums characterized by housing shortages and inadequacies in public utilities, overcrowding, and unhygienic conditions (Singh, B. N, 2016). Cities act as beacons for the rural population as they represent a higher standard of living and offer opportunities to people which are not available in rural areas. This results in large-scale migration from rural to urban areas. The characteristics associated with slums vary from place to place. Slums are usually characterized by urban decay and high rates of poverty with illiteracy and unemployment. They are commonly seen as breeding grounds for social problems such as crime, drug addiction alcoholism, illness etc.

Slums are the irresistible part of the urban landscape where they depict a picture of misfortune, indigence and crisis that requires immediate attention. The term slum instantly reflects misery, trouble, pain, misfortune, negligence and many more. These are characterized by low-income groups people with shanties, and extremely overcrowded with a lack of basic infrastructure and services.

It is difficult to get any precise definition of slum, Goswami, S. (2013) mentioned in his thesis a dictionary meaning of the term that appeared in Veux's Flash dictionary in 1812 to indicate working-class housing during the Industrial Revolution in Britain. Kirby (1979) in his book mentioned that there is no precise dictionary definition of the term slum but the possible meaning may be to fall or sink. Therefore, by this meaning slum refers to a decline or deterioration in standards.

Slums are known by various names, in India these are called 'jhuggis' in the northern parts of

the country, 'ahatas' in Kanpur, 'cherries' in Chennai, 'bustees' in Kolkata, 'chawls' or 'patrachawls' in Mumbai and Ahmedabad (Singh, B. N, 2016). The economic growth in urban areas is certainly accompanied by the growth in the section of a number of urban poor who occupy the discarded places with limited basic services. The irony stays with the fact that with heavily built-up infrastructure in urban areas, the slum dwellers are deprived of basic services. According to Statistical Compendium 2015 by the Ministry of Housing and Urban Poverty Alleviation, slums manifest deprivation that transcends income poverty. They are characterized by acute overcrowding, and unsanitary, dehumanizing living conditions. They are subject to insecure land tenure, lack of access to basic minimum civic services such as safe drinking water, sanitation, solid waste management, internal and approach roads, street lighting, education and healthcare and poor quality of shelter. Many of these habitations are located in environmentally fragile and dangerous zones prone to landslides, floods and other disasters that make the poor highly vulnerable. Civic bodies do not provide the required municipal services in slums on the plea that these are located in illegal spaces. Moreover, the scale of the problem is so colossal that it is beyond the means of municipalities that lack a buoyant fiscal base.

Living conditions in slums have a direct impact on people's health (Goswami, S, 2013). The slums are considered breeding grounds for various diseases due to a lack of basic health care, uninhabitable conditions and malnutrition as well as social issues like crimes, drug addiction, child abuse, alcoholism, mental illness and suicide. In spite of all the disadvantages, people choose to live in these areas with the prime cause being the inability to afford any other kind of accommodation and free from civic obligations. Large cities continue to grow and attract a heavy inflow of migrants with minimum basic infrastructure. Squatter and slum settlements are the results of the inability of authorities and city governments to plan and implement affordable housing for the poor segments of the urban population. With the proliferation of slums, urban planners are facing major challenges in maintaining the services along with implementing new planning programs. Most of the programs have the ultimate goal to improve quality of living and overall human development which will lead to economic and social progress. The economic growth will result in the development of social aspects of health, literacy, life expectancy and environmental sustainability. Therefore, to have a balanced development in economic and social aspects there requires accessibility to basic infrastructure to the slum dwellers who certainly contribute towards the economy.

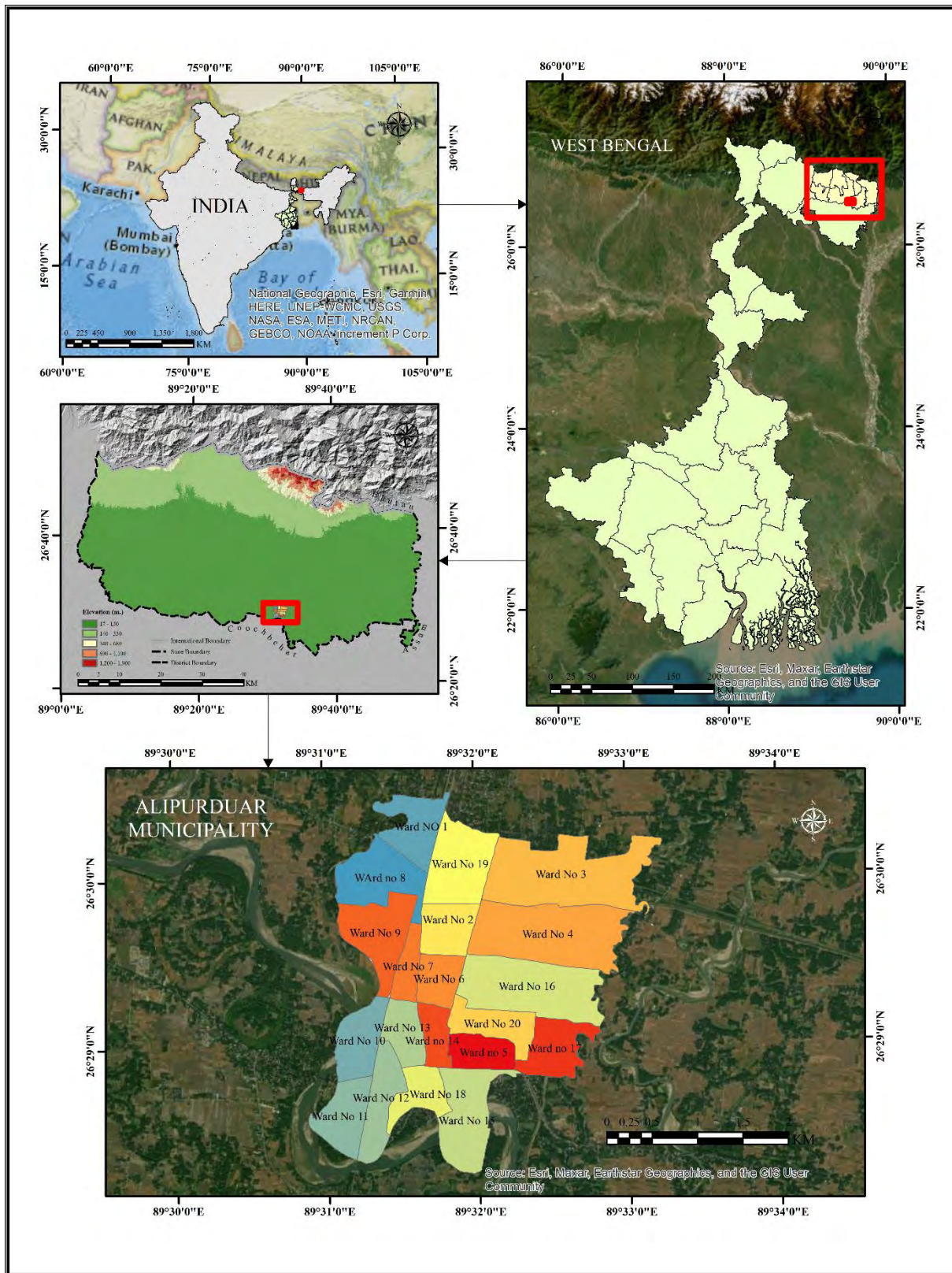
The development of a city is important but the provision of basic services to the slum population cannot be neglected. There is a need to develop plans and policies for the up

gradation of slum dwellers in terms of infrastructural development and basic amenities. The slums are barriers of urban development which are blighted areas of shiny city life. Thus, slum is an integral part of urban life and the slum dwellers opt to identify themselves with city life rather than with their native place and tend to permanently settle there. Thus, it is imperative to include slum as an integral part of social, cultural, economic and environmental aspects of urban life and forms an intrinsic part of the planning process for sustainable urban development.

## **1.2 Study area**

Alipurduar is a newly formed district of West Bengal created by bifurcating the erstwhile Jalpaiguri district on 25<sup>th</sup> June 2014 and Alipurduar town is the district headquarters of Alipurduar district. Located in the heartland of the world-famous tea gardens of North Bengal and surrounded by a huge share of tribal population it is one of the backward districts of West Bengal. Since Alipurduar is the only statutory town of the district according to Census 2011 and it is also the largest urban center of the district with a population of 65232 in 2011, therefore it acts as the gateway to the neighbouring landlocked country of Bhutan and North Eastern states of India. The railway link to this region was introduced during the British Raj to facilitate the exploitation of tea plantations and timber. However, after the partition of the country in 1947 the major railway links were cut as most of them passed through the erstwhile East Pakistan (Bangladesh) but after independence to establish a link for the north-eastern states with the rest of the country new railway network was set up. In the course of time with the expansion of the tea plantations, the setting up of Alipurduar Division under North Frontier Railways and its elevation as district headquarters, Alipurduar began to gain importance as a center of trade and commerce, transport and administration.

### Map No. 1.1 Location map



Source: Prepared by the researcher

### **1.3 Statement of problem**

The present study is a humble attempt to analyze the socio-economic condition of the slum pockets along with the overall housing, environmental and health status of the slum dwellers existing in Alipurduar Municipality. Although the total population of Alipurduar Municipality has witnessed fluctuating trends during the recent decades with 69613 persons in 1991, 72999 persons in 2001 and 65232 persons in 2011, however, the formation of Alipurduar district in 2014 and its elevation as district headquarter will have a huge positive impact on its population growth in near future with new avenues of employment opening in the fields of administration, transport, trade and commerce, real estate and entertainment. With this rapid urbanization and associated newer employment opportunities, Alipurduar Municipality will attract a lot of low-income group people with very little formal education from the surrounding regions in the low-paid- low-skilled urban informal sector in search of livelihood. The recent sickness in the tea industry and the closure of a number of tea gardens near the town have forced people to migrate and get absorbed in the urban informal sector. Moreover, the majority of tea garden workers engage in leaf plucking activity and are mostly female, thus males are automatically pushed towards the town for generation of additional income. This will be ultimately manifested by a rapid increase in urban population through the conversion of rural poor into urban poor. The newly formed urban underclass could not afford the high cost of land and housing commonly associated with an expanding town and were forced to stay in substandard and unhygienic neighbourhoods within the town. The effect will be immense with further aggravation of the condition which is already at a critical level with 26376 of the total population of the municipality living in slums in 2011 which constitutes about 40.43% of the total population of the municipality. This calls for renewed attention towards the study of the overall condition of slum dwellers in Alipurduar Municipality. Slums result from insufficient living space, large-scale migration of a labour force mostly unskilled and lack of infrastructure which leads to a deteriorating quality of life. Increasing informalization of urban economy and seasonality in employment opportunities can be observed across all categories of urban centers in the country and Alipurduar being no exception further leads to the proliferation of slums.

Alipurduar town is the only statutory town in the district in addition to twenty census towns according to the 2011 census. Since the census towns do not have any statutory backing and function under the administrative setup of the gram panchayats so the availability of basic urban services and infrastructure is either absent or very low. This put immense pressure on Alipurduar Municipality as people from all across the district and also from Bhutan depend on Alipurduar Municipality for meeting their requirements of higher education, critical health

care, judicial services, administrative services etc. which is not available in their native place. Alipurduar Municipality is surrounded by a number of national parks, wildlife sanctuaries and pristine forests which attract thousands of tourists not only from the state but also from various parts of the country. Most of these tourists make Alipurduar Municipality as their base or as a transit point to explore the natural beauty of this region. In fact, during the peak tourist season from the month of April to mid of June and from October to December the population of the municipality goes up considerably due to the tourists and tourism related services. In spite of all these positive factors of growth, Alipurduar Municipality is heavily burdened with a shortage of infrastructure and basic services like roads and footpaths, drainage networks, housing, drinking water, sanitation etc. making the poor people even more vulnerable in an urban environment. These urban poor trying to balance between the advantages of urban life and cheap living conditions consider slums as their solution to housing needs.

#### **1.4 Review of literature**

It is noted that there has been a steady increase in slum formation in various cities and towns with the development of urban areas. Slums and squatters are blighted areas of cities. Various studies have been done on the development of slums and issues related to it. Slum studies are increasing and attracting a large section of researchers from developed as well as developing countries from various disciplines such as sociology, economics, geography, anthropology, various other social institutions, public health etc. Thus, there are a number of write-ups and articles regarding various issues and concepts of slum.

A number of published journals and articles have been gone through. For the present study, only the relevant literature has been taken into account which is related to the concerned field of interest. A systematic literature survey has been prepared by classifying the relevant literature into specific themes and thereafter each theme was treated independently.

##### **1.4.1 Causes for the formation of slum**

Ooi, G. L. and Phua, K. H. (2007) studied urbanization and slum formation and said city authorities faced with rapid urban development lack the capacity to cope with the diverse demands for infrastructural provision to meet economic and social needs. The paper suggests that city governments have to first recognize and then act for economic development and housing.

Gulyani, S. and Bassett, E. (2012) studied the living conditions, rents and their determinants in the slums of Nairobi and Dakar where it is found that living conditions for tenants are worse than for owners though tenants pay higher rents.

Kumar, J. (2014) made a study on slums in India with a focus on metropolitan cities, he said rapid urbanization and increasing migration from rural areas have led to the growth of slums. Slums are neglected parts of the city where housing and living conditions are appallingly poor. The pattern of slums in each city has resulted from its environment, stage of development and characteristics of location. The analysis of slumming in the cities reveals that the slum proportion decreases with the decrease in population size as well as the industrial status of a city. Highly industrialized cities have a higher rate of slum localities.

Tripathi, S. (2014) has focused on determinants of large city slum incidence in India which investigates the city specific relevant economic determinants of slum formation and identify the factors to improve the living condition of people living in slums in India. The paper suggests that the problem of slum should be analyzed from a macro perspective rather a micro level as the stage of development of a country has a direct bearing on proliferation of slums.

Taubenbock, H. and Kraff, N. J. (2014) studied the physical face of slums and compared slums in Mumbai based on remotely sensed data to provide an independent, area-wide spatial overview, to capture the complex morphological pattern and at the same time capture the large-scale individual objects typical for slums. In this, the structural homogeneity and heterogeneities within and across slums can be analyzed and to suggest characteristic physical features for spatial delineation. The study allows to identify characteristic features and slum areas by using quantitative and measurable parameters, further, it uses high-resolution satellite data through which slums and formal settlements can be easily differentiated.

The above literature reflects that rapid urbanization and increasing migration lead to slum formation. The living condition is worse and the stage of development of a town has a direct bearing on the proliferation of slum. The areas with varied industrial setups and history bear a higher number of slum localities. The problem of slums should be analyzed from a macro perspective rather than a micro level.

#### **1.4.2 Social and cultural background of slum dwellers**

Banerjee, A. (2012) made a study on the socio-economic profile of slum-dwelling women in Dankuni municipality, Hooghly and reveals the overall miserable condition with a low level of education, early age of marriage, hard work to earn money and above all violence against women which describe the lower social status granted to women. The author stresses on female literacy, women empowerment, effective steps for controlling early marriage, domestic violence, dowry system to improve the situation. Moreover, to generate adequate awareness mass media may act as a major source.

Nasrin, S. O and Rahman, K. M. (2012) attempted to study the factors affecting early marriage

and conception of women in slum areas of Rajshahi City in Bangladesh where they found that a lion's share of respondents i.e., 83.7% are married before 18 years of age and there exist a disowning of family planning methods which effects the conception and health of the women. The study reveals that the education of the respondents, the education of the husband, education of the father is significant along with the family's monthly income and religion as important factors to determine early marriage.

Goswami, S. and Manna, S. (2013) conducted a study on urban poor living in the slums of Raipur city in India and elaborated that living conditions in slums have a direct impact on people's health. There exists a very strong linkage between attaining economic prosperity and enriching the quality of life, which is reflected in the social indicators of health, longevity, literacy and environmental sustainability. Raipur's formation as capital has brought qualitative and quantitative changes among the slum dwellers. The strategies and priorities for improving slums are evolving over time and new initiatives are adapted based on the experiences gained by implementing many schemes launched over previous plan periods. There is a need to emphasize and strengthen institutions at the community level in the form of neighbourhood committees and to support non-governmental efforts, either individually or else.

Mukherjee, A., Parasuraman, S, et.al. (2014) studied how often and early Indians marry and the marriage rates in India which despite of having strict laws and policies to curtail early marriages continues to have high rates of marriages below the legal age at marriage. The paper investigated the levels, patterns and differences in marriage rates across states and in different socio-demographic subgroups in India as well as factors associated with early marriages and found that the marriage rates were slightly higher as compared to developed nations during 1999-2004 to 2004-2008. Marriage rates are higher for females than males, higher in rural than urban areas and the rate varies in different income groups, religious practices and also in different states.

Sharmin, S. and Luna, F. (2015) made an exploration on the socio-economic condition of female slum dwellers of Dhaka city in Bangladesh revealing Dhaka as an overpopulated city with unplanned industrialization and urbanization leading to pollution, congestion and inadequate public services. The condition of women is miserable as they are neglected and are devoid of basic human rights and thus the paper suggests government interference to stop domestic violence and other serious issues by ensuring the implementation of laws and social community clinics to aware the women about the system.

Rahaman, M. (2018) studied the demographic structure and educational status of the slum population in Kalyani municipality and found that the literacy rate is in satisfied category and

the male literacy is higher than the female literacy rate. The paper further ascertains that 90% of people belong to the scheduled caste community in the studied slums. The local authority should make a separate development plan for the slum dwellers. To improve the literacy rate, the slogan 'education for all' needs to be launched in the slum areas and to increase income, effort should be made to create avenues of employment with the help of the local authority.

Kumari, V, Hiremath, R. N, Ghodke, S. et.al. (2018) studied gender preference and family planning decisions among eligible couples staying in slum areas in eastern India. The paper focused on the most influential person regarding family planning decisions and concluded that the majority had son preference and family planning decisions were taken by male members. For maintaining the family size adopting two-child norms, increasing the age of marriage, and encouraging wives to equally participate in decision-making process would help to maintain the family size.

The above literature exhibits that the urban poor living in slums are devoid of proper education which results in early marriage, especially of the females making them more vulnerable to social problems. The females at an early age have tremendous pressure to carry social responsibilities starting from giving birth to managing household chores along with accepting social norms. The average size of the family remains generally high whereas the income level remains lower comparatively. It is to be mentioned that the social condition is very closely tied to literacy level which makes people aware. The conditions of female slum dwellers are miserable as they are devoid of basic rights which immediately call for government intervention. To improve the overall scenario, the literacy rate has to improve, the family size should be controlled through active participation in the decision-making process by the male as well as the female member of a family.

#### **1.4.3 Economic condition of the slum dwellers**

Naksoon, C. (1992) studied the occupation and income in a Bangkok slum and revealed the irony of the situation in which more than half of the slum dwellers endure poverty while their cheap labour underpins the country's economic growth. Thus, the cycle of poverty continues with the growth of slum and squatter areas.

Sufaira, C. (2013) analyzed the socio-economic condition of urban slum dwellers in Kannur municipality by expressing that the existence of slums is essentially a manifestation of poverty and rapid growth of population with developmental activities in urban centers which provide employment to the migrants. The study further shows that the condition of slum dwellers in notified areas is better than that of non-notified areas and recommends multiple strategies to fulfil the needs of slum dwellers.

Ali, Md. J. (2015) conducted a study on slums and said how they acted as a barrier to urban development in Kolkata. The slum is an integral part of urban life and the paper emphasizes on analyzing diverse problems in slum life. Unplanned and improper land utilization leads to a lack of living space. Further, the paper suggests land use planning, the use of modern technology, the creation of job opportunities, adaptation of an integrated housing plan and construction of multi-storied buildings due to space shortage for slum improvement.

Bose, R and Ghosh, S. (2015) attempt to study slums in Kolkata with respect to various socio-economic parameters like income, education, sanitation, financial inclusion etc. It presents a clear picture of the current condition of Kolkata slums and quite surprisingly found that the current scenario has rather improved than what common people think about slums. If the planning is correctly implemented with judiciously chosen measures the slums can contribute to inclusive growth.

Sen, R. K. (2015) explored the status of Muslim women slum dwellers in the Basirhat municipal area near Kolkata which uncovered the situation that more than half of the slums are located on privately owned land leading to institutional challenges. With a lack of knowledge, poor health, early marriage and motherhood the condition of women in the area is concerning which perturbs the situation further. The author urges to fight against women's poverty by understanding the causes of their migration, ensuring women's effective economic participation, enforcing equal rights to marital property and investing in slum upgrading programmes.

Singh, B. (2016) studied the socio-economic condition of slum dwellers and attempted to demonstrate the theoretical ideas relating to socio social and economic condition of slum dwellers. He also suggested that skill enhancement programs initiated by the government can produce potential human resources.

Basu, M. (2016) studied the socio-economic condition of slums in ward number 82 of Kolkata Municipal Corporation and revealed that the growth of the urban poor depends on the government's incapability to provide shelter to them. Considerable success has been achieved but there is a long way to go in addressing the issues related to urban poverty and slums.

Dutta, B. and Rath, S. (2017) focused on the lack of basic infrastructure among the slums of Midnapore municipality in West Bengal and compared it with the Indian scenario. The paper urges for immediate implementation of some actions regarding social welfare schemes along with changing the negative attitude of the poor people and providing access to different benefits.

Penck, D. (2018) gave a detailed overview of the economics of Kolkata's slums and the related

issues and compared and contrasted life in slums with that of rural West Bengal. According to him a family choosing to move to a slum in Kolkata from any rural area is a negative economic choice because they make less money than a rural businessman and spend more money on healthcare, suffer from the effects of pollution, overcrowding etc.

Talule, D.C. (2018) studying the pattern of interstate migration and employment in the manufacturing and unorganized sectors on the border of Maharashtra and Karnataka found poor people largely migrate from Karnataka to Maharashtra in search of employment in unorganized sectors like brick kilns, and construction sites and factories with very low wage and minimum job security which force them to settle in slums.

Raghav, P. and Joshi, A. (2019) dealt with the socio-economic dynamics of a slum in the expanding city of Haryana in which they found the process of rural-to-urban migration results in slum formation. In the study area, the majority of people migrated to avail better employment opportunities and income. The situation becomes miserable as the slum dwellers do not have the ration card and have low-irregular wages. The paper suggests that the clearance of slum is not the solution but the government need to provide adequate infrastructure and basic amenities to the dwellers making them aware of various welfare schemes and programs.

The above literature indicates that with low income and poor livelihood, the cycle of poverty in the slums is perpetuated. Improper land utilization leads to a lack of space and overcrowding. In some cases, there has been some improvement but there is still a long way to go for the complete redressal of all livelihood issues in slums. Migration from rural to urban areas, mostly controlled by push factors always plays a vital role in changing the rural-urban composition of the population as well as the formation of slums in urban areas. Providing basic amenities and adequate infrastructure to the slum dwellers by making them aware of welfare schemes may act as a move towards the implementation of slum development programs.

#### **1.4.4 Housing, environmental and health condition of the slum dwellers**

Mahapatro, A. and Das, S. (1998) studied the quality of life of the urban poor in Shillong and found that in a city like Shillong, investment in social infrastructure pays higher dividends and poor and inadequate infrastructure reflects the existing condition of the people residing in slums.

Sundar, R. and Sharma, A. (2002) examined the pattern of morbidity and health care utilization by the urban poor living in slums and resettlement colonies in Delhi and Chennai and found that people living in resettlement colonies have a better health status than the slum dwellers owing to the fact that households are in a better environment with a pucca house and separate space for cooking. Moreover, the resettlements have toilet and waste disposal facilities whereas

the slums do not have provision for waste disposal. The paper urges to strengthen the public health services in urban areas, especially in the slum areas and the activities of the NGOs could be integrated with government health services.

Sur, D, Deen, J. L, et.al. (2005) conducted a community-based study to measure the burden of cholera with potential risk factors and found that cholera cases are significantly more likely to surface among household members of less than five years of age, families with expenditure of less than 2000 INR per month and unsafe health behaviours like irregular hand washing practices. The paper recommends mass vaccination to prevent seasonal cholera in the area along with the implementation of adequate health infrastructure.

Vyas, H.V and Sawant, V.A (2008) investigated seasonal variations in drinking water quality of some borewell waters in the urban area of Kolhapur city where the samples are collected and analyzed for parameters such as pH, E.C, dissolved oxygen, alkalinity, chloride, total dissolved solids, total hardness etc. The study revealed significant changes in water quality during different seasons of the surveyed year.

Murthy, L, S. (2012) focused on land security and the challenges of realizing the human right to water and sanitation in the slums of Mumbai and revealed that the slum dwellers lack access to safe drinking water and sanitation which has a negative impact on health. It further compromises the ability to lead lives full of dignity. The non-notified slums on central government land are in the worst position revealing the central government reluctant behavior to improve the condition which contradicts the goal of their own poverty alleviation schemes. The author insists on realizing the human right to water and sanitation by disentangling the provision of basic services from the more complex questions of land security and ownership.

Bhattacharjee, S, Ray, K, et al. (2013) studied menstruation and experiences of adolescent slum-dwelling girls of Siliguri city and to elicit the knowledge, attitude and practice of menstrual hygiene in adolescent girls. They found inadequate knowledge of menstruation observed among adolescent girls may be attributed to the fact that menstrual practices are clouded by taboos and socio-cultural restrictions for women as well as adolescent girls in India. They concluded that more efforts like awareness programmes and health camps should be undertaken regularly by government and non-government agencies to imbibe hygienic practices during the menstrual period.

Ganguli, S. (2013) made a study on the condition of women's health in relation to the socio-economic aspects in Jalpaiguri municipality, West Bengal and expressed the health condition of women as the major controlling factor to nation development. Women's health is frequently threatened by the gynaecological diseases that arise due to frequent pregnancy at an early age,

poverty, inadequate nutrition, lack of medical facilities etc. The author recommended community participation and introducing self-help groups in slum areas to enhance the economic as well as health status of women.

Guria, N and Pandey, M. (2013) attempted a case study regarding living conditions and housing environment in the slums of Bilaspur City and reported that urban slums are mostly located in low-lying environmentally hazardous areas coupled with insufficient food, shelter, sanitation, and health care make life even worse. There is a high prevalence of diseases especially among children, 67% of them reported fever during the survey and different types of waterborne diseases also has been reported. The author considers an unhealthy environment, the mother's lack of knowledge regarding dietary practices and hygiene, and lack of affordability to consume healthy food as determining forces for the prevailing diseases.

Agarwal, V. (2014) analyzed the slums and their effects on the environment and discloses the environmental decay caused by rapid urbanization and the mismatch in the provision and maintenance of housing and infrastructure. It is easier to pay low wages to the migrants and workers with large numbers competing for work in cities. The suggestions are to focus on public investments and infrastructure accessible to the poor living in informal settlements.

Ali, Md. J. and Islam, J. (2014) focused on life in the slums of Kolkata and emphasized on perspective of the indoor environment and human health across the slum households of different income levels in Kolkata metropolitan city. They also made an attempt to find out the relationship between indoor environment conditions and associated incidence of health problems and concluded that both are highly related.

Jha, D.K. and Tripathi, V.K. (2014) made a study on the quality of life in slums of Varanasi city which portrays a pathetic picture. They found housing conditions, literacy rates and medical facilities are very poor in the slums. Moreover, the lack of piped water supply which leads to dependence on groundwater and lack of waste disposal facilities creates pollution leading to several health problems among the people of slums. They advocated for a need for holistic work to understand the issues and strengthen the roles of NGOs and inclusive planning.

Banerjee, S. et al. (2016) provided estimates on the prevalence, awareness and control of hypertension in an adult population sample of the slums of Kolkata. The study revealed that there is a high prevalence of hypertension and half of them are unaware of their condition. Therefore, antihypertensive medications are to be used with proper monitoring to avoid adverse outcomes from hypertension.

Bhar, D, Bhattacharjee, S, et al. (2017) studied the utilization of safe drinking water and sanitary facilities in slum households of Siliguri to find out the incidence of diarrhea among

children below the age of five. They observed household connections to piped water supply are still lacking and many people do not have access to basic sanitary services and are of the opinion that awareness generation through family-centered educational programs could improve the situation.

Sau, A. (2017) surveyed on water supply and sanitation at Bagbazar slum in Kolkata through an observational descriptive study with a cross-sectional design. The result shows that all the households have access to safe drinking water but the sanitation facility needs proper attention.

Sembiah, S, Paul, B, et al. (2017) conducted a study on visual health among women aged 18-59 years residing in slums of Kolkata to identify the factors leading to low vision. Their suggestion to effectively control blindness, in the long run, includes educational activities and awareness campaigns at the community level since eye care in our country still focuses on curative measures rather than preventive measures.

Abdi, S, et.al. (2018) focused on identifying priority health conditions for field-based screening in urban slums of Bangalore by considering the key health issues in urban slums with a focus on the perceptions of health professionals and community workers. Malnutrition and anemia are identified as top-priority health issues for women and children.

Sinha, D and Dammani, J. (2018) focused on seasonal variations in mass concentration of PM 10 and PM 2.5 at traffic intersections and residential sites in Raipur city and found that the concentration of both show peaks in winter as compared to summer and monsoon seasons and the reason possibly lies with the enhanced local burning activities and low wind speed with low mixing height in winter season.

Usmani, G. and Ahmad, N. (2018) made a detailed analysis of the health status among slum and non-slum populations in India and revealed the inequality prevailing among urban poor and non-poor. Almost the whole section of the urban poor has low access to healthcare services and undernutrition becomes a common phenomenon almost found in every child. There is an urgent demand to focus on urban health and cater to the essential needs of urban slums.

Zaman, T.U, Goswami, H.D, et.al. (2018) attempted to study the impact of the growth and development of slums on the health status and health awareness of slum dwellers and also to understand how the growth of slums in Guwahati influences the living conditions and consequent effect on the health status of the slum dwellers.

Maharana, S.P, Paul, B. et al. (2018) studied the exposure to indoor air pollution and its perceived impact on the health of women and their children in a slum of Kolkata and found that the majority of households were exposed to indoor air pollution due to use of kerosene, neighbourhood smoke, poor ventilation etc. They concluded that effective intervention with

intersectoral coordination is the need of the hour and women should be educated and made aware of the dangerous effects of IAP on their health and also of their children so that they can raise healthy children.

Garg, S, Mallick, N, et.al. (2019) in their study on common ocular morbidity among elderly people in a slum of Kolkata tried to analyze the factors affecting morbidity. They found that blindness is the common phenomenon, cataracts being the leading cause followed by visual impairment. Their suggestions for overcoming the problems were government initiatives such as ensuring good quality geriatric eye health care services at the primary level with cataract operation facilities.

George, C. E. et al. (2019) studied health issues in Bangalore slum using a mobile screening toolkit by designing a community-based cross-sectional survey. The study found the prevalence of hypertension, diabetes, and anemia to be higher among the screened slum population and it was interestingly found that most of them were unaware of their disease prior to screening. The paper suggests of simple technological solutions to improve slum health and to design suitable health interventions.

Kondapi, A, et.al. (2019) examined slums as informal housing for people below the poverty line in India considering their income as below \$1.9 per day. With low incomes, the people are compelled to reside in slums and have to face daily challenges to complete basic needs. The paper also analyzed the space occupation of each house, street connectivity, distance between houses, materials used for construction, and kinds of common spaces with a view to having a better understanding of their living standard. If the slum dwellers are provided with better infrastructure with suitable policy, then their standard of living will improve leading to human capital formation.

The literature study shows that the people living in slums suffer from various types of health diseases as they are deprived of basic needs like safe drinking water, open space, proper sanitation, inadequate drainage etc. To overcome this problem not only different aspects of health care require adequate attention but also environmental degradation needs to be controlled. The quality of life resembles a pathetic picture in slums, drinking water and sanitary facilities are poor, and there is a common exposure of indoor air pollution which has an impact on the health of mainly women and children. Women's health is frequently threatened by gynaecological diseases inadequate nutrition, frequent pregnancies, lack of proper medical facilities and further, there is inadequate knowledge of menstruation and hygiene among them. Malnutrition and anemia are identified as top priority health issues for women and children along with visual impairment as a common phenomenon among the elderly people in slums.

The strengthening of public health services and its integration with activities by NGOs in slum areas will be fruitful.

#### **1.4.5 Focus on slum improvement**

Satterwaite, D. (2010) focused on upgrading slums with and for slum dwellers. Upgrading is the term given to measures for improving the quality of housing and the provision of housing related infrastructure and services including water and sanitation to settlements that are considered to be or officially designated as slums, including those that are developed illegally. The scope of the upgradation varies from some minor improvements which may involve the communal taps, paved roads and street lighting to comprehensive improvements to every household as well as providing good quality infrastructure and services including schools and healthcare centers. The attempt for on-site upgradation could be inconvenient for people because it is far less disruptive than site clearance and re-building.

Durr, E and Jaffe, R. (2012) emphasized on the emerging field of slum tourism which has the potential to connect Latin American and Caribbean studies on tourism and urban inequality. Slum tourism involves transforming poverty, squalor and violence into a tourism product and approaching this form of tourism as a site to understand the reproduction and transformation of global and urban inequalities. This results in a complex phenomenon that raises various questions concerning power, inequality and subjectivity.

Singh, K. A. (2013) studied slums and urban environmental challenges with an appraisal on planning and expressed that a major part of rural-urban population migration is because of vast stagnant rural hinterlands, unbearable poverty, unemployment and low wages. The strategies proposed by the author are to create and update the database on slums with an integrated slum development plan, ensuring participation of the community, civil society and in-situ upgradation.

Narayan, L. (2014) studied the historical changes in the government of India's policy towards slums along with analyzing the physical and financial performance of various schemes started by the government. The Ministry of Housing and Urban Poverty Alleviation recognized five possible physical development options which are slum improvement, slum upgradation, slum redevelopment, slum resettlement and clearance. The paper asserts that the focus of government shifted from forceful eviction to slum improvement then to slum upgradation and presently shifted to improving physical and social infrastructure in the cities.

Taher, M. T. and Ibrahim, A. (2014) discussed about the transformation of slum and squatter settlements and assessed the question if implementing contemporary architecture can provide an ecological living for squatter settlements. They concluded by revealing that the squatters

will have to work as a community, architectural designs must fulfil the first condition of being affordable to the receivers, assurance from the government regarding the ownership of the place and thus will lead to sustainable housing settlement for the dwellers.

Baitalik, A, Pramanik, R, et.al. (2015) made a study on contemporary analysis of urban slums and their problems in Haldia municipal area, West Bengal. Slums are the informal settlements that accommodate the low-income group of people and are a clear manifestation of a poorly planned and managed urban sector. The study pointed out the problems like indoor pollution, degrading air quality, spreading of communicable diseases, crimes, drug trafficking, other anti-social activities which threaten the social and cultural environment. It has considered slum as 'malfunctioning housing sector' and concluded that slum upgrading projects or schemes should be properly organized for the improvement of the slum.

Hindman, M. (2015) focused on addressing slum redevelopment issues in India and shares different reasons behind slum formation with an emphasis on in-situ redevelopment in which the implementing agency would provide temporary accommodation until the construction is completed. The efficient implementation will require strong partnerships between governments, investors and private developers to affect the quality of life. The paper concludes that the policies and practices that provide low-income families with quality homes and access to essential services, need to be action-oriented, forward-thinking and sustainable.

Crooks, A. (2016) studied the slums as social and physical constructs with challenges and emerging research opportunities. By synthesizing the social and physical constructs of slums the paper argues for a more holistic approach which can potentially lead to deeper understanding and better approaches with having a multifaceted and multidisciplinary perspective to tackle the challenge of slums at the local, national and regional scales. The authors further argued that the data needs to be collected at adequate spatial and temporal resolutions to accommodate a greater number of user's diverse needs and also emerging sources of data that can provide spatial, temporal and social insights about slums e.g. crowdsourced information and open data, this should be further explored and used to complement traditional sources of data collected on slums e.g. census surveys and remote sensing.

Rankey, K. (2018) emphasized on framework forecasting positive change with a solution for slum improvement through local empowerment so that India could implement an inclusive slum improvement process. Slum dwellers are required to be equipped with skills and tools to improve their communities at the grassroots level. The paper concludes if the inclusive and bottom-up model is shown to work in Mumbai's slums then it could become a template for

other Indian states struggling to address issues in their slum communities.

Shekhar, S. (2019) made an exploration on the effective management of the slums of Kalaburagi city in Karnataka by developing slum ontology from very high-resolution satellite data validated with field surveys and photographs. The author also applied a few models to show current slum distribution and to provide hints for the possible occurrence of slums in the future. The models suggested that the open areas present in moderately attractive areas will show future slum occurrence and it is concluded that the models will be useful for proper management of resources in a sustainable way.

The above literature exhibit slum as a malfunctioning housing sector, it should be addressed properly through up gradation or improving the quality of life in these areas. The improvement in the condition of the slum dwellers refers to the various ways by which a better living condition is provided to the residents along with improving the infrastructure, availing access to the basic requirements such as drinking water, proper sanitation, electricity, proper sewage and provision of waste management services, creating employment opportunities, improving the housing structure or renovating, ensuring community participation etc. thereby creating a conducive environment for social and economic growth which will reduce poverty, improve living standard, reduce social and economic instability. To envisage the challenge at local, regional and national scales, skills and tools are to be provided to the slum peoples for the generation of income and overall improvement of the communities. Slum improvement and measures to upgrading slums are indispensable for proper urban development which will result into overall development and prioritizing the slum improvement will penetrate deeper to empower the slum dwellers and make them aware of accessing various resources.

### **1.5 Objectives**

The present study focuses on various aspects of slums in Alipurduar municipality. The following are the objectives that have been framed for the study:

6. To analyze the socio-cultural condition of the slum dwellers.
7. To analyze the economic condition of the slum dwellers.
8. To examine the housing and environmental aspects of the slums.
9. To study the health status of the slum dwellers.
10. To calculate the levels of development in slums across the various wards and identify the problems and suggest measures for their solution.

## **1.6 Hypothesis**

6. There is a positive relationship between literacy rate and age at marriage among the slum dwellers.
7. There is a positive relationship between economic condition and literacy rate of the slum dwellers.
8. There is a positive relationship between housing conditions and income level of the slum dwellers.
9. There is a positive relationship between literacy rate and health conditions among the slum dwellers.
10. The health condition of the slum dwellers depends significantly on their economic and housing characteristics.

## **1.7 Database and methodology**

It is essential to have the data, maps and information system to monitor the research work. This purpose can be fulfilled through qualitative and quantitative data. Qualitative data specifies the features and conditions of the study area describing geographical, historical, cultural, and economic issues. These are collected from books, periodicals, journals, practical experiences and other records. Quantitative data are collected and resulted from compilation and processing of collected data into information from various official and unofficial records.

Primary data are collected from field survey through proper questionnaire, to fulfil the objectives information are collected through primary survey by preparing questionnaire related to social, economic, housing, and health condition of the slum dwellers and environmental details. The secondary data sources are the Census of India, the District Statistical Handbook, various government reports, Statistical Abstract, and State map series of West Bengal and Alipurduar Municipality. For preparing the physical maps for the district satellite imagery data are collected and analyzed accordingly, viz. for slope and elevation map Cartosat DEM, for physiography and soil map National Bureau of Soil Survey (NBSS) and Land Use Planning (LUP), for drainage and vegetation map SOI toposheet no. 78 F/1, F/2, F/3, F/5, F/6, F/7, F/8, F/9, F/10, /11, F/12, F/13 has been used. The spatial variation of various characteristics for relevant selected parameters of slum households will be portrayed under GIS platform where it will be visually represented, interpreted and analyzed.

The research has been carried out on the basis of primary and secondary data. In the study area according to a 2015 demand survey done by the municipality, there are twenty wards in the municipality having 46 slum pockets in total. In every ward, there are a minimum of two slum

pockets with a few wards having three. For the purpose of the survey major slum pockets from each ward will be taken into consideration. Households will be selected on the basis of a simple random sampling technique and will cover 10% of slum households from each ward. Since the total number of slum households in Alipurduar Municipality was 7334 in 2015 the sample size will be around 733 households.

To fulfil the first objective i.e., to analyze the socio-cultural condition of the slum dwellers various related indicators like male-female population distribution, sex-ratio, age-sex structure, marital status, age at marriage, size of the family, literacy rate, religious composition, mother tongue, caste composition, migration status etc. will be taken into consideration and their percentage figure will be calculated according to different wards for analysis and spatial variation. The total literacy rate along with male and female literacy rates is calculated and cross-classified with various income groups. To show the relationship between literacy level and family size simple bi-variate correlation will be done. For analyzing the gender disparity in literacy rate Sopher's Disparity Index (modified by Kundu and Rao, 1986) will be used. The spatial variation in socio-cultural characteristics for the selected parameters of slum households across the different wards will be portrayed in GIS platform for visual interpretation and analysis.

The disparity in literacy rate is calculated by applying the Sopher's Disparity Index (modified by Kundu & Rao, 1986) between male and female literacy.

$$D.I = \text{Log} (X_2 / X_1) + \text{Log} (200 - X_1) / (200 - X_2)$$

Where, DI= Disparity Index

$X_2$ = Percentage of Male Literates

$X_1$ = Percentage of Female literates

i.e.  $X_2 \geq X_1$

It is a well-accepted statistical technique to measure the disparity. This technique is useful in measuring relative disparity between two variables, the greater the value of DI higher the extent of disparity and the lower the value, the lower the disparity.

To fulfill the second objective i.e., to study the economic condition of the slum dwellers the occupational structure of the slum dwellers will be taken into consideration. Secondly, the monthly income of the surveyed households will be analyzed and the change in their income during the last year will also be accounted. Moreover, the number of households having Antyodaya Anna Yojna, Priority Household and other cards under the public distribution system will also be taken into consideration. Thirdly, the number of earning members and the number of dependents in each household will be identified to find the dependency ratio.

Moreover, the monthly expenditure of each household with respect to major categories like food, fuel, education, health and clothing will be analyzed. This will be further cross-classified with income level to find out the change in expenditure pattern with change in income. Further for determining relations between various social and economic indicators simple bi-variate correlation technique will be applied. Other economic indicators like savings, availability of bank accounts, etc. will be analyzed to get an idea about the economic condition of the slum dwellers.

To fulfil the third objective i.e., to examine the housing and environmental conditions of the people living in slums a number of indicators will be taken into consideration. To analyze the housing condition, indicators like house structure, drinking water facility, toilet facility, drainage facility, availability of separate kitchen, fuel used for cooking, electricity facility, household asset etc. will be analyzed. The environmental aspect of the slums will be analyzed by taking into consideration the level of air pollution, water pollution and noise pollution within slums. Information like the presence of particulate matter in air, pH and Total dissolved solids (TDS) of drinking water and noise level will be collected over a period of time by primary survey across various wards within the municipality. Moreover, the source, type and disposal of solid waste within the slums will also be analyzed at the household level. All this information will be spatially portrayed under GIS platform.

To fulfill the fourth objective i.e., to study the health status of the people living in slums emphasis will be given to the daily food habits of the slum dwellers and their frequency of consumption of meals. The information regarding the collection of food under the Public Distribution System will also be analyzed. The occurrence of illness in the family during the last one year, the type of medical treatment undergone and the cost associated will also be examined for the slum households. To examine the women's health, data regarding the number of pregnant women, place of delivery, prenatal and postnatal care, incidence of maternal mortality and menstrual hygiene among the women living in slums will be acquired. Information regarding the child's health up to the age of six will be collected with respect to infant mortality rate, breastfeeding and number of feeds per day, weight, height and head circumference of the child and vaccination status of the child will be collected. Moreover, information regarding the incidence of smoking and drinking among the male members of the household will also be collected. The relationship of health status with literacy rate, economic condition and housing condition will be analyzed by measuring the correlation between the respective variables.

To fulfil the fifth objective i.e., to calculate the levels of development in slums across various

wards of Alipurduar Municipality a composite index of development will be constructed taking the following indicators like sex ratio, age at marriage, literacy rate, monthly income, availability of bank account, house structure, drinking water facility, drainage facility, toilet facility, electricity facility, maternal mortality rate and infant mortality rate etc. into consideration. The computation of the composite (CI) index can be mathematically expressed as follows:

$$CI_j = X_{1j} + X_{2j} + X_{3j} + \dots + X_{nj}$$

Where,  $CI_j$  = Composite index of development for a ward no. 'j' in the municipality.

$X_{1j}$  = The scale fee value of indicator 1 for the ward no. 'j' in the municipality.

$X_{nj}$  = The scale fee value of the indicator for 'n' the ward no. 'j' in the municipality.

### **1.8 Chapter organization**

This Ph.D. thesis comprises of eight chapters.

Chapter 1- Introduction

Chapter 2- General background of the study area

Chapter 3- Socio-cultural condition of the slum dwellers

Chapter 4- Economic condition of the slum dwellers

Chapter 5- Housing and environmental aspects of the slum dwellers

Chapter 6- Health status of the slum dwellers

Chapter 7- Levels of development in slums, problem identification and suggestive measures

Chapter 8- Conclusion

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