

Chapter Four

SLUMS IN CALCUTTA - FRAME-WORK OF THE PRESENT STUDY

4.1 Calcutta - its Population, Density and Some Problems :

Calcutta, the capital of West Bengal is the nerve centre of whole of the eastern part of India. In 1690, Job Charnock, an agent of East India Company chose this site for a British Trade settlements. There were large villages along the east Bank of the river Hooghly named Sutanuti, Gobindapur and Kalikata and these three villages formed the nucleus of the present city of Calcutta.

The Calcutta Metropolitan District (C.M.D), in its present form is a conurbation formed in one linear and continuous pattern of urban development along with both banks of the river Hooghly. It covers an area of 1,425 sq. km. with a present population of 9,165,650. Whereas 3,305,006 people are living in the Calcutta Municipal Corporation area of 104 sq. km., i.e., the density is 31,779 persons / sq. km. and 5.46 persons / household. The decennial population growth rate (1971 - '81) of the city was 4.96%, whereas the slum population is 8.4%. The proportion of the slum population to total population of the city is 30.26 with slum population density is 1,62,866 persons / sq. km. (Census, 1981). Some of the other aggregate statistics (Mitra and Banerjee, 1985; Majumder, 1987; The Statesman, 1988) about Calcutta are as follows :

1. 3.02 million people are living in the core area of the city (C.M.D.) in slums with less than 30 sq.ft. per dweller;
2. About two-thirds of the population in greater Calcutta live in make-shift, non-permanent buildings;
3. The per capita open space (such as parks) in Calcutta is 21 sq.ft. against 250 sq.ft. in London (but the more congested localities of the Calcutta city the said area is not even two square feet);
4. Calcutta has about 713,571 children between 1 to 14 years living in slums and on pavements;

5. Only 6% of Calcutta's area is under roads as against Bombay's 12% and Delhi's 20%;
6. Traffic crawls at an average 8 km. per hour, half as fast as in Bombay which has more than thrice Calcutta's 1.9 lakh registered vehicles;
7. Over 7,000 people die in Calcutta every year because of dysentery, diarrhoea, tuberculosis and respiratory infections - just four broad categories of quality-of-life related diseases;
8. Approximately 200,000 are the pavement dwelling population in Calcutta (C.M.D.), who sleep, bathe and eat on the street pavements;
9. About 3 million are living at or below the poverty* line with monthly household income of less than Rs.300.00;
10. In Calcutta (C.M.D.) there were 1.5 million housing units in 1971 and the then existing backlog was 3 lakh housing units and at present the situation exceeds all previous records.

* Urban poverty may sometimes be defined in terms of Physical Quality of Life Index (PQLI). One of the major features resulting in a low value of PQLI for the Calcutta Metropolitan District (C.M.D.) is the existence of a large number of slum neighbourhoods in C.M.D., the number of which has increased over time along with influx of the poor from its hinterland. As a result of sub-standard housing in squalid conditions, the slum dwellers were subjected to various health hazards. Lack of affordability of good housing coupled with the lack of interest by a majority of tenants residing in slums towards improving their physical environment aggravated the process of deterioration of their quality of life.

Poverty in urban areas is also influenced largely by poverty in the hinterland. Calcutta being the largest metropolitan city in the eastern region having the business centres, port, office establishments and factories in the fringe areas still becomes the attractive place for the migrants of the rural areas of the state and adjoining states of Bihar, Orissa, Assam etc. Such migrants are attracted to the city by the prospects of vocations and earning opportunities in private and public sectors. They find shelter in the slums or on the pavements of the city and are able to enjoy civic facilities of the metropolis that are not available in their villages.

4.2 Origin of Calcutta Slums :

Origin of the Calcutta slums is attributed to a variety of circumstances. The exploitation of the labour is the first and foremost reason for the growth and development of the slums in Calcutta. Slums are, in fact, the product of industrialisation. Jute, engineering and other industries in and around Calcutta had their growth in the second half of the 19th century. Few industrialists had social commitment and seldom did they provide houses to their workmen. The jute industry was somewhat organised and the owners of jute mills cannot be accused of neglecting their workmen. The engineering industry was completely unorganised in the 19th century and no attempts were made by the proprietors of small and medium units to provide housing accommodation to their workmen. The manual workers in the engineering, chemical and other industries in and around Calcutta are still immigrants from the neighbouring states as the local Bengalis prefer white-collar jobs (Mitra, 1963). These immigrant labours do not or did not insist on providing accommodation as it entailed deductions from their earnings (Chakravorti, 1970). House rent allowances are given to the workers. The workers are indifferent to accommodation as their only aim in life is to maximise their earnings for remittance^{to} home. Housing has never been made a statutory liability in India and the slums of Calcutta grew in response to the growing demand for cheap housing to the lowest class of industrial workers.

Migration ~~from~~ the neighbouring districts and provinces has been going on in Calcutta ever since its inception. These local migrants, either driven away from their houses and hearths by exploiting landlords or greedy Mahajans needed shelter, for ~~which~~ neither the local Government nor the municipality provided an answer. Huts in the suburbs embraced these unfortunate landless cultivators with open arms. Ninety-nine percent of the petty traders, port municipal and industrial workers, rickshaw pullers, cart pullers and others of their ilk in Calcutta hailed from the adjoining states like Bihar, Uttar Pradesh, Assam and Orissa. Slums are their only refuge. These people, accustomed

to live in close-knit clusters of houses in the villages, found the slums ideal for their locales as their cattle, merchandise and other paraphernalia could be accommodated in the huts of the slums.

Influx of refugees from the then East Pakistan (now Bangladesh) following the partition of Bengal in 1947, was taken care of by the State and Central Govts. These uprooted humanity found no refuge of the slums of Calcutta unless they had their kith and kin.

Slums in South Calcutta sprang up from internal migration, in North Calcutta from mixed migration, in Central Calcutta from migration from the neighbouring districts of the State and those in East Calcutta from neighbouring States (Dasgupta, 1978).

4.3 Calcutta Slums and Their Characteristics :

The slums* of Calcutta are private properties paying municipal taxes. These slums sprang up in response to demand for housing the urban poor. These are huts constructed mainly with non-durable materials. The slums of Bombay and Delhi are so constructed of polythene paper and such other flimsy materials that they are destroyed by fire in no time. Bulldozers can make a clean sweep of these squatter colonies as the inhabitants are not protected by law. But the slums of Calcutta are not unauthorised structures, but the sub-standard houses, unfit for human habitation according to hygiene standards.

There was a three-tier structure in the slums of Calcutta :

- (1) The Zamindar", or "Bariwalla" or the landlord, who owned the land,
- (2) the "Thika" tenant, the person who constructed the huts and (3) the "Bharatiyas" or hut dwellers. The rights of the landlord, the thika-tenant and the tenants were governed by various legal enactments. In fact, the slums of Calcutta are tenancy arrangements where the land belongs to one person, the huts to another, and the slum dwellers is only a tenant paying a monthly rent without any claim either to the land or to the hut.

*Locally called "Bustee"

4.3.1 Physical Structures of Slums :

Generally, a cluster of rooms, facing a rectangular courtyard or a narrow slum pathway, form a hutment which forms a distinct physical and social unit in a slum. These hutments or slum huts are huddled together often back to back in a slum. Very crudely speaking, a small slum may have 20 huts, each hut containing about 10 families in 10 rooms, thus having a total population of about 1,000, if the average family size is taken as 5. A medium size slum would have about 5,000 population, i.e., 5 times of size of a small slum, i.e., with about 100 huts. Similarly, a large slum might have 10,000 population, i.e., with 2,000 families living in 200 huts. There are also very large slum-conglomeration in Cossipore, Ultadanga (both in North Calcutta) and Kidderpore (in South Calcutta) which are a continuous aggregation of slum-huts, interspersed by road, pathways, brick buildings, ponds and the like - they might contain anything between 20,000 to 50,000 slum population or even more, if taken together (C.M.S., 1983). The ward-wise distribution of huts (updated as per Calcutta Corporation Year-Book 1987-88) are presented in the Appendix-II and Figure - 1.

The physical setting of the slums typically comprises structures with mud lined split bamboo walls, mud or brick-paved floor, and burnt clay tile roof over bamboo frame grouped around a small courtyard. The structures are subdivided into small cabins from 6-10 nos. each measuring about 10-12 sq.mts. to shelter a house-hold, the courtyard serving as the circulation space and means of access to the streets and pathways and making room for the common facilities (viz. common latrines and community tap etc.) for the use of the households around the courtyard. Approximately 70% of the huts were found to be dark and poorly ventilated and almost all families lived in one room which also implied that kitchen, privy and bathing facilities were shared. The living conditions in which slums are characterised with inadequate water-supply and sewerage-drainage are virtually absent. As per assessment of Calcutta Metropolitan Development Authority (CMDA) about 5,000 nos. of slums exist within the Calcutta

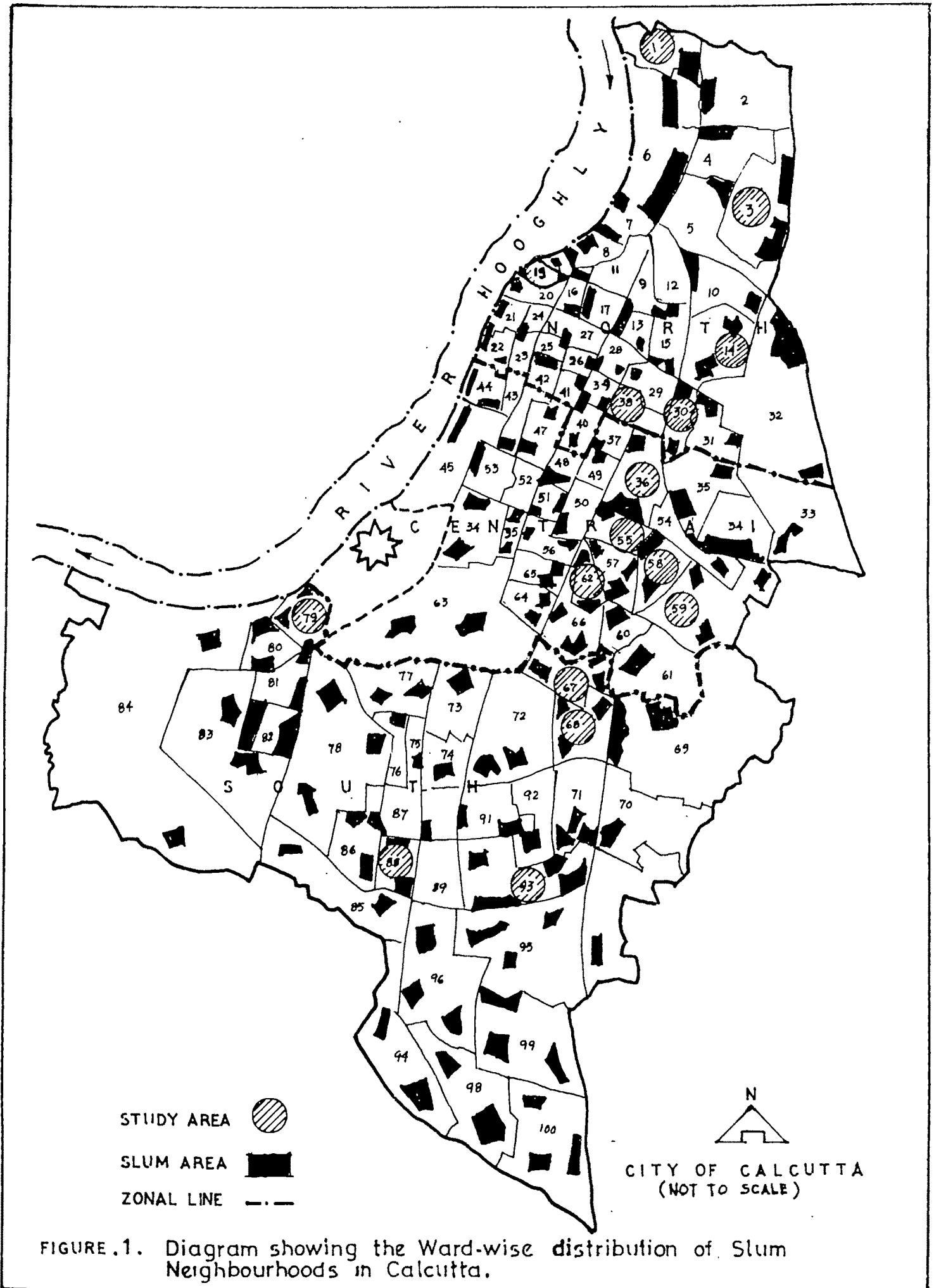


FIGURE .1. Diagram showing the Ward-wise distribution of Slum Neighbourhoods in Calcutta.

Metropolitan District of which about 3,000 nos. are in the city of Calcutta. The nos. of hutments also come to a staggering figure of 1.30 lakhs. The average size of the slum is about $\frac{1}{2}$ an acre accommodating 8 - 10 huts. It has also been observed that -

- a) 32% of huts occupy less than 1,000 sq.ft.;
- b) 43% of huts occupy 1,000 - 2,000 sq.ft.;
- c) 78% of huts are shared by more than 6 families;
- d) 90% of families live in one room.

Such intense over-crowding associated with environmental deficiencies continued unabated mostly due to economic reasons (CMDA Report, 1987).

4.3.2 Literacy Level and Economic Condition of the Slum Dwellers :

In the slums, average earnings for over 95% of families were below Rs.300/- per month (Rs.325/- based on consumer price index as poverty line) as per 1971 survey. The literacy and health status were understandably low. Over 80% among the lowest earning families belong to the illiterate or pseudo-literates as against 43% in CMD. 37 out of 100 wards of Calcutta having larger concentration of slum population have primary school enrolment coverage below 50% as against 65% in CMD. Incidence of current sickness, indifferent health condition and malnourishment among children were high. Infant mortality and maternal mortality rates were 100 and 30 per thousand respectively (CMDA Report, 1987).

4.3.3 Occupations of the Slum Dwellers :

One of the most common assumptions about slum social life is that the slum bound in thousands of small-scale cottage industries and handicrafts and there is no dearth of skill for trade and industry in the slums. There is no doubt that many small-scale industries do exist in slums and through sheer struggle for survival, slum people

do learn many operational skills. But any thorough investigation has not yet carried out to get a clear statistical picture of employment and occupations in slums of Calcutta. However, in a sample survey conducted by Mukherjee (1976) the following pictures were obtained :

(i) There is considerable under-employment in the Calcutta slums. The percentage is about 20% of the total working population in the slums.

(ii) The most privileged ones who work in fairly large or medium-scale industries and their percentage is approximately 25%.

(iii) Then comes the category of small and petty traders who sell odd things as vendors on the pavements and their percentage is about 25%.

(iv) After this comes the category of small-scale industries and cottage industries or handicrafts and skilled operatives and their percentage is around 20%.

(v) Lastly, there is an odd assortment of unskilled and half-skilled jobs of domestic servants, maid-servants, day-labourers, gardeners, cooks, prostitutes and other antisocial population etc. and their percentage is approximately 10%.

Undoubtedly these figures are rough averages and they vary enormously from slum to slum. Slum people are great innovators and entrepreneurs in most of the modern industries. Many of the television parts particularly the wooden frames are produced by the slum dwellers. Plastics electronics, chemicals, small-engineering are all part of the armoury of the poor slum peoples entrepreneurship in small-scale industries. Garment-making, shoe-making, hosiery, furniture-making etc. are also very popular trades in slum economy - men, women and children are engaged

in these trades in a massive way. It is very interesting to note that there are some special social groups in different slum areas which are given below :

Special Group	Calcutta Slum Area
(1) Patuas	: Kalighat
(2) Goalas, image-makers and potters	: Kumartuli
(3) Cobblers	: Nimtollah, Jorabagan and Tangra.
(4) Sweepers and scavengers	: Tangra and Dhapa.
(5) Washermen	: Kasba, Tiljala and Manicktala.
(6) Handicrafts	: Entally and Phoolbagan.
(7) Theatre stage and musical instrument	: Rambagan.
(8) Prostitute	: Watgunge, Chowringhee.
(9) Ceremics, Potteries	: Ultadanga, New Alipore.
(10) Garment makers	: Paikpara, Gouribari.
(11) Domestic maid-servants	: Kankulia.
(12) Industrial workers	: Kidderpore and Cossipur
(13) Masons	: Taltola, Phoolbagan.
(14) Hawkers and Vendors	: Wellesly, Beniapukur and Park Circus.

4.3.4 Environmental Condition of Slums :

The environmental condition of slum area is extremely poor with unsatisfactory ventilation, inadequacies of sewerage and potable water-supply, irregular manual collection and disposal of wastes and garbage, dark lanes and poor drainage. Many of the slums are located in low-lying areas, with the result that during the monsoon they become polluted by floating waste materials. The acute inadequacy of space in the dwellings squeezes children out, and brings them on the streets for play in dirt and dust throughout the day. The state of health in the slums

is thus severely affected by the insanitary conditions by shelter. Infectious diseases, tuberculosis, enteric troubles, the common ailments in slums are result of over-crowding, insanitary condition, undernutrition, malnutrition and unsatisfactory low levels of living that prevail in the slum.

In the perspective of the discussions, made so far, it is quite explicit that the Calcutta's slum problem has bedevilled planners and social-workers alike because of the manifest all-round crisis in their physical living conditions and a shocking poverty. Even the number of slum-dwellers - more than a million in Calcutta city and another one-and-a-half million in the Municipal suburbs excluding those living in so-called "unregistered" and "unauthorised" squatter-settlements - paralyses our imagination for drawing up a rational frame-work for development work in the slums. Perhaps the only redeeming feature is the indomitable urge and magnificent ingenuity of the slum dwellers themselves to struggle for a survival in such misery and squalor.

4.4 Adopted Public Intervention Measures :

In a sum the Calcutta slums tell a grim tale of sordid battle fought within enclaves of human deprivation for the sake of sheer survival, often in close proximity with centres of affluence. Hence, such situation warranted a direct public intervention. The first ever of such intervention was conceived in 1958 when the "Calcutta Slum Clearance and Rehabilitation of Slum Dwellers Act" was enacted. The model adopted was to rehabilitate the slum dwellers of the target slum area in better housing in a planned environment and to take possession of the land and huts comprised in the slum area thus vacated for being utilised for similar or other public purposes. This was attempted for several slum areas by the State Housing Department, but in actual practice, neither the slum dwellers of the designated slums (there are a very few exception) moved into the rehabilitation dwellings, nor as a corollary, the land comprised in the respective

slum areas could be taken possession of by the State. The Calcutta Improvement Trust, while carrying out city improvements, was also involved in the rehabilitation of slum dwellers where the slums were acquired for the purpose of improvement works, but their efforts in regard to the totality of the problem were very limited, being a by-product of their improvement works. Even in large cases the target group did not move to the designated rehabilitation dwellings. The rejection of the model of rehabilitation by the slum dwellers was not only due to the ground of their affordability lag to an urban life style but also the 'thika tenants' who thrive on rents from hutments from an interest group opposing slum clearance.

However, any action plan has to take into account the existing situation and the prevailing compulsion. Apart from the staggering dimension of the problem and enormous fund needed for a better model which influenced the adoption of the "Environmental Improvement Only" model, the physical disposition of the slum hutments are also not conducive to any different action programme achievable within a small time frame capable of making some reasonable impact. Attempts to change or improve the structural conditions of slum hutments by public agency are dependent on many factors including legal ones which preclude radical steps. Moreover, the urge to conserve the shelter stock of the slums - pitiable though they are - was great and consequently it is prudent not to disturb the vocations of the slum dwellers.

4.4.1 Some Adopted Measures or Norms in Slum Development Programme :

The physical norms of improvements adopted are :

- a) Conversion of existing latrines to sanitary latrines/construction of new sanitary latrines either with septic tank with chlorination chamber discharging into surface drains in unsewered areas or connection of city sewer system :were available on the basis of one latrine for each hutment or everyday 25 persons whichever is advantageous.

- b) Potable water tap connection to individual hut or for every 100 persons with an average water supply of 90 litres per capita.
- c) Surface drainage facilities through underground conduits connected to underground sewer system were available or open surface drains discharging into the nearest open drainage channels.
- d) Paving on roads, streets and pathways within the slum.
- e) Miscellaneous facilities such as garbage vats, dustbins bathing facilities etc. at suitable locations.

4.4.2 Slum Improvement Programmes by Voluntary Organisations :

Some of the voluntary organisations engaged in looking after the welfare of the inhabitants of Calcutta's slums include (1) Bengal Service Society (Sargachi Tiljala), (2) Bustee Welfare Centre (Lovelock Street), (3) Calcutta Bustee Welfare Association, (4) Bustee Congress of the Indian National Congress, (5) Calcutta Urban Service Consortium (CUSCON), (6) Kalikata Bustee Pragati Sanstha, (7) Lutheran World Service, (8) Mother Teresa's Missionaries of Charity (Tiljala) and (9) Rotary Club of Calcutta. These voluntary agencies try to make life in the slums less miserable by providing medical aids, supply of milk and bread, etc. Elementary education is imparted to the slum dwellers by some of these agencies. Most of these agencies are engaged in making qualitative improvement in the living standards of the slums. Mother Teresa, instead of giving doles is finding work for the slum dwellers in Tiljala. Once the economy of the slum-dwellers picks up, slum themselves are assumed to make improvement (The Statesman, 1983).

In the heart of North Calcutta's dingy and congested Rambagan slum, many among the over 2,000 slum dwellers, who until some years ago were considered social outcasts and ostracized by all, have today become India's cultural ambassadors enthralling foreign audience

as distant as Moscow and Paris with their talent and skills in handicraft, puppetry and painting. What had been started by the monks of the Mission as a modest social welfare scheme in 1952 has today grown into a massive project which includes a housing complex called Vivekananda 'Palli which will have 22 blocks - a total of 352 flats. The uniqueness of the Rs.1.5 crore housing project being built by the Ramkrishna Mission Ashram, Narendrapur, with donations from home and abroad is that slum dwellers are being rehoused in the same area without being uprooted. It, however, still needs generous donations for the remaining 10 blocks. All the 2,156 people living in the slum area being provided with flats each having into rooms and toilet measuring 27.42 sq.mts. In addition, four flats in each floor will share a common space for social gathering.

For improving the craftsmanship of the slum dwellers, a tailoring centre for women and craft training centre for children were set up. All these steps coupled with constant guidance from Swami Lokeswarananda and other monks helped the Rambagan residents to improve their lot (Sengupta, 1989; The Statesman, 1990 - Appendix - III).

It is really unfortunate that slum clearance or improvement programmes by the Government sectors or the private sectors and further spread of slum and unauthorised squatters' colonies, are, in fact, contesting with each other and in most instances, are becoming a cause for the other. In 1981, 35% of CMD's population lived in slums which is expected to rise 37.5% and 38% in 1991 and 2001, respectively, while for Calcutta Municipal 39% of its residents is expected to live in slums in the year 2001. While the housing need for CMD is 65,000 dwelling units per year for the coming 20 years, only 10,000 - 12,000 units were constructed per year in the early 80's. These projections in the background of CMD's estimated slum improvement programme clearly show that either the rate of people are crowding those slums after improvement, depriving and pushing away the original residents to nearby newly developing slums or squatters' colonies. Such a phenomenon is on the increase and is

therefore, inflating the rate of growth of slums (Muni-Chakravorti, 1982). Slums are, at present, the most highly densed regions of the Calcutta city and are often thought of as the breeding grounds of social pathology. Such facts are often popularly published in the well-known dailies and weeklies of the city (Paribartan, 1984; The Statesman, 1984; 1988).

4.5 Framework of the Present Study :

The present study may be regarded as one of the first attempts to carrying out a psychological field research on overcrowded housing taking slums of the Calcutta city. Calcutta slums were not only identified as the "high-density" living environment (Dasgupta and Sarkar, 1983) but also were observed to be as suffering from various sources of deprivation (as mentioned under Chapter Three).

Of course, there has been a general lack of agreement among researchers regarding the operational definitions and concepts of density and crowding (Rodgers, 1981). But evidence coming from the recent studies (Kaliaden, 1984; Jain, 1987) it is now more or less clear that the crucial variable in the overcrowded primary environments (e.g. home) is the number of occupants and the variables associated with those occupants viz. privacy, excess of persons, stimulus overload, etc. Especially in the Indian context the more relevant issue is the increase in population and the increase in occupancy rate (excess of people) in addition to the existing characteristics of the deprived setting. Hence, crowding studies in India will be meaningful only within the context of existing conditions of over-crowding in slums. Its main concern would rather be "how continuous living in overcrowded (large numbers in relatively smaller area) environments affects human behaviour, attitudes, emotions, experiences, etc." (Freedman, 1975).

Stokol's model (1972) is the most comprehensive of the existing models of crowding which was further elaborated by Moos (1979). According to this model perceived adequacy or inadequacy of space is the key

factor in determining response to crowding (Rapoport, 1975). Perceived adequacy is determined by three factors, namely, (1) Physical milieu, (2) Social milieu, (3) Personal antecedents. Crowding stress occurs when there is an incongruence between the given situation and the perceived feeling of adequacy or inadequacy. Behavioural coping mechanisms like withdrawing, filtering out of overload, intrapsychic adaptations etc. are again mediated through factors like physical milieu, social milieu and personal factors.

One major problem in using this model for the study of continued living in high densities is that many of the elements lose their significance in the cases where the individual is born into a crowded environment and continues to live there throughout his life. In such cases the personal factors themselves are the products of individual's response to "crowding". Individual in such cases has no past history other than the history of "crowding" itself. Further, his perception of spatial adequacy or inadequacy ("demand" in Stokols' model) is already built into his cognitive system through early social learning process. Hence, demand-supply dynamics of space functions at a different level wherein demand is predetermined by "already built-in demand structure".

The psycho-social development of the newly born individual is already determined by the crowded condition. An alternative model of crowding is necessary to explain situations of extreme overcrowding in which individuals are born and continue to live.

Stokol (1972) hypothesized that residents of high density conditions may not "experience" crowding if (1) their activities do not require a high degree of behavioural condition (2) their relationship to each other are co-operative and friendly and (3) they have had much experience with living under condition of limited space. It may be noted that residing in a high density condition does involve high degree of behavioural condition on different tasks. Being co-operative and friendly could therefore be better understood or coping or adaptive mechanism developed out of necessity and probably, at the cost of effective or productive behaviour in certain realm, rather than as an independent character trait extraneous to crowded living itself.

The third condition (habituation) therefore involves specific social learning process of the individual in the overcrowded environment which consequently get built-in as a part of his behavioural repertoire. One should therefore look at a situation where "social interference" is built-into the man-environment system from the very out-set and as a result, the behaviour gets modified accordingly.

One of the important determinants of 'experienced stress' or feeling of crowding is the perceived time-span or duration of the high-density situation. If a situation is perceived as only momentary, one may resort to simple techniques like "ignoring, avoiding sense contact, filtering out", etc. If the situation continues or is perceived as of longer duration other psychological responses follow. The distinction between short-term density including experimental laboratory conditions, and long-term density situations like residential crowding is strongly rooted in the above mentioned "perceived time-span".

Depending on the "perceived time-span" of the high density situations and other condition the individual might resort to the following mechanisms:

1. Avoidance : filtering out of unwanted stimuli, e.g., ignoring the people around, with holding attention etc.
2. Accommodation : recognizing the presence and "reality" of others, "letting them be", allowing them room to be or to move.
3. Adjustment : conscious or not-so-conscious development of certain attitudinal changes within oneself to help habitual or continued accommodation.

4. Adaptation : socially or culturally learned manipulation of environment involving "trade offs" and sacrifices. Certain needs or desires are traded off or sacrificed for other or for the sake of survival within the situation perceived as the "given", "the inevitable or the necessary".

In order to demonstrate that adaptation can be stressful, even fatally stressful, one may turn to the extensive work done by Hans Selye (1956) on "General Adaptation Syndrome".

Selye (1956) defined stress as follows : "stress is essentially the rate of all the wear and tear caused by life." According to him "many common diseases are largely due to errors in our adaptive response to stress, rather than to direct damage by germs" poisons or other external agents. In this sense, many nervous and emotional disturbances, high blood pressure, gastric and duodenal ulcers, certain type of rheumatic, allergic, cardiovascular and renal diseases appear to be essentially diseases of adaptation.

Selye demonstrated that adaptation process involves the following three stages :

1) Alarm reaction where in auxilliary mechanisms are mobilized to maintain life so that the reaction spreads to large territories. No organ-system is, as yet, specially developed to cope with the task at hand.

2) Stage of resistance. At this stage adaptation is acquired due to optimum development of most appropriate specific channel of defence. Spatial concentration of the reaction makes corticoid production necessary.

3) Stage of Exhaustion. Here reaction spreads again due to wear and tear in the most appropriate channel. Corticoid production rises but can maintain life only until even auxilliary channels are exhausted.

Seyle summarized the process as follows : "In the adaptive process hormones of the pituitary-adrenal system appear to be necessary for survival whenever large tissue regions are under stress. By maintaining life during the alarm reaction the body gains time necessary for the development of specific local adaptive phenomena in the directly affected region. During the subsequent stages of resistance, this region can cope with the task without the help of adaptive hormones. Finally, they prolong survival, but only until even the auxiliary mechanisms are worn out; after that there is no further line of defence and death must necessarily ensue".

This account on stress and adaptive reaction throws a great deal of light into the various studies on physiological effects of crowding in animals. Crowding impact ~~presumably~~ involves forced adaptation which is stressful. Normally this stress is consciously felt or experienced. In such cases high density arouses aversive or negative responses. But we may encounter situations even extreme densities are not perceived as stressful. This state of affairs may be more alarming in the sense that the organism has passed the stage of resistance and the process of breakdown of defences has set in. It is also possible that one has got used to it by an early habituation process. The individual under stress, therefore, may or may not be aware of the stressor and the effect it has on him.

In fact, endocrine systems act as homeostatic mechanisms to rescue the organism in the facet of stress. But a number of different stressors acting on the organism can overload ~~this~~ homeostatic mechanism. Boulouard (1963) showed that corticosterone in normal rats was 26.7 mg of plasma. In rats that were starved it was 34.6 mg. In rat kept in cold it was 37.0 mg. But in rats both starved and in cold it was 46.8 mg. This demonstrates the addictive effect of stressors and the physiological cost of adaptation to stress.

The psychic cost of adaptation to environmental stressors has been demonstrated by Glass et al (1969).

Based on their research on the after effects of adaptation to loud irritating distractors on experimental subjects, they made the following remarks : "On the basis of the principle findings of this research, it is concluded that people can become accustomed to stimuli which, at first, had a disturbing effect, but the work of adaptation itself leaves the organism less able to cope with subsequent environmental stressors." This observation is contrary to the commonsense conception -- that the more one adapts to stressful situations, the more capable he learns to be to face future stress situations.

The deleterious effects of adaptation process itself is still to be fully understood with reference to environmental stressors. But the present indications is alarming enough to psychologists dealing with human adaptation specially in case of continued living in overcrowded housing conditions or in high density housing such as slums.

Such significant framework of the theoretical knowledge about density and crowding as well as the overcrowded housing neighbourhoods specially the slums of the Calcutta city largely contribute to develop the following outline plan of the present Ph.D. Dissertation.

Title : A STUDY ON THE IMPACT OF SLUM ENVIRONMENT ON CERTAIN SOCIAL AND PSYCHOLOGICAL ASPECTS OF THE DWELLERS' LIFE*

Introduction :

In the context of rapid development of the Calcutta city a lot of spontaneous clusters of housing have been constructed in different regions of the city. Along with such development a considerable portion have been occupied by slums and out of a total of 9.1 million, Calcutta has as large as 3 million slum dwellers. The term "slum" in the present study will refer

* The outline plan has been approved by the Ph.D. Committee in Applied Psychology, University of Calcutta, No.3411 Ph.D.(Sc)Plan. dt.9.12.87
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to "an overcrowded squalid neighbourhood". Slum environment and its housing conditions severely suffer from basic environmental and infrastructural inadequacies (Moore, 1981; Muni-Chakravorti, 1982; Majumder, 1987). Obviously, the inhabitants of those areas can be said to be in a state of deprivation which may result in a dearth of favourable cues in their cognitive frame of reference contributive to promoting their social and psychological aspects of life. It has been reported in a number of research publications (Spivack, 1974; Rath, Dash and Dash, 1978; Pushpa, 1980) that when people are compelled to live in environment characterised with severely restricted range of settings in which to carry out all personal-social behaviours, their ability to function effectively as individuals as well as social beings may be seriously affected. As a result the integrity and quality of their society may not be enriched upto a desirable extent.

In the perspective of the above framework, the present study has been designed to conduct investigation with a group of slum dwellers of the Calcutta city with a view to explore certain social and psychological variables that are assumed to be affected significantly due to continuous living in slum environment; thereby this investigation aims at conducting a comparative study of psychological and social effects of living in slum and non-slum housing complexes.

Sample : Sample will be selected from the three zones (North, Central and South) of the Calcutta city and from those localities where slum dwellers' and non-slum dwellers' community-life co-exist for more than 10 years, maintaining respective styles of life.

A cluster of 50 willing families consisting of parents, adolescents and children will be selected from each zones and from each type of dwellers'

community (slum and non-slum) by applying the random table on the specially prepared lists of households for different zones and types. The following table represents probable sample structure of the present study :

Different Zones of Calcutta	Slum Dwellers			Non-slum Dwellers		
	Adult	Adolescent	Child	Adult	Adolescent	Child
North	50	50	50	50	50	50
Central	50	50	50	50	50	50
South	50	50	50	50	50	50
Total	150	150	150	150	150	150

Tools to be used :

1. A general questionnaire, to be prepared, that will include the identification of the subject, his or her housing type, age, sex, education, occupation, family size, family income, etc. It should also include questions on satisfaction-dissatisfaction with present dwelling unit and the reason thereof.

2. An Environmental Perception Scale to be developed to understand the nature of the housing perception of both slum and non-slum dwelling adults in terms of their inner and outer housing environmental variables including all infrastructural aspects.

3. A Social Interaction Scale to be developed to understand the social interaction pattern of the adult dwellers of both slum and non-slum neighbourhoods.

4. Social Morale Inventory (Dasgupta and Bose, 1984) will be used to explore the nature of adjustment pattern of the adolescents of both settings.

5. Adapted Bengali Version of the Bronfenbrenner Moral Dilemma Test (Dasgupta and Bose, 1981) will be used to understand the nature of moral development of the adolescents.

6. Raven's Coloured Progressive Matrices will be used to assess the intellectual grades of the children (6 to 12 yrs.) who are living in the selected settlements in the present study.

7. Adapted Indian Version of the Vineland Social Maturity Scales (Malin 1966) will also be used to understand the nature of social maturity levels of the children.

Steps to be followed :

- (i) In consultation with the Census (1981) Report and the Calcutta Corporation Year-Book (1987-88) the study areas i.e., spots of slum and non-slum housing settlements would be identified.
- (ii) By the help of exploratory interview technique with the inhabitants of the selected spots the first three tools (mentioned under tools to be used) would be developed.
- (iii) Three special lists (one for the selected spots of northern, central and southern zones of the Calcutta city) for the slum and another three sets for the non-slum dwellings would be prepared through preliminary survey of the selected spots.
- (iv) Then using random table on the said lists the households and the subjects would be selected for the final test administration.
- (v) A programme schedule for the test administration would be developed in consultation with the selected subjects and following that the tests would be administered on them.

- (vi) The crime statistics and other deviant behaviours would be collected from the respective police stations of the selected housing neighbourhoods.
- (vii) Data, collected from each area, would be separately tabulated, scored and statistically treated to make a comparison between the responses of the subjects of slum and non-slum housing neighbourhoods.

Probable Applied Value :

The findings may provide resource materials to enrich the following aspects of Environmental Psychology :

- (i) Whether living in an impoverished and crowded slum environment causes cognitive impairment;
- (ii) Whether living in such conditions generates an ecology-framework that is assumed to have potentials to invite social pathology and crime among the inhabitants;
- (iii) Identification of the significant social and psychological factors that should be duly considered in drawing up a comprehensive rehabilitation programme for the slum dwellers.