



Indian urban change and Megacities

Urbanisation, that is, *the growth in proportion of a population living in urban areas* has been a recognised process for some centuries, but the pace of change has been erratic both spatially and temporally. In India as in China, urbanisation is occurring very rapidly.

The change is attributable to **Natural increase** (*the difference between birth and death rate*) which leads to internal growth, and to **rural – urban migration**. The first is enhanced by the latter, as the dominant migrant group is of young fertile people. The basic principle is that 50% of growth is due to natural increase and 40% to migration. Figure 1 (below) demonstrates changing patterns of urbanisation by region. India is clearly one of most rapidly urbanising countries as part of the Asian region. 10% of urban growth is accounted for by reclassification of areas from rural to urban

Figure 1. Population growth 2010 -2050

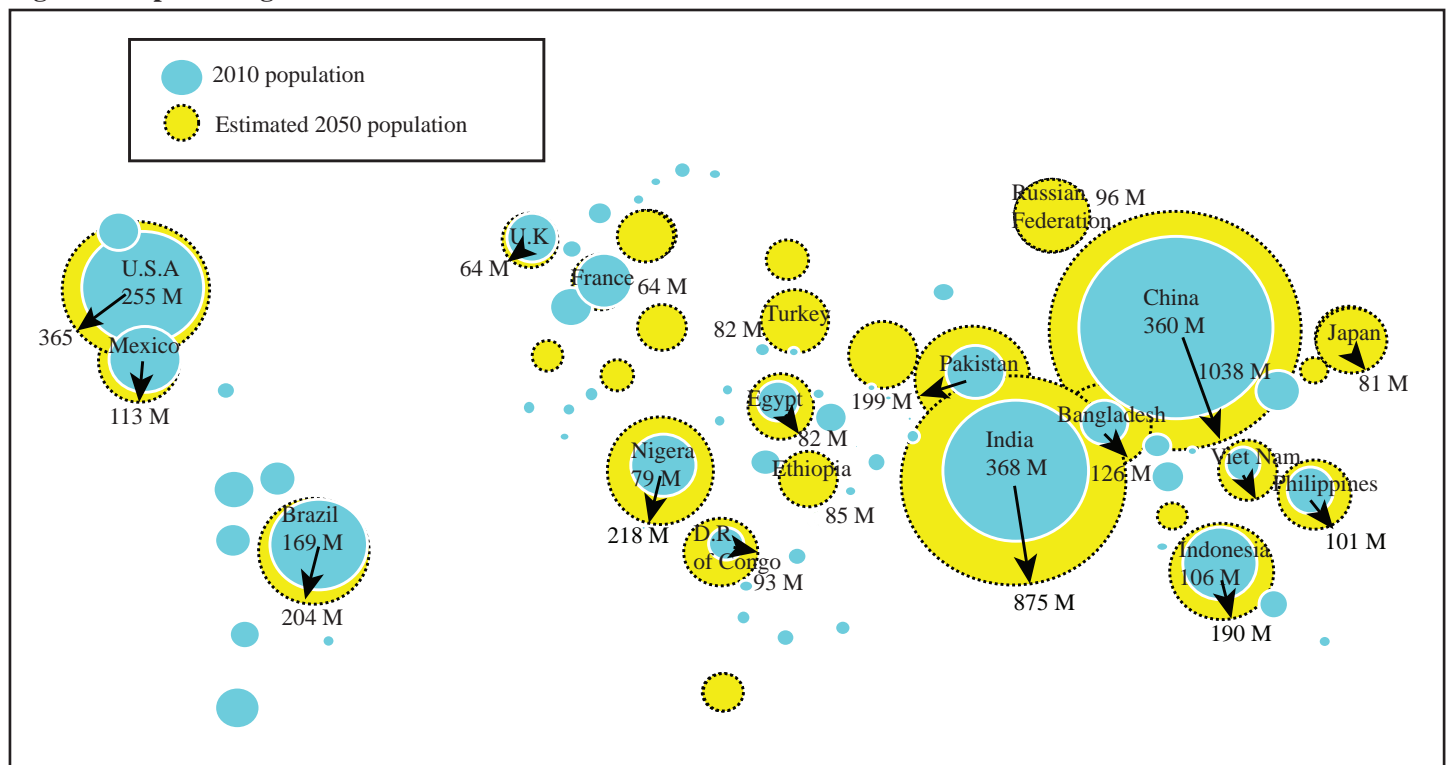
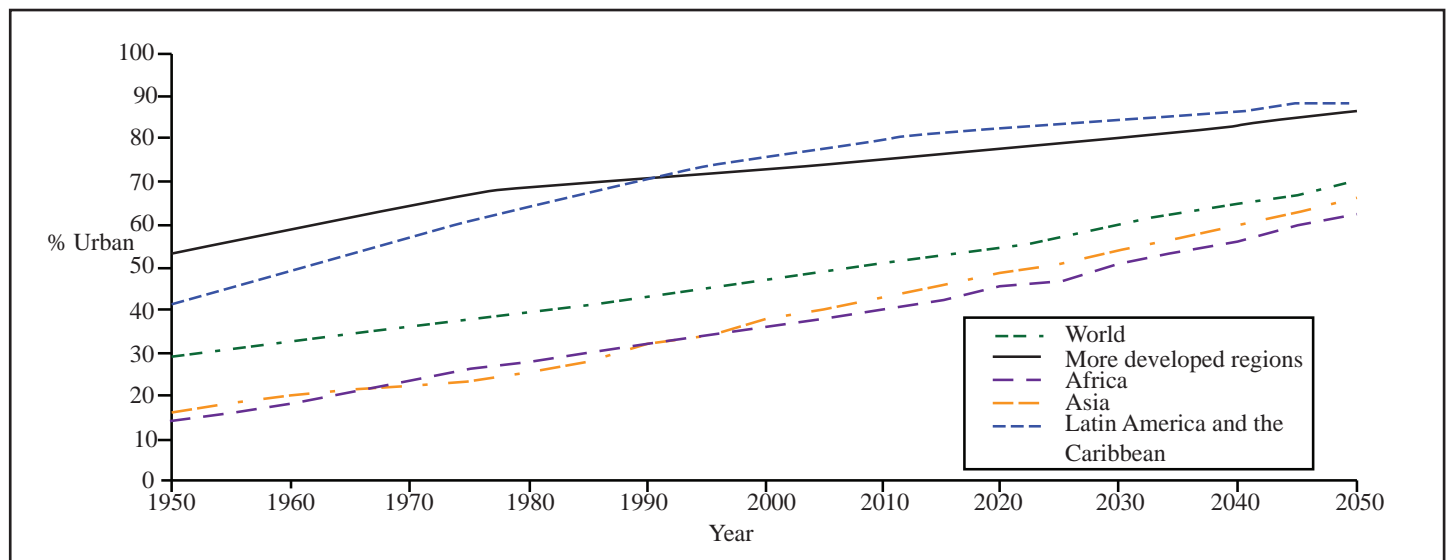


Figure 2. Percentage of population living in urban area by region 1950 - 2050



There is a growing group of **Megacities**, (urban areas with a population of over 10 million). Of course not every megacity is also a **Global City** i.e considered to be important in the global economic system through its socio-economic resources and position in global networks. The current hierarchy of global cities only shows Mumbai and possibly Delhi as third tier, compared to London, New York and Tokyo – first tier cities.

Indian urbanisation

The following table **Figure 3** shows the growth statistics of the world’s top 10 megacities of which 3 are in India - highlighted in bold. (data from UN Population division, World Economic forum) in 3rd 6th and 7th position.

Figure 3. Mega cities

City	2011 – pop in millions	2025 - pop in millions	% Growth
Dhaka	15	23	53
Beijing	16	23	44
New Delhi	23	33	43
Karachi	14	20	43
Shanghai	20	28	40
Kolkata	14	19	36
Mumbai	20	27	35
Manila	12	16	33
Mexico City	20	25	25
Los Angeles	13	16	23

It is suggested that the number of Indian megacities will double by 2021 with the addition of Bangalore, Chennai and Hyderabad. In the case of India, Delhi is now classified as A National Capital Region. This has special status and includes Baghpat Gurgaon Sonapat ,Faridabad, Gahziabad (home to 4 million people alone) ,Noida and Greater Noida plus many other neighbouring towns. (see Figure 4). Many mega cities can be classified as consolidating cities whereby cities show attempts at planning, focused on waste management, water supply, traffic congestion and slum upgrading.

Figure 4. Map of Indian cities

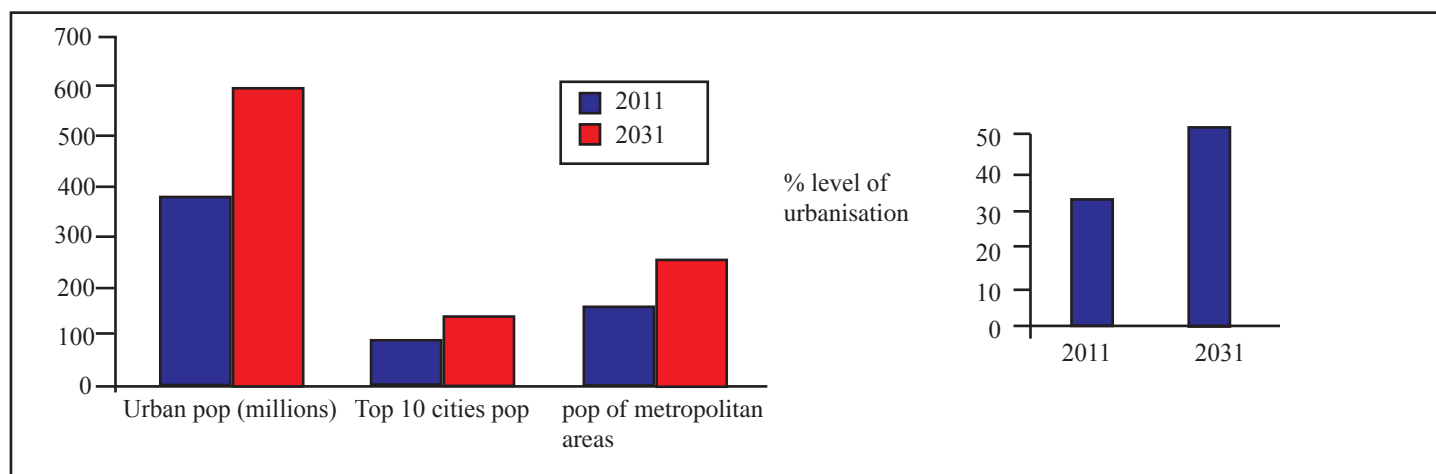


Figure 5. Table of growth of 6 Indian key cities (India census data)

Urban area	Pop 1941 (millions)	1961 (millions)	1981 (millions)	2010 (millions)	2025 (millions)
Bengaluru (Bangalore)	1.0	1.6	1.9	8.3	13.2
Chennai	2.2	2.4	2.8	8.5	12.8
Delhi	1.9	3.4	3.8	21.9	33.0
Hyderabad	1.9	1.7	1.7	7.6	11.7
Kolkata	4.2	5.7	6.1	14.3	19.0
Mumbai	9.0	8.0	6.0	19.4	27.0

The census data of 2011 gives the following overview of Indian urbanisation (Figure 6) which emphasises not only growth in urbanisation but also the growing imbalance of the mega cities.

Figure 6. Graphs of population data in millions

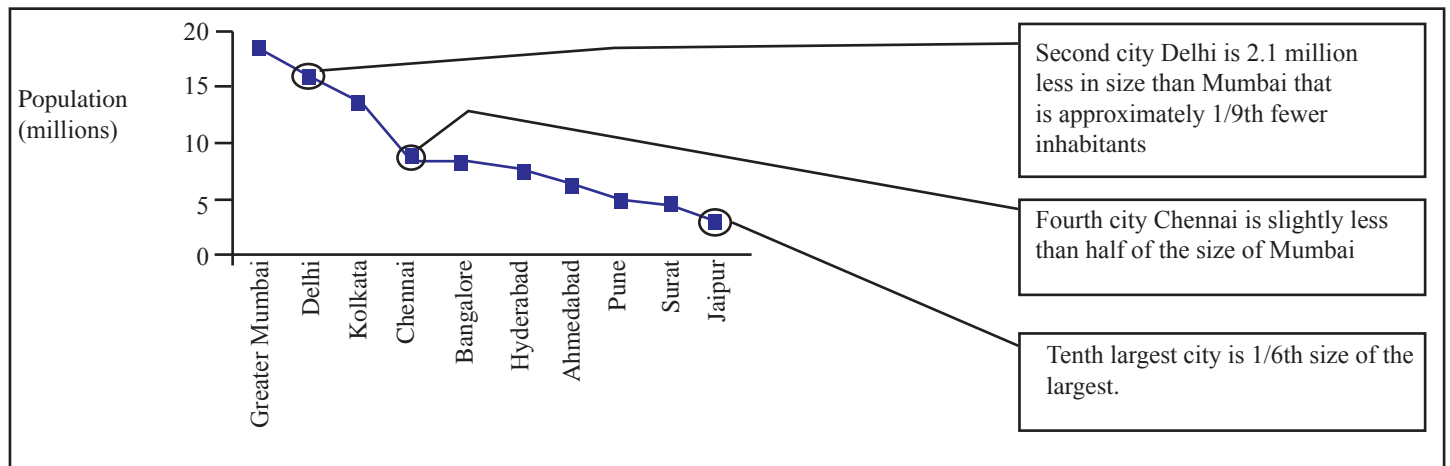


Theoretical relationships

In 1941 it was hypothesised by Zipf that regional city size distributions would show a pattern in which the second city is half the size of the largest and so on ie the size is proportional to the rank in the urban hierarchy. (the rank size-rule). He argued that this applied to developed economies whereas less wealthy countries had a Primate distribution. In this one city dominates. However in 1961 B Berry studied a range of urban hierarchies and showed that India even then had a rank size pattern.

Analysis of city size pattern in the 2011 census shows the following pattern which clearly does not conform to rank size per se but is also not indicative of primitive urban primacy;

Figure 7. City population size in 2011



Note: These figures vary from those in Figure 2 because of different boundaries. Several individual states are demonstrating a high degree of primacy, that is a large percentage of the state's population live in a single city.

These states include ;

West Bengal	1st city Kolkata	pop 14,111,536	2nd city Asanol	pop 1,243,008
Maharashtra	1st city Mumbai	pop 12,478,447	2nd city Pune	pop 3,115,431
Karnataka	1st city Bangalore	pop 8,520,435	2nd city Mysore	pop 990,900

What then is causing this growth in India?

As stated in the introduction the majority of the growth is due to natural increase belying the image of a flood of rural urban migrants. However, intra- city migration is also causing increasing pressure but this may be part of a stepwise movement by many people, thus is inherently an element in rural – urban shifts of population. On the chart it can be seen that rural urban migration has overtaken natural increase in the last decade, but this data includes rural/ urban conversion when large areas previously regarded as rural are reclassified (see earlier comments re greater Delhi) There is a general theory of migration causes based on concepts of Push and Pull factors. Figure 9 shows the importance of push and pull factors.

Figure 8. Urban population growth % contribution of rural urban migration vs natural increase (2011 Census of India)

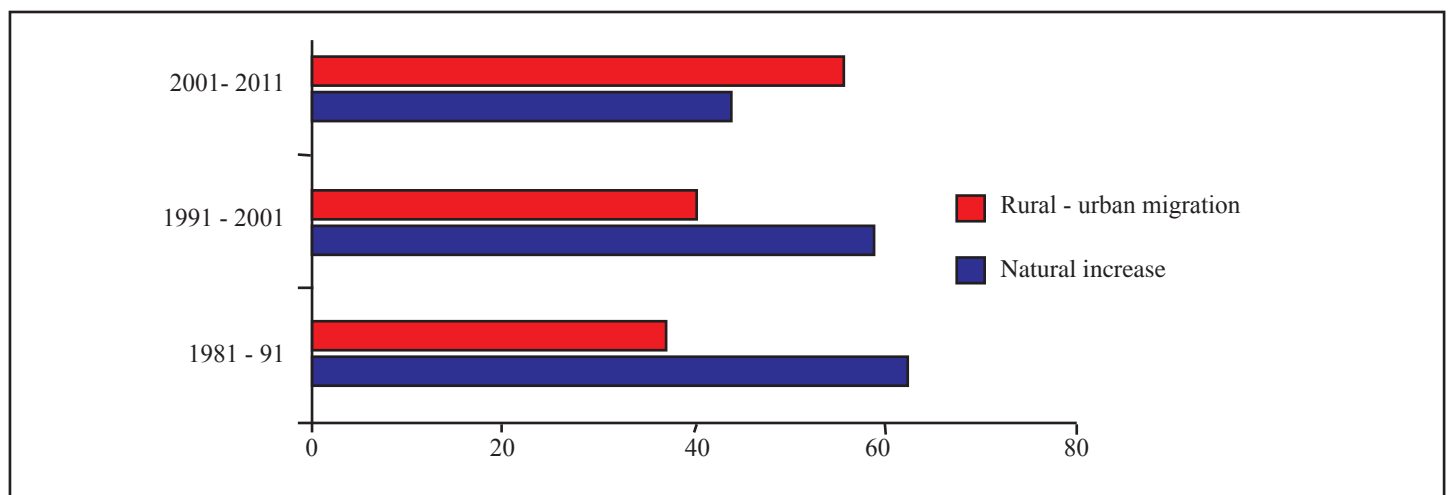


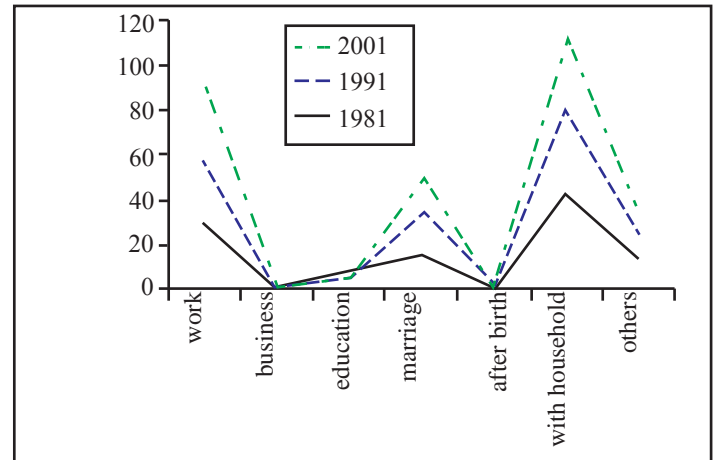
Figure 9. Push and Pull factors

Push from rural	Pull to urban
Poverty	Job opportunities
Natural disasters eg drought	Better healthcare
Insecurity of land tenure	Quality of education
Lack of food /crop failure	Higher standard of living
Poor education chances	Higher wages
Conflict	Improved housing

All of these factors have played their part in the Indian urbanisation process. It should also be pointed out that urbanisation in India has also been affected by its history of colonial dependence. Major administrative centres, industrial agglomerations and commercial foci are concentrated in port cities such as Kolkata and Mumbai. Some of these cities are now enacting a policy to discourage migrants, particularly the more poor and unskilled workers. But the migration of millions proves that villagers see slums, however they may be regarded as unfit for human habitation, as the way forward to economic advancement.

Figure 11 below demonstrates some of the reasons for migration to the city, given by residents of Delhi to census enumerators.

Figure 11. Reasons for migration to cities



A Guardian article reporting on the rise of mega cities in January 21st 2012 cited the case of Prakash Kumar a migrant into Delhi;

He spent a morning helping to push a broken down van loaded with bags of cement up a flyover into Southern Delhi A recent immigrant to the capital from the poverty stricken state of Bihar the 24 year old had picked up work helping a relative – another migrant on a building site. .. his dream job is to get a job as a security guard .. For shelter he shares a room in an illegal slum settlement with a dozen other labourers

Of the New Delhi census respondents in 2001 55.5% were male rising from 54.7 % in 1981. 2.6% had been there for less than a year falling from 6.7% in 1981. However, 26.85% of total migrants have lived there for more than 20 years rising from 23.6% in 1981. Migrants are therefore clearly remaining in the city, hence the formation of large slum areas of great duration

According to Delhi’s human development report 2013, migration is falling and the average migrant is better off and better educated than before. In addition the growth rate is declining due to falling fertility rates and declining immigration. Many are settling in other parts of the National Capital region so this may be purely a statistical phenomenon. 40.4% migrants cite access to education and training as the most important reason. The changing nature of the migrant it has been suggested is linked to differences in employment structures over time. In the last decade the biggest increase has been in finance, real estate and business. By contrast traditional embroidery and sari industry has lost 82,000 posts in last 5 years. The poorest 60% of the population work as domestic cleaners, caretakers, masons, plumbers, welders etc.

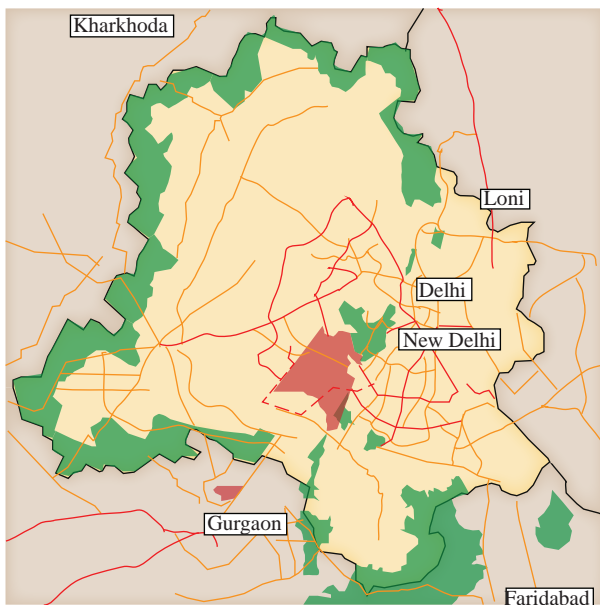
Delhi’s growth statistics have already been referred to but the magnitude of the problems this growth creates is huge. The migrants take up residence in informal / spontaneous settlements. Provisionally these provide temporary accommodation and possess certain key characteristics such as:

- High population densities
- Houses made of scrap materials
- No or limited access to services including sewage, fresh water supplies and electricity
- Roads rarely ‘metalled’

Problems and causes of growth– Delhi case Study

According to UN data globally Delhi is the second most populated urban area after Tokyo whereas in 1950 it was not even placed in the top 30! Its growth is unrestricted by physical features as it has evolved in the flood plain of the Yamuna river.

Figure 10. Areal extent of Delhi



Delhi grew as the hub of the British Raj after 1911. Post-independence in 1947 it became the democratic capital and is now the National capital region. From that date it grew inexorably accruing a large refugee population. The government continues to try to channel migrants such as these into satellite centres which have therefore meant the development of The Greater New Delhi Area. Delhi’s spatial growth has been explosive with an area now twice that of Mumbai and Kolkata. The density of population has increased too despite the urban sprawl. The population of Delhi is estimated to be at twice its carrying capacity, ie for efficient functioning and use of services.

In Delhi, over 1/3 of the population live without any basic facilities as the slums are not recognised. A survey held from 2008-2009 found that there were 4390 slums in the Delhi urban area. By their definition, 'A slum is a compact settlement of at least 20 households with a collection of poorly built tenements mostly of a temporary nature...'. These are locally termed jhuggi-jhompri and refer to lack of any planning, on land illegally occupied. The Delhi Development Authority had not provided sufficient accommodation for the poorer sectors of its urban population so they resorted to constructing informal shelters or jhuggi – jhompri. In the 90s the slum population represented over 25% of the total and yet they survived on only 6% of the land. According to census data 19% lived in slums in 2001 and 15% in 2011. But the census definition excludes smaller settlements of less than 300 people. In Bhalswa Slum Delhi: "The Heart of India" the slum population is estimated at 20% of the total population of Delhi. It also has the largest number of child labourers... Delhi has become one of the most unsafe Indian cities for women, due to the large population and crimes. 78% of the slums surveyed were constructed on public land ie owned by state government, railway or local authorities. According to reports this year in the Hindustan Times the city's consumption of resources already exceeds its ability to supply the people. Figure 12 indicates the pressure points ;

Figure 12. How Delhi's carrying capacity is exceeded

Water	Transport	Refuse
<ul style="list-style-type: none"> • Only 11% water demand met with internal supply • 52% water areas shrunk since 1997 • 55% sewage released into River Yamuna untreated • 222 litres per day per person in VIP areas but only 135 litres in all other areas • deficit in water supply per day of 718 million litres 	<ul style="list-style-type: none"> • 10% urban area used to park cars • 21% city area is composed of roads • Air pollution 16 times more than safe limit • 1400 new vehicles on roads per day. • for 20% running time cars are no faster than pedestrians 	<ul style="list-style-type: none"> • 10,000 tonnes rubbish generated every day • 23% slums report no arrangement for rubbish collection • only 3% households report no electricity connection

However the reports paint a better picture than this implies, for almost 50% of slums have electricity indoors and street lighting, 61% have primary schools within 500m, 81% had an approach road that was properly surfaced. Slums are dirty, but they are also centres of entrepreneurial initiative which permit India's poor to earn money and improve their standard of living, 16.7% of slum areas contain factories, shops and offices. Indeed economic evidence shows they are thriving commercial foci. A report of 2013 argues that those of the urban slums are actually better off than their rural compatriots. It states

'No less than 70% of slum households have TVs, against only 47% of total Indian households. The ratio is just 14.5% in Bihar and 33.2% in Uttar Pradesh'.

And

'Similar stories hold for access to tap water, education, healthcare, electricity or jobs. As many as 90% of slum dwellers have electricity, against barely half of rural households. Ownership of cellphones (63.5%) is as high among slum dwellers as richer urban households, and way above rural rates. One-tenth of slums have computers, and 51% have cooking gas (not far short of 65 per cent of total urban households). Amazingly, more slum households (74 per cent) have tap water than total urban households (70.6 per cent).'

This indicates an improving situation in line with identification of Delhi as a city undergoing consolidation.

Improving Delhi's slums

Since the 1990s many squatter settlements have been removed often with forced evictions. This resulted from a policy aimed at urban renewal and beautification. One consequence perhaps unintended was a greater number of homeless residents. The preparation for the Commonwealth games in 2010 caused an even greater impetus to these improvements. Of 3000 families evicted for major clearance schemes prior to the Games only 85 were resettled.

Slum dwellers from various parts of Delhi have also been moved to Bhalswa on the banks of the River Yamuna in NW Delhi. Nearly 20,000 people who had moved to Bhalswa resettlement colony from 11 slums lost their livelihoods, and struggle to obtain even the most basic amenities. Most of the men and women start early for their workplaces and return late as their workplaces have become distant or even lost their jobs in the process.

Many of Bhalswa's inhabitants are migrants from nearby villages in search of work and refugees from Bengal. There is no work to be had other than informal employment as rag pickers etc, and having no home to go back to, they made homes under heaps of garbage (according to a report from Youthkiawazz- a media platform for the youth of India)It has a population of 197,150; of which male and female are 106,271 and 90,879 respectively. It is also reputed to have one of the greatest percentages of child workers in urban slums of India.

Since 1990 approximately 65,000 families have been rehoused in resettlement colonies up to 30 km from the core of the city. These were site and service places. Many more were stated to have been evicted, but these people do not appear on official statistics. Those who were resettled frequently found they were unable to sustain the residence since it was far from their income source, or necessitated extra expense in rebuilding. New rules of eligibility for resettlement now apply, but they too are stringent and so deter potential residents eg require Indian citizenship, enrolment on voter list, residence from a particular date etc. The Delhi Government is thinking to launch a survey to prepare a data base of slum dwellers in the city to help improvements.

The master plan 2021 for Delhi seems to recognise that the site and service scheme had not worked and now proposes the provision of homes in multi storey blocks in a combined public / private partnership.

In summary it has the following proposals pertinent to squatter settlements;

- Incentivised redevelopment with additional FAR (floor area ratio) has been envisaged as a major element of city development covering all the areas;
- Shift from plotted housing to group housing for optimal utilization of land;
- Private sector participation for development / redevelopment of housing;
- Removing unnecessary controls (like height) for optimum utilization of land and to facilitate creation of 'signature' projects.
- In-situ slum rehabilitation, including using land as a resource for private sector participation;
- In order to prevent growth of slums, mandatory provision of EWS (economically weaker section) housing / slum rehabilitation in all group housing to the extent of 15% of permissible FAR or 35% of dwelling units on the plot, whichever is higher.
- Housing for urban poor to the extent of 50-55% of total;
- Recategorisation of housing types, development control norms and differential densities to make EWS housing viable and economical.
- Unauthorised Colonies: are to be regularised and should be effectively incorporated in the mainstream of urban development. This requires provision of infrastructure development, services and facilities

In conclusion India has a vibrant and burgeoning urban population and Delhi is likely to be at the peak for many years to come, not least because it is the designated national Capital city. The city's master plan 2021 is seeking to redress problems of unofficial slum development resulting from rapid growth, but certain key areas such as Bhalswa will determine its overall success.

Follow up tasks

1. Create a table with 3 columns listing problems resulting from squatter settlements in Indian cities categorising them according to whether they are Economic, Social or Environmental.
2. Research the Indian census 2011 to gain a full demographic picture of the city of Delhi including social data eg literacy, infant mortality etc. Contrast it with one of the other Indian megacities. Present a report on the city/cities. Does anything in the statistics surprise you?
3. Investigate the links listed with visual images-attempt to imagine you are a dweller in Bhalswa and devise a letter to the authorities describing what you would like to be done to your residential area
4. Evaluate the solutions as proposed by Municipal govt of delhi – make a list of the pros and cons for the city and then for the slum dwellers.

Further Research

- <http://www.bbc.co.uk/programmes/b011ql6k> covers Andrew Marr's megacities
- <https://www.youtube.com/watch?v=l-yjpvzGKZQ> looks at Kevin Mc Cloud's visit to Dharavi Mumbai
- For images and brief details of major shanty towns in top Indian cities <http://www.walkthroughindia.com/lifestyle/major-slum-areas-in-top-indian-cities/>
- For urbanisation data and report on development in 2010 http://www.mckinsey.com/mgi/publications/india_urbanization/indec.asp.
- www.indiaurbanportal.in/
- Urban slums in Delhi – Directorate of Economics and Statistics, Govt of National Capital territory of Delhi 2009
- Urban India 2011 :evidence – iihs (Indian Institute for urban settlements)
- http://articles.economictimes.indiatimes.com/2013-03-31/news/38163286_1_slum-households-villages-rural-india
- <http://www.themoscowtimes.com/special/environment/eng/megacities-face-mega-problems.html>
- <http://www.youthkiawaaz.com/2012/09/to-bhalwsa-dairy-an-urban-slum-of-rag-picking-and-toxic-waters-photostory/>
- The future for Delhi? <https://dda.org.in/ddanew/pdf/Planning/reprint%20mpd2021.pdf>
- <http://www.unicef.org/sowc2012/urbanmap/>



Acknowledgements;

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