Mumbai Human Development Report 2009

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August 13, 2009

FOREWORD

Most recent publications on urban agglomerations take cognizance of the fact that with more than half of the world's population now living in cities, by the year 2030; developing countries will account for 80 per cent of the world's urban population. Urban-based economic activities account for up to 55 per cent of gross national product (GNP) in low-income, 73 per cent in middle-income and 85 per cent in high-income countries. Some cities outpace several countries in economic output. UN-HABITAT reported in 2007 that if five of the largest cities in the United States – New York, Los Angeles, Chicago, Boston and Philadelphia - were to be treated as a single country, it would rank as the fourth largest economy in the world. As compiled by *Cities Mayor*, eleven Indian cities made it to the list of 151 richest cities in the world in 2005 - namely Mumbai, Kolkata, Delhi, Bangalore, Chennai, Hyderabad, Ahmedabad, Pune, Surat, Jaipur and Lucknow; yet in the developing world itself, 36.5 per cent of the urban population live in slums.

In urban India, over 61 million people live are slum dwellers constituting nearly 22 per cent of the urban population. A large proportion of people in urban India have unmet needs for housing, water, sanitation, health care, and education. The Technical Group on Estimation of Urban Housing Shortage for India reported a shortage of 24.71 million houses in 2007. The National Family & Health Survey (NFHS) III reported that 58.8 percent of poor women and 71.4 per cent of the poor children in urban India have anaemia. All this points to the following: First, cities are drivers of economic growth; second, the phenomenon of urbanization is not likely

to diminish in intensity; third, cities, improperly managed are also drivers of urban poverty; and fourth, urban poverty is a complex of which, income inequalities form just one manifestation.

The one Indian city that exemplifies the growth-poverty conundrum is Mumbai - the city of lore where a little known petrol station attendant with an entrepreneurial spirit built a multi-billion dollar company whose many subsidiaries now drive the Indian stock market. Mumbai contributes 33 per cent of India's tax collection, 60 per cent of India's customs duty collection, 20 per cent of India's Central Excise Collection and generates 40 per cent of India's foreign trade. In spite of this, select statistics demonstrate that while once a world class city, today Mumbai is limping along. It is estimated that in 2010, vehicular traffic in Mumbai will touch 1.87 million vehicles at the present rate of addition of 384 vehicles per day. The city's legendary bus and train services are marred by accidents. Ambient air quality is lamentable, with suspended particulate matter at critical levels for over 10 years. Noise levels all over Mumbai exceed the prescribed standards of the Central Pollution Control Board. The Storm Water Drain system of the city that releases rainwater and waste water into the sea is over a 100 years old, and functions most efficiently in low tide. Mumbai is also the only Indian city with the dubious distinction of having almost 55 per cent of its population living in slums, whose inhabitants face additional difficulties. While Mumbai gets an average water supply of 200 litres per capita daily (lpcd), the city's slums get less than 90 lpcd. Studies have demonstrated that in certain slums of Mumbai, there is an average of 81 people to each toilet seat available. And only 31 per cent of Mumbai's slum-dwellers are likely to complete 10 years of schooling. In short, the quality of life in Mumbai leaves a lot to be desired.

From the above, it is obvious that attempts to tackle the issue of urban poverty have had limited success. Until now, the Central Government has been the chief driver of reforms on issues of urban development,

employment and poverty alleviation. Jawaharlal Nehru National Urban Renewal Mission (JNNURM) focuses on a reform-driven integrated planning and development of urban areas. The Ministry of Housing & Urban Poverty Alleviation runs the Integrated Housing & Slum Development Programme (IHSDP) and Sub-mission II of JNNURM i.e. Basic Services to the Urban Poor (BSUP) which involves a 7-point charter, namely security of tenure at affordable prices, improved housing, water supply, sanitation, education, health and social security.

However, as envisaged back in 1992 with the 74th Constitution Amendment Act, it is to the "local" that such initiatives must turn and it is the Urban Local Body (ULB) that must take the lead in such urban reforms. I see the release of the Mumbai Human Development Report 2009 as a positive step in this direction. This report, owned by the Municipal Corporation of Greater Mumbai (MCGM) and prepared in consultation with eminent academicians, researchers, government officials and practitioners in the field, has achieved a key milestone in being the first ever Human Development Report led by a ULB. Significantly, MCGM is remarkably forthright in its acceptance of the negative and rightfully assumes responsibility and ownership for the inclusive development of Mumbai city demonstrating that with proper decentralized urban management, poverty can be successfully tackled.

The Ministry of Housing & Urban Poverty Alleviation, Government of India is happy to have supported this initiative and I commend the MCGM, UNDP India and all the contributors for their role in this endeavour. It is my hope, that in addition to generating much-needed debate from the ground-upwards, this report will serve as an example for other Indian cities to follow for the necessary development of their own programmes for urban poverty alleviation and inclusive urban development.

(Kumari Selja)

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Foreword

Mumbai, the burgeoning megapolis of India is a city in transition. It is the city of hope for the hundreds and thousands who flock to it every day in search of jobs and to pursue their dreams making Mumbai one of the most densely populated cities in the world. It is a city whose crumbling infrastructure is still sustaining rapid economic and cultural change.

It is India's most modern city and undoubtedly crowned as the financial capital of a country that is aspiring to become an economic superpower of the new world. The world's gateway to India, the country's premier city is fast emerging as an International Financial Centre of a globalised world. It is the city that handles about one third of the country's foreign trade and also contributes the most to its tax revenue. The pace of economic change that the city has seen is indeed breathtaking. With a decline in traditional textile and manufacturing sector, service sector has multiplied in finance, IT, telecom, tourism, entertainment, advertising, communication etc. and now accounts for about three-fourth of Mumbai's economy.

Mumbai is also a city of paradoxes. The massive urban agglomerate spread across the Mumbai metropolitan Region is the largest in the country. However with the present land mass to population ratio reaching a tipping point, any further expansion would become unmanageable. Migration that has played a crucial role in urbanization of the city continues unabated in spite of high social costs involved. Mumbai's claim to the highest per capita income in the state is overshadowed by glaring disparities in income and possessions with about 40% population of the city living below poverty line.

Mumbai is also known to be the most densely populated, overcrowded city that houses one of the largest slum populations in Asia, a symbol of deep structural poverty and socio-economic disparity. Proliferating slums indicate rapid growth of informal sector, inadequate amenities of health and education and underutilization of social services. In a city famed for its skyscrapers, over half of its population lives in slums.

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Education is directly correlated to improvement in human development. The future of every child matters in community's human development. While the city prides itself in its new generation millennium schools, the condition of its municipal schools remains far from satisfactory. This underscores the importance of developing adequate sanitation facilities in civic schools and also the need for accessible, adequate and affordable secondary schooling.

Health of an individual as well as that of community is intrinsically related to physical, economic and social well-being. Economic development of a nation depends on health and productivity of its people. Poor incomes, consequent malnutrition and unhygienic living conditions have negative bearing on health. Both, the Municipal Corporation and the Government deserve credit for laying strong foundation for health infrastructure in Mumbai. However, with an ever increasing pressure of growing population and spatial expansion of the city to its natural limits, inadequate facilities for primary and secondary health and poor healthcare access to the economically weak have become main drawbacks of the city's current civic health infrastructure. Surprisingly, in spite of high economic growth, relative affluence and spread of health facilities, life expectancy, an indicator of health and quality of life falls below the national and even the state average. Charitable institutions have always played a seminal role in providing affordable healthcare in Mumbai. Now there is a greater need to tap the potential for public-private partnership and community-provider linkages in order to strengthen the delivery mechanism of health services in Mumbai.

The change in the nature of economic activity has thrown up unprecedented opportunities and enabled increase in female participation in the work force. Education and economic independence have doubtlessly cast their influence on emancipation of women. However as the chapter on gender disparity vividly explains, globalization and economic reforms have led to increasing marginalization of women and informalisation of female workforce. This point outs the need for gender sensitive urban planning and women-inclusive growth.

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Like women children also find themselves on the periphery of development. Children are the future of the world. Mumbai ranks third amongst the mega cities with highest number of street and working children, the majority of which has little access to education and healthcare

Migration, both from within the state and outside is a natural corollary of development. Mumbai is a magnet that attracts people in search of jobs and opportunities. The unabashed population growth has its implications for housing, transportation, provision of civic amenities and social stress which in turn have bearing on the quality of citizens' life. The report discusses an increasing slum population with falling quality of life. It also describes the great disparity in levels of income, growing adverse sex ratio and widening difference in nutritional status.

What does this paradox of development mean to the city in human context? The makeover of Mumbai is in rapid progress through programmes like JNNURM, MUTP, MUIDP, BRIMSTOWD, the Mithi River Development Project, the Slum Rehabilitation Scheme to name only a few. Mumbai is being cleaned and beautified. The face of Mumbai is changing, but the change should not remain cosmetic. A beautiful face adorns a healthy body. For that to happen, the Government, the BMC and the civil society ought to work in tandem with each other in consorted and coordinated effort towards improving the quality of life of their citizens.

Therefore the Mumbai Human Development Measurement Report focuses on human development as a measure of well-being that still eludes a large section of its population. It shows status, achievements, challenges faced and also points at the way ahead towards poverty alleviation, sustainable livelihoods and an all-round social development of the city. It factors in crucial importance of investing in gender equality, effective local governance and social protection of poor by means of livelihood promotion and guaranteed access to basic services like health and education. The report thus emerges as the key tool for bringing about lasting people-centric development of Mumbai.

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Development after all can not be mistaken for economic attainments alone. It is a multi-dimensional concept. Its focus aught to be on expansion of opportunities and enhancement of choices through building capabilities. Human Development has now emerged as an important policy tool which would help mobilize and focus resources on critical areas for overall social development. A general sense of well-being is a reflector of the level of human development attained by a community. The sense of well-being is personal, subjective and difficult to quantify. However, the report uses methodology popularized by UNDP based on parameters such as health, education, livelihood and gender discrimination. It gives us a broad perspective of attained progress and its complex relationship with wellbeing.

It is in this light, that the path to the future needs to be traversed. The city of Mumbai's size and stature is bound to face complex problems. However, the solution to Mumbai's myriad problems needs to be found in effective governance and futuristic urban planning. This calls for greater empowerment of the city government in true spirit of the 74th Amendment to the Constitution. It also necessitates sustained pressure, persuasion and participation on the part of civil society. The much hyped inner resilience of Mumbai that shows itself when a calamity strikes, should express in citizens' participation even in times of peace, shunning all apathy and alienation and infuse new energy in to its once vibrant public life.

The present might seem to be in a state of flux, future uncertain, but I am sure, it is this inner resilience and vibrant spirit of this great city that would eventually succeed and overcome the obstacles in the way to its becoming the city of the future.

(Dr. Ratnakar Mahajan)
Executive President,
State Planning Board.

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August 15, 2009

MESSAGE

The concept of Human Development Index was introduced for the first time by UNDP in 1990. Since then, Human Development has become the guiding principle in analyzing overall development.

An attempt has been made by the Municipal Corporation of Greater Mumbai to prepare the first Human Development Report of Mumbai city. A city formulated by seven islands known as Mumbai after Goddess Mumba Devi, has now grown into a mega city in the world. Mumbai city is not only India's financial and commercial centre but today has become an important global financial hub.

Citizens of Mumbai are fortunate enough to have had a leader like Sir Pherozeshah Mehta, who had the vision of realizing the future of the city some 125 years ago. In 1888, he took lead in formulating an Act, by which even today, Municipal Corporation of Greater Mumbai is effectively handling its administration.

With the passing of time, the urban management problems faced by city of Mumbai are changing and no problem can be tackled considering single aspects only. We know the progress of a city means benefits to its citizens and this principle should be the epicenter for planning its policies. Once a citizen is considered as a central figure, then the direction of entire planning process is determined. For a city like Mumbai which is rapidly growing, and while planning for the future progress, due consideration should be given to the national / international developments and the adoption of changing technology, which is also on a fast track.

For this, there is need to have concrete facts and figures to determine the future path. On account of this, UNDP, Ministry of Housing and Urban Poverty Alleviation, Government of India, State Planning Board, Government of Maharashtra, Municipal Corporation of Greater Mumbai and All India Institute of Local Self Government, Mumbai, under the joint leadership are able to bring out this important report, which is a very vital document for the city of Mumbai. If Mumbai is to be transformed into Global Hub and Commercial Centre, and the Human Development Index needs to be improved, then this report should be

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kept as a bench mark by all policy makers. City's development and progress should not only be measured by production and number of production units but the general health and quality of life of the citizens at large, which should be the ultimate goal.

That is the reason that in depth study of all the factors foremost to the Human Development measurement has been made and I feel this is a very notable feat. In India, this study has been made for many States but it is for the first time that such measurement has been done for a mega city and the efforts and responsibility undertaken by the concerned institutions and experts is quite laudable. I am sure that our Municipal Corporation of Greater Mumbai will consider the Human Development report while planning for the future.

I am thankful to Dr. Ratnakar Mahajan, Executive Chairman, State Planning Board, Government of Maharashtra for providing necessary guidance for this important study. I gratefully acknowledge the dedicated efforts of all expert base paper writers, technical editor and Dr. (Prof) Sneha Palnitkar, Director, Regional Centre for Urban and Environmental Studies (RCUES), All India Institute of Local Self Government, Mumbai and her entire research team in preparing the Report of Human Development for Mumbai city.

I also appreciate dedication and hard work of the concerned officials of the Municipal Corporation of Greater Mumbai, Bureau of Economics and Statistics, Department of Planning, Government of Maharashtra, School Education Department, Government of Maharashtra, Census of India, Mumbai Office, in bringing out this important document for Mumbai city.

I also hope that UNDP, Ministry of Housing and Urban Poverty Alleviation, Government of India, and All India Institute of Local Self Government, Mumbai, shall guide the Municipal Corporation of Greater Mumbai in conducting similar studies.

I sincerely hope that the report will provide a sound basis for all of us to pursue the objectives and goals for further improving Human Development status in Mumbai city.

Dr. (Mrs.) Shubha Raul

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United Nations Development Programme

MESSAGE

I congratulate the Municipal Corporation of Greater Mumbai not only for preparing a Human Development Report (HDR) for Mumbai but also for producing the first-ever municipal HDR globally.

The first global HDR was launched in 1990 by the United Nations Development Programme (UNDP) with the goal of putting people back at the centre of the development process. Over the last 20 years, Human Development Reports at the global, national and state-levels have emerged across the globe as powerful tools in the hands of governments, citizens and civil society for accountability and action. The concept of *human development* reminds us that development is not confined to economic attainments alone abut is multi-dimensional with a focus on expanded opportunities and enhanced choices through building of capabilities.

In India, the nationally-led and nationally-owned process of bringing out Human Development Reports has become very much an integrated part of development analysis and planning. Since 1995 India, 20 State Human Development Reports have been prepared to date and now over 40 District Human Development Reports are also under preparation.

The *Human Development Report Mumbai 2009* is the first such report for Mumbai and the first municipal HDR in the world. It is heartening to see Mumbai is proactively looking at what the city offers its people, especially the poor and vulnerable among them, in terms of livelihood, jobs, opportunities and basic urban services such as water supply, sanitation, education and health.

Bring the spotlight on the urban poor in Mumbai, the Report provides clear direction to policymakers by identifying key areas for improving the quality of life of its people – housing, health, education, livelihoods and good civic governance. The report examines the different wards of this mega-city and highlights disparities across wards. The report also highlights instances where the people have collectively demonstrated solutions to some of these challenges.

In the coming years, India is expected to urbanise at a fast pace. We are confident that the *Mumbai Human Development Report 2009* will provide a roadmap not just for Mumbai, but for other cities in India as well.

Patrice Coeur-Bizot
UN Resident Coordinator and
UNDP Resident Representative

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PREFACE

The concept of Human Development Index (HDI) has been developed by the UNDP from the physical quality of index (PQLI) developed by Morris and McAlpin.

It has been realized that money alone is not enough for overall happiness and contented life. Education and health are equally important as per capita GDP to show whether a nation is progressing in the right direction.

The HDI of Mumbai has been evolved more or less on similar indicator used for developing the Human Development Report (HDR) for Maharashtra. Mumbai is not a separate state and as such earlier it was not felt necessary to have a separate HDR for the city of Mumbai. However, the Municipal Corporation of Greater Mumbai in a way is a state within a state. The sheer compass of activities is larger than many states in India. The population of the city is more than that of 150 countries in the world and more than 17 states of the Indian Union. The Government has assigned adequate revenue to the Municipal Corporation and the aggregate revenue income of the Municipal Corporation is more than 16 states of the Indian Union.

It was, therefore, necessary to analyse which administrative wards of the city are lower in the HDI than the other wards so that the Corporation can take appropriate decision in the social sector expenditure for those particular wards. I am sure that this Human Development Report would be eminently useful in defining priorities of the Corporation.

Several eminent personalities contributed in preparing this important document for Mumbai City. I am thankful to Dr.Ratnakar Mahajan, Executive

Chairman, State Planning Board,Government of Maharashtra for guiding the difficult exercise and providing necessary guidance to the team. The technical editing work handled by Mr.Mahesh Vijapurkar, Editorial Consultant and Independent Journalist also requires special appreciation.

The comprehensive efforts by base paper contributors played a major role in preparing the framework for the report. I am thankful to all experts, viz. Prof.(Dr.)Smita Gandhi, Dr.(Prof.) D.P.Singh, Mr.Asoke Basak, IAS (Retd.), Dr.Sangita Kamdar, Ms.Farida Lambay, Dr.Renuka Narang, Dr.Snehalata Deshmukh, Dr.Alka Karande, Dr.Archana Patankar and Prof.(Dr.)Vibhuti Patel.

The exercise of measurement of human development for all wards of Mumbai by Mr.Asoke Basak, IAS (Retd.), Chief Executivbe Officer, Shri Vile Parle Kelwani Mandal and Dr.Sangita Kamdar, Professor and Head (Economics), School of Business Management, NMIMS University provided necessary setting for visioning for a city. I am thankful to them for their valuable contribution.

I also appreciate the necessary technical help given by Directorate of Economics and Statistics, Planning Department, Government of Maharashtra's Census office, Mumbai.

I must record my great appreciation for strenuous efforts made by the research team led by Dr.(Prof.) Sneha Palnitkar, Director, All India Institute of Local Self Government for anchoring the entire process and preparing comprehensive document for Mumbai City.

Finally, I must also acknowledge the sincere efforts taken by officials in different departments at MCGM for providing necessary data for the report preparation.

The increasing attention given to human development reminds us once again that the final end-point of all our actions at MCGM will be the citizens of Mumbai.

(Dr.J.M.Phatak)

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***(Note:** The Steering Committee was constituted by Government of Maharashtra by Resolution: Sankirna 2007/ Pra Kra - 23 / Ka.1415, dt. 12th December, 2007 for the preparation of Mumbai Human Development Report)*

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Dr Hiremath S.
Mr **I**ngle Rajesh
Mr **J**adhav Aabasaheb
Mr Jadhav Saudagar
Mr Jagtap Anand
Mr Jha Ramanath
Ms Jharia Neha
Ms Joshi Mrudul
Mr Joshi S.G.
Dr **K** Sita Prabhu
Mr Kale Sharad G.
Mr Kedia Subodh
Mr Khawale Vijay
Mr Khaire A.N.
Mr Kirtane Gautam
Mr Kolekar B.M.
Dr Kulkarni Sumati
Dr Kumar Sanjeev
Ms **M**adhavan Anjana
Mr Mahajan J.B.
Mr Mahangade Yogesh
Mr Malhotra Ashok
Dr Malik Seema
Ms Marathe Suprabha
Ms Mhapsekar Jyoti
Dr Mishra Rajiv
Dr Mohan Sudha
Dr Mohanty P.K.
Mr Mohole D.R.
Mr Moon Nimish
Ms Morepatil Geeta
Mr **N**agrale B.M.
Mr Naik B.N.
Mr Naik S.S.
Ms Nair Raji
Mr Nayak Umesh
Ms Noronha Kimberly
Mr **O**rpe Prakash
Mr **P**alnitkar Arun
Dr Parsuraman Sulabha
Mr Patkar Vivek
Ms Pathak Purnima
Mr Pawar Vikram
Dr Pethe Abhay
Mr Phadke Suhas
Mr Phatak V.K.
Mr Pisolkar P.C.
Mr Pohare P.H.
Dr Potdar Ramesh
Mr Powar J.V.
Dr Prabhu Chandrashekhar
Dr Prabhu Seeta
Mr **R**. Dnyanesh
Ms Rade Chhaya
Mr Rajeev R.A.
Dr Raman Kannamma
Mr Randive Avinash
Mr Rao Praveen
Ms Redkar Seema
Ms **S**adekar B.L.
Ms Sakhare Nitu
Mr Sangle Madhav
Mr Sanjay Kumar
Mr Sannabhadti Ravi S.
Mr Sarnaik J.R.
Mr Sawant Milind D.
Dr Shah Daksha
Mr Shinde S.S.
Ms Shinde Poornima
Mr Shingade S.R.
Mr Shishupal Sudhir
Mr Shrotriya D.M.
Ms Simon Phoebe
Mr Srivastava P.K.
Ms Srivastava Ruchira
Ms Subramaniam Uma
Dr Suraj Kumar
Mr Sukthankar D.M.
Dr Suryanarayana M.H.
Dr Suryawanshi A.H.
Ms **T**askar Vijaya
Dr Tendolkar Uma
Mr Thakur Amarjeet
Dr Thanekar Jairaj C.
Dr Tipre Pranita
Ms Tiwari Sheela
Mr Tragler Adolf
Mr **V**arghase Maju
Ms **W**aghmare Monali
Mr Waghmare R.B.

List of Abbreviations

AEI	Alternative Education Initiative
AIILSG	All India Institute of Local Self Government
BCG	Bacille Calmette-Guérin
CBR	Crude Birth Rate
CBSE	Central Board of Secondary Education
CDO	Community Development Officers
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CEHAT	Centre for Enquiry into Health and Allied Themes
CHC	Community Health Centres
CHW	Community Health Workers
CPCB	Central Pollution Control Board
CRC	Cluster Resource Centre
CSSM	Child Survival and Safe Motherhood
CSW	Commercial Sex Workers
CWD	Children With Disabilities
CWSN	Children With Special Needs
DOTS	Directly Observed Treatment, Short-Course
DPT	Diptheria Pertusis Tuberculosis
DT	Diphtheria and Tetanus Toxoids
ECCE	Early Childhood Care and Education
EF	Exceedence Factor
EGS	Education Guarantee Scheme
ELBW	Extremely Low Birth Weight
EMIP	Employment Market Information Project
ERPC	Environmental Pollution Research Centre
ESIS	Employees State Insurance Scheme
FICCI	Federation of Indian Chamber of Commerce and Industry
FSI	Floor Space Index
FWMCH	Family Welfare and Mother Child Health
GDP	Gross Domestic Product
GP	General Practitioners
HDI	Human Development Index
HDR	Human Development Report
HIV	Human Immuno-deficiency Virus
HIV/AIDS	Human Immuno-deficiency Virus / Acquired Immuno Deficiency Syndrome
HRD	Human Resource Development
IB	International Baccalaureate Board
ICDS	Integrated Child Development Scheme

ICMR	Indian Council of Medical Research
ICSE	Indian Certificate Secondary Education
ICSSR	Indian Council of Social Sciences Research
IED	Inclusive Education for the Disabled
IMR	Infant Mortality Rate
ITES	Information Technology Enabled Services
IUD	Intra Uterine Device
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KG	Kindergarten
KGBV	Kasturbha Gandhi Balika Vidyalayas
LBW	Low Birth Weight
MCGM	Municipal Corporation of Greater Mumbai
MDACS	Mumbai Districts AIDS Control Society
MDG	Millennium Development Goals
MDM	Mid-day Meals
MDTCS	Mumbai District Tuberculosis Control Society
MHADA	Maharashtra Housing and Area Development Authority
MIS	Management Information System
MMR	Maternal Mortality Rate
MMRDA	Mumbai Metropolitan Region Development Authority
MMTU	Mumbai Municipal Teacher's Union
MoHFW	Ministry of Health and Family Welfare
MoHUPA	Ministry of Housing and Urban Poverty Alleviation
MPCCE	Monthly Per Capita Consumer Expenditure
MPEGS	Mahatma Phule Education Guarantee Scheme
MPS	Mumbai Public Schools
MPSP	Maharashtra Prathmik Shikshan Parishad
MSDP	Mumbai Sewerage Disposal Project
MSRDC	Maharashtra State Road Development Corporation
MTPD	Metric Tones Per Day
MUTP	Mumbai Urban Transport Project
NACO	National AIDS Control Organisation
NACP	National AIDS Control Programme
NASVI	National Alliance of Street Vendors in India
NDDP	Net District Domestic Product
NFHS	National Family Health Survey
NGO	Non Government Organisation
NKC	National Knowledge Commission
NPEGEL	National Programme for Education of Girls at Elementary Level
NPP	National Population Policy
NSS	National Sample Survey

NUHM	National Urban Health Mission
OBC	Outsourced Backroom Operations
OPV	Oral Polio Vaccine
PDS	Public Distribution System
PHC	Primary Health Centres
PM	Perticulate Matter
PRI	Panchayati Raj Institutions
PSI	Population Services International
PTR	Pupil–Teacher Ratio
RCH	Reproductive and Child Health
RCUES	Regional Centre for Urban and Environmental Studies
RNTCP	Revised National Tuberculosis Control Programme
RSBY	Rashtriya Swasthya Bima Yojana
SCC	Short-Course Chemotherapy
SHG	Self Help Group
SPM	Suspended Perticulate Matter
SSA	Sarva Shiksha Abhiyan
SSC	Secondary School Certificate
STP	Sewerage Treatment Plants
SWD	Storm Water Drains
T.B.	Tuberculosis
TDR	Transfer of Development Rights
TEC	Transitional Educational Centres
TFR	Total Fertility Rate
TISS	Tata Institute of Social Sciences
TLM	Teaching and Learning Material
TT	Tetanus
UFWC	Urban Family Welfare Centres
UHP	Urban Health Posts
UMR	Under-five Mortality Rate
UNESCO	United Nations Economic, Social, Cultural Organisation
UNFPA	United Nations Population Fund
UNICEF	United Nations Childrens Fund
URC	Urban Resource Centre
VLBW	Very Low Birth Weight
VOC	Volatile Organic Compound
WEC	Ward Education Committee
WHO	World Health Organisation
YUVA	Youth for Unity and Voluntary Action

Dedication

Mumbai owes a lot to countless people who shaped it down the ages. Needless to say, several visionary pioneers as much as its people had a role in making it the country's pre-eminent metropolis from the marshes it once was. There is something special to Mumbai and its citizens which is easier to feel than be easily described.

A city is made by the way it is managed for a civic order is quintessential element of civilisation. A civic body guides its physical development and progress in tandem with the demands of human development. The basis of how to manage this city was laid by Sir Pherozeshah Merwanji Mehta. His contribution has been so seminal that much of what is now the city's municipal governance was shaped with his help, and which has stood the test of time.

His call for civic reforms in 1872 triggered a wave of support. In 1882, the then Bombay Municipal Act was passed. All primary duties to provide for education, health and sanitation were set then itself. He was the President of the civic body four times, in 1884, 1885, 1905 and 1911, a member of the Legislative Council in 1887, and then in 1893 a member of the Imperial Council.

History has judged the man and given him his rightful place in it. How tall he was can be best judged by another event. His remarks about the plight of Indians in South Africa led Mahatma Gandhi to launch his campaigns there which ultimately brought him back to the Indian shores to make the country free. Clearly, he was a sensitive man with foresight.

Gandhiji himself called Sir Mehta 'the father of the Bombay Municipal Corporation' who took the lead on every public issue and 'people had such confidence in him that they would do whatever he wanted them to do.' Writing in the Prajabandhu's 21 November 1915 edition, Gandhiji noted how the city meant so much to Sir Mehta that he would forego attending the Assembly if 'he considered the work of the Corporation of greater importance.'

'There is no city in India in which a member (of a Corporation) has rendered such services in the field of municipal governance as Sir Pherozeshah Mehta did.' The 'right memorial to Sir Pherozeshah Mehta would be for all municipalities to work in the manner he did.'

The first Parsi to secure a MA degree, Sir Pherozeshah Mehta returned as Bar-at-Law and found that English lawyers dominated the bar and the courts, so he took up legal practice. But again, to cite Gandhiji, he did not mind dropping a client's case, or forfeit his legal fees 'or suffer any inconvenience to attend meetings' of the Bombay Municipal Corporation.

He was Bombay University's Vice Chancellor and founded the renowned Bombay Chronicle, later edited by Benjamin Guy Horniman, the only Englishman to have edited a pro-freedom newspaper. With Badruddin Tayabji and Kashinath Trimbak Telang, he founded in 1885 the Bombay Presidency Association of which he was life-long president. He joined the Congress and guided its fortunes.

His greatness was recognised in his own time and a grateful citizenry installed his statue in front of the iconic municipal headquarters. That statue, a street, and a park named after him are, in a sense, not the real memorial to him. Ensuring that all civic bodies run with the zeal for service and meets every basic need, including the human aspiration to development would be by far the best.

The publication is dedicated to that man, for it is an attempt to see how far the city he loved and groomed has travelled.

1. Introduction

MUMBAI: An Overburdened City Where Now, and in Future ?

Mumbai is perhaps the most researched Indian city attracting scholars and researchers from India and abroad. The bibliography on Mumbai could be as big as the city itself; the fine-grained narrations and conclusions as diverse as its population. However, everything about this city is not known. For every known and unknown fact and interpretation that has emerged from the thoughts of several scholars who have sought to study Mumbai, perhaps as many remain to be uncovered.

What inspires researchers to study Mumbai is its rich history and the nuanced changes that have materialised since its transformation from a marshy group of islands to a metropolis, on its way to a global city and the core of an extended urban agglomeration. The vast and diverse population, the richness of its fabric, a 'can-do' approach to life, and the willingness to put up with inconveniences for a livelihood appear to be among its unique features.

Gateway of India, Mumbai (inaugurated in 1924)

***Source**: MCGM*

How do so many live in such a compact city? How do they cope with the densities and the resultant stresses? How do they manage to sustain as a society? In short, what makes Mumbai, Mumbai, is the subject of much interest to the scholar, researcher, and analyst, with the rich segment of its people and the squalor that the other half of the population takes in its stride. Mumbai's urban poverty has inspired not just Indian films, but now even Hollywood. The city, it would seem, is of eternal interest, for its successes as well as failures, or perhaps in spite of both!

Harbour Centric

Had the marshy islands not nestled along one edge an excellent all-weather harbour, they may well have remained just that – a marshy region of no interest to anyone, perhaps not even to the British who got it from the Portuguese. The fortuitous circumstances of a royal marriage between Catharine de Braganza and Charles II of England enabled the transfer of the islands as a dowry in 1661, following which the East India Company took charge of it.

Prior to that, the Portuguese had arrived in the area but their sights and ambitions were set more to its north. It was the English who chose to exploit the harbour's possibilities as an alternative to the Factory in Surat. That turned the fortunes of a place inhabited by the *Kolis*, the fishermen community that even today lives in its scattered coastal enclaves, hardly distinguishable from a slum. That was the turning point and the group of islands became Bombay, and later Mumbai; without hesitation, India's premier city.

Mumbai during its evolution has seen simpler times, when huge tracts were bought for a meagre amount by the merchant princes who also donated handsomely several institutions and facilities to the city, which in turn fostered their own prosperity. Today, Mumbai faces a difficult amalgam of enormous problems – the acute scarcity of space, the load of its price, the cost of its labour and, now, the absence of industrial jobs. Yet it has developed and continues to do so.

Unreasonable Growth

Mumbai has not only become the biggest city in India, population-wise, but it is also poised to become the core of the biggest urban agglomeration in the country, and the world's third largest after Tokyo and Mexico City. The Mumbai Metropolitan Region (MMR) encompasses six other rapidly growing municipal corporations – any urban habitat with populations above 3,00,000 can be so notified as a Municipal Corporation – and 13 municipal councils and 995 villages. If the area of Mumbai, also known as Greater Mumbai, under the jurisdiction of Municipal Corporation of Greater Mumbai (MCGM), is 437.71 sq km – City (68.7 sq km), Western Suburbs (210.54 sq km), Eastern Suburbs (158.46 sq km), the rest of the MMR admeasures 4,355 sq km. It accounts for a population equal to half of Mumbai's. Out of these, Greater Mumbai constitutes about 10 per cent of the total geographic area, but accounts for 63 per cent of the population of the MMR region (Box 1.1).

'City Mayors', an international think-tank involved in urban affairs comprising professionals who work together to promote strong and prosperous cities as well as good local governments, in 2006 ranked Mumbai as the world's largest, and referring to its southern component, called it 'probably the world's largest core city and the densest'. It has projected that Mumbai, with the MMR, would be one of the 21 mega cities of the world, three-fourths of which would be in the developing world. In Asia, Mumbai would lead the pack. In terms of population densities, it has no peers. Amongst the most expensive, it ranks 33rd among cities in Asia. On the strength of its GDP, it was ranked 126 in 2005.

Despite the post-Independence continuance of New Delhi as the country's capital, which gave it a pre-eminent political status, Mumbai has lost none of its attraction. In the world of business, finance, corporate management skills, arts, entertainment, and culture, it holds its own. It will grow – as urban experts predict – into the largest Asian city, next only to Tokyo. But Tokyo has invested wisely and stabilised its

Map 1.1 : Mumbai and Mumbai Metropolitan Region (MMR)

***Source**: MMRDA*

population, an ability which eludes Mumbai. It continues to invest in economic activities and in infrastructure though it is poorer and slow to develop with the latter.

Form and Content

The absence of distributive justice means a sharp spatio-sectoral imbalance and social inequality that have taken root defying simplistic solutions. Mumbai exults in its wealth and, at the same time, faces the impact of urban poverty, dwarfing other major Indian cities in its extent and complexity. This, however, is not unique to Mumbai. Other cities in the developing world have lived through it. Its identity is unique and the spatiality is a product of several forces – socio-political and economic – which have been governing it.

Mumbadevi Temple, (built in 17th Century) Mumbai
***Source**: AIILSG (2009)*

Like many other cities, this too has a legend behind the place and name, which reflects the texture of its initial social foundation that thereafter has been ever-changing. Its name is an eponym; its etymology is 'Munga Aai' or 'Maha Amba', indicating the link to the Kolis who were the original fishermen inhabitants. The Portuguese called it the 'Bom baim' meaning 'the good bay'. Later, it was anglicised to Bombay but the Marathi and the Gujarati usage all along has been 'Mumbai', while the Hindi, Urdu and Persian speakers called the city 'Bambai'. In 1996, the name was officially changed to 'Mumbai'.

Apart from the early Kolis who first encountered the Portuguese, every other resident of Mumbai has migrated into the city or has been born to such migrants. They came, prospered, and more followed, aided by their visual demonstration of Mumbai being a haven for opportunity seekers; and more or less developed a cultural identity of a *Bambaiyya* or a *Mumbaikar*. The Kolis have retained their distinctive identity and habitats. Despite being marginalised and encroached upon, they continue in their hamlets forming the distinct socio-cultural space on the shores tied to fishing, locally known as *koliwadas*.

The Heritage

The city of Mumbai was originally a cluster of seven islands of volcanic origin. There is a evidence to show that these seven islands were inhabited since the Stone Age. The islands were converted into a

Cluster of Seven Islands
***Source**: AIILSG (2009)*

Colaba Causeway (built in 1838) Mumbai

***Source**: MCGM*

promontory of solid land, measuring about 4.8 km in width at the northern end, narrowing to a point of rock at Colaba, its southern extremity. It is united at its southern limit with Salsette Island by means of causeways and railway embank-ments (*Mumbai City Development Plan, 2005-2025*).

Box 1.1 : Location, Size and Population of Mumbai

Covering two revenue districts under one civic body, the MCGM extends between 18°3'to19°20'N and 72° 45' to 73°00'E, accounting for a mere 0.2 per cent of the total area of Maharashtra, of which it is the capital. In 2001, its population was 1.19 crore, claiming 12.36 per cent of the total and 29.2 per cent of the urban population of the state. The population is now estimated at 1.34 crore and growing. It encompasses an area of 437.71 km, hemmed on the three sides by the Arabian Sea.

The British welded the archipelago of seven islands to make Mumbai; later a further four were added to its north to form the larger – or Greater Mumbai – city which actually expanded thrice since 1950 to reach its present boundary in the north, i.e., the Thane Creek and the River Ulhas.

Now a peninsula, it has coastal mud-flats, swamps and mangroves with the west and the east coasts offering distinct topographies. The western coast is studded by hills, bays and beaches while the eastern segment has the harbour and the salt pans. The people huddle within these boundaries. The wonder (or perhaps the irony) is that a city teeming with people and precious little elbow room also hosts a national park – the Sanjay Gandhi National Park. But given the space constraints, even this sylvan corner is encroached upon by squatters.

Rich Architectural Feature and Grandeur (1873) in South Mumbai

***Source**: AIILSG (2009)*

The southern part of Mumbai is truly a British construct, with wide open roads and spaces, rich architectural features, and grandeur to the extent that it was called once the London of the East. The British left an imprint on every inch of the region which slowly eased into a kitsch as the city turned cosmopolitan and progressed north till it could spatially grow no more. They found the deep natural harbour to be their ally, meeting a critical important function of keeping the centre of the Empire in wealth. The development of the city northwards did not necessarily mean any improvement into a conceptually good city.

The British development of their first port in the Indian sub-continent was the one major trigger to put Mumbai on the path to its present: diverse and vibrant. But in the process, it brought forth a whole set of disparities among the population, all of whom in one measure or another are the beneficiaries of economic growth. In spite of this, however, the city's growth has been sustainable but inequitable. It is a city that values and rewards enterprise. However, the initial fashioning of Mumbai was by external demands and inputs, for which imperial rule set the tone for every activity.

That activity was rooted in exploiting the hinterland, which later extended to the entire country and routed resources from the colony to the centre of the Empire. That brought Mumbai into close contact with the world's markets despite the then unequal terms of exchange. The British requirements were paramount, dictating everything from selective recruitments of merchants, artisans, and labourers, and even the education of people, bringing forth a class of clerks and petty officials. They affected the spatial implantation of port, factories, market places, railway lines, public buildings, and residential quarters.

Civic Order

The Mumbai government evolved gradually, giving way to Indian control while responding to the exigencies of the day. However, the form of municipal governance that took shape, as is evident today, in practice conceptually evolved during the British times where Indians like Sir Pherozeshah Mehta offered leadership; their contribution has been seminal. It is but natural that the civic governance's form and content should emerge from the country's premier city. A necessary civic order was the requirement before the civic authorities mandated to maintain the city. The primacy of local self-government in managing a city can never be downplayed; that primacy with a wise, sensitive elected component and responsive machinery can work wonders for any city.

Institutional Framework for Local Governance

The Municipal Corporation of Greater Mumbai is governed by an Act which was formulated in 1888 known as Mumbai Municipal Corporation Act of 1888.

Elphinstone Circle (in 1873) now Horniman Circle, South Mumbai

***Source**: AIILSG (2009)*

Since then, it has undergone a number of amendments in the last century, but the MMC Act 1888 is still considered a masterpiece of municipal legislation, with a foresight for the variety of problems that the city will face in the future.

Statutory Authorities

There are nine Municipal Authorities that have been charged with the responsibility of carrying out the Provisions of the Mumbai Municipal Corporation Act 1888.

a. Corporation
b. Standing Committee
c. Improvement Committee
d. Brihanmumbai Electric Supply and Transport Committee
e. Education Committee
f. Ward Committees
g. Mayor
h. Municipal Commissioner
i. General Manager of the Brihanmumbai Electric Supply & Transport (BEST) Undertaking

Apart from them, Section 37 (1) provides for the office of the Deputy Mayor in the Mumbai Municipal Corporation and Section 37–1A (1), for the Leader of the Opposition who also enjoys a statutory status.

Apart from Statutory Committees, the Corporation has powers to appoint special Committees including Women and Child Welfare Committee, under Section 38 A (1) of the Mumbai Municipal, Corporation Act. These Committees consist of 36 members each.

Head Office of Municipal Corporation of Greater Mumbai

***Source**: MCGM (2009)*

Flora Fountain (built in 1864), now Hutatma Chowk, Mumbai

***Source**: AIILSG, 2009*

In addition, as is required under Section 38 of the said Act, four Consultative Committees have been appointed by the Corporation, viz., (1) Grants-in-Aid Committee, (2) Swarna Jayanti Shahari Rojgar Yojana Implementation, (3) Planning Committee, and (4) Review Committee each for the City, the Eastern Suburbs and Western Suburbs.

By virtue of the Indian Constitution and for purpose of making municipal administration more people-oriented for decentralisation of powers, 16 Ward Committees have been established. Each Ward Committee consists of elected Corporators from the respective wards and three nominated members from recognised Non-governmental Organisations. The main functions of Ward Committees are to quickly dispose of matters brought up by local citizens relating to water supply, cleanliness and other basic civic amenities including approval to the plans and estimates up to Rs 5 lakh for works in the area of the concerned Ward.

The Tree Authority which is mainly concerned with protection of Trees in urban area, consists of 13 elected corporators and seven nominated members and functions under the Chairmanship of the Municipal Commissioner.

The Municipal Corporation of Greater Mumbai is one of the oldest and largest civic bodies in India administering a city. It is entrusted with the task to provide basic civic amenities, health, sanitation, solid waste management, education, and city transport, while planning and maintaining roads and other civic facilities. The Mayor who heads the deliberative wing also heads the house of elected municipal councillors – totalling 227 – one each for electoral ward of the city represents the Municipal Corporation of Greater Mumbai. The Municipal Commissioner is the Chief Executive of the Corporation, who has to perform all the duties and exercise all the powers conferred upon him by the Act. The Act provided separation of powers for deliberative and executive wing coupled with proper checks and balances.

The Municipal Commissioner (appointed by the state government) is assisted by four Additional Municipal Commissioners. They are subject to the control of the Commissioner, exercise all or any of his powers and perform all duties and functions. The General Manager of BEST Undertaking (appointed by the Corporation with the approval of the State Government), heads the administration of the BEST Undertaking.

The executive powers are vested with the Municipal Commissioner, who is assisted by Additional Deputy Commissioners and Assistant Municipal Commissioners. The latter are in charge of the 24 administrative offices. In 1964, the administrative system of MCGM was decentralised for effective service delivery and the entire Mumbai city was divided in six Administrative Zones with 23 Wards. Today, there are seven Zones and 24 Wards. The Zones in Mumbai city are supervised by the Deputy Municipal Commissioner with the help of Assistant Municipal Commissioners working under them.

Industrialisation and Jobs

The first textile mill was set up in 1850, almost a century before Independence, and until the crippling strike in the 1980s the industry was the biggest employer. Today, barely a mill is in operation, with the entire sector's shutdown changing the city's skyline and land use pattern, affecting even the economic sustainability of over 2,00,000 families whose breadwinners were directly employed by the mills along with others who had ancillary roles in the sector. Despite its demise in the 1980s, it was the mills that gave the impetus to the city to grow and brought in the migrants who had an eye on a sustainable livelihood.

If the planting of textile mills across the city was the turning point in the history of Mumbai's economy, the changing profile of the population with the emergence of a large working class, influenced its social ethos which tended to push towards egalitarianism, but not with much success. Unionism

Textile Mill in Mumbai

***Source**: MCGM (2009)*

came to the fore. The closure of the mills also led to another paradigm shift which, in quick succession, saw an industrial relocation policy in place seeking to decongest the city and reduce environmental pollution. That component of decongestion has been slow in making its impact.

Inspite of the insensitive environment under colonial rule, with the establishment of the textile mills, the city grew rapidly. But it did not lead to the strong growth of the factory sector, which grew slowly but only after 1920. The mill owners usually complemented their investments in large-scale factories by simultaneous investments in small-scale units mainly using contract labour. Implications of this were seen in the activity composition of manufacturing as well as size profile, with a number of small-scale units prevalent around the textile mills.

Magnet for Migrants

This growing activity attracted migrants, initially from the stagnant farming tracts of the Konkan region and later from the Deccan Plateau, Saurashtra and Kutch. In the later phases, and in the post-independence period, migrants were increasingly drawn from the distant northern and the southern parts of the country. Huge populations were added in the inter-War and post-World War II period when industrial growth focussed on non-traditional sectors. This shift, with growth of banking and finance, helped local business groups to start and sustain profitable enterprises. The city was locked into the world market. Simultaneously, a base was set for a national industry.

Initially, industrial growth was haphazardly located. Economic activity was informalised and new sites for light industries were also occupied by unauthorised, small-scale, manufacturing units. The growth of technology and capital-intensive industries could not generate significant growth in employment and led to proliferation of informal units in the marginal space of an expanding city. Their expansion outside city limits created conditions for fragmented growth in the city, enhancing the informal component. Since the late 1960s, Mumbai's economy revealed a strong tendency to absorb in-migration and high rates of population growth on the one hand, with joblessness and underemployment complemented by vigorous growth of urban informal sector as well as slums on the other.

Only after Independence in 1947 did local industrialists, traders, indigenous bankers, who had risen to prosperity during the colonial period come to dominate the city's economy, and, where possible, civic issues and the urban choices. Recently, however, the increasing globalisation of commerce, industry, and the services sector has further exposed the city to international capital with its neo-liberal policies; this has put Mumbai on the verge of being an overburdened but global city. However, the pre-Independence rise as a principal city in phases is the foundation on which the present edifice is built.

Overburdened

What comes across clearly is that Mumbai is burdened with numbers; and that numbers are its strength. And again, disquietingly, the numbers also constitute its weakness; at least, it makes optimally managing the city difficult. The numbers have been strong enough to influence every dimension of the city's life and its citizens from the cradle to the tomb. The discussion in the subsequent chapters would pursue the hope that somehow the city could neutralise its disadvantage due to the numbers it hosts by a legitimate process of incentivising growth of economic activity in areas beyond Mumbai.

Overburdened City

***Source**: AIILSG (2009)*

The choices are difficult because there are not many. And choices are likely to be such that they would take time to incubate and develop into physically achievable targets.

The Trends

These trends would be examined in the subsequent chapters which deal with issues of population trends which have overstressed a city – disorganised but not yet dysfunctional; the economy and livelihoods, and how it has influenced lives; and the clear division of the city into the haves and the have-nots whose poverty is visible as slums despite substantial involvement in the informal sector; education as a sector which is vital for promoting the human development indicators; the health sector's dimensions and its impact on the population; the issues of gender in a city where there

are fewer women than men; the quality of the people's lives despite the inputs provided by state and its other governance arms; and finally, an attempt at suggesting a solution.

Therefore, is there a justification to continue to call this city, once the London of the East, the *Urbs Prima in Indis*? Given the levels of deprivation and the size of the deprived population, it would be natural to ask: whose city is Mumbai anyway? This document which puts together the efforts of several scholars to understand where Mumbai stands vis-à-vis the human development component would positively help judge those vital dimensions. What needs to be dealt with to change lives of its citizens? What is, if possible, the measure of a citizen's quality of life?

Purpose of Mumbai Human Development Measurement Report

Human development is more than what can be caught in a mere set of numbers but it does help in providing an indication of the direction the process of progress is or should take. Its one major drawback is that like per capita incomes, the Human Development Index (HDI) reflects only the averages which can hide individual attainments; these can vary dramatically between different sections of the population. It can be argued that averages are better than nothing at all. Especially so, when the HDI helps focus critical attention in locating areas of weaknesses in provisioning and promoting access to basic facilities and the consequent outcomes. Thus, the HDI becomes a useful policy tool. Even if it is an imprecise reflection of the status of the various components of a population segmented in terms of age, community, gender, etc. It is useful for formulating people-centric policies.

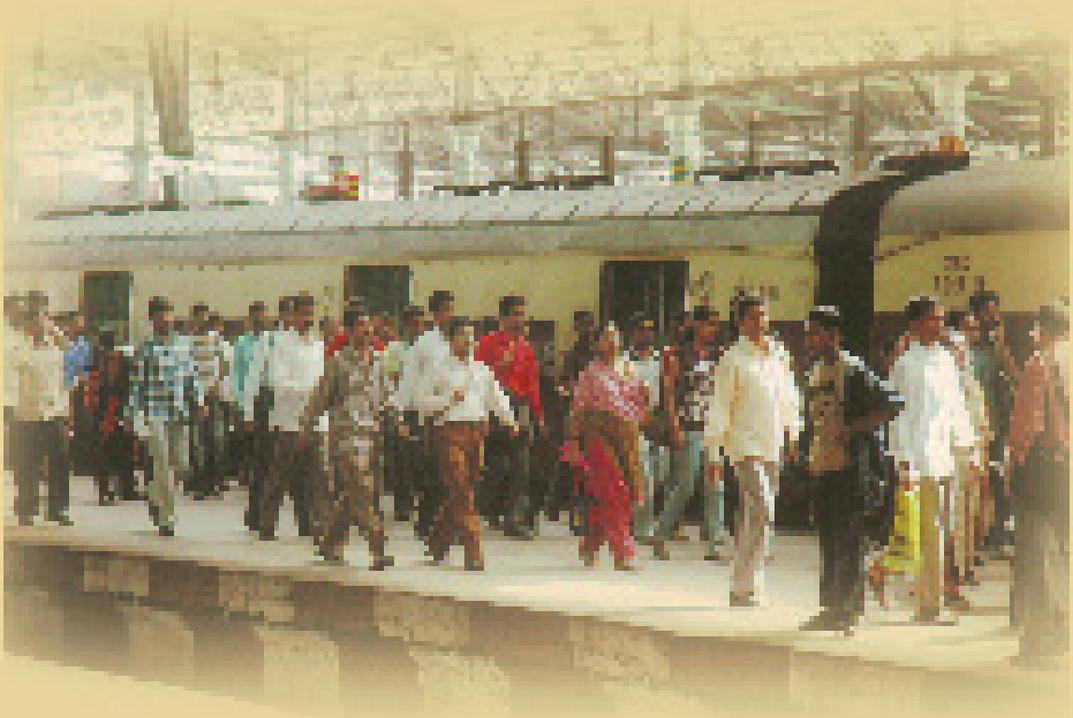
For instance, how would a HDI or a Human Development Measurement Report help a city like Mumbai? A city teeming with people, stretched in its essential services, can and does hide lot of inequalities and inequities.

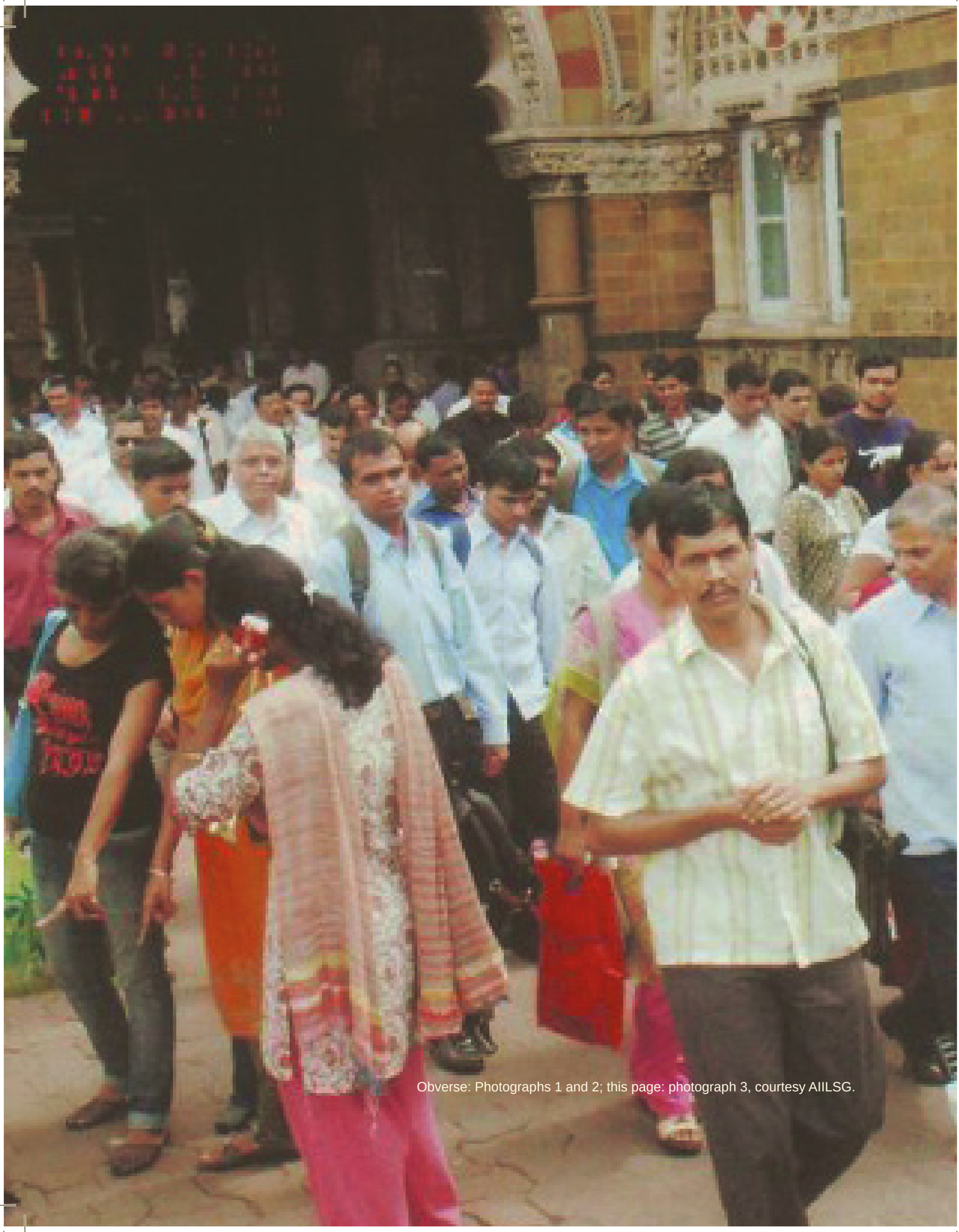
Analysing Mumbai from the point of view of human development is desirable from the point of guiding policy decisions in the city. However, comparable data on the indicators spelt out in the international HDI were not available. With these limitations on the availability of data sets an attempt was made to calculate an index which would measure human development levels using surrogates (proxies). Hence, the index that is being presented below uses the three dimensions identified by UNDP and the methodology identified by the same. However, the indicators chosen to represent each of these dimensions do not correspond to those in the international reports of UNDP. The index so constructed has been titled 'Human Development Measure across the Wards of Mumbai' to reflect this difference in the methodology of calculation.

If and when the inequalities and inequities are listed, and a qualitative assessment then made possible, it would enable the urban policy-makers to fine tune their priorities and make appropriate allocations not only for provisioning of facilities, but also help develop approaches that could improve access to them for the best outcomes.

As the ensuing discussions in this report would help draw the attention to the dark corners, it would also show that while income inequalities are visible, and access to basic services is also varied, their access is improving among those who have better incomes. This is true also with respect to education and health services which have a direct bearing on the wellness or the quality of life of the stock of human capital.

Population Trend





Obverse: Photographs 1 and 2; this page: photograph 3, courtesy AIILSG.

2. Population Trend

Numbers could have been Worse, but Implications could Worsen

Way back in 1921, when Mumbai's population was 14 lakh and growing (1921 Census), the country's first birth control clinic was set up by a college teacher, R.D. Karve (Government of Maharashtra 2002: 11). He was motivated by the need to promote birth control as a necessary means to protect the mothers' health. He faced social disrespect but was unconcerned by that disapproval, and the erstwhile Bombay Municipal Corporation followed up with two publicly funded family planning clinics. The intention was to promote reproductive health and curb population growth.

Ironically, the same Mumbai which saw merit in fewer children being born and a manageable population base is now trapped in the huge and inevitably growing numbers of people which are now estimated to be 1.34 crore or more. It is projected to grow further between 1.5 crore to 2.1 crore by 2031 despite the city's numerous limitations to cope with it, including the already overcrowded space. Population has always been Mumbai's nemesis. But Mumbai is not just numbers, a set of statistics; it is also its people.

There are three reasons why population of any given area grows: one – natural increase, which is a combination of fertility rates and the balance of births over deaths; two – migration from across the county; and three – annexation of new adjacent areas with existing populations in it. The last one has not been an issue for Mumbai, which just does not have any new areas to bring under its purview. The other areas that grew beyond its border came up later and developed into dormitory cities that largely survive on Mumbai's economy (see Box 2.1).

Table 2.1: Population and Sex Ratio of Mumbai, 1901-2001

Year	Persons	Male	Female	Sex Ratio (Female/Male *1000)
1901	927994	561825	366169	651
1911	1148757	731634	417123	570
1921	1380448	884301	496147	561
1931	1397812	878102	519710	592
1941	1801356	1114983	686373	616
1951	2994444	1868335	1126109	603
1961	4152056	2496176	1655880	663
1971	5970575	3478378	2492197	717
1981	8243405	4652646	3590759	772
1991	9925891	5460145	4465746	818
2001	11978450	6619966	5358484	809

***Source**: Census of India (1901-2001)*

Mumbai's average fertility rate, which is a determinant of the pace of population growth, is currently estimated at 2 or less. This is lower than 2.1 which is the replacement total fertility rate. It also implies that in-migration contributes in a large measure to the growth. The declining death rate, along with the birth rate (Tables 2.1–2.4), has had a similar influence. Had the fertility rates not declined over the decades, the tide would have been disastrously higher and the starting point of any degeneration reached much earlier. It would not be incorrect to assume that the process may have already started.

Strength and Weakness

The implications of the demographic pattern of Mumbai are manifold; this is its strength as well as its weakness, dictating its pattern of evolution, moulding the city's structure including housing, transportation and provision of urban amenities, determining the access to them, their utilisation, and the outcomes as well as outlook. The population trends have had a significant effect on everything that made Mumbai what it is: economically vibrant but inequitable, energetic, socially layered, overcrowded, and, dismayingly, caught in a controlled disorder.

Population increase pushed spatial growth and the city had to grow to accommodate it. The geographic limits were extended towards the north twice, first in 1950 and later in 1957, which enabled planned development of infrastructure and provision of basic services in syncrony with the older parts of the city. It has grown to be the country's most populated city and the world's fifth. In 2001, the average density was 27,000 persons per sq km. This has its own special significance, for quality of life which is partly determined by the availability of physical space. It shapes social and lifestyle issues as well.

Registration of both births and deaths show a consistent decline (Table 2.3).The decline is from a birth rate of 19.24 per thousand in 1996 to 13.76 per thousand in 2006. The death rate too dropped significantly from 7.3 deaths per thousand in 1996 to 6.89 in 2006. This clearly shows that fertility and mortality component of the population improved, moderating the impact on the total population size but for which it could have been worse. The data presented in Table 2.4 shows an improvement of the infant mortality rate (IMR), significantly dropping from 38.51 in 2001 to 34.57 in 2006 while the maternal mortality rate was substantially less than one per cent. These are well below the Population Policy estima0tes at this point of time.

Table 2.2: Average Annual Rate of Growth by Gender, 1901-2001

Decade	Person	Male	Female
1901-11	2.13	2.63	1.30
1911-21	1.83	1.88	1.73
1921-31	0.13	-0.07	0.47
1931-41	2.51	2.37	2.75
1941-51	4.98	5.06	4.86
1951-61	3.24	2.88	3.81
1961-71	3.59	3.29	4.03
1971-81	3.20	2.89	3.61
1981-91	1.85	1.60	2.17
1991-2001	1.87	1.92	1.82

***Source**: Census of India (1901-2001*

Table 2.3: Crude Birth and Death Rates, Infant and Maternal Mortality in Mumbai, 1996-2006

Year	Birth Rate	Death Rate	Infant Mortality Rate	Maternal Mortality Rate
1996	19.24	7.30	39.86	-
2001	15.73	7.10	38.51	0.06
2006	13.76	6.89	34.57	0.63

***Source**: Municipal Corporation of Greater Mumbai, Yearly Reports of Public Health Department, 1996-2006*

Table 2.4: Maternal and Infant Mortality Rate, 2001 – 2006

	2001	2002	2003	2004	2005	2006
Infant Mortality Rate	38.51	38.59	36.17	35.02	35.12	34.57
Maternal Mortality Rate	0.06	0.06	0.17	0.27	0.45	0.63

***Source**: Municipal Corporation of Greater Mumbai, Yearly Reports of Public Health Department, 2001-2006*

Peri-Urbanisation

The population increase has definitely overtaken the pace of spatial growth that had halted, and the burden of the population is being felt via its density. The pressures on the civic services which impact the quality of a citizen's life, including the human development dimensions, are a natural outcome of this process. In fact, Mumbai has been a good example of peri-urbanisation, a process by which people move away from the city's main hub and radiate away towards the periphery, by implicating relatively open or less-congested areas, thus expanding the original area. This also implies substantive intra-city migration (see also Box 2.2).

Between 1901 and 2001, the population increase was twelve-fold from 9.2 lakh to 1.19 crore but the decadal growth rates have varied. The population growth, in absolute numbers, has been continuous. The population doubled in the first 40 years, i.e., from 9.2 lakh in 1901 to 18.01 lakh in 1941, tripled from 9.2 lakh in 1901 to 29.2 lakh by 1951, and in another 30 years, i.e., by 1981 tripled again to 82.4 lakh (Table 2.1). The annual population growth rate according to the 1931 Census was the minimum at 0.1 per cent during 1921-31, a decade marked by life-taking epidemics. It was at its maximum during 1941-51 according to 1951 Census at 4.98 per cent, due to the refugee influx during the Partition (Table 2.2). The population crossed the 10 lakh mark in 1911 according to 1911 Census; and soon after the enumeration for the Census of 1991, reached 1 crore. That qualified Mumbai as a mega-city.

The annual compound growth rate has been reducing from 3.28 per cent during 1971-81 to 1.84 per cent in 1991-2001. However, the real story is not so much of just the growth rate, which in Mumbai's case has been slowing down, but the growth in absolute numbers which has been increasing. Given the continuous addition of numbers, year after year for the past few decades, the lower incremental rates in percentages between two censuses are misleading because of the base effect. Despite a low growth rate, the numbers can increase**.** This is a reason for concern.

Adverse Sex Ratios

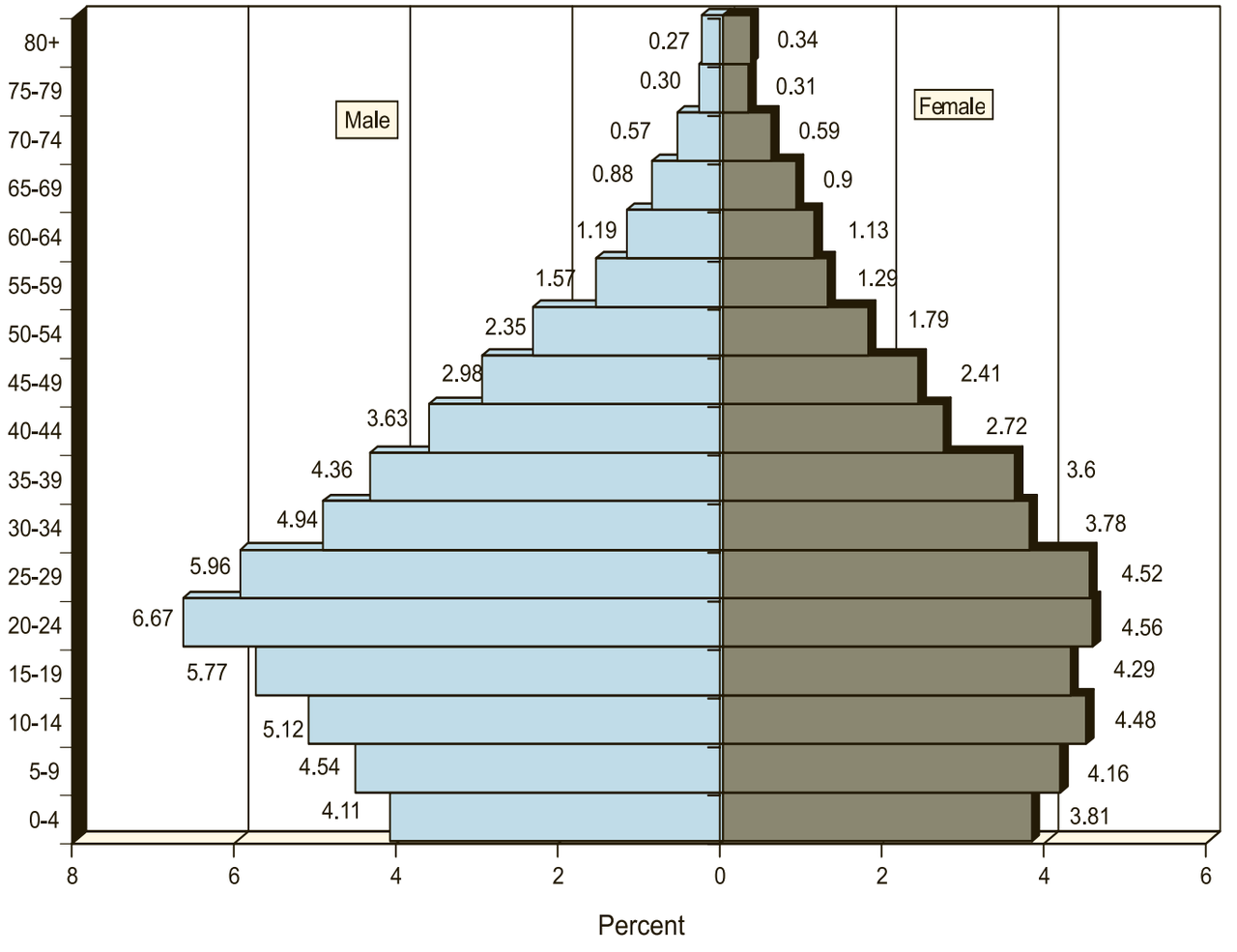
Apart from the huge numbers, there are two other aspects of note. Firstly, the male to female ratio is

adverse, and secondly, Mumbai has a largely young population with 68 per cent of the population under the age of 34 years. The sex ratio remains adverse though it improved gradually over the decades. In 2001, the ratio was 809 females to 1,000 males (Table 2.1). This deficit of female population is an old Mumbai story; the sex ratio was 651 per thousand males in 1901 which improved to just 809 females over a century later, indicating that despite the improvement it remains skewed towards males.

In 2001, the male population was 66.2 lakh and the female population 53.6 lakh. As Table 2.2 indicates, the rates of growth of male and female population have also varied. It shifted from the higher annual rate of growth for males during the 1901-11 decade to a relatively higher rate for females in successive decades in a distinct post-Independence trend. The ratios also vary from area to area within the city.

Furthermore, 66.71 per cent of the total population (Chart 2.1) in that year was under 34 years, with just 6.5 per cent being 60 years and above. The striking feature is the high concentration of male population in the age group 20-29. In all groups, however, males outnumber females, especially in the middle-aged population, by one-and-a-half times, except in the age group of 70 and beyond. In all probability, this is on account of high male in-migration.

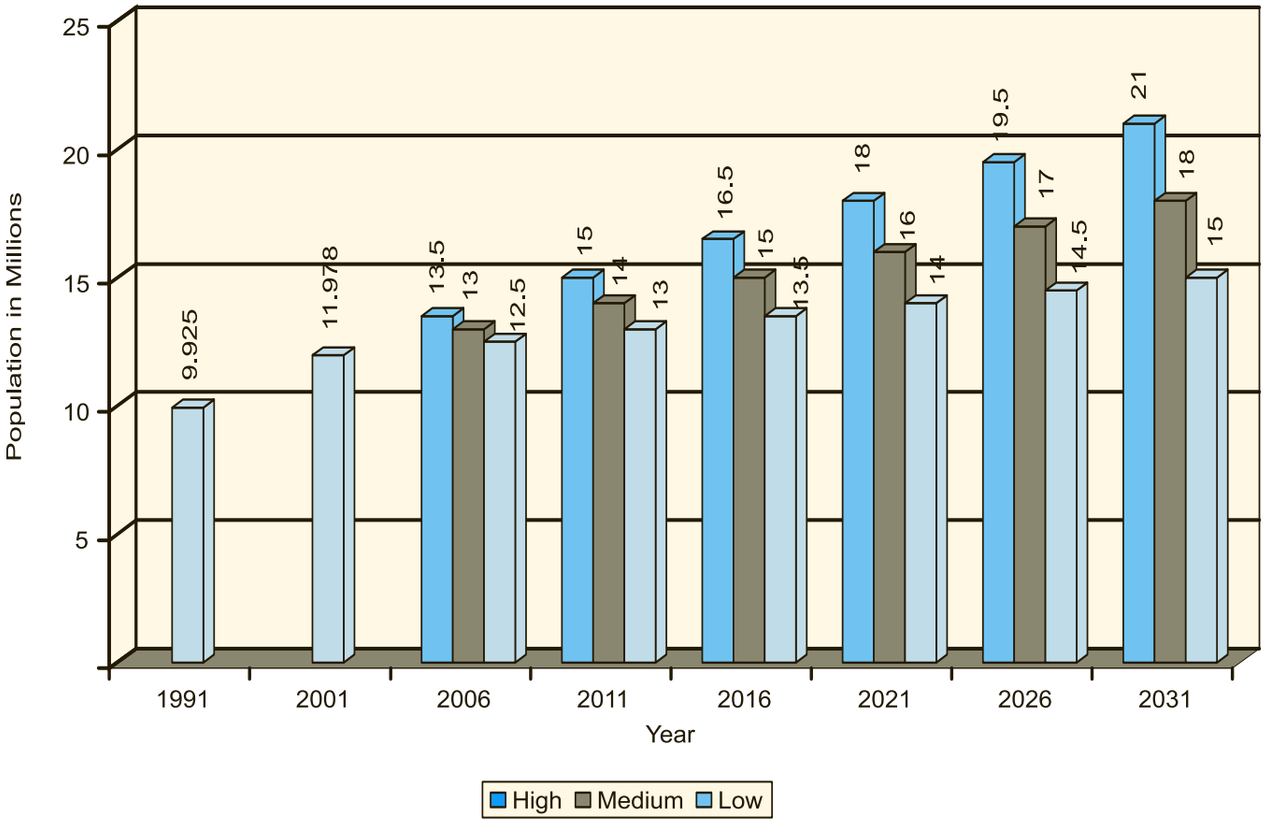
Chart 2.1: Age-Sex Pyramid of Greater Mumbai, 2001



The Future?

Given this demographic trend, what would be Mumbai's population size in the future, say, in 2031? Three scenarios are possible: low, medium and high, all relative to the present population, and depending on the pace of additions by natural accretion – that is by births and balance of births over deaths – and migration (Chart 2.2).

Chart 2.2: Future Population Growth of Greater Mumbai



1. Should the population grow at about 3 lakh people annually, that is, additionally more than were added in the period 1991-2001, it could be on the higher side at 2.1 crore. That is the 'high' projection.
2. Should the addition be of just 2 lakh people per annum to the existing population, it could be expected to touch 1.4 crore in 2011, 1.5 crore in 2016 and 1.6 crore in 2021, and then increase further to 1.8 crore in 2031. That level of population increment would be akin to what was witnessed during 1991-2001 and be categorised 'medium'.
3. Were it to be an annual growth of just 1 lakh per annum, the population could reach 1.5 crore by 2031 and be categorised as the 'low' estimate (see Chart 2.3).

In the worst case scenario when the population doubles to 2.1 crore by 2031, in its wake, it would result a worsening of all attendant issues – space constraints, social stress, and the ability to provide adequate basic services. It is possible, though not definite, that the densities would shift towards the north but the problems would only get compounded.

Box 2.1: The City, the Suburbs, and the Urban Agglomeration

Mumbai consists of two distinct areas, one being the 'island city' or just 'the city', and the other, 'the suburbs', again sub-divided into eastern and western suburbs. The former is so referred to as that component emerged with the melding of the seven islands up to Mahim and Sion on the north, with Colaba at its southern tip.

The suburbs are the areas beyond Mahim and Sion towards the north ending at Dahisar and Mulund, but they are not suburbs in the classical sense of being merely residential areas which are on the outskirts of a city or a town; they are now part of the larger city, the complexion having changed over the decades. These areas have their own pockets of intense trading, shopping, office spaces, industrial activity and with increasing relocation of even corporate businesses, are literally now an extended city.

However, the city and the suburbs are two distinct revenue districts of Maharashtra—Mumbai and Mumbai Suburban, together forming a major urban spread also known as 'Greater Mumbai'. This Report refers to this area collectively called as 'Mumbai' and is serviced by the Municipal Corporation of Greater Mumbai. Occasionally 'city' is also used and sometimes, to distinguish the suburbs from the southern end, 'island city' has been used.

Even the immediate areas outside of this is contiguous to Mumbai, These contiguous areas are themselves other major civic corporations, namely, Thane, Kalyan-Dombivli, Ulhasnagar, Bhiwandi-Nizampur, Navi Mumbai, Mira-Bhayandar. With Mumbai, the entire spread is the Mumbai Urban Agglomeration, spread over the neighbouring Thane and Raigad districts. Taking several other smaller towns like Panvel, Alibaug and several other villages, the entire larger spread is the Mumbai Metropolitan Region–the largest in the country.

No Room to Expand

These are alarming statistics, especially for a city that has no room to expand – being surrounded by sea on three sides, and the fourth side being areas of conjoined cities to its north. In one sense, given the land mass and population density, Mumbai can be seen as already having reached saturation. Efforts are underway to enable vertical growth by increasing floor space index (FSI), the stipulated built-up area that can be built on a specific piece of land. The other element is taking up vast tracts colonised by low-rise slums for vertical development in a rehabilitation programme where squatters would get free housing; the developer being allowed to market the excess area he can build. There are other issues like basic services where the demand curve is always ahead of the capability to meet it.

Migration

A little under half, or 43.7 per cent of the population was categorised as migrants in the 2001 Census as they reported a different place of birth. This is different from the initial phases of population growth wherein net migration was the only cause of growth till 1941, and a major proportion till 1951. The declining trend in percentage terms, but not in absolute numbers which is higher, commenced thereafter; but it remains significant. The other striking aspect is the predominantly rural origin of the migrants from across the country, with two-third to three-fourths of all migrants belonging to this category. There are migrants from other countries as well but these have been less than one per cent since 1981 (Table 2.7; see also Box 2.3).

Box 2.2: Hand in Hand

Urbanisation (as a demographic process) and migration go hand in hand; together they alter the population geography of a region.

Rural populations migrate to cities, not necessarily closest to them but those which offer a chance of realising at least partly their bigger dreams–a better life focussing chiefly on livelihoods. They are considered to be triggered by labour-market disequilibrium.

Interestingly, they tend to shift to cities even if they are unlikely to find jobs readily provided on the expectation that they will be able to procure one eventually in the high-wage sector. They are willing to wait because of the large difference between what they get in the rural sector and what they expect could materialise in the new urban location. There is, thus, a gamble built into this aspiration.

It does not matter if they have to delay setting up families, or bring their families to join them, as long as it seems possible to do so at a later point of time. Most prefer the economics of earning a city wage and sending the money back home for sustenance enabled by the cost of rural living. They stand to gain by this rural-urban economic differential.

Given the Indian paradigm of accentuated urban-rural differentials in every aspect of life, the country has witnessed over-urbanisation or difficult-to-manage expansion of cities. The overcrowding in cities does not seem to deter or offer a disincentive to further migration. A migrant would appear to encourage, by his demonstrated success of a replanted life, more of the same.

The results are visible in Mumbai via the presence of huge slums and the hardships that entails. The migrants seem to ignore the high social costs of rural-urban migration and continue to move into the city. Of late, the migrants have been spilling over to neighbouring cities where populations are spiralling, but depend on Mumbai for sustenance.

It is only now that urban planners and political entities have begun to disapprove of the rural-urban migration, the former because of difficulties in providing services and the latter because of a host of reasons, including 'cultural conflicts'. But any attempts at preventing in-migration are futile and counter-productive, unless the causes that promote out-migration are not tackled first.

***Source**: Wahba (2007).*

From Whence they Come

The number of persons living in Mumbai reporting their place of birth elsewhere is presented in Table 2.5, categorised state-wise with largest proportion of migrants from Maharashtra (37.4 per cent) followed by Uttar Pradesh (24.3 per cent) and Gujarat (9.6 per cent). Together, Maharashtra and Uttar Pradesh form, according to various Census reports, a little over 60 per cent of all migrants. The relatively lower proportion of migrants from other states were from Karnataka (5.8 per cent), Rajasthan (3.9 per cent), Bihar (3.5 per cent), Tamil Nadu (3.1 per cent), Andhra Pradesh (2.4 per cent), Kerala (2.2 per cent), and West Bengal (2.0 per cent). According to the 1961 Census, 41.6 per cent of the migrants were from within Maharashtra, followed by 16.9 per cent from Gujarat, and 12 per cent from Uttar Pradesh. The migrants from other states were from Karnataka (6.4 per cent), Andhra Pradesh (3.4 per cent), Tamil Nadu (3.2 per cent), Goa (3.1 per cent), Rajasthan (2 per cent), and Punjab (1.2 per cent). The migrants from the remaining states were less than 1 per cent.

Table 2.5: Place of Birth of Migrants to Greater Mumbai: 1961 – 2001

States	Census Years				
	1961	1971	1981	1991	2001
Total Population	4152056	5970575	8243405	9925891	11978450
Total Migrant	2667130	3372384	4229276	3696764	5185429
Percentage of Migrants to Greater Mumbai According to Place of Birth: 1961-2001					
Maharashtra	41.64	41.57	42.23	41.20	37.40
Uttar Pradesh	12.01	13.46	15.90	19.28	24.28
Bihar	0.22	0.41	0.80	1.40	3.50
Orissa	0.08	0.13	0.22	0.37	0.77
West Bengal	0.49	0.61	0.79	1.11	2.01
Gujarat	16.90	14.85	13.46	11.89	9.58
Madhya Pradesh	0.87	0.90	0.97	0.99	1.14
Karnataka	6.44	7.34	7.19	6.55	5.83
Andhra Pradesh	3.38	3.02	2.70	2.30	2.41
Kerala	2.76	3.60	3.33	2.93	2.21
Tamil Nadu	3.20	3.27	3.37	3.49	3.14
Goa	3.11	2.29	1.54	1.06	0.63
Rajasthan	1.94	2.59	2.68	3.26	3.87
Punjab	1.23	0.95	0.87	0.77	0.56
Haryana	-	0.32	0.29	0.37	0.33
Delhi	0.30	0.38	0.46	0.49	0.52
North Eastern states	0.04	0.04	0.08	0.22	0.13
Other Northern states	0.09	0.27	0.19	0.25	0.24
Pakistan	4.17	3.05	2.06	1.32	0.75
Nepal	0.33	0.37	0.32	0.35	0.40
Bangladesh	-	-	0.06	0.04	0.03
Other Asian countries	0.41	0.35	0.27	0.24	0.14
Other countries	0.34	0.29	0.23	0.16	0.11

***Source**: Singh (2007: 318)*

More than a third of the migrant population, as already pointed out, hailed from within Maharashtra, making them the largest component of the population. The districts from where they originated are listed in Table 2.6. The maximum number of migrants, despite their decline in number over decades, originated from Ratnagiri and Sindhudurg (bifurcated from Ratnagiri in 1981). Nearly 60 per cent of intra-state migration into Mumbai is from four districts – Ratnagiri, Satara, Pune, and Raigad (earlier known as Kolaba district). During 1961 to 2001, the percentage of migrants from Ratnagiri district declined from 44.5 per cent to 31.5 per cent, while other districts mainly in the Marathawada region namely, Latur, Nanded, Solapur, Parbhani, Jalna, Osmanabad, and Beed indicate higher numbers.

On the other hand, half of those born in Mumbai but later enumerated in other Maharashtra districts, were accounted for in Ratnagiri and Thane districts in 1971 and 1981. However, the 2001 Census shows nearly two thirds of out-migration from Mumbai is to the adjoining district of Thane. This unprecedented increase in volume of migrants to Thane district is mainly due to movement of people who found, in that period, relatively inexpensive homes in the newly evolving cities, including Navi Mumbai, Mira-Bhayandar, Vasai-Virar, Kalyan-Dombivli, and Ulhasnagar. However, a sizeable number of out-migrants are found in Pune as well.

Table 2.6: Inter-District In and Out Migration in Greater Mumbai: 1961-2001

Districts	In-Migrants					Out-Migrants			
	1961	1971	1981	1991	2001	1971	1981	1991	2001
1. Ratnagiri	494404	564890	628887	519917	612688	58059	68920	65868	59900
2. Satara	140520	146802	190522	165380	217529	15645	27855	31250	24028
3. Pune	117711	145934	194571	163220	196331	38281	59555	45860	119933
4. Kolaba	109204	129924	150000	126090	159644	21444	27805	37865	47247
5. Sangli		51241	73508	64710	83262	6080	10369	10680	10906
6. Thane	45349	55695	67053	48480	61352	67019	132540	107660	732889
7. Nashik	40509	49319	60143	49040	57601	10685	16039	18913	37205
8. Ahmednagar	38749	50140	71064	55150	67955	7685	9860	11760	15740
9. Kolhapur	36792	56336	70038	59700	81190	8650	11516	13550	14745
10.Sholapur	25179	39213	63579	58010	75905	3785	5526	9010	6337
11.Jalgaon	14423	27793	34400	28970	36845	2305	3555	5381	3857
12.Aurangad Div.	NA	33523	93949	95270	132712	3015	6601	10939	15707
13. Amravati Div.	NA	22041	34755	35700	51636	2955	4534	7350	9562
14. Nagpur Div.	NA	12021	16643	15350	22551	3890	5124	5300	7938
15.Other Dist.	47713	17116	36890	38060	82290	1095	2100	2680	2522
District Total	1110553	1401988	1786002	1523047	1939491	250593	391899	384066	1108516

***Source**: Singh (2007: 323)*

The data demonstrates that there is a strong rural bias among the migrants with respect to their origin. Of the entire lifetime migrants, the number of which in 2001 was 43.70 per cent of the total population, 68.47 per cent came from the rural areas (Table 2.7) and among the migrants from within Maharashtra, the bias was stronger at 74.33 per cent; i.e., three-fourths of all migrants from within the state hailed from rural areas.

However, there is some misunderstanding as to who a migrant is; not everyone who comes from outside the city to take up residence in Mumbai would always remain a migrant. Many migrated individually, only to build up their families by bearing children – statistically, however, they are counted as 'all-time migrants' even though they qualify as locals. Table 2.7 indicates the proportion of the once-migrants by duration of residence. A fifth of the migrant population had stayed for up to 19 years, and more than a fourth for longer than two decades.

Table 2.7: Percentage of Migrants from Rural and Urban Areas to Greater Mumbai*

	1961*	1971	1981	1991	2001
Total Lifetime Migrants	64.24	56.86	51.46	37.46	43.70
Rural	58.13	64.17	66.03	67.65	68.47
Urban	33.16	31.51	31.28	30.04	26.15
Within state Migrants	41.64	41.94	42.47	41.32	37.59
Rural	74.82	78.74	76.33	77.49	74.33
Urban	24.92	20.95	23.64	22.42	20.79
Outside state	53.07	54.50	54.87	56.50	61.01
Rural	50.83	57.14	61.27	63.06	66.42
Urban	42.93	41.69	38.68	36.77	30.05
International	5.25	3.56	2.65	2.01	1.40
Intercensal Migrants (0-9 years)	51.90	38.68	37.16	31.32	31.11
Rural	60.72	66.14	69.81	70.84	71.56
Urban	33.27	31.08	28.95	27.65	25.20
Within state	41.17	41.48	42.29	39.23	30.96
Rural	74.86	78.49	78.16	78.94	76.39
Urban	24.91	21.23	21.76	21.01	21.19
Outside state	55.49	56.46	56.50	59.36	67.99
Rural	53.88	59.49	65.06	67.17	70.45
Urban	41.47	39.45	33.45	32.69	27.41
International	3.31	2.06	1.21	1.26	1.04

Source: *Singh (2007: 320)*

Note: **based on place of last residence (1961 data based on place of birth)*

Box 2.3: Who is a Migrant?

Migration is an important facet of study of populations and migration arises broadly out of various social, economic and political reasons. It helps understand the dynamics of a society, especially one where there are inequities and hope.

It is likely to be more pronounced a feature at this juncture in the socio-economic development of the societies, where states are undergoing faster economic development, particularly in areas such as manufacturing, information technology or service sectors; it is here that data migration profile of population becomes more important.

A person is considered a migrant when he or she is enumerated in census at a different place than his/her place of birth. Moving away from the place of birth could be due to several reasons, including due to marriage, which is the most common reason for migration among females or for work, which is the case generally among males.

If a person being enumerated reports a place of residence previously to have been elsewhere, then he/she is considered a migrant.

In this report, except for a few cases, the criteria of place of birth has been used.

Box 2.4: Why they Migrate?

People migrate because of several reasons. Aspirations, a compelling need to escape their misery even if it means gambling with the future, drives them to the new locations.

They decide, in most cases, to move to an urban area as part of a complex survival strategy.

This can be described by two factors – the 'pull' and the 'push'.

The 'pull' of the city is the prospect of jobs and / or higher incomes, low barriers to migration, the lure or hopes of better access to services and modernity.

The other, which has a significant impact on the trigger to migrate, is the 'push': rapid population growth among low-income groups in rural areas putting pressure on land, fuel and water, loss of traditional tenure lands or sub-division of farmlands making them unreliable source of livelihoods.

What assists them are the networks of friends or relatives who provide a context of familiarity, encouragement and support in the initial stages and then form a larger kinship arrangement of people migrating from a specific place.

Lack of skills does not deter them because in growing cities, the informal sector accounts for a substantial portion of employment and employment growth.

Box 2.5: Migrants and Assimilation

Studies have shown that the longer the exposure of a migrant to a host city's life, more the resemblance with the non-migrants or the locals. The locals could be the earlier migrants who have blended into the environment or their children who have had a relatively easier assimilation into the host community. The dissimilarity between the two population classes tends to blur over time. They may retain their linkages to the roots back home from where they originated but their demographic, social, and economic characteristics change over a period of time. Many sample surveys conducted in Mumbai in the past two decades have highlighted the differentials in demographic and socio-economic characteristics (Gore, 1970; Visaria, 1973; Narain and Gotpagar, 1983; Muttangi & Yesudian, 1984; Sengupta, 1984; Sebastian, 1993; Acharya and Jose 1991). This process is seemingly double-edged in that both the migrants and the locals have together helped evolve a Hindi that is popularly known as *Bambaiyya*.

Reasons for Migration

There are many reasons why people migrate, a dominant reason being an attempt to improve their life chances. They have to plan a survival strategy and migration, and risks and opportunities are part of that strategy. The issues that impose on the quality of their lives, especially incomes, drive the people in what demographers describe is the 'push' that their places of living provides – low wages or lack of employment, fewer opportunities to secure any employment, lack of access to facilities that have a bearing on their health and education, etc. Though it is considered self-evident that in a developing country most of the rural-to-urban population movement is a result of the push factor, cities like Mumbai provide a strong pull as well, making them important choices because of the perceived, and often to an extent real, opportunities to improve their economic status (see Boxes 2.4 and 2.5; see also Box 2.7).

The correlation between the relative economic status of the districts measured by the per capita income and the origin of the migrant is evident from Table 2.8. The per capita income of most districts (except for Pune which is lower than Mumbai's but higher than Thane) from where the migrants came are significantly lower. A similar trend can be seen in the status of other districts of other states from where the migrants felt the 'push'. The per capita incomes of these districts are substantially lower than the state's per capita incomes in the two cited years – Rs. 36,090 and Rs. 41,331 (Table 2. 8). Therefore, economic compulsions seem to be the obvious drivers of migration into Mumbai.

Table 2.9 provides the reasons cited by the migrants to Mumbai as to why they chose to relocate from their earlier homes – work, employment or business, and reflected in all the three Census documents since 1981 are education, marriage and 'others', the last being an omnibus which includes movement of the dependent with or to be with the breadwinner of the family. It is possible that 'other' reasons could be hope of livelihood as well. 'Moving with the family or household' or 'moved because of calamities' are reasons which have an indirect bearing on livelihood opportunities being sought and differentiated from marriage or education as reasons.

Table 2.8: Per capita Incomes of Select Districts, 2005-06 & 2006-07 (Current Prices)

	District	2005-06	2006-07
1	Mumbai	57229	65361
2	Thane	51153	58224
3	Pune	52811	60375
4	Ratnagiri	29214	32946
5	Sindhudurg	29106	33099
6	Raigad	41771	47648
7	Satara	33216	37398
8	Aurangabad	31016	35845
9	Solapur	30667	36186
10	Parbhani	20839	24860
11	Beed	22295	26018
12	Jalna	19936	23436
13	Osmanabad	20232	23760
14	Latur	20469	21998
15	Nanded	18380	21998
16	Maharashtra	36090	41331

***Source**: Economic Survey of Maharashtra 2007-2008, Government of Maharashtra*

Significantly, nearly half of those who provided work, employment, business as the reason for migration are from Uttar Pradesh who came in the decade prior to 2001. A similar response came from migrants originating from Bihar in the same decade. Only about a sixth of the migrants from these states said they had moved due to their marriages. A miniscule 0.91 per cent from UP and 1.31 per cent from Bihar said education was their intention.

Chart 2.3: Percentage of In-migrants in Greater Mumbai

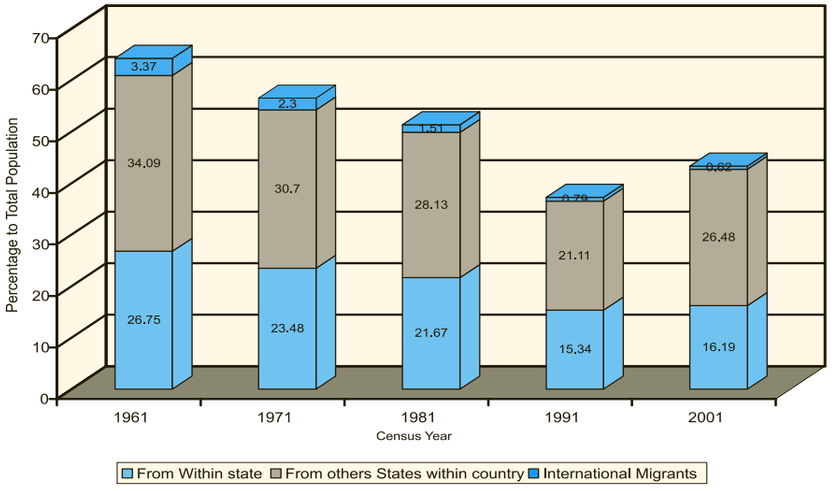


Table 2.9: Percentage Reasons for Migration (All Durations of Residence, 2001)

Sr. No.	Particulars	Total Migrants	Work / Employment / Business	Education	Marri -age	Others
	Total Migrants	100	37.03	1.51	19.44	42.02
A.	Last residence elsewhere in India	100	37.25	1.51	19.60	41.64
I	Within the state of enumeration but outside the place of enumeration	100	30.79	1.79	22.01	45.41
(a)	Elsewhere in the district of enumeration	100	17.92	0.60	14.73	66.74
(b)	In other districts of the state of enumeration	100	31.32	1.83	22.31	44.53
II	States in India beyond the state of enumeration	100	41.86	1.32	17.88	38.93
1	A & N Islands	100	16.12	1.56	5.95	76.37
2	Andhra Pradesh	100	35.74	0.86	18.78	44.62
3	Arunachal Pradesh	100	32.00	10.00	17.60	40.40
4	Assam	100	41.98	2.93	12.51	42.58
5	Bihar	100	58.10	1.31	9.93	30.66
6	Chandigargh	100	29.60	2.56	16.95	50.89
7	Chhatisgargh	100	37.24	2.88	17.35	42.53
8	Dadra & Nagar Haveli	100	25.12	1.67	27.03	46.17
9	Daman & Diu	100	23.99	2.05	25.53	48.42
10	Delhi	100	28.51	2.41	17.19	51.89
11	Goa	100	25.95	3.95	26.71	43.38
12	Gujarat	100	25.65	1.87	25.64	46.84
13	Haryana	100	31.47	1.17	17.88	49.48
14	Himachal Pradesh	100	38.61	1.86	20.02	39.51
15	Jammu & Kashmir	100	38.05	5.11	13.08	43.75
16	Jharkhand	100	60.49	1.85	9.68	27.98
17	Karnataka	100	34.95	1.56	21.81	41.69
18	Kerala	100	42.49	1.78	19.67	36.06
19	Lakshadweep	100	45.76	1.69	10.17	42.37
20	Madhya Pradesh	100	33.22	1.89	21.19	43.69
21	Maharashtra	100	-	-	-	-
22	Manipur	100	37.69	18.13	9.72	34.46
23	Meghalaya	100	32.25	8.83	13.82	45.11
24	Mizoram	100	33.33	17.24	14.94	34.48
25	Nagaland	100	31.89	15.75	8.66	43.70
26	Orissa	100	55.35	1.38	14.02	29.24
27	Pondicherry	100	29.17	1.60	20.91	48.32
28	Punjab	100	32.29	1.38	21.97	44.36
29	Rajasthan	100	38.65	1.55	18.10	41.70
30	Sikkim	100	32.99	7.14	12.59	47.28
31	Tamil Nadu	100	38.07	0.75	21.31	39.87
32	Tripura	100	40.95	1.97	13.82	43.26
33	Uttar Pradesh	100	49.18	0.91	14.35	35.55
34	Uttranchal	100	43.14	1.50	18.85	36.51
35	West Bengal	100	54.37	0.95	13.55	31.13
B.	Last residence outside India	100	23.16	1.10	8.62	67.11
1	Countries in Asia beyond India	100	23.64	0.90	8.20	67.26
2	Other Countries	100	16.76	3.85	14.28	65.12
C.	Unclassifiable	100	42.86	0.00	0.00	57.14

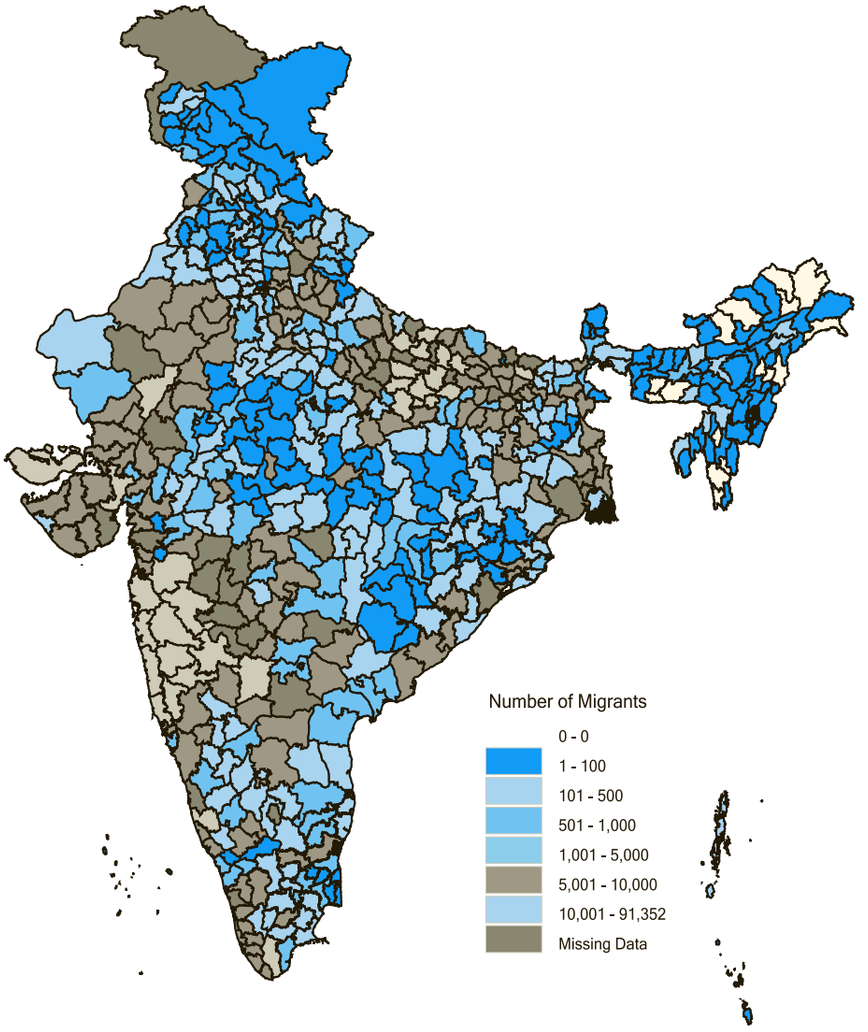
(***Source**: Census, 2001)*

***Note**: Other Migrants includes migrants moved after birth, moved with family / household, natural calamities like drought and others.*

Intercensal Movement of Population

For the first time the 2001 Census has revealed the pattern of migration, indicating a shift to the basis of the district as the place of birth of the migrant. About 59 per cent of intercensal migrants, i.e., migrants between the two successive censuses came from 34 districts in the country, mainly from Maharashtra and Uttar Pradesh (see Map 2.1). The highest number of migrants originated in Maharashtra's Ratnagiri, Satara and, Pune districts, while Jaunpur, Azamgarh, Basti, Siddartha Nagar, Allahabad, and Varanasi districts from the eastern Uttar Pradesh were the place of origin for highest number of migrants from outside Maharashtra. Their male to female ratios are also of significant interest because they tend to adversely impact Mumbai's ratios (see Annexure Table 2A-1).

Map 2.1: Number of Migrants to Greater Mumbai from Other Districts in India, 1991-2001



Source: *Prepared by Dr D.P. Singh, Tata Institute of Social Sciences, Mumbai*
Data from Census of India, 2001 and using DevInfo ver 5.

There has been a considerable decline in migration from other countries, especially from Pakistan, i.e., those who reported their place of birth as Pakistan, being mostly survivors from the Partition days. The notable aspect is that near about 2,000 immigrants (Table 2.5) are recorded in every census since 1981 as hailing from Bangladesh, which is likely due to gross undercounting (Table 2.5). It may be observed that the number of migrants from West Bengal have increased more than two-and-a-half times in a decade from 1991 to 2001. It seems reasonable to assume that most migrants from Bangladesh could have mis-declared West Bengal as their place of birth, fearing personal security due to hostile politics in Mumbai. Some similarity in language as well as culture may have helped them pass muster despite their illegal status; they came not as declared immigrants citing reasons and seeking asylum. However, in view of the paucity of information to definitively state the same, it remains simply an assumption yet to be proven.

Ward-wise Population

The physical city, divided into wards for the civic body's administrative convenience, offers geographic units for discussing the various population and other relevant trends, like provisioning of facilities, including and especially in the education and health sectors. Health, measured in life expectancy; knowledge, measured as mean years in school and literacy; and incomes have a bearing on what is now known as human development of people. These are vital indicators of well being.

Broken down into wards, the larger numbers relating to the entire city lend themselves to easier, even understandable dimensions. They, in turn, enable clearer comparative profiles because the city, despite being one whole, is not heterogeneous in all respects. Not all of the wards are alike in their demographics, living conditions, facilities, and offer interesting perspectives.

Ward-wise distribution of population shows two distinct population growth trends over the last five decades. The area comprising Wards A to G recorded varying growth rates; it was slow and even negative in Wards B, C and E, while Wards G and F registered higher growth. In contrast, wards in the eastern and western suburbs recorded very high population growth (Table 2.10 and Map 2.2). Significantly, these suburban wards together recorded high population growth. During 1991-2001, the West Section of K Ward and the North Section of P Ward in the western suburbs recorded very high growth. All the sections in eastern suburbs especially of Wards L, M, S, and T increased in absolute number as well as in percentage growth. Between 1981 and 1991, Ward B continued to show a decline but surged in the subsequent decade.

Sex Composition

The sex ratio according to the Census of 1961 and 2001 increased from 663 in 1961 to 811 in 2001 across Mumbai. Two reasons account for this trend. One would be the strong preference for a male child, including perhaps the use of the prohibited amnio-centesis method of gender selection and probable

Map 2.2: Section-wise Decadal Growth Rate of Population of Mumbai 1991-2001

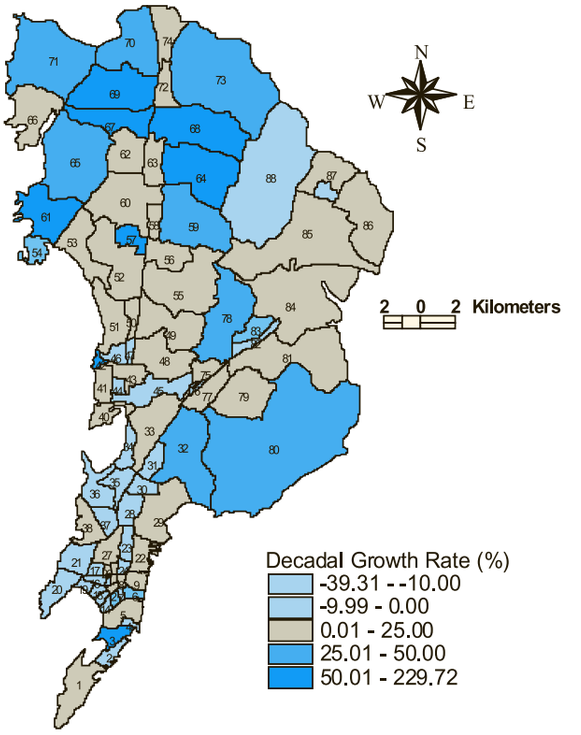


Table 2.10: Ward-wise Population of Mumbai: 1961-2001

Wards	Census Years				
	1961	**1971**	**1981**	**1991**	**2001**
A	195668	184104	168223	194844	210847
B	175056	175131	147313	117722	140633
C	339452	312472	270705	197228	202922
D	353646	448602	445393	401548	382841
E	498814	462876	455711	410824	440335
F	549120	662516	814703	-	-
F/S	-	-	-	417136	396122
F/N	-	-	-	430687	524393
G	660177	824677	982992	-	-
G/N	-	-	-	560052	582007
G/S	-	-	-	444848	457931
H	290405	523633	706838	-	-
H/W	-	-	-	317661	337391
H/E	-	-	-	452162	580835
K	302906	573693	925682	-	-
K/E	-	-	529244	692586	810002
K/W	-	-	396438	575994	700680
P	167625	372335	-	-	-
P/S	-	-	296075	350948	437849
P/N	-	-	367641	603877	798775
R	117377	235833	-	-	-
R/S	-	-	172835	335317	589887
R/N	-	-	389081	619434	363827
R/C	-	-	-	-	513077
L	142055	273507	434007	616592	778218
M	135721	316371	565770	-	-
M/E	-	-	-	470662	674850
M/W	-	-	-	352254	414050
N	165496	479660	877881	507329	619556
T	58536	125165	222555	289182	330195
S	-	-	-	567004	691227
Total	**4152054**	**5970575**	**8243405**	**9925891**	**11978450**

Note: *Wards' boundaries of 2001 are used. In 1991 and 2001 some of sections were divided across wards such as M/E and M/W. Ward S was created from N and T Wards.*

female infanticide; and the second being the migratory pattern which is predominantly male-first. Anecdotal evidence does suggest that those who migrate from the northern regions of the country to Mumbai are males who first find their footing in the city – livelihood, accommodation, and a comfort level that enables them to bring their dependents. But this is so only after a time lag, and sometimes significantly so, from the first arrival of the male.

However, the trend among those who shift to Mumbai from the southern states show a better sex composition, with significant numbers coming in along with their spouses to start their lives as families in Mumbai. The trend among the intra-state migrants is a mix of the two trends.

According to the 2001 Census, it was found that the sex ratio was 811 females to every 1,000 males. Disaggregated between the non-migrant and migrant populations, a pattern emerges wherein it is 903 among the non-migrant population and 854 among intra-state migrants, and 615 among the migrants from other states (Table 2.11). The sex ratio among the rural migrants was much lower than from those who hailed from other urban areas. The most noticeable improvement over decades has been among the urban intra-state migrant with a high ratio of 1,011.

Table 2.11: Sex Ratio (Female per Thousand Males) of Migrants and Non-Migrants, Mumbai: 1961-2001[1]

		Census Years				
		1961	**1971**	**1981**	**1991**	**2001**
Total Population		663	717	772	818	811
Non-Migrants	Total	909	905	894	857	903
Intra-state Lifetime Migrants	Total	585	631	714	825	854
	Rural	536	580	647	761	809
	Urban	756	881	991	1099	1011
Inter-state Lifetime Migrants	Total	509	553	626	706	615
	Rural	399	467	532	619	535
	Urban	618	700	812	887	803
Lifetime Immigrants		772	828	895	881	801
Intra-state Intercensal Migrants	Total	644	717	804	990	971
	Rural	598	668	740	922	920
	Urban	804	924	1075	1298	1164
Inter-state Intercensal Migrants	Total	501	597	658	766	552
	Rural	418	516	568	685	480
	Urban	625	737	857	961	763
Intercensal Immigrants		790	737	778	711	473

***Source**: Singh (2007: 322)*

1 In 2001, Rural Urban classification is based on place of Last Residence. In 1961-1991 Census, lifetime migrants are based on place of birth data. The intercensal migrants, data are based on place of last residence except in 1961.

All wards of Mumbai show significant increases in the deficit of females. The eastern and western suburbs show better sex ratios compared to the parts in all the five census years. The Mumbai city Ward C recorded the lowest sex ratio in 2001 (Table 2.12), which also indicates a serious decline from 732 in 1991 to 587 in 2001. The general improvement in sex ratio seems due to inter-ward movement of population and migrants who came at different periods of time, and higher female growth during the decades. Ward C has the lowest – that is, the most adverse – sex ratio while Wards H/E and Ward T have the highest.

Table 2.12: Ward-wise Sex Ratio (Female per Thousand Males) Mumbai: 1961-2001

Wards	Census Years				
	1961	**1971**	**1981**	**1991**	**2001**
A	517	588	721	761	733
B	631	648	723	813	735
C	604	623	659	732	587
D	691	751	817	872	863
E	604	640	692	782	755
F	657	702	751	794	808
F/S			720	769	831
F/N			800	819	791
G	628	670	720	782	786
G/S			663	734	773
G/N			795	822	800
H	768	794	836	855	834
H/W			920	915	800
H/E			797	817	894
K	740	768	807	850	842
K/E			844	832	837
K/W			779	872	847
P	740	772	800	822	809
P/S			785	815	801
P/N			813	818	813
R	794	790	803	827	820
R/S			794	783	760
R/N			807	859	892
R/C	-	-	-	-	821
L	688	698	733	767	760
M	757	794	805	824	812
M/E			784	840	801
M/W			812	849	829
N	699	744	788	830	855
T	807	815	853	884	894
S			742	813	822
Total	**663**	**716**	**772**	**818**	**809**

***Source**: Census of India, 2001*

Population Densities

Being surrounded by sea on three sides, Mumbai has severe space constraints in growing beyond its present limits. This has aggravated the population pressure, and the population density, defined as number of persons living in 1 sq km, presents a striking feature. As a consequence of the population rise, the density has been constantly on the increase, and in 2001, over 27,000 persons on average were living per sq km. There has been a four-fold increase since Independence, and when examined ward-wise, the picture is quite disturbing. A miniscule 15 per cent of Mumbai – called the 'city' or the 'island city' as explained earlier – is home to about 48,000 persons per sq km. In that region, Ward C is the most densely populated, perhaps in the world, with more than 1 lakh people (Table 2.13) living in area of 1.8 sq km (see also Box 2.6).

Variegated density distributions, a feature of other cities across the globe, are seen in Mumbai as well with special characteristics. The compulsions of space have driven it to such phenomenal density levels, with people suffering sub-standard living conditions. This will eventually force a situation where the debate on urban sustainability would have to come up with

Table 2.13: Wardwise Population Density, per sq km in Greater Mumbai: 1951-2001

	Area in sq km	1951	1961	1971	1981	1991	2001
Greater Mumbai	437.71	6841	9486	13640	18833	22677	27366
Mumbai City	68.71	33882	40358	44681	47824	46342	48581
A	11.41	13848	17178	16126	14724	17381	18479
B	2.46	68293	71138	71138	60163	47854	57168
C	1.78	178652	191011	175843	152247	110802	114001
D	6.63	41780	53394	57768	57919	52018	57744
E	7.41	63293	67341	71255	69771	63089	59424
F	21.17	19414	25933	31271	38498	40048	43482
G	17.85	29524	36975	46218	55070	56297	58260
Western Suburbs	210.34	2078	4169	8101	13588	18770	24400
H	21.05	7458	13777	24893	33587	37944	43621
K	47.46	3245	6384	12073	19490	26184	31831
P	64.27	1245	2598	5788	10331	14450	19241
R	77.56	593	1509	3030	7246	12608	18912
Eastern Suburbs	158.66	1437	3151	7526	13230	17667	22111
L	13.46	6315	10550	20282	32244	45809	57817
M	54.92	765	2458	5754	10288	14984	19827
N	55.44	1299	2976	8658	15837	19125	11175
T	34.84	832	1665	3588	6372	8704	9477

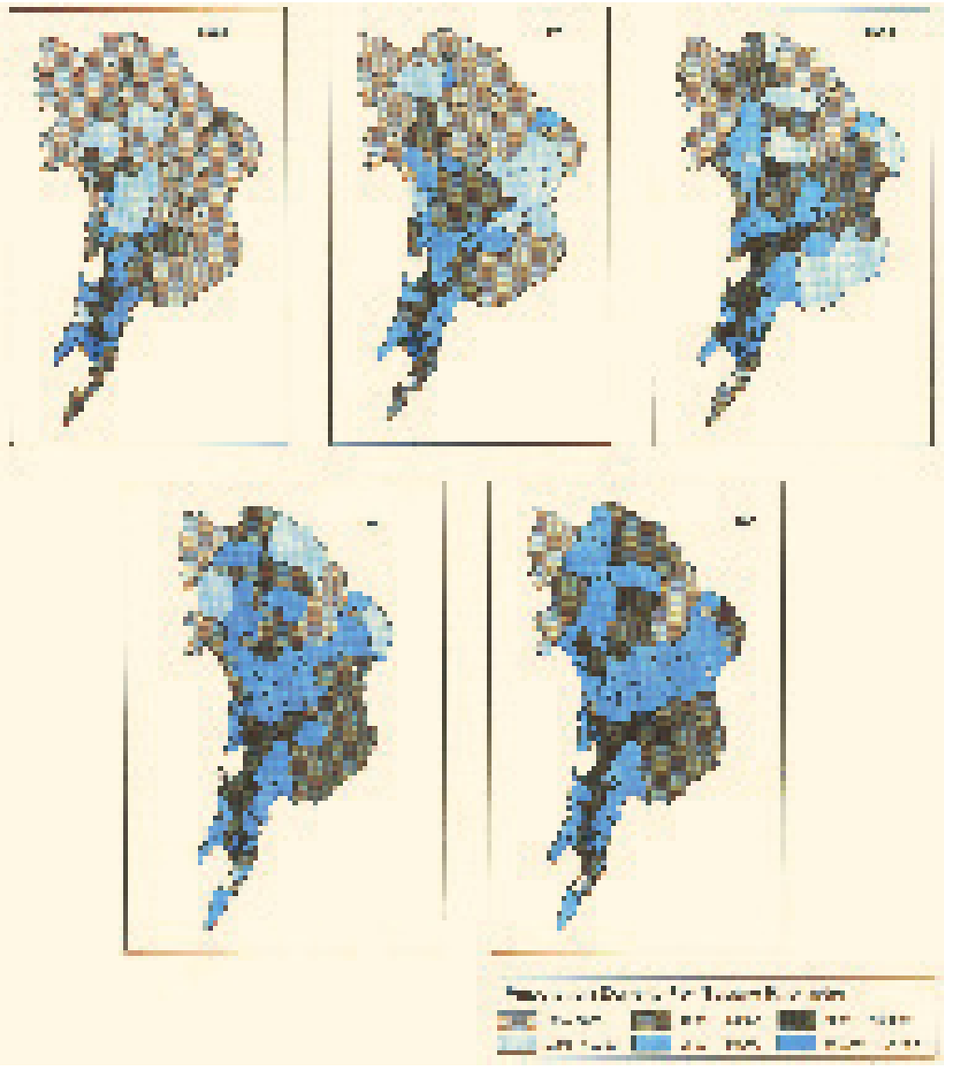
***Source**: Census of India, 2001*

sustainable answers failing which, the city, already at its tipping point, would rapidly degenerate.

Within Mumbai, there has been a distinct change in the population's spatial distribution since the 1970s. Over the 1901-1971 period, the population in the island city steadily increased and was always more than that in the suburbs. But during the last three decades, the population growth in the island city was negligible. In the suburbs it moved up rapidly where the western suburbs (Wards H, K, P and R) have more population than those in the eastern suburbs (Wards L, M, N, S and T). Gross density in the western and eastern suburbs has registered a three-fold increase over the 1971-2001 periods while all of Mumbai doubled over the 1971-2001 period (Table 2.13 and Map 2.3).

The Census of 1991 and 2001 indicate that the densities had declined in oldest wards while Wards F and G increased by nearly 3,000 and 2,000 persons per sq km during 1981-91 and 1991-2001. In comparison to Mumbai 'city', the western and eastern suburbs had lower densities of 4,169 and 3,151 persons per sq km in 1961, respectively. It increased in both

Map 2.3: Mumbai: Population Density, 1961-2001



Source: *Prepared by D.P. Singh and A. Shaban, Tata Institute of Social Sciences, Mumbai.*

the suburbs by six to seven times during 19612001 to reach nearly 24,000 and 22,000 persons per sq km in 2001. The change in density during the last five decades indicates the faster movement of the population from city to suburbs as well as the settlement of new immigrants in the suburban areas.

Implications and Conclusions

Mumbai is a city with a past, an imperfect present and uncertain future; uncertain despite the hope and vision of becoming a city of the future. Its functional capabilities are severely strained despite a continuous

Box 2.6: Choking-Up

If Mumbai had no other cities on its fringes, there is no telling what the population pressures on it would have been, especially because saturation levels have been reached already. One educated assumption is that it would have been more crowded, more chaotic, in shambles and on the verge of collapse.

The lure of Mumbai, however, continues and that implies the unremitting attraction for the migrants who come seeking a better life with or without skills that could secure it. Mumbai's expansion in area and in numbers of its population has been mainly driven by migration.

Constraints of space in Mumbai have never halted the urge to shift to it and not only has it pushed demand for housing in the formal sector but led to more slums which are getting denser. However, the satellite cities on Mumbai's doorstep have taken some pressure off Mumbai. They have been absorbing, thankfully, the post-1991 substantive migration.

Population growths in some of these satellite cities explain that nicely. For instance, Kalyan and Mira-Bhayandar grew by 645.33 per cent and 583 per cent in 1981-91, respectively, compared to 36.67 per cent and 141.99 per cent in the previous decade. Navi Mumbai, which held the least attraction initially, found 3,07,724 persons taking up residences there during 1981-91. The headcount in the Mumbai Urban Agglomeration, which comprises other cities with Mumbai during the 1991 Census and 2001 Census, indicate an increase in population by 38,37,643. Mumbai city, on the other hand, registered an increment of 20,52,559. The difference between the two which is 17,85,084 is what the outlaying cities absorbed.

This could be attributed to two causes.

One, the residents of Mumbai sold their tenancies or ownership rights to others and migrated to northern parts of the suburbs or the satellite cities driven by relatively cheaper housing there and to accommodate their own growing families. Two, the migrants preferred to pitch camp in the new cities given the access by the transport system to Mumbai which continues to be the main provider of livelihoods. The trains could be woefully inadequate and crowded, travel by them traumatic, but it does offer a risky passage.

Had these cities been not organically attached to Mumbai but, as satellites, been at some distance needing longer commutes, their growth would perhaps have been slower and weaker. In the bargain, they would have led to worse increases in population pressures directly on Mumbai, creating a far worse situation than as is now prevalent – congestion. These cities have prevented Mumbai from choking up.

***Sources**: Census of India, 1991, 2001; Maharashtra Human Development Report, 2002, Chapter 3: Population: Trends and Prospects, p. 11*

but slow makeover process. Mumbai continues to see population increases although its capacity to hold them is long gone. Migration continues to be a significant issue and there appears no mitigation in sight. It is intractable because people cannot be stopped physically from relocating for it would impinge on the constitutional rights of the Indian citizens' free movement.

The city's services – drinking water, sanitation, and transportation or other basic services – are stretched. Even the streets in several pockets does not serve the purpose for which they were laid out – with passages being taken up for other activities like hawking. Overcrowding has its own negative impact starting from sanitation and precision of neighbourhoods. The psychological implications remain to be assessed. This over-congestion is only bound to exacerbate living conditions across Mumbai, whether in well laid out multi-storeyed cooperative society buildings, the stench-filled slums, or the *chawls* or tenements.

The more a city grows positively, more it tends to attract in-migrants. A city which is getting denser by the year continues to be the main draw for the migrants from other regions; and the cities on Mumbai's periphery, by turning into dormitories, have only partly eased the pressures on Mumbai. However, migrants alone do not populate these areas. Many families have migrated from Mumbai itself to these locations, driven by relatively affordable housing, notwithstanding commuting woes on overcrowded trains.

Though migration is now being captured by the adjacent cities, all within the Mumbai Metropolitan Region, it still has an adverse impact on Mumbai which has a higher daytime concentration of people, and the related consequences like overcrowded trains used for the commute to work and back, and the associated

Box 2.7: Migration–Some Hidden Facts

- Migration accounted for 43.7 per cent of population growth between 1991-2001, and natural increase 61 per cent.
- The highest percentage of migrants originated from within Maharashtra (37.4 per cent) followed by Uttar Pradesh (24.3 percent) and Gujarat (9.6 per cent). Migrants from four southern states—Karnataka, Tamil Nadu, Kerala, Andhra Pradesh were at 16 per cent.
- Migration of people from North Indian States increased substantially from 1961 to 2001 and contribution of South Indian States declined.
- Changes in the sex ratio of a population is an important indicator of who amongst those migrated, finally settled in the city. The increase of sex ratio of migrants was much more remarkable among migrant from 'within' Maharashtra (that is 854 females per thousand males in 2001) as compared to migrants from other States (615 in 2001).
- Migrants are engaging in the production-related occupations – at least half are becoming indispensable to the city's economy by filling in cheap labour-oriented and unskilled jobs.
- Much of the migrant population is absorbed in Mumbai's in urban agglomerations – Navi Mumbai, Thane, Kalyan, and Mira-Bhayander sparing Mumbai from choking up. The rate of migration is much faster in these urban agglomerations than in Greater Mumbai.

physical and mental stresses. These cities too are growing by leaps and bounds signalling that the attention has to shift to the spread on the periphery. But they are without strong internal economic models save for a small stretch of the Thane-Belapur road, or even any adequate facilities that would sustain them and their populations *in situ* without having to access Mumbai for a livelihood. Without that, Mumbai would continue to be burdened and overcrowded.

Investments in Mumbai itself would have to continue but at a faster pace to catch up with the demand curve of the infrastructure to sustain, at best, the present level of all activities. The situation is serious enough to suggest greater outlays on provision of services, enhancement of the quality of these services to withstand the pressure of numbers, greater attention to improving perspective planning, and efficient execution. Above all, the city would require working in tandem with the peripheral cities to ease the strain on the facilities that provide the linkages between them and Mumbai.

Ultimately, when numbers continue to expand, it is not easy to contemplate or forecast a positive scenario for the people. Renewal and rebuilding has not been a successful effort, since it has barely started. It never had the time, having to constantly catch up with numbers. Any remedies hitherto applied have therefore been inadequate and often rounded by the complexities. The solution to Mumbai's population issue therefore lies outside of it, especially in the peripheral cities, which are as of now unable to engage the resident populations there in self-sustaining economic activity.

To enable that would call for huge but focussed investments because the metropolitan area minus Mumbai is about eight to nine times Mumbai's size with a population scattered in relatively small pockets but with very little inter-connectivity. These peripheral cities should be enabled to weaken the attraction Mumbai holds. Also, a greater interconnectivity between them is critical to such a force emerging and sustaining any economic activity which should bypass Mumbai. Otherwise, Mumbai will not be a city of people but of only numbers. Everything is getting subordinated to numbers.

Economy, Equity and Livelihoods

Obverse: Photograph 1 and graphics, and photographs 2 and 3; this page: photograph 4, courtesy AIILSG.

3. Economy, Equity, and Livelihoods

Doing Well and on Equity, Badly

People make cities and give them their respective distinct character, including the economic character. The cities in turn influence the way people live, including the time they manage, or are forced to allocate, for different activities, be it for livelihood or personal lives. The cities evolve to meet the requirements and compulsions of either those who constitute the larger section of the populations, or those who are willing to pay for facilities. They also influence the contours of the lives of those who live in distant rural habitats offering hope, hardships and survival, and then playing host to them.

Mumbai is one such city, perhaps arguably more so than any other in India. It has successfully put to test the notion that all migration from rural areas is mainly due to the 'push' factor. As discussed in Chapter 2, demographers hold that the 'push' factor is a major cause of the migration compulsion. But in Mumbai's case, its economy provides the additional 'pull' that persuades the rural migrant to opt to move. The common belief among new migrants settled here for a period of time is that 'no one goes hungry' in Mumbai, and that it is a 'city of dreams', which is an all too powerful a magnet. This, in turn, that has overcrowded Mumbai.

Informal Sector

This is so despite the decline of the manufacturing sector which once accounted for most jobs. There has been a shift to the tertiary or services sector due to relocation of industries. The demand for livelihoods has made the services sector the foremost, and arguably the fastest growing, component of Mumbai's economy. In fact, the sector, increasingly informalised, seems to provide the best spark for an individual's hope of finding better living wages here and a life less hard than that in the much sharper rural inequities. The greater the number of migrants into the city, the more powerful the demonstration that migrants have a chance of success – this constitutes the strong pull for additional migrants.

Mumbai is migrant-friendly and migrants have a share in its economic growth. Most of the newer migrants provide the cheap-labour orientation to the market, especially in the informal services sector. There is another level of migrants, educated and skilled, with specific industry orientation who come for middle- and higher-end jobs. They have no problem in finding housing and integrating in their class of peers, with both local and other migrants.

Migration's Impact

The effect of the growing population comprising both locals as well as migrants has been a qualitatively important determinant of the economic development processes over decades in this geographically compact city. The migrants came with poor, little or no skill sets, and chose to grab any opportunity that they stumbled upon to re-start their lives. They may not hit the high trajectory straightaway but do hope of an

eventual better employment, or scope for foraying into small, informal businesses (see also Box 3.5).

The services sector's share in the economy is close to three-fourths of the total, accounting for a large number of the working population. The proportion of the informal sector, which is 36 per cent of the total income generated by the sector, explains both the nature of the ever-growing economy and the migrants' role in it. Their participation in the home or cottage manufacturing cannot be ignored. Because Mumbai presents comparisons and contrasts of immeasurable magnitude, it is difficult to properly assess quantitatively the differentials between the poor and non-poor, but urban poverty and deprivation are clearly visible in the city. The disparity between the monetary and real standards of various segments of the population is also enormous. The migrant also contributes to urban poverty.

In sum, Mumbai is doing well because of high per capita incomes, and badly; because of huge disparities in incomes and possessions. Income disparities have not been measured precisely but income-based polarisation is visible. The inequitable distribution of incomes is actually an unbecoming spectacle in Mumbai. It is a spatio-sectoral segregation, the scale of these two physical spaces themselves being phenomenal and not seen elsewhere in India. It is less to do with the urban use of space but more to do with the implications to equity, or lack of it. Economically, Mumbai is the least homogeneous city.

Poverty, unaffordable housing and lack of adequate housing supply are chief causes of proliferating slums. If 3,683 relatively cheaper flats by the Maharashtra Housing & Area Development Authority (MHADA) attract over 7 lakh applicants, it tells something about housing stocks' pricing in Mumbai. Housing is so exorbitantly priced that even the middle-class tends to move into hutch-like apartments, into tenements whose sizes preceed only slums – *chawls*. But whether urban growth comes from migration or by natural increase in population, the growth of urban areas has always included a huge number of the urban poor. That is because, by their very nature, cities concentrate poverty and, at the same time, represent the best hope for the poor attempting to escape it. Urban dynamics have not yet managed to deal with the poverty.

Most migration is of the unskilled class. These migrants fit into menial or minor jobs, or are under-employed in the economy. Such livelihoods account for the bottom of Mumbai's economic pyramid. When they try self-employment in desperation, even if it offers only tenuous livelihoods initially, they provide the contours of very tiny enterprise. They are the strivers, game for a struggle, wanting to shed the indignity of poverty often because of their place of birth; places which are backward and have no jobs to offer. They settle for the long haul to improve their life by bringing in the capital of sweat and persistence to their host city. They are willing to take any risk for survival.

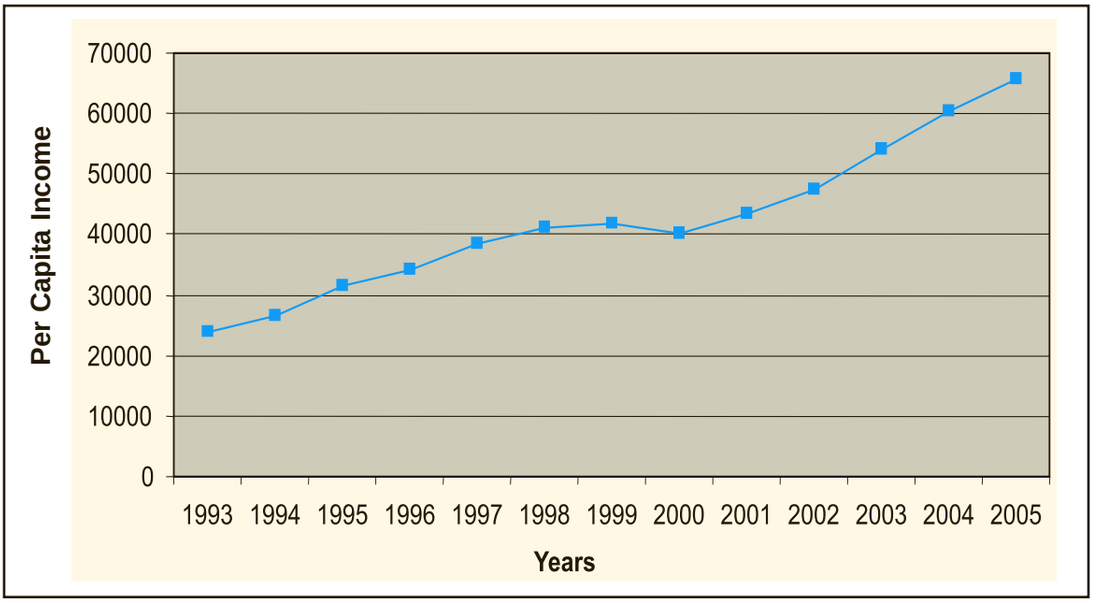
But the question remains: does the city have that inherent sustainability to absorb such regular flow of migrants indefinitely?

Poor Skill Sets

In 1958-59, a team led by D.T. Lakdawala, which conducted the pioneering, methodical sample survey of the economic status of the Mumbai residents, found low skills among the slum dwellers who were mostly migrants. These low-level skills can be described as 'acquired urban skills', those required for a livelihood in a city and to meet its specific needs, and conceptually far from what they had seen or experienced. The resultant incomes were quite low in comparison to the wages in the formal sector where the employer had to bear higher costs.

The service sector, especially the informal segment, is the bedrock of an urban region, especially the larger cities. This is found to be useful because the migrants assume low wages and then price their

Graph 3.1: Per Capita Income at Current Prices



***Source**: Derived from data in Table 3.1*

Table 3.1: Population, Net District Domestic Product and Per Capita Income of Mumbai: 1991–2001

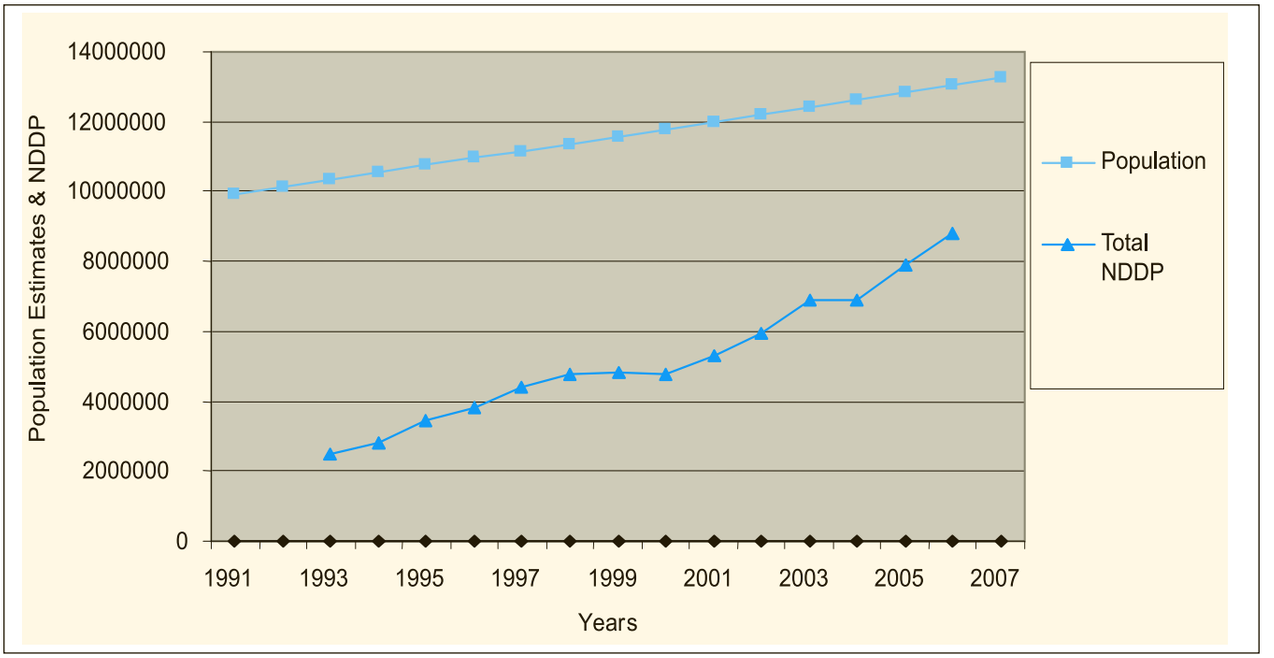
Year	Population*	Total NDDP** Mumbai (Rs. in Lakhs)	Per Capita Income (Rs. in Lakhs)
1991	9925891	2516237	0.253502
1992	10111505	2834059	0.280281
1993	10300590	3460671	0.335968
1994	10493211	3803220	0.362446
1995	10689434	4377596	0.409526
1996	10889327	4780675	0.439024
1997	11092957	4827597	0.435195
1998	11300396	4750427	0.420377
1999	11511713	5279394	0.458611
2000	11726982	5927865	0.505489
2001	11978450	6891971	0.575364

***Source**: Census of India, 2001*

Note: * 2001 Census

** Directorate of Economics & Statistics, Government of Maharashtra, Mumbai.

Graph 3.2: Population Growth and Total NDDP of Mumbai: 1991–2007



***Source**: Derived from data in Table 3.1*
***Note:** Census Population figures were available for the years 1991-2001 and the estimates for 2007 were available with the Public Health Department, MCGM, 2006 and MCGM website at http://www.mcgm.gov.in. On their basis, the population figures using formula for incremental growth rate for the population annually for post 2001 period have been estimated. The difference between 2001 and 1991 was taken into consideration to estimates of population for the in-between period. Similarly, the difference was considered between 2001 and 2007 separately.*

services appropriately, and become an integral part of the whole economic dynamic of a city. They are – like home manufacturing – a parallel to the formal sector, save a few exceptions, and more entrepreneurial in approach than is normally acknowledged.

Population and Incomes

Graphs 3.1 and 3.2, and Table 3.1 offer an interesting correlation between the growing population (with growth coming significantly due to migration) and the city's per capita income, which did not decline in the same period. Though the population shows a consistent upward trend, the per capita incomes have not lagged behind. They have in fact doubled, for instance, between 1991 and 2001, and continue to grow, implying that migrants have not diluted the economic strength of Mumbai, but may have actually contributed to it. In other words, migration has not been adverse but has actually served Mumbai well.

Mumbai's economy can be the envy of several states and cities. The city's per capita net income was Rs. 65,361 at current prices in 2006-07 which is one and a half times that of Maharashtra's Rs. 41,331, and twice the country's average per capita income of Rs. 29,382. However, these figures do not reveal the wide disparity of incomes across the city where both extreme wealth and absolute poverty are clearly visible. Mumbai is much riddled with urban poverty even as it is home to many overwhelmingly rich people (Box 3.2).

Box 3.1: Transition to Services

Once a textile manufacturing hub, the city's socio-economic structure has witnessed a sea change due to a paradigm shift in business activities – a switch from 'manufacturing' to 'services'. This has resulted into a dramatic change in employment opportunities and job profiles in virtually every sector.

Mumbai continues to have an undisputed significance in the Indian economy. The financial capital of India is probably the best-known face of India to the international community, handling approximately one-third of the country's foreign trade, in terms of value, and a similar proportion of India's software exports originating from the city. The manufacturing enterprises have gradually given way to service-based businesses mainly in sectors like Finance, IT, Telecom, Tourism, Entertainment, Advertising and Communication, etc.

The replacement of manufacturing jobs by service sector has been a gradual process. In 1981, the industrial sector accounted for 44 per cent of the jobs, while the services sector accounted for 54 per cent. By 1991, the share of the industrial sector in employment declined to 39 per cent, while that of the services sector increased to 60 per cent. Now, three-fourths is the share of service sector. This transition during the eighties has much to do with the closure of the textile mills, followed by the prolonged strike of textile workers. Subsequently, there was also a large-scale relocation of engineering, chemicals and pharmaceutical industries from Mumbai to locations elsewhere.

***Source**: Planning Commission, Government of India*

Big Shares

So significant is Mumbai's economy to the country that it has few peers. According to the Mumbai Metropolitan Regional Development Authority, in its report *City Development Plan – Mumbai*, 33 per cent of the country's income tax, 60 per cent of customs duty, 20 per cent of central excise duty, and 40 per cent of foreign trade is generated in Mumbai. That makes Mumbai an economic powerhouse.

A study by Indicus Analytics listed Mumbai (including Suburban Mumbai and Thane, in the absence of other city-to-city comparisons) as a city with the highest income measured as the District Gross Domestic Product in 2006-07 (see Table 3.2) amongst the metropolitan cities. There are regions now with higher growth rates but Mumbai remains at the top. Given this high level of income generation the region has been experiencing rapid growth. This growth, which spills over to the neighbouring cities, has influenced the quality of life in the city.

Box 3.2: Contribution of Mumbai to Economy of India

- Share in Tax Collection in India : 33 %
- Share in Customs Duty Collection : 60 %
- Share in Central Excise Collection : 20 %
- Share in Foreign Trade : 40%

***Source**: Mumbai City Development Plan, 2006*

Table 3.2: Economic Growth in Top 10 City Regions based on Total Gross Domestic Product (GDP)

City Regions	Total GDP at Current Prices, 2006-07 (Rs in Crores)	GDP Growth Rate (%, 2001-02 to 2006-07)
Mumbai (+ Suburbs + Thane)	200,483	8.5
Delhi (+ NCR)	160,739	8.4
Kolkata (+North and South 24 Parganas + Howrah)	100,229	6.3
Chennai (+ Thiruvallur + Kanchipuram)	63,195	6.2
Bangalore (+ Bangalore rural)	58,792	10.3
Pune	48,116	7.4
Ahmedabad	47,561	10.1
Hyderabad (+ Rangareddi)	42,931	7.8
Surat	33,332	11.5
Barddhaman	24,291	6.6

***Source**: 'Indian Development Landscape', Study by Indicus Analytics, available at http://www.indicus.net/Products/Home/Product%20Details/Indian%20Development%20Landscape/*

Income and Per Capita Income

Mumbai's per capita income is twice that (see Table 3.3) of Maharashtra, but the growth in per capita income is slightly less in Mumbai as compared to the state in this period. This is true for total incomes as well. The plausible explanation to this lies in more

Table 3.3: Income–1993-94 to 2005-06 at Current Prices

Year	Total NDDP		Per Capita NDDP		Contribution of Mumbai to State Income
	Mumbai	Maharashtra	Mumbai	Maharashtra	
	Rs in Lakh		Rs	Rs	(%)
1993-94	2516237	10349187	24012	12390	24.31
1994-95	2834059	11843034	26476	13880	23.93
1995-96	3460671	14256492	31661	16363	24.27
1996-97	3803220	16285771	34090	18313	23.35
1997-98	4377596	17720226	38460	19531	24.70
1998-99	4780675	19267006	41189	20825	24.81
1999-2000	4827597	22030412	41907	23340	21.91
2000-01	4750427	22110904	40105	22992	21.48
2001-02	5279394	23943170	43369	24450	22.05
2002-03	5927865	26528972	47575	26697	22.34
2003-04	6891971	30057582	53960	29770	22.93
2004-05	7892898	33825401	60304	32979	23.33
2005-06	8798965	38624067	65625	37081	22.78

***Source**: Directorate of Economics and Statistics, Mumbai*

rapid growth of other cities and regions in the state. The growth in Mumbai could have been higher, if some of the city's traditional industries like textiles and manufacturing had not declined, and had the assets been better deployed and infrastructure constraints been overcome or weakened (see Box 3.1).

A peculiar aspect of Mumbai's economy is that a significant part of the working force employed in the city commutes daily from adjoining areas such as Navi Mumbai, Thane, Dombivali, Kalyan, Mira Road, Vasai, and Virar. Such population is enumerated in their places of residence at the time of the Census, and, therefore, in estimates arrived at by the 'Allocation' method, their contribution could not be considered as Mumbai's. That leads to underestimation of net domestic product for Mumbai. But the underestimation is reduced to some extent because there is reverse flow of workers/employees from Mumbai to adjoining areas in Thane and Raigad districts, though not equally compensating.

Real Per Capita

The real per capita income which is income deflated for price rise and taken per capita, is considered to be an adequate indicator of wellbeing. It increased from Rs. 36,501 in 1993-94 to Rs. 51,938 in 2005-06, an increase of 1.4 times or 42 per cent, while the state registered an increase in real per capita income of 1.6 times or 61 per cent, from Rs. 18,909 in 1993-94 to Rs. 29,085 in 2005-06. While the growth or rise in real per capita income in Mumbai is less than that registered for the state as a whole, it is almost double that of the state. Tables 3.3 and 3.4 indicate that Mumbai contributes between a fifth and a fourth of the state income. The other conclusion is that other regions/cities/districts in Maharashtra are growing faster than Mumbai.

Table 3.4: Real Per Capita NDDP at 1993-94 Prices for the Period 1993-94 to 2005-06

Year	Total NDDP		Per Capita NDDP		Contribution of Mumbai to State Income
	Mumbai	Maharashtra	Mumbai	Maharashtra	
	Rs in Lakh		Rs	Rs	(%)
1993-94	3825549	15797257	36501	18909	24.22
1994-95	3848311	16103037	35942	18868	23.90
1995-96	4308440	17819500	39403	20445	24.18
1996-97	4408846	18659851	39500	20973	23.63
1997-98	4884100	19614839	42884	21606	24.90
1998-99	5095464	20415615	43866	22049	24.96
1999-2000	4827597	22030412	41907	23340	21.91
2000-01	4639900	21302010	39172	22151	21.78
2001-02	4883327	22152682	40116	22622	22.04
2002-03	5282419	23788445	42395	23939	22.21
2003-04	5781841	25509512	45268	25265	22.67
2004-05	6435351	27733929	49168	27040	23.20
2005-06	6963884	30295239	51938	29085	22.99

Source: *Directorate of Economics and Statistics, Mumbai*

The per capita incomes hide a sombre picture of huge disparities. There are people who are the very rich, the rich, the middle class, the poor and the very poor because most Indian cities are without inclusive growth. Income poverty is an inadequate measure but there are few available data to judge that aspect. However, official statistics reveal a dismal picture of at least 12.17 lakh, i.e., close to 10 per cent of total population, reporting incomes of less than Rs. 591.75 per month. The survey was done on 54 socio-economic parameters including housing, education, and infra-structure availability, which tries to profile the status on the basis other than only incomes.

Though in 1998 it was reported that poverty was much low at only 8.5 per cent and much below the national and state urban averages (Government of India 2001), a baseline survey of 16,000 slum households by MMRDA for its Mumbai Urban Transport Project had a different story to tell: with an average monthly household income of Rs. 2,978, 40 per cent of them were below the poverty line. If confusing, these various sets of statistics at different point of time do indicate that Mumbai is beset with poverty even if the precise extent remains to be determined.

Per Capita Consumption Expenditure (PCCE) is another proxy indicator for income. Data from the National Sample Surveys conducted by the NSS provide the composition and pattern of expenditure across various groups. It indicates levels of spending on food versus non-food categories and various components within the non-food category, and hence, the income. The trends have been changing. Table 3.5 provides a one-time snapshot from the 61st Round wherein the lowest 20 per cent of the population by income spends 57.22 per cent on food items and 42.78 per cent on non-food items; the middle class which is the segment between 20 per cent and the 50 per cent of the population spends 53.91 per cent and 46.09 per cent on food and non-food items. The upper-middle class spends most on food items at 99.89 per cent and the rest on non-food items.

Table 3.5: Percent Expenditure on Food and Non-Food Items by Various Expenditure Classes

MPCE Groups	Food	Non-Food	Total
Lowest 20%	33926609	25368115	59294724
	57.22%	42.78%	100
20-50% Middle Class	567386961	485060304	1052447265
	53.91%	46.09%	100
50-80% Upper Middle Class	2216799480	2345044	2219144524
	99.89%	0.11%	100
Top 20%	4446777112	5735901888	10182679000
	43.67%	56.33%	100

***Source**: NSS 61st Round, Directorate of Economics and Statistics, Mumbai*

A rigid comparison between the various rounds for components of non-food items is not possible, as the items are not common across all rounds of National Sample Survey (NSS), Directorate of Economics and Statistics, Mumbai. A general picture on the basis of several rounds is one where expenditure on education is more or less the same at about 4 to 7 per cent of total non-food expenditure. The lowest level of expenditure category spends about 4 per cent of total consumer expenditure on education as compared to 2.47 per cent on health. As consumption expenditure class goes up, the share of expenditure on education and health also goes up. The share is almost equal, about 6-7 per cent of consumer expenditure in the middle class. Health expenditure is more than education expenditure in the highest class of consumption expenditure.

Economic Structure

In Mumbai, 74 per cent of the income is generated in the tertiary sector while the secondary sector accounts for about a quarter of the total. Despite being an urban area, there is a contribution of 1 per cent from the primary sector, notably from fisheries. This predominant status of the services sector as a contributor to the economy is in keeping with the national trend, but is accentuated here. This set of proportions has been reached by some significant shifts in the two decades from 1993-94.

The primary sector's share in 1993-94 was 1.25 per cent, now just 1 per cent. The secondary sector's share declined from 36 per cent to 25 per cent, the decline being rapid since the year 2000 when the share of the tertiary – or the services sector, both formal and informal – jumped to 74 per cent (see Box 3.3). This shift towards services (Table 3.6) is a result of several factors and has significant implications for both employment generation as well as conditions that govern employment including social security. However, this shift is due to the dynamic fields such as Information Technology, electronic servicing, communications, banking, and software related activities.

This happened during the same phase as the liberalisation of the economy but its one adverse implication is that it bars access to those without specific and specialised skill sets. This marks the advent of a substantive segment of activity where employment is skill-intensive and education-intensive, and does not lead to widespread employment generation. Though quite a part of the activity continues to be in the informal sector, even those who are educated but without the relevant skill sets tend to get pushed to other activities in the informal sector.

Employment

The number of enterprises, as per the official 2005 count was 5,72,198 which included a miniscule number, 889 that were classified as 'agricultural', reflecting the almost entire dependence on non-agriculture nature of employment in Mumbai, also another index of the level of urbanisation. Between the Fourth and Fifth Economic Census, the proportion of agriculture-based enterprises dropped from 0.26 per cent of all enterprises to 0.16 per cent. Nearly 63 per cent of them reported between 1-5 and 20-24 employees. Others employed up to 25 and more,

Box 3.3: The Three Sectors

The economy has three sectors – primary, secondary, and tertiary. The first comprises agriculture, forestry, logging, fisheries mining, and quarrying. The secondary consists of both registered and unregistered manufacturing, construction, electricity, gas, and water supply. The tertiary accounts for railways, transport, communication, trade, banking and insurance, real estate, ownership dwelling, business services, public administration, and other services.

Table 3.6: Time Series NDDP (at Current Price)–Mumbai

(Rs. in Lakh)

Sr. No.	Year	Mumbai							
		Sector			Total NDDP	Sector			Total NDDP
		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary	
		Rs.	Rs.	Rs.	Rs.	%	%	%	%
1	1993-94	31385	908769	1576083	2516237	1.25	36.12	62.64	100.00
2	1994-95	36434	952921	1844704	2834059	1.29	33.62	65.09	100.00
3	1995-96	50688	1160794	2249189	3460671	1.46	33.54	64.99	100.00
4	1996-97	78910	1279723	2444587	3803220	2.07	33.65	64.28	100.00
5	1997-98	80310	1512119	2785168	4377597	1.83	34.54	63.62	100.00
6	1998-99	85297	1506436	3188942	4780675	1.78	31.51	66.70	100.00
7	1999-2000	90358	1512025	3011686	4614070	1.87	31.46	66.67	100.00
8	2000-01	89362	1261544	3113637	4464543	1.88	25.85	72.27	100.00
9	2001-02	85399	1380249	3520397	4986044	1.63	26.13	72.23	100.00
10	2002-03	91739	1544207	3917940	5553886	1.56	26.47	71.97	100.00
11	2003-04	91539	1934093	4503534	6529165	1.35	28.59	70.06	100.00
12	2004-05	114549	2148224	5341526	7604300	1.49	26.61	71.90	100.00
13	2005-06	74337	2204877	5394049	7673263	0.88	25.30	73.82	100.00
14	2006-07	126344	2570342	6276828	8973513	1.41	28.64	69.95	100.00

***Source**: Directorate of Economics and Statistics, Government of Maharashtra, Mumbai*

indicating the dominance of smaller entities as providers of most jobs. As much as 39 per cent of all enterprises, employed between one and five persons. An assumption would be that those enterprises which employ one person are self-owned and self-employed.

Employment is an important indicator of economic growth, and increasingly less of that comes from the formal sector. Apart from the increase in the informal nature of employment, there has been a striking shift in the male-female component of the workforce, reflecting the changes in the nature of economic activity which enables female participation. The economic compulsions of women to secure livelihoods, including for supplementing family incomes, are subsumed into this trend.

The main workers and marginal workers together constitute the working or earning members of the total population. In 1961, of the 41.52 lakh population, 40.62 per cent constituted the main workers (Table 3.7), but when the population increased to 1.19 crore in 2001, their percentage declined to 35.24. During the same period, the number of male main workers

more than doubled from 15.40 lakh to 35.93 lakh and the female workers' number grew sharply by more than four times from 1.45 lakh to 6.29 lakh.

The percentage of male main workers to the total male population declined from 61.73 to 54.28, while female main workers as a percentage of the total female population increased from 8.8 to 11.73. This indicates that main workers in total population have been declining but female participation in the work force has increased over the decades. This has been possible probably because of the change in the nature of economic activity with more and more employment being generated in the tertiary sector, many of whose activities are known to be more female-friendly.

Marginal workers have increased from 0.51 per cent in 1981 to 2.02 per cent of the total population in 2001. Marginal male workers have seen an increase from 0.59 per cent of total male population in 1981 to 2.59 per cent of total male population in 2001, while female marginal workers increased their share in total female population from 0.41 per cent in 1981 to 1.32 per cent in 2001 (Tables 3.7 and 3.8).

Table 3.7: Growth of Different Categories of Workers, 1961-2001

Year	Total Population			Main Workers			Marginal Workers			Non-Workers		
	P	M	F	P	M	F	P	M	F	P	M	F
1961	4152056	2496176	1655880	1686668	1540861	145807	NA	NA	NA	2465388	955315	1510073
1971	5970575	3478378	2492197	2198098	2005728	192370	NA	NA	NA	3772477	1472650	2299827
1981	8243405	4652646	3590759	2860054	2552548	307506	42145	27430	14715	5341206	2072668	3268538
1991	9925891	5460145	4465746	3434732	2966082	468650	64640	41250	23360	6426549	2452813	3973736
2001	11978450	6619966	5358484	4221749	3593040	628709	242499	171510	70989	7514202	2855416	4658786

***Source**: Census of India, 1961-2001*

Table 3.8: Growth of Different Categories of Workers (Percent), 1961-2001

Year	Total Population			Main Workers			Marginal Workers			Non-Workers		
	P	M	F	P	M	F	P	M	F	P	M	F
1961	100	100	100	40.62	61.73	8.81	NA	NA	NA	59.38	38.27	91.19
1971	100	100	100	36.82	57.66	7.72	NA	NA	NA	63.18	42.34	92.28
1981	100	100	100	34.70	54.86	8.56	0.51	0.59	0.41	64.79	44.55	91.03
1991	100	100	100	34.60	54.32	10.49	0.65	0.76	0.52	64.75	44.92	88.98
2001	100	100	100	35.24	54.28	11.73	2.02	2.59	1.32	62.73	43.13	86.94

***Source**: Census of India, 1961-2001*

Overall, the decline in the share of main workers in total population supports the view that work activity is becoming more part-time or informal. This is corroborated with the growing share of marginal workers in total population. Along with marginalisation of the work force, there are trends of feminisation, as observed in the growing share of female main workers. Those who secure work for 183 days or more are categorised as 'main workers' – that is, for a major part of a year – and those who get it for less than those number of days are categorised as 'marginal' workers.

Dependency Ratio

It is possible to measure as how many people on an average are dependent on one earning person. For this purpose, taking the main worker as a denominator, the dependency of non-working population on working population has increased from 1.46 to 1.87 in the period 1961 to 1991, and marginally declined to 1.8 in 2001. Despite the marginal decline, the dependency ratio has increased in the period 1961 to 2001. This also indicates that possibly more and more young children are attending schools rather than going to work, and possbily due to the drive against child labour, a lesser number of children are offering themselves to be exploited for jobs (Table 3.9).

Table 3.9: Dependency Ratio, 1961-2001

Years	Main Workers			Non-Worker to Main Worker			Total Worker (Main + Marginal)			Non-Worker to Total Workers		
	P	M	F	P	M	F	P	M	F	P	M	F
1961	100	100	100	146.17	62.00	1035.67	100	100	100	NA	NA	NA
1971	100	100	100	171.62	73.42	1195.52	100	100	100	NA	NA	NA
1981	100	100	100	186.75	81.20	1062.92	100	100	100	184.04	80.34	1014.38
1991	100	100	100	187.10	82.70	847.91	100	100	100	183.65	81.56	807.65
2001	100	100	100	177.99	79.47	741.01	100	100	100	168.32	75.85	665.83

***Source**: Based on Table 3.7*

Child Labour

However, despite the higher ratio of dependency indicative of lesser children being available for work exploitation, the phenomenon of child labour continues. The Non-agricultural Own Account Enterprise, 2005 (Fifth Economic Census, Government of India, 2005) essentially covers those enterprises which have self-employment and are engaged in non-agriculture work. They are enumerated at 2,368, constituting 0.84 per cent of the total workers. However, when set against anecdotal evidence, this appears an undercount. There is a large component of domestic workers, including those who mind infants, who are from the under-privileged child population, plus the ubiquitous waste-pickers and street-children who do occasional odd jobs (Box 3.4; see also Box 3.8).

Employment Pattern

There has been a significant increase in self-employment with a simultaneous decline in salaried and wage employment, though only marginally. Casual labour appears to have declined too but those seeking work have increased. Across sectors, it is observed that in the tertiary or the services sector, employment has gone up – both self-employment and salaried/wage employment.

These trends are visible from the data provided by the NSS Rounds on employment in the various sectors such as primary, secondary and tertiary, and also by type or kind of employment by the NSS Rounds. Table 3.10 is a consolidated Table of three NSS Rounds – 50th, 55th, and 61st for the years 1993-94, 1999-2000 and 2004-2005, respectively. Employment in the age group of 15 to 59 has been taken into consideration and the percentages calculated.

Box 3.4: The Nowhere Children

Children in difficult circumstances living in urban areas can be classified into different categories like, children living in slums, child workers, street children, children of commercial sex workers, children of prisoners and those living in institutions, and the almost nomadic children of construction workers.

According to a count in 2004 done for the Sarva Shiksha Abhiyan, there were 1,060 street children while 1,709 were in shelter homes; 1,457 in government institutions and 25,000 were categorised as 'working children'. These deprived urban children are not a homogeneous group but are widely dissimilar and face many different challenges.

Apart from those who live in slums, disadvantaged urban children sometimes are also known as the 'Nowhere Children'. The phenomenon of street and working children among the disadvantaged children has assumed proportions that should cause concern. This is an offshoot of a complex interplay of various economic and social factors which have acquired unprecedented dimensions.

Most of these children work in the informal service sector as they are a source of cheap labour. Mumbai ranks third among the mega cities with the highest number of street and working children. There have been different definitions of working children nationally and internationally and the dispute of the minimum age of work is endless.

But all the working children or other children in vulnerable situations are generally seen to be afraid of adults, have been abused physically, mentally, sexually, lead a life like an adult, and are generally undernourished and overworked. Apart from this, the majority of them do not enjoy their basic right to education and childhood.

Since 2005, there has been some difference in the status of working children in the city. The formation of the State Task Force for eradication of child labour, paved the path for the abolition of this malpractice in the city. Almost 23,000 child labourers were rescued through different strategies and rehabilitation policies in the city.

Through interstate coordination the children have been repatriated and the remaining children have been rehabilitated through different educational (both residential and non-residential) NGO's. Last year Mumbai was declared as 70 per cent child labour free city.

Self-Employment

Self-employment has increased from 15 per cent to 19 per cent across the three NSS rounds in 1993-94, 1999-2000 and 2004-2005, while salaried/wage employment declined marginally from 34 per cent in 1993-94 to 32 per cent in 2004-05. Casual labour has declined from 2 per cent in 1993-94 to 1 per cent in 2004-05. Those seeking work have increased from 1.48 per cent in 1993-94 to 2.50 in 2004-05. Self-employment in the tertiary sector has increased from 12 per cent in 1993-94 to 15 per cent in 2004-05. Salaried/wage employment in the tertiary sector increased from 20 per cent in 1993-94 to 23 per cent in 1999-2000 and 21.4 per cent in 2004-05.

Employment has also gone up in the secondary sector, but only marginally. In the secondary sector, self-employment has increased from 2.72 per cent in 1993-94 to 3.81 per cent in 2004-05. However, salaried/wage employment has declined in the secondary sector from 14 per cent in 1993-94 to 10 per cent in 2004-05 (see also Box 3.6 and Box 3.7).

Table 3.10: Per Thousand Distribution of Persons by Principal Usual Activity Category

URBAN: MUMBAI

Sr. No.	Status	Industry	Age-group					
			61st Round (2004-05)		55th Round (1999-2000)		50th Round (1993-1994)	
			15-59	%	15-59	%	15-59	%
1	Self Employed in Household Enterprises	1	6	0.07	0	0.00	28	0.31
		2	343	3.81	310	3.44	245	2.72
		3	1367	15.19	1036	11.51	1057	11.74
	Total	**1-3**	**1716**	**19.07**	**1346**	**14.96**	**1330**	**14.78**
2	Salaried / Wage Employee	1	14	0.16	3	0.03	9	0.10
		2	917	10.19	1003	11.14	1249	13.88
		3	1929	21.43	2086	23.18	1816	20.18
	Total	**1-3**	**2860**	**31.78**	**3092**	**34.36**	**3074**	**34.16**
3	Casual Labour	X	0	0.00	2	0.02	31	0.34
		1	0	0.00	0	0.00	0	0.00
		2	103	1.14	177	1.97	130	1.44
		3	8	0.09	33	0.37	50	0.56
	Total	**1-3**	**111**	**1.23**	**210**	**2.33**	**180**	**2.00**
	Total	**X to 1-3**	**111**	**1.23**	**212**	**2.36**	**211**	**2.34**
4	Seeking Work / Unemployed	X	225	2.50	233	2.59	133	1.48
5	Non Workers	X	4088	45.42	4117	45.74	4252	47.24
6	All (1 to 5)		9000	100	9000	100	9000	100

***Source**: NSS 50th, 55th, and 61st rounds, Ministry of Statistics and Programme Implementation, Government of India*

***Note:* For 61st and 55th Rounds**

1. *Agriculture, Hunting, Forestry & Fishing*
2. *Mining & Quarrying, Manufacturing, Electricity, Gas, Water, Construction.*
3. *Wholesale and Retail Trade, Repairs of Motor Vehicles, Motor Cycles and Personal and Household Goods, Hotels and Restaurants, Transport, Storage and Communications, Financial Intermediation, Real Estate, Renting and Business Activities, Public Administration and defence, Compulsory Social Security, Education, Health and Social Work, Other Community Social and Personal Service Activities, Private households with employed persons, Extra-territorial Organisations and Bodies*

1-3. Total (1 to 3)

***Note:* For 50th Round**

1. *Agriculture, Hunting, Forestry & Fishing*
2. *Mining & Quarrying, Manufacturing, Electricity, Gas, Water, Construction*
3. *Wholesale and Retail Trade, Restaurants and Hotels, Transport, Storage & Communication Services, Financial Insurance, Real Estate & Business Services, Community, Social & Personnel Services.*

1-3. Total (1 to 3)

Trends on employment may be drawn also from the information available in the Employment Market Information (EMIP), provided by the Department of Employment, Government of Maharashtra. While it is not wrong to assume that most of the public sector units employing more than 25 workers are reporting under this scheme, the same is not true for private sector units where reporting may be around 40 to 50 per cent. However, the data so collected provides some idea about total employment in public and private sector (Table 3.11).

Table 3.11: Formal Employment by Sector, Mumbai, 1981-2007

(in '000)

Years	Sectors		Total
	Public	Private	
1981	645	629	1274
1991	718	463	1181
1996	719	439	1158
2003	686	351	1038
2007	660	339	999
	Annual Growth Rates		
1981-1991	1.13	-2.64	-0.73
1991-1996	0.03	-1.04	-0.39
1996-2003	-0.65	-2.85	-1.49
2003-2007	-0.95	-0.88	-0.92
1981-2007	0.09	-1.77	-0.83

***Source**: Employment Market Information, Department of Employment, Government of Maharashtra*

Even after providing for a margin for reporting inadequacies, it can be concluded that between 1981-2007 formal employment in the public sector remained more or less stagnant, with a definite strong downward trend of formal employment in the private sector. This further confirms the earlier conclusions that more and more livelihood opportunities in Mumbai are being created in the small and micro sector as well as in the informal and self-employment enterprises.

Opportunities

As pointed out in the Planning Commission's *Employment Generation in Post Globalisation Era in Greater Mumbai* Report, 'bringing so-called labour flexibility and the international competition through increased emphasis on reducing labour costs, labour saw the erosion of many benefits. It has led to further segmentation of the labour market and the expansion of low-income informal sectors in the economy. This process has been accompanied by increase in casualisation, contract labour, subcontracting and lengthening of working hours, etc.' (EFI-Solar Foundation, Mumbai, 2006: 22).

The said report has noted how the former textile manufacturing hub has witnessed a sea change in the business activities with the switch from manufacturing to services, and how it has resulted in a dramatic change in job profiles as well as opportunities in virtually all sectors.

The projections of the new opportunities are of the short term of about five years but could possibly stretch for a longer period. The important sectors for at least the next five years are Financial, Construction, Tourism, IT, Telecommunication, Courier Services, Entertainment, Shops, Automobile Garages and Photo Copy Centre, etc., which are expected to provide huge employment opportunities, both direct and indirect, over the next five years.

This rapid replacement of the manufacturing by the services sector as a provider of bulk employment has been a gradual process, with the industrial sector accounting for just a little less that half of all jobs – 44 per cent. The rest was provided by the manufacturing sector. The manufacturing sector's share declined by 1991 to 39 per cent and the services sector's share rose proportionately during the same period.

Much of this has to do with the textile industry's demise which declined to virtual non-existence, which was followed by large scale relocation of engineering, chemicals and pharmaceutical industrial units. But the services sector has been unable to match the number of lost jobs in the formal sector to fill up the void created by the virtual demise of the formal manufacturing domain.

Implications

Mumbai has been an engine of growth in terms of economic activity; it has been also supporting a large number of people because of the dependence of the outlaying cities in the MMR on it. The creation of employment opportunities continually draws migrants to it. What is interesting is to observe and analyse the structural changes that have taken place in the light of the changing economic scenario and globalisation. But Mumbai continues to have an undisputed significance in the Indian economy. However, urban poverty remains an issue, as much as income disparities and deprivations are also dominant, but unaddressed.

The livelihood structure has distinctly changed with traditional industries being totally eclipsed by new growth drivers in the tertiary sector, which is also increasingly informal in nature and, consequently, driven by a significant of level cheap-labour; nearly half of that run by migrants. The entire informal component run by them contributes a little over a third of the incomes from that sector. This is primarily in the private sector.

The weakening trend of employment in the formal sector and strengthening of the casual nature of employment, with its built-in insecurities would have serious implications for the stability of livelihoods, which is a matter of concern. Studies have reported a shift from 'quantity' to 'quality' manpower, higher educational attainments, where not just educational degrees but employability is sought after, as are improved language and communication skills in English. Perhaps the only sector where the unskilled worker has a role is in construction.

In this reorientation to stronger service sector, there appear to be four key areas as drivers to growth and three other areas, namely, financial services, health care, IT/ITES and tourism; and media, entertainment, and telecom. To these can be added sectors like transport, gems and jewellery, construction activities, and modern retail. It has not been possible to chronicle the changes, which appear quite pronounced, in these sectors over a time due to paucity of data. Demands of globalisation, relaxed labour laws, near absence of trade unions, etc., have begun to dictate the terms of engagement in the employment sector.

To sum up: Mumbai has high per capita incomes; the growth in population has not negatively impinged on this status, but the disparities are stark and urban poverty, despite the growth of the economy does exist in terms of lack of access to facilities. Opportunities for livelihoods do exist, but a large part of those being in the informal and low-wage driven sectors, has not ensured any significant move towards equity. There has been economic decentralisation, a marked trend towards increased self-employment with a significant element of feminisation of the labour force; child labour is not absent, however, the precise number of children engaged in labour is not available.

Therefore, the economy requires to be mainstreamed by avoidance of extremes of the formal and the informal sectors as defined now. Increased legalisation of the informal sector to add scope for efficiency and growth can build a responsive system which takes care of the jobless by creating and offering opportunities to optimise on skills available with them – employment exchanges are nowhere near this function – and reduce the element of gamble and risk in them.

Box 3.5: Employees Come from Other Towns too

It is a known fact that a considerably large amount of employees engaged in Mumbai are sourced from the townships.

Rapid urbanisation, escalating real estate prices and the quest for better living standards have pushed the employee class (middle class families) to migrate to townships in Mira-Bhayander, Kalyan- Dombivli, and Navi Mumbai.

The present trend of middle class families migrating to the suburbs is likely to be fuelled in the coming decades largely due to improving infrastructure facilities in these cities.

Box 3.6: Informal Sector

The informal sector in Mumbai accounts for a large share.

Workers in this sector get low wages or if self-employed, their income is meagre. This implies that their living conditions are low and, if employed, their wages are less than the stipulated minimum wages. There is hardly any regulation of their working conditions and social security is virtually non-existent.

A large section of this population comprises low-skilled rural migrants or migrants from smaller towns. Hence these people, right from the time of their arrival, become a part of the informal sector as they have neither the skills nor the opportunities to enter better-paid and more secure formal sector jobs. They thus move from one level of poverty at their place of origin to another level of poverty at their destination.

At the same time, there is a growing section of workers in the formal sector who have their jobs are compelled to work in the informal sector. To these, this change means a drop in reduction in their standard of living and insecure, unregulated employment.

***Source**: The Informal Sector and Urban Poverty, Infochange India, January 2005*

Box 3.7: Income Generation and Employment Pattern

- Per Capita Income in 2006-07 (as measured by per capita Net District Domestic Income at current prices): Rs. 65,361
- Income generated in Tertiary Sector (2005-06): 74 %
- Income generated in Secondary Sector(2005-06): 25%
- Self employment in Tertiary Sector(2005-06): 19 %
- Salaried / Wage Employment in Tertiary Sector(2005-06): 21.4 %
- Main Workers (2001): 35.24 %
- Marginal Workers (2001): 2.02 %

***Source**: Directorate of Economics and Statistics, Government of Maharashtra 2006, and Census of India, 2001*

Box 3.8: Bonded Child Labourers in Zariwork

Zariwork for livelihoods is very common in slums of Govandi. However, this work thrives on hundreds of bonded child labour in the age group of 6-14 years. Most are boys between 6 and 14 years working 20-hour days, seven days a week, in dingy rooms of about 100 sq ft. The rooms have hardly any ventilation and the floors are grimy. Each room has a small smelly bathroom located in one corner. Another corner serves as a basic cooking area. They sleep, bathe and eat in this same room. They are given two meals a day and, if lucky, two cups of tea. They are not only burdened with work, but also face inhuman treatment–physical torture, abuse, hardly any treatment during illness, etc. And after suffering to such extent, all they are paid is Rs. 50/- per month.

According to data from State Labour Welfare Department, about 25,000 children are involved in this work and 90 per cent are from extremely backward areas where there are no schools in the villages or even close by. Most families are landless and work for a daily wage – that is if they can find work. Some have land but suffer through drought or other calamities and, therefore, have no resources to bring up children. The parents sending their children for this work to Mumbai believe that by sending the children they save them from a miserable life in the village. Those who live in border areas think that sending children to Mumbai prevents them from joining terrorist or naxalite outfits.

Till the date a very small number of these unfortunate children have been rescued, while thousands of the rest remain enslaved in inhuman conditions for years.

Sources: *'Young Slaves of Mumbai'* , Frontline, *Volume 23, Issue 06, 25 March–07 April 2006; *Hazardous Occupation According to the Child Labour Prohibition and Regulation Act, 1986)*

Slums

Obverse: Photographs 1, 2, and 3; this page: photograph 4, courtesy AIILSG.

4. Slums: The Face of Inequity

Diversity, Deprivation and Squalor, but Vibrant

Mumbai, allegorically speaking, is actually two cities: a city of the 'haves', and a city of the 'have-nots'. The 'haves and have-nots' are within the same geographical territory but occupy entirely different economic, physical, and social spaces. Among these two, one is better laid out and the other has developed in a haphazard manner which seems orderless. Both depend on each other despite their economic and social asymmetry. The 'other' consists of slums that dot the city and gives Mumbai a part of its character. One is neat, the other grimy, and a shadow city of Mumbai. Thus, they are two distinct but inter-dependant cities within one.

Those who do not live in the slums, numerically constituting nearly half of the city, rarely if ever, even consider walking through it. This is in spite of the fact that the city is directly and indirectly dependent on the slums for its supply of services and cheap goods. Slum dwellers are integral to the city, and yet the city is aloof to their needs. Those living in the slums have contact with, and continual access to, the non-slum areas where less than a half of Mumbai's population live. Thus, slums are manifestations of deep structural poverty (Box 4.1).

But this can no more be ignored because of the scale of the issue. Worldwide, one in three persons lives in a slum. But the figures are much higher for Mumbai where 54.1 per cent of the population are slum dwellers (2001 Census). This means that 'one in two persons in Mumbai city is residing in a slum'. And the relevant dimension is the area they together occupy – just 6 per cent of all land in Mumbai explaining the horrific levels of congestion. Delhi has 18.9 per cent, Kolkata 11.72 per cent and Chennai 25.60 per cent in slums. Some 29 per cent, i.e., between a fourth and third of Maharashtra's urban population resides in Mumbai's slums.

The slums give Mumbai its dubious distinction, making it infamous for the visible economic disparities of the city. The disparity is clearly visible. The disparity between the two segments is particularly evident when compared on social and health parameters like literacy rate, sex ratio, and morbidity rates, not just on account

Box 4.1: Slums, an Integral Part

The slum and hutment dwellers of unauthorised structures form an integral part of this vibrant metropolis. All of them undoubtedly have a share in the growth, status and prosperity of this great city. They have had and continue to contribute a significant share in the building up and maintaining the commercial, industrial and economic importance of the city.

Source: *The Report of the High Powered Study Group on Slum Rehabilitation in Mumbai, The Afzulpurkar Committee Report (1995), Government of Maharashtra*

of the largely male-first migration, but also because of the difficulty in securing and maintaining family space, costs, mental stress, etc. These are critical, difficult to surmount factors. These variations in ratios, as the later discussion shows, are wide, though for an urban area they are low. Between the two segments, the lower figures are found in the slums.

The slums are informal housing of disparate families which have developed into community settlements. Thus, they are built without legal sanction, devoid of any minimal legal standards, leave alone modest human requirements. From here, most of the slum dwellers participate in the informal economy which by all accounts would appear to be growing. Poverty in the urban area is more visible as compared to rural areas as people living in rural poverty are relatively less concentrated. Slum dwellers are forced to reside in such appalling conditions as Mumbai affords better income generation opportunities; livelihoods, not how they live, seem to be the preponderant need of the slum dwellers (Box 4.2).

The extent of the slum sprawls, their mushrooming growth, and socio-economic disparities are yet to balloon into social disruption, but are a threat not fully recognised. In these areas, the population finds it difficult to satisfy normal, basic human needs. Their cramped, unsanitary dwellings and surroundings are under threat of demolition and eviction. That is why their lives are like the play of the roulette, hoping the odds would eventually even out. Given the growth in their numbers, that seems unlikely. They have not willingly chosen these conditions but have been driven to them due to compelling economic circumstances such as exclusion from the formal housing sector.

The UNFPA *State of the World Population Report* (2007) says no country in the industrial age has ever achieved significant economic growth without urbanisation. If migration and urbanisation are two sides of a coin, slums are their natural outcome. Slums often are a result of the inability of the city to ever plan ahead. It is as yet an unmet challenge. A question would linger: how much can the slum population grow before the slums and the entire city collapse?

Poverty, with its resultant indignity, is not always reflected by measurements of income poverty alone. Income poverty is one of its aspects. Abysmally poor qualities of shelter, extreme overcrowding, poor access

Box 4.2: Urban Slums and the Urban Poor

The term 'slum' is used to refer to many types of housing, including those that could be upgraded. Terms such as 'slum', 'informal settlement', 'squatter housing', 'shanty-towns' and 'low-income community' are often used interchangeably in any discussion on urbanisation and on urban poverty. Indian terms are *jhopadpattis, kacchi bastis,* and *jhuggi-jhopdi.*

According to UN-HABITAT, a 'slum household' is a group of individuals living under the same roof in an urban area who lack one or (often) more of the following: durable housing, sufficient living area, access to improved water and sanitation, and secure tenure. Not all poor people live in slums, and not all people who live in areas defined as slums are poor. But most are, and urban poverty is not seen as only income poverty but absence of access to basic civic services as well as the quality of their habitats. However, for the sake of simplicity, the urban poor can be termed slum dwellers.

Source: *UNFPA, State of the World Population Report, 2007*

to public services, including basic civic facilities as well as insecurity of land tenure are some other markers of poverty. There has been no change in the condition of the slum dwellers even though the non-slum areas in the city have improved their lifestyles. If anything has changed, it is the deterioration in the health and sanitation conditions and the increasing social trauma of visible inequity.

Slums is an urban issue that needs immediate attention. Even the Millennium Development Goals consider improving lives in slums as a critical task. Slums are major detractors of human wellbeing and the very face of urban poverty; these are actually a surrogate for poverty. The most visible aspect of poverty in urban areas are reflected in the proliferating slums, rapid growth of the informal sector, absence of inadequate amenities and high contingencies on health and education, and underutilisation of social services.

If residents tolerate the conditions in which they live, it is out of sheer helplessness emerging mainly from economic reasons. Not that slum dwellings come cheap – there is a huge alternative social cost in terms of subservience to political agents, slum lords and the other health costs. Without addressing the issues of slums, it is recognised that achieving human development indicators would not be possible. The human development of an entire city cannot be advanced if this huge segment is ignored or allowed to lag behind; either because of benign neglect or lack of resources, the human development of an entire city cannot be advanced.

It is equally true that the poor also live in areas which are not categorised as slums. But even among the poor, there are considerable variations. The poor in Mumbai reside across three distinct habitat categories. The first of these is the chawls – either single- or multi-storeyed, single-room tenements,

Box 4.3: Who are the Poor in an Urban Domain?

The poor live in unplanned, unauthorised developments of permanent and semi-permanent nature characterised by unhygienic conditions on account, mainly, of infrastructure deficiencies.

The poor who live there are migrants, construction workers, street vendors, domestic help, beggars, waste pickers, sex workers, taxi and auto rickshaw drivers, workers of small manufacturing units, plastic recyclers, automobile mechanics, repairers, laundrymen, *zari*, leather and tanning workers, and a host of others. The list is not exhaustive but only indicative and in some categories, including children.

A baseline survey of 16,000 slum households done for Mumbai Metropolitan Regional Development Authority (MMRDA) in 2002 revealed that 33 per cent of slum population were working with an average of 1.46 workers per household with a monthly household income of Rs 2,978, and 40 per cent of households were categorised as below poverty line (BPL).

Women and children are particularly more vulnerable. Many women worked as housemaids in neighbouring non-slum homes and the construction sector was another employer where their chief role was to be head-load carriers and helpers to male workers on a lower scale of wage. They preferred to work on construction sites because of the makeshift but poorly ventilated shelters, devoid of toilets and water, provided by the contractor were available for their children. They moved from site to site even if they had no wage work on any day because of the access to these shelters.

Source: *Regional Centre for Urban and Environmental Studies, All India Institute of Local Self-Government, Mumbai, Inception Report on Urban Poverty Reduction Strategy, 2007*

mostly found in the southern regions, where the quality of housing is relatively stable, more ordered, but congested with appreciable densities. The second is the continually evolving, ever expanding slums which now tend to get vertical depending on the means of the owner. And finally, the third category consists of the floating population such as pavement dwellers, those who sleep under bridges, station platforms, staircases or just anywhere. The third category is truly the least fortunate, the homeless (Box 4.3; see also Box 4.6).

All these three categories have different characteristics. The first – or the *chawls* – are not officially categorised as slums even though they have slum-like living conditions. They are more stable despite being old and are part of the formal housing sector. (The chawls are not included in the statistics analysed in this report.) The chawls have strong community bonds. The second category appears equally strong in family ties but shows evidences of an intent to move out of the slum by finding the elusive economic emancipation. They are more cosmopolitan given that they are squatters from different geographical and socio-economic backgrounds. The third group or the pavement dwellers are transient, extremely stressed, more exposed to elements, who seek and find a place to rest wherever available (Box 4.4).

Slums of varying sizes, population, and densities are to be found across Mumbai except in Ward C. These slums are on lands owned by a variety of entities. According to survey conducted by YUVA, a non-governmental organisation, and Montgomery Watson Consultants in 2001, there were 1,959 slums holding 57.2 lakh people, comprising 92 per cent of all slum population. However, the *Environmental Status Report for 2002-03* of MCGM reported about '2,245 slum pockets'. Data generated by these two reports are not easily reconcilable. But the present report would

Box 4.4: Chawls: A Typical Mumbai Feature

They were essentially built by industrial units, often within their premises, to accommodate the migrant labour which arrived to work in Mumbai. These were mostly built between 1920 and 1950s in order to provide rental housing at nominal rents for the labour arriving in the city.

Typically, the chawls are multi-storeyed of usually two floors. Each accommodation unit opened on a long, sometimes broad balcony with wooden balustrades and comprised of a room and a kitchenette with a small washing place, which often also served as a bathing place. The toilets were common to each floor, each floor having several such rooms. A loft was another common feature found in the units of the chawls. These units were designed for one individual as single male migrants were the target group for the textile mills who evolved the concept. Such units later expanded as the male migrants brought their families and slowly, the densities in these units increased. With the increase in industrialisation, more migrants were attracted to the city. To accommodate them, landlords in South Mumbai built similar apartments to rent out to them.

However, the provisions of the Rent Control Act during World War II froze this supply. Profitability of the rental housing units was almost nil with the freeze on rents in the context of rising inflation and earlier prevalent low rentals. In the absence of improved rental incomes, landlords virtually abandoned any effort at maintenance, leading to many of the chawls to decay. In fact, the occupants have virtual ownership. The deterioration and dilapidation has been rapid in the chawls to the extent that despite being in well-heeled neighbourhoods, they have taken on slum-like conditions.

continue with the YUVA figures because it offers disaggregated data. Of these slum pockets, 93 per cent slums were notified (Box 4.5).

The civic body charges Rs 20 - 22 per household as 'nominal charges', in lieu of providing basic services including internal roads. The rest of the slum dwellers residing in the non-notified or unrecognised slums are susceptible to eviction and the civic body does not attempt to provide them with basic services. These slums are liable to be provided with basic services as the cut-off dates for notifications of slums are constantly being revised. The first cut-off date was 1976, meaning the slums settled prior to 1975 were recognised and notified. The present cut-off date for notification of slums is 1995. The issue is simple: people have colonised lands with impunity or with local political and administrative connivance. Given the constraints of funds and political patronage that enables new slums to emerge, the city government has a limited ability to deal with the issue of slums.

A large mass, in fact nearly half of the slums are on private lands. An equal proportion is shared by various public entities (Table 4.1), including those dwellings on pavements or footpaths, which technically is municipal property. Often, to keep off the squatters, flowerbeds are laid which is not the intended use of pedestrian pathways. The railway lands, for instance, due to their occupation by slum dwellers, has led to significant delays in several railways projects meant to speed up commuting facilities between the city and the suburban regions.

The National Sample Survey 58th Round explains why people who come in search of livelihoods settle there. Independent accommodation was one reason cited by 38 per cent of the slum occupants. As many as a fifth reported that low or rent-free accommodation was the decisive factor for selecting the location, which underscores the economic compulsions and the unaffordable housing costs. Another fifth of the respondents had opted for slums on account of the

Box 4.5: Urban Poverty

Aggregate statistics hide deep inequalities and gloss over concentrations of harsh poverty. Figures on urban poverty are imprecise and often underestimated because many aspects of poverty are simply not measured. Surveys either fail to consider the specificity of urban conditions (for instance, the inability to grow or forage for food, the higher monetary cost of non-food needs, the higher incidence of homelessness, harassment, eviction or arrest in their 'illegal' homes or livelihoods), or present incomplete information (for instance, by not measuring the adequacy of sanitation facilities).

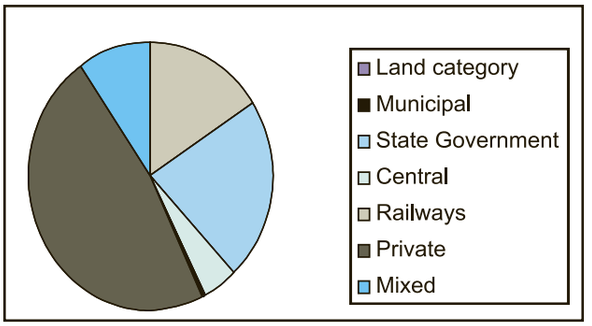
Source: *UNFPA, State of the World Population Report, 2007*

Table 4.1: Land Ownership of Slums in Mumbai 2001

Land Category / Ownership	Number of Slum Pockets	Percentage of Slum Pockets
Municipal	313	15.98
State Government	431	22.00
Central Government	88	4.49
Railways	13	0.66
Private	924	47.17
Mixed	190	9.70
Total	**1959**	**100**

Source*: YUVA and Montgomery Watson Consultants, India (2001)*

Chart 4.1: Land by Category on which Slums Stand, 2001



proximity to their workplaces. Virtually all, that is, 97 per cent had said that they had not tried to move out of the slums, indicating the stagnation in their personal economic status. The choice of slum pockets for residential purpose is governed by the diverse needs of slum dwellers like living space or work space based on work they perform or the proximity to their work. The poor need to be near the rich in order to maximise their opportunities to survive in the city.

Distribution of Slum Population

According to anecdotal evidence, the homeless do not find relatively stable employment due to their transient nature of 'habitation' because they would either move on or are intermittently evicted. They are thus forced to offer themselves for casual wage labour. In the three notional geographic divisions of Mumbai

Box 4.6: Slums–A Profile

In 1,959 slum pockets and sprawls the average household size is 4.5, and about 13 per cent of them are headed by women. About 62 per cent of the slums have permanent materials like brick walls, even reinforced cement roofs; 27 per cent make do with semi-permanent structures using brick walls, tin or asbestos sheets for roofs, and only 115 slums or about 6 per cent of them have predominantly temporary structures.

These are of low quality material, built to low standards to the extent of being flimsy, with inappropriate ventilation, total lack of hygiene, extraordinary levels of congestion and extreme squalor – they even abut stinking, clogged open drains.

That these slums in themselves are not temporary are manifest in the fact that the housing is consolidated, in that people constantly try, depending on the level of improvement in their economic status, to change the material of the structures and about 45 per cent of the dwelling units have two or more storeys.

These houses are tiny, with about 42 per cent having areas of 10 sq m, 38 per cent having areas between 15 and 20 sq m and the rest 20 sq m.

The slum settlements have an in-built capacity to adversely impact lives of its residents, because the dangerous locations – hill slopes, under the high tension power transmission lines, along the narrow swath between water pipelines, coastal or creek-side locations, low-lying areas including the marshy zones, footpaths and even straying on to the main carriageways of roads. They may not have legal tenures and security thereof in all cases.

They can also impinge on the lives of others: they could, given their locations in some cases, block natural drainage systems, trigger land/mudslides, traffic hazards, fire, etc.

Source: *UNFPA, State of the World Population Report, 2007*

– the 'city', the 'eastern' and 'western suburbs' – the population on the basis of slum and non-slum, the distribution of households, the homeless population's household mean size, and the ratio of households to residential houses are indicated in Tables 4.2, 4.3, 4.4, and 4.5.

As per Table 4.2, 44.3 per cent (11,14,636 HH) of the households, the largest proportion, are in the western suburbs extending from Bandra to Dahisar, and 28.7 (7,23,790 HH) per cent in the eastern suburbs from Sion and Mankhurd to Mulund. The smallest proportion, 26.9 (6,77,163 HH) per cent is in the city extending from Colaba to Mahim, Sion, and Mankhurd (Box 4.7; see also Box 4.9).

the income criterion determining the choice of housing, though in the case of *chawls*, they are old-time residents benefiting from rents frozen at 1940 levels. The World Bank study did not find a geographical pattern or segregation by income groups across Mumbai (Box 4.8).

Pricing has a bearing on the extent of housing supply as lower the supply of housing higher are the prices. The National Housing Bank's real estate price index, Residex, was at 178 on a base in 2005 on a starting base of 100 in 2001, indicating a 15.5 per cent annual incremental hike in what one had to pay for a house. In 2008, it was 268 indicating a continuing spiral. It is remarkable that suburbs like Mulund, and

Table 4.2: Number of Households and Total Population of Slum, Greater Mumbai 2001

District	Number of Households		Total
	Slum	Non-Slum	
1. Mumbai District	224115 (16.8%)	453048 (38.7%)	677163 (26.9%)
2. Mumbai Western Suburbs in Mumbai Suburban District	580911 (43.6%)	533725 (45.0%)	1114636 (44.3%)
3. Mumbai Eastern Suburbs in Mumbai Suburban District	526958 (39.5%)	196832 (16.6%)	723790 (28.7%)
4. Total	**1331984**	**1183605**	**2515589**

***Source**: Census of India, 2001*

Another interesting profile of incomes and housing emerges from the World Bank report *Partnering with Slum Communities for Sustainable Sanitation in a Megapolis 2006*, which studied Mumbai's transport dynamics and said that 52.2 per cent of households with incomes of less than Rs. 5,000 live in slums and 37.5 per cent in *chawls*. This indicates

Virar in the adjoining Mumbai Metropolitan Region, showed sharper spikes – 418 and 349. Not only do they indicate the ever-increasing nature of prices prior to the current slowdown of the economy, but also the shift of preferences of people towards residing in the suburbs and extended suburbs.

Box 4.7: Dharavi–Not the Largest

Dharavi is routinely called 'the largest slum in Asia', a dubious attribution sometimes conflated into 'the largest slum in the world'. This is not true. Mexico City's Neza-Chalco-Itza barrio has four times as many people. In Asia, Karachi's Orangi Township has surpassed Dharavi. Even in Mumbai, where about half of the city's swelling 12 million (1.2 crore) population lives in what is euphemistically referred to as 'informal' housing, other slum pockets rival Dharavi in size and squalor.

Source: *National Geographic, May 2007*

Box 4.8: The Trade-Offs

Slums and squatter settlements represent a series of trade-offs
between
Poor living quality and close proximity to jobs and markets;
between
Poor quality of houses and low affordability in investing in housing;
between
No housing and tenural insecurity; and
between
No access to infrastructure and informal and intermittent supply of urban services.

Box 4.9: Thriving in Hardship

The Economist (December 19, 2007) described Dharavi slum as one that had residents 'thriving in hardship' and the slum itself 'triumphantly alive'.

This is how they live. In one case, 'On one side is a family of 12 living in a 90-square-foot room—about half the size of an American car-parking space. On the other, eight people share a similar area. Night-sounds suggest they include a man with a painful cough, a colicky baby, and an amorous couple. At least they can squeeze inside' the slum room.

In another case, a semi-skilled electrician, his parents, two brothers, their wives and two children lived in a 48 sq ft room. 'If half the family members slept on their sides, they could just about fit. But as the only single male,' the electrician 'felt very uncomfortable due to the lack of privacy.' Wretched nonetheless at the nightly coupling around him, '(he) began sleeping in the alley outside – and drinking heavily'.

That electrician 'then fixed a man-sized plank to the hutment wall, so that while his father and brother made love to their wives below, he could stay chastely on the shelf. Still, he sometimes sleeps outside, beside an open sewer, in the blissful quietude of the street.'

In the early mornings, 'in the metre-wide street … an ugly morning ritual has begun. "It's my turn! My husband needs to get to work!" a woman shouts, in jostling over a water tap. In Shiva Shakti Nagar, a slum area of *dalits*, there is a tap for every ten houses, or roughly 100 people. "Push off! My kids are late for school!" another woman lashes back.'

'All along the street, water is gushing into blue plastic tanks and aluminium tubs, washing sticky breakfast dishes clean. It flows down the street in a rippling sheet. Bisecting it is an open drain, which gushes torrentially, flushing away the detritus of the previous day.

'The whole mass of water is stinking as it includes a lot of human excrement—which tiny naked children, squatting with their backsides jutting over the torrent, is busy adding to. In fact, it is not supposed to be used for this purpose. The locals are instead supposed to take their turn at a block of 16 public latrines, serving 300 hutments (or 3,000 people). It costs a rupee a visit – or 30 rupees (75 cents) for a monthly family ticket.'

Then on to the commerce there: 'At 7 a.m., the early shift begins in Dharavi's 15,000 hutment factories. Typically, they consist of one or two jerry-built storeys, stuffed with boys and men sewing cotton, melting plastic, hammering iron and moulding clay. Indeed, it is for its industry, not its size, that Dharavi is most distinctive.

The residents earn millions of dollars in annual exports alone through clothes, pots, toys, and recycled materials. As the sun climbs over Dharavi, a rising timpani of metal on metal, a whirring of small machinery, indicate that the working-day has begun.' For thousands, Dharavi 'is a wonderful opportunity'. But for millions living in Mumbai 'it represents a cost.'

Table 4.3: Number of Households and Residential Houses, 1961-2001

Year	Number of Households	Number of Residential Houses
1961	803023	767730
1971	2043497	2018063
1981	1624555	1590575
1991	2051216	2027243
2001	2515589	2345986

***Source**: Census of India, 2001*

The other revealing aspect of households and the number of residential houses, indicated in Table 4.3 is an unchanging feature of the city since 1961, where the number of households have always been more than the houses occupied. In 2001, the shortage of residential premises numbered 1,69,603 – indicating a serious housing supply shortage in a city with a very active realty sector. The number of houses relative to the households was less in 1961 by 35,294, in 1971 by 25,434, in 1981 by 33,980, and in 1991 by 23,973. Thus, the shortage of houses vis-à-vis the households has been increasing constantly till 1991.

But this differential widened incredibly during the decade 1991-2001 to 1,69,603. It speaks of the enormous housing issue that remains to be addressed. However, the housing densities in Mumbai are quite high, though comparable figures are not available for other cities. The Municipal Corporation of Greater Mumbai (MCGM) has reported, using the 1981 and 1991 Census data that every square kilometre of land carried 3,362 houses. It also reported a marginal improvement in occupant size from 3.7 members per room in 1981 to 3.4 a decade later as 'likely due to reduction in family size rather than increase' in housing stock. Some 73 per cent of the households in Mumbai lived in one-room tenements.

The implication of the Table 4.3 is not that the shortage in housing units has left the households homeless. This is based on the assumption that one household somewhere stayed with another, or that families have been accommodating of others less fortunate, or put up a family of a friend or relative.

As pointed out in Table 4.4, the number of homeless households registered a substantive increase in the mean size of such households from 1.9 in 1971 to 2.0 in 1981, to 2.3 in 1991, and then sharply to 3.3 in 2001. There are less of them in the suburbs than in the other part of Mumbai. Here it must be noted that the number of homeless households and the total houseless population has registered a decrease from 1971 to 2001.

Mumbai also has another category (Table 4.5) of residents – the institutional households with an increasing mean size. These households are of persons not related to one another and include persons living together in boarding houses, hostels, messes, residential hotels, lodges, rescue homes, jails, ashrams,

Table 4.4: Number of Houseless Households and their Population

Particulars	2001			1991	1981	1971
	Mumbai Suburbs	Mumbai City	Greater Mumbai	Greater Mumbai	Greater Mumbai	Greater Mumbai
Household	4591	7184	11771	16825	22608	31133
Population	15074	24000	39074	38763	44289	59169
Mean Size			**3.3**	**2.3**	**2.0**	**1.9**

***Source**: Census of India (1971 to 2001)*

among others. However, it is unclear whether this statistical category also includes paying guest accomodation, especially for families. The number of such households during the four decades from 1971 remained more or less at about 10,000 except a drastic fall in 1991 to 4,341. The male population was higher than female population among institutional households. The average size of institutional households was about 13 in 2001, about same during 1981 and 1991, while it was 7.4 in 1971.

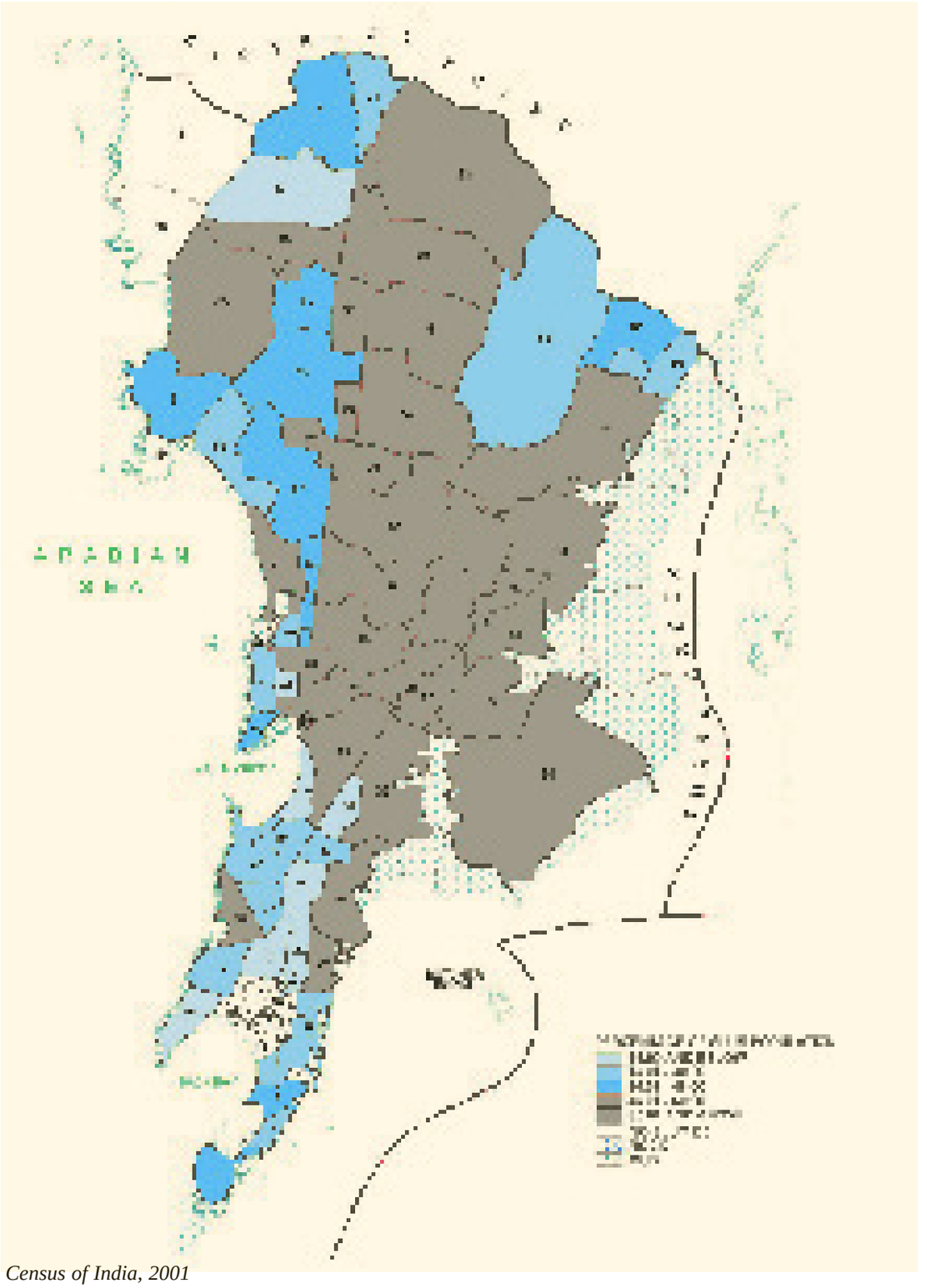
About three-fourths of the enumerated population is present in the eastern suburbs of Mumbai and lives in slums, while a half of them are to be found doing so in the western suburbs. A third of them (Table 4.6) live in the island city. The concentration of slum population was at 85 per cent in Ward L and Ward S of the eastern suburbs and 77 per cent in Ward M/West in 2001. In other eastern suburban wards the slum population varies between 60 to 70 per cent; except in Ward T which shows lowest percentage of slum (33 per cent). The wards of western suburbs shows a little lower percentage of slums population as highest in H/W (78 per cent), P/North (64 per cent), R/South (55 per cent) to lowest in R/C Ward (34 per cent). Map 4.1 and Table 4.6 show ward-wise distribution of population in slum and non-slum areas.

Table 4.5: Number of Institutional Households and their Population

Particulars	2001			1991	1981	1971
	Mumbai Suburbs	Mumbai City	Greater Mumbai	Greater Mumbai	Greater Mumbai	Greater Mumbai
Household	5005	5705	10710	4341	12415	9366
Population	59075	73724	132799	59622	158312	68841
Mean Size	**11.8**	**12.9**	**12.4**	**13.7**	**12.8**	**7.4**

***Source**: Census of India, 1971 to 2001*

Map 4.1: Greater Mumbai Municipal Corporation:
Percentage of Slum Population to Total Population, 2001 (Sections)



***Source**: Census of India, 2001*

Table 4.6: Ward-wise Slum and Non-slum Population, 2001

Ward	Total Population			Slum Population			Non-Slum Population			Sex Ratio	
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Slum	Non-Slum
A	121644	89203	210847	34076	26817	60893	87568	62386	149954	787	712
B	81055	59578	140633	11441	7305	18746	69614	52273	121887	638	751
C	127901	75021	202922	0	0	0	127901	75021	202922	-	587
D	205459	177382	382841	21885	16192	38077	183574	161190	344764	740	878
E	250867	189468	440335	32014	20216	52230	218853	169252	388105	631	773
F/S	216366	179756	396122	79214	62439	141653	137152	117317	254469	788	855
F/N	292759	231634	524393	175912	128588	304500	116847	103046	219893	731	882
G/N	322009	259998	582007	187237	137649	324886	134772	122349	257121	735	908
G/S	260186	197745	457931	87468	64038	151506	172718	133707	306425	732	774
H/E	322635	258200	580835	257555	200067	457622	65080	58133	123213	777	893
H/W	178140	159251	337391	77100	61441	138541	101040	97810	198850	797	968
K/W	379291	321389	700680	179496	136569	316065	199795	184820	384615	761	925
K/E	440992	369010	810002	259946	212280	472226	181046	156730	337776	817	866
P/S	244500	193349	437849	123396	87195	210591	121104	106154	227258	707	877
P/N	439106	359669	798775	286383	222052	508435	152723	137617	290340	775	901
R/S	335157	254730	589887	193433	132802	326235	141724	121928	263652	687	860
R/C	271126	241951	513077	96181	76979	173160	174945	164972	339917	800	943
R/N	199798	164029	363827	97225	72437	169662	102573	91592	194165	745	893
L	442090	336128	778218	378511	280461	658972	63579	55667	119246	741	876
M/E	374611	300239	674850	293116	230208	523324	81495	70031	151526	785	859
M/W	226431	187619	414050	158444	125113	283557	67987	62506	130493	790	919
N	333989	285567	619556	238290	196719	435009	95699	88848	184547	826	928
S	379474	311753	691227	327592	265708	593300	51882	46045	97927	811	887
T	174380	155815	330195	63519	52731	116250	110861	103084	213945	830	930
TOTAL	**6619966**	**5358484**	**11978450**	**3659434**	**2816006**	**6475440**	**2960532**	**2542478**	**5503010**	**770**	**859**

***Source**: Census of India, 2001*

Box 4.10: Defeating Slums

Overcoming the slum phenomenon ought not to be impossible. But it can be a complex uphill task given the numbers involved.

The Afzulpurkar Committee (1995), Government of Maharashtra, which studied slum eradication has said that rehabilitation of close to 80 per cent of them *in situ* rehabilitation should be feasible. That rehabilitation would enhance their standards of living as well as bring about a marked improvement in their hygiene and health 'including the level of public hygiene which has fallen to very low ebb.'

Rehabilitation via cross-subsidisation of the replacement dwellings to be allotted free of cost, though not supported by any housing philosophy so far, has become a necessity. The thrust of the argument is based on the idea that slum dwellers deserve preferential, unequal treatment to bring them into the mainstream of social, cultural and economic fabric of the city. 'If inequality has to be removed, there have to be unequal laws.'

Till 1970s, they were illegal squatters, demolitions were the norm though not effective and was seen by the civil society as inhuman. The occupants, of course, were unnerved and helpless.

This marks a major departure from the past approaches to slums. Treating the land colonised as a resource was the turning point in the slum eradication intents in which extra FSI – 2.5; developers are now allowed to sell excess space in the open market to subsidise the free 225 sq ft replacement component per family living in the slum. This would be at no cost to the state or the civic body, but the private sector evinces interest where the prices are promising. Not every slum would interest them.

Dharavi, the iconic slum, is the principal place where the biggest chunk of this kind of work is in the pipeline, but it has a long way to go before the dream of both the slum occupants, the authorities, and the open market are fully realised. There is some suspicion about the benefits accruing to the legitimate slum dwellers and whether this is aimed at slum eradication or unjust enrichment of the construction industry.

This is bound to take time before all is done because of the complexities involved mainly due to sheer size of the effort. A lengthy gestation should not be a surprise.

The Dharavi project is the biggest ever contemplated though an assortment of small successes has been notched up elsewhere in the city. One problem is of ensuring *in situ* rehabilitation in some places because the lay of the land does not lend itself to it. That adds a dimension of another kind to a complex issue: the new location has to be satisfactory to the slum occupants who stand to benefit. Location is often specifically linked to livelihoods and kinship as well.

However, an earlier project to build on more or less the same lines project taken up in the mid-1990s faltered because the open market prices were not sufficiently high to provide room for profitable sale in the open market and subsidise the free component. Now, the FSI allowed is 2.5 in order to enable just that.

The earlier decades saw slum improvement being taken up, and a census of such informal housing to the cut-off date of 1976 was done and identity cards issued to dwellers. Now the cut-off date is 1995. The decade of the 1980s was when lands occupied were given on lease and soft loans provided to upgrade their premises; but this was only on lands which were not reserved for public purpose, and on government land.

***Source**: Patel (2006)*

The non-suburban wards show wide variation of population living in slum areas from slum free wards such as Ward C to about 58 per cent in Wards F/North and G/North. The lowest percentage of slum population is recorded in Wards B, D, and E, ranging between 10 and 13 per cent (Table 4.7).

Table 4.7: Ward-wise Percentage of Slum and Non-slum Population, 2001

Ward	Total Population			Slum Population			Non-Slum Population			Percent Population	
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Slum	Non-Slum
A	1.84	1.66	1.76	0.93	0.95	0.94	2.96	2.45	2.72	28.9	71.1
B	1.22	1.11	1.17	0.31	0.26	0.29	2.35	2.06	2.21	13.3	86.7
C	1.93	1.40	1.69	0.00	0.00	0.00	4.32	2.95	3.69	-	100.0
D	3.10	3.31	3.20	0.60	0.57	0.59	6.20	6.34	6.27	9.9	90.1
E	3.79	3.54	3.68	0.87	0.72	0.81	7.39	6.66	7.05	11.9	88.1
F/S	3.27	3.35	3.31	2.16	2.22	2.19	4.63	4.61	4.62	35.8	64.2
F/N	4.42	4.32	4.38	4.81	4.57	4.70	3.95	4.05	4.00	58.1	41.9
G/N	4.86	4.85	4.86	5.12	4.89	5.02	4.55	4.81	4.67	55.8	44.2
G/S	3.93	3.69	3.82	2.39	2.27	2.34	5.83	5.26	5.57	33.1	66.9
H/E	4.87	4.82	4.85	7.04	7.10	7.07	2.20	2.29	2.24	78.8	21.2
H/W	2.69	2.97	2.82	2.11	2.18	2.14	3.41	3.85	3.61	41.1	58.9
K/W	5.73	6.00	5.85	4.91	4.85	4.88	6.75	7.27	6.99	45.1	54.9
K/E	6.66	6.89	6.76	7.10	7.54	7.29	6.12	6.16	6.14	58.3	41.7
P/S	3.69	3.61	3.66	3.37	3.10	3.25	4.09	4.18	4.13	48.1	51.9
P/N	6.63	6.71	6.67	7.83	7.89	7.85	5.16	5.41	5.28	63.7	36.3
R/S	5.06	4.75	4.92	5.29	4.72	5.04	4.79	4.80	4.79	55.3	44.7
R/C	4.10	4.52	4.28	2.63	2.73	2.67	5.91	6.49	6.18	33.7	66.3
R/N	3.02	3.06	3.04	2.66	2.57	2.62	3.46	3.60	3.53	46.6	53.4
L	6.68	6.27	6.50	10.34	9.96	10.18	2.15	2.19	2.17	84.7	15.3
M/E	5.66	5.60	5.63	8.01	8.17	8.08	2.75	2.75	2.75	77.5	22.5
M/W	3.42	3.50	3.46	4.33	4.44	4.38	2.30	2.46	2.37	68.5	31.5
N	5.05	5.33	5.17	6.51	6.99	6.72	3.23	3.49	3.35	70.2	29.8
S	5.73	5.82	5.77	8.95	9.44	9.16	1.75	1.81	1.78	85.8	14.2
T	2.63	2.91	2.76	1.74	1.87	1.80	3.74	4.05	3.89	35.2	64.8
TOTAL	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**54.1**	**45.9**

***Source**: Census of India, 2001*

Mumbai's non-slum and slum areas have one thing in common and that is numbers. The slum and non-slum population are almost equally divided, with the percentage tilting in favour of the slums. In terms of economic status, the slum is the face of urban poverty, though relatively poorer quarters compared to the non-slum areas' status could exist outside of the slums.

The two significant aspects that emerge from Table 4.8 are that the sex ratios are low for all of Mumbai but are far lower in the case of slums, almost under 750. This can possibly be attributed to the migration patterns characterised by single-male migration; this is especially true in case of the poor from rural areas. The *Maharashtra Human Development Report 2002* had discussed this retrogressive 'ruralisation' of an urban sphere by rural-led in-migration.

the Government of India has for the first time flagged the issue of the security of tenure for the urban poor as a necessary prerequisite for the sustainable and inclusive development of the urban agglomeration.

In pursuit of ensuring Shelter for All, the Government of Maharashtra (GoM) introduced a multitude of schemes. Until the 1970s, the Government of Maharashtra and the Municipal Corporation of Greater Mumbai followed a policy to unilaterally demolish slums and clear land of encroachment. However, this strategy did not work because people simply rebuilt their huts after some time at the same location or at another unoccupied locations nearby. In the 1970s, however, legislation and policy changed. Slums began to be viewed as housing solutions and the state began to provide water, sanitation, electricity, and other amenities in these areas. Furthermore, the state started to recognise that when slums were demolished, some

Table 4.8: Percentage Population of Slum and Non-Slum Area of Mumbai, 2001

Area (Constituent Wards)	Percentage of Total Population to Greater Mumbai Population	Percentage of Slum Population to Total Respective Area Population	Sex Ratio		
			Total	Slum	Non-Slum
City Proper District[1]	27.87	32.73	777	736	798
Western Suburbs[2]	42.85	54.02	826	765	903
Eastern Suburbs[3]	29.28	74.41	817	789	904
Total	**100**	**54.06**	**809**	**770**	**859**

*(**Source**: Census of India (2001b)*

***Notes:** 1. Ward A, B,C, D, E, F/S, F/N G/N and G/S*
2. Wards H/W,H/E, K/W, K/E, P/S, P/N, R/S, R/C and R/N
3. Wards L, M/W, M/E, N, S and T

Slum Policy: Rehabilitation and Resettlement

The Millennium Development Goal 7, Target 1, seeks to achieve by 2020 a significant improvement in the lives of at least 100 million slum dwellers. The onus for India alone is to address a total sum population of 60 million slum dwellers. The BSUP-JNNURM of

form of resettlement was needed. In 1976, a Census of huts on public lands was conducted and photo passes issued to all those found eligible. (Living in the slum at the time of the Census was the criteria.) This was the first time that slum dwellers were given any form of security (Box 4.10).

Initially they were based on the perception of upgradation. Since upgradation and the Low Income Group Shelter Programme, supported by the World Bank, the government began realising that although the scheme had reached 85,000 families, the tasks of providing security of tenure and better living conditions was proving to be further daunting.

The constraints of finance and paucity of land led the government to don the mantle of a facilitator instead of a provider, where shelter needs of urban areas were concerned. In order to address the constraints and harness the business potentials of Mumbai's strategic location, the Slum Redevelopment (SRD) Scheme and the Slum Rehabilitation Scheme (SRS) were introduced. They heralded a change of stakeholders. Real estate players and infrastructure companies emerged as important stakeholders.

The Slum Rehabilitation Authority (SRA) and the GoM framed comprehensive rehabilitation and resettlement (R&R) policy that has enabled the provision of security of tenure to slum dwellers who have been affected due to the road and rail infrastructure projects, and those who have participated in the SRS as well as the previously known SDS in the city of Mumbai. In the past two decades, Mumbai has undertaken an innovative exercise in R&R, which is unique in its provisions of security of tenure, fair play of market forces and active involvement of non-governmental organisations (NGOs). The relative success achieved on R&R issues in Mumbai has been primarily due to the lead role played by the World Bank, along with the supportive administrative infrastructure in the Mumbai Metropolitan Regional Development Authority (MMRDA) and active civil society organisations.

These legal provisions have provided security of tenure to three categories of slum dwellers – those affected by infrastructure projects, those who participate in the slum rehabilitation and redevelopment schemes, and those housed through the slum improvement schemes in the past.

In Mumbai, the potential for R&R is substantial on account of infrastructure and expansion projects and slum rehabilitation schemes. The estimated slum dwellings affected due to road and railway transport projects are around 50,000, (MUTP, MUIP, Mithi, Metro). The Airport Expansion Programme estimates the need to rehabilitate approximately 60,000 to 80,000 families. The Dharavi Redevelopment Project further requires rehabilitation of 57,000 families. The SRA project statistics reveal that more than 1.55 lakh units have obtained approval for rehabilitation. The Municipal Corporation of Greater Mumbai initiatives like BRIMSTOWAD, implementation of the Development Plan and Town Plan reservations also call for additional rehabilitations of more than 5,000 families. The magnitude of rehabilitation and redevelopment is, thus quiet vast with critical implications for Mumbai's future expansion and development.

The SRA schemes have emerged as observation grounds to assess the impact of rehabilitation. Since many of the colonies are now more than seven years old, it has been possible to ascertain the emerging challenges and issues that are arising due to resettlement and rehabilitation. MMRDA and SRA have been periodically assessing the rehabilitation processes. They have also provided for the appropriate institutional mechanisms to address the grievances and lacuna in the process.

There is a growing realisation that while the cityscape is undergoing rapid changes, slum housing is a critical component of the city's landscape which needs to be addressed effectively.

The R&R is emerging as a multi-disciplinary challenge. The issues involved are not only restricted to engineering or community development principles, but also need integrated efforts on the part of planners, economists, fiscal experts as well as progressive real estate players. There is a further need to identify the critical socioeconomic, health and cultural dimensions of slum rehabilitation with the goal of providing necessary policy inputs for future rehabilitation programmes.

Access to Basic Urban Services

With regard to basic urban services, the slum dwellers in urban areas suffer vulnerability and deprivation on multiple counts. As per estimates based on NFHS-3 data, only 18.5 per cent of urban poor households have access to piped water supply at home, which is much less than the urban average of 50.7 per cent households. Likewise only 47.2 per cent have access to toilet facilities as compared to the urban average of 83.2 per cent (UHRC reanalysis of NFHS- 3 data). The major reason for degradation of city environment in the slum areas is improper waste management, sanitation and inadequate water supply.

Access to Water Supply

The Municipal Corporation of Greater Mumbai supplies 3300 mld (millilitres per day) of water per day in city of Mumbai. All houses in Mumbai use tap water – save those depending partially or intermittently on untreated water from wells ferried by private tankers in a private arrangement – but the proportion of those with piped water in their dwelling is high at 92 per cent in non-slum homes. It is substantially low in slums. In the slums water costs more for the user because of indigenous arrangements made by users, and of paying exorbitant price to private suppliers, a fact often ignored when discussing relevant data. Table 4.9 presents the access to water through different sources to slum households.

Table 4.9: Access to Water in Slums

Type of Water Supply	Percentage of Slum Households	Number of Slums
Individual	5.26	103
Shared	49.77	975
Stand post	11.69	229
Tubewell	0.51	10
Mixed	31.9	625
No supply	0.87	17
Total	**100**	**1959**

***Source**: YUVA and Montgomery Watson Consultants, India, 2001*

Box 4.11: Community Participation in Water Distribution

To achieve the goal of universalising services to all those consumers including the marginalised groups within the cities, the strategy of community participation plays an important role.

The experiences of community participation has been demonstrated in certain countries such as the southern part of Latin America; water cooperatives operate in the urban areas in Argentina and Bolivia. Similar experiences of community participation in water supply were demonstrated by a Dhaka-based NGO in Bangladesh. The key components of the community model include organising and mobilising the community to identify convenient site for a water point, to operate and maintain the water point, and to manage day to day distribution on behalf of the community. The Municipal Corporation of Greater Mumbai has pioneered several initiatives of extending basic services to slum population of the city.

***Source**: Jain (2007)*

Community Participation in Water Distribution in Mumbai

Participation of slum dwellers in water management in the context of slums of Mumbai is an unique example. The MCGM supplies about 3,000 million liters of water per day to its citizens. As a matter of policy, the MCGM supplies water to the slums in the tolerated category, i.e., slums constructed prior to 1995. However, in certain cases water does not reach the far end of the distribution system of those settlements, which are located on the hilly land. Slum dwellers in these colonies do not get water supply despite their entitlement as per policy (Box 4.11).

Under the initiative taken by the MCGM, slum pockets situated at the higher levels that do not get water are motivated to form a Cooperative Society. The society elects a committee comprising Secretary and Treasurer, who are responsible for day to day working of the scheme as well as collecting the bills for payment towards electricity, water, and sewerage charges. The concerned Ward Engineer (Water Works) verifies the document submitted with the application to ascertain their eligibility. The documents required are mainly photo passes, ration cards and the voters list. This is to ensure that the housing structures near which water supply is being made available were in existence prior to 1995.

After scrutiny of the various documents submitted, a final list is drawn where the names of the members who are eligible for water connection are listed. All the details regarding the elevation of the location, the population to be served, and the water pressure available in the water main in the locality are furnished to planning division of Hydraulic Engineers Department of MCGM. The planning division then designs the scheme and the papers are returned to respective Assistant Engineer, Water Works of wards for the approval of the scheme and to collect Rs. 200 per hut from the society, all the eligible huts and deposit the same with MCGM as a security deposit.

On receipt of the security deposit, the Assistant Engineer sends the documents to the construction division of Hydraulic Engineer Department for preparing the estimate and executing the scheme. The scheme is executed at Mumbai Cost. When the Scheme is completed, including the inlet connection to the sump and installation of the pumps and receiving of the electric supply to these pumps, the scheme is handed over to the said group, which, in turn, enters into an agreement with the Corporation regarding maintenance of the scheme and payment of various charges.

Through its infrastructure of water mains, the Municipal Corporation supplies water to the suction tank through a single bulk meter. Responsibility of supply of water from tank to the general washing places of the group lies with the cooperative society so formed. It may be mentioned here that the location of various general washing places of the group lies with the cooperative society so formed. However, the locations are pre approved by the Corporation. After taking over the scheme, the co-operative society runs the scheme and collects the water charges and other maintenance charges from the members of the scheme and makes bill payments to the concerned authorities.

There are many such schemes in existence in Western Suburbs, Eastern Suburbs and City areas in Greater Mumbai. Due to the commissioning of these schemes, many of the slums situated on an elevation have started getting sufficient water supply (Box 4.12).

Access to Toilets

As per the NFHS data, 46 per cent of non-slum households are more likely to have toilets which they do not share with other households. Only 21 per cent in slums do not share. About 98 per cent in slums have access to some type of toilet facility, shared or otherwise. The YUVA survey (2001) showed that 1,435 slums (73.25%) depend on public toilets while less than one per cent has individual toilets. The report prepared by the All India Institute of Local Self-Government, Mumbai, using MCGM's statistics, shows an acute shortage of toilet seats – an average of 81 persons per seat, though in some clusters, it is as high as 273 per seat and the lowest is at 58 per seat.

Toilets are being added by the civic body as part of its basic civic services programme for slums; the population apparently outpaces that provisioning. The toilet blocks usually lack allied functional facilities which are indispensable for their proper usage, like running water or drainage connectivity. This is especially an issue when a large number of persons use these facilities. The absence of such allied facilities has a bearing on the sanitary status and can be a cause for a public health crisis. Such facilities almost amount to no sanitation. Thus, the mere physical existence of a toilet does not ensure that it is functional and being used by the target group. Only 14 per cent of the toilets have some water, and in its absence, the users are forced to carry their own pails. Outbreaks of malaria, leptospirosis, diarrhoea, dengue, and hepatitis are just some of the diseases attributed to poor water and sanitation facilities.

Carrying pails of water can be embarrassing for women as these invite snide remarks. Many, according to anecdotal narratives, prefer using them at night, akin to the rural counterparts who wait for nightfall or scurry before dawn for their ablutions to avoid embarrassment. According to the World Bank's (2006) document, *Partnering with Slum Communities for Sustainable Sanitation in a Megalopolis,* 20 per cent of all slum dwellers defecate in the open. Local communities point out that children are driven to such practices mainly because the toilets are not child-friendly, and the children usually do not have the capacity to wait long for their turn when these toilets are occupied.

Slum Sanitation Programme in Mumbai

A large number of Mumbai's slum population is dependent on toilet facilities provided by the Municipal Corporation of Mumbai or through MHADA. However these facilities are far too inadequate in comparison with the needs of the population. Therefore, there is visible open defecation and unhygienic conditions prevailing in nearly all slums, along roads, coastal line and the railway tracks. Squatting along the coast also pollutes coastal water to a large extent. A large number of toilets have been constructed in Mumbai under the Slum Improvement Programme by MHADA and the MCGM and Local Area Development under MPs', MLAs', and Corporators' funds.

The Municipal Corporation of Greater Mumbai launched the Slum Sanitation Programme (SSP) in March 1997, as an integral part of the World Bank funded Mumbai Sewage Disposal Project (MSDP). The SSP seeks to involve the community in the planning, construction and maintenance of the toilets, envisages upfront monetary contribution of the slum household, and establish a mechanism to ensure this. The SSP required the slum community to be organised as a cooperative society with bank accounts in joint names of the society and the MCGM to escrow public contribution for post construction toilet maintenance.

Salient Features of Toilet Blocks Constructed under SSP

- RCC frame construction instead of load bearing.
- Provision of water and electricity.
- Caretaker room.
- Squatting platform for children.
- Provision of suction and overhead tank.
- Proper disposal arrangement that is first priority to connect toilets to the sewer network.
- If available second priority to septic tank and third to A.P. block.
- Provision of bathrooms, urinals as per the space availability.

To implement this community led approach, the MCGM for the first time designed their tenders suitable for involving the Community Based Organisations (CBOs) and the NGOs that could facilitate such participation in sanitation activities. The selected NGOs or private agencies formed a joint venture with the slum society for planning and construction of the SSP toilet blocks. The programme was initiated in 1997 but picked up momentum from 2001 onwards. Today, there are 77,526 seats available in Mumbai's slums and Tables 4.10, 4.11 and 4.12 give

Table 4.10: Status of Sanitation Services in Mumbai Slums

Sr. No.	Ward	Slum Population	No. of Existing Toilet Blocks	No. of Seats
1	A	85735	20	215
2	D	39965	73	695
3	E	154365	143	966
4	F/N	205100	259	2349
5	F/S	148220	376	2631
6	G/N	326255	430	3985
7	G/S	127950	275	2154
8	H/E	478480	434	4945
9	H/W	152330	211	1660
10	K/E	463260	1193	7850
11	K/W	306385	276	2474
12	P/N	548670	721	6378
13	P/S	205225	322	2371
14	R/C	166645	449	2712
15	R/N	173220	462	2750
16	R/S	346575	498	3727
17	L	595385	618	5402
18	M/E	477670	426	5461
19	M/W	260210	289	3172
20	N	431600	532	5537
21	S	471860	1464	8380
22	T	109775	194	1712
	Total	**6247880**	**9665**	**77526**

***Source**: MCGM, Note on Slum Sanitation Programme to Government of Maharashtra, dt. 6/3/2009*

Table 4.11: Existing Status of Slum Sanitation in Mumbai

Total Required Toilet Seats	125055
Existing Number of Toilet Seats	77526
Work in Progress (Seats)	6050
Deficit of Toilet Seats	64157

***Source**: MCGM, Note on Slum Sanitation Programme to Government of Maharashtra, dt. 6/3/2009*

details about existing status of slum sanitation in Mumbai.

It can be seen from Table 4.11 as against the required number of 1,25,055 seats, Mumbai City has deficit of 64,157 toilet seats in slums. Inadequate number of toilet seats lead to longer waiting time. Overuse and poor maintenance makes them un-hygienic and unusable. Inadequate water supply and absence of electricity connections further limits the

Table 4.12: Stage-wise Existing Status of Slum Sanitation in Mumbai

Stage 1 (1997 – 2003)	Constructed 330 toilet blocks Constructed 6050 toilet seats.
Stage 2 (2005 – 2011)	(Target upto 2011) Proposed – 35000 toilet seats Work in Progress (as on June, 2009) – 2119 toilet seats

***Source**: MCGM, Note on Slum Sanitation Programme to Government of Maharashtra, dt. 6/3/2009*

use of these toilets. Women and children face difficulties in using poorly maintained toilets in the city.

As seen in Table 4.12, Stage 1, during the years 1997 to 2003, 330 toilet blocks and 6,050 toilet seats were constructed with a new community demand driven approach, with operation and maintenance responsibility on local users through the community based organisations. For Stage 2 (2005-11) – target upto year 2011 – it has been proposed to construct 35,000 toilets seats. As on June 2009, work is in progress for construction of 110 toilet blocks in Mumbai City.

Box 4.12: Initiative by Municipal Corporation–Slum Adoption Programme

The Municipal Corporation of Greater Mumbai has been providing basic services to the slum population of the city. The conventional approach of providing civic services has, however, been replaced with active community participation. One of the initiatives is 'Slum Adoption Scheme (SAS) – Dattak Vasti Yojana'. This scheme was initiated on a pilot basis in the slum pockets called Prem Nagar in Goregaon area in the Western suburbs in 2000. A population of 65,000 in this slum was successfully provided cleanliness services with the help of local CBO Suruchi Mahila Mandal. The active participation of CBO and well placed participatory mechanism of daily cleanliness services and awareness creation worked very well with visible results. This was instrumental in laying the foundation for the SAS.

The SAS was formally launched in 2001. At the initial stage, the scheme was implemented across many slum pockets and it was well received by the slum population as well as the elected representatives. The cleanliness witnessed visible improvement in difficult and inaccessible slum pockets. After reviewing the implementations process the scheme was revised in March 2005. Many new features and mechanisms were incorporated to overcome certain gaps experienced during the initial phase.

SAS was envisioned as a community-led programme, such that, all the tasks related to solid waste management in a slum would be handled by the slum community through a local CBO without over-dependence on the city administration. The aim was to create awareness amongst the slum population and connect them to the scheme through local financial contribution, involving them directly in the sanitation process. Based on the rationale that the slum residents had a stake in keeping their surroundings clean, SAS attempted to 'organise, motivate and involve the slum population' to 'to arrest the garbage at the generation stage'.

It meant to serve as possible framework of community participation in civic function. Ultimately, the vision was that the slum dwellers would 'adopt' their own slum and SAS would emerge to be 'a people(s) movement for health and sanitation by the people for the people'. Thus, the SAS, rather than remaining restricted merely to a solid waste management initiative, was to become a tool to sensitise and empower the slum dwellers in the management of basic urban services and provide a framework of city-civic partnership.

***Source**: Jain (2007)*

Access to Education

Such marked differentials do exist in the case of education as well. Though almost nine-tenths of the population above six years of age have some education across Mumbai, the slum dwellers, at 31 per cent, are less likely to have completed their 10 or more years of education. In the case of non-slum dwellers, this figure is 47 per cent. Of those in the age group of 15-49, 39 per cent of those in slums and 57 per cent of those in non-slums, would have 10 or more years of education. While there is, as per the NFHS-3, some universalised primary education in both segments, only 48 per cent of the school going children in the 15-17 age segment attend school in sharp contrast to 64 per cent in the non-slum areas.

Diversity does mark the approach to education as well as attainments in that sector in the slums. Many of the elders, in fact, are illiterate or without formal schooling at all and as the MMRDA base line survey indicated, the literacy rate in the slums is lower than Mumbai's total, at 60 per cent. The majority of children who do go to school are forced, due to economic reasons, to confine their ambitions to the municipal school close by because it is free with some incentives, including some mid-day nutrition. If any post-primary schooling is to be pursued, it is limited to the relatively well-off amongst the slum population, and this percentage is low.

Disparities in Slum and Non-Slum Areas

The other contrasting features in Mumbai's slums, which indicate that slum dwellers are worse off compared to their counterparts in other areas, are:

- The total fertility rate is 1.9 in slums compared to 1.4 in non-slum areas.
- Contraceptive prevalence is lower in slums at 55 per cent compared to 64 per cent in non-slum areas.
- The contraceptive methods also vary; slum women use less of the IUD and condoms, and use the pill more than in the non-slum areas.
- The unmet need for family planning is twice in the slums at 15 per cent of the need in non-slum areas which is 8 per cent.
- Only 62 per cent of mothers in slums would have received post-natal care within two days of the last birth compared to 77 per cent in non-slum areas.
- Though all children would have been vaccinated with BCG, slum children are slightly less likely to have been fully immunised than non-slum children – 4-5 percentage points less of three doses of polio and of DPT, and 2 percentage points less for the measles vaccine.
- Though they score over their non-slum counterparts in a much lower infant mortality rate of 25 deaths per 1,000 births compared to the non-slum rate of 40 deaths per 1,000, and also a lower under-5 mortality rate (33 vs. 44), they have a higher mortality rate between the first and the fifth birthdays which is twice as high as for those in non-slum areas – eight versus four.
- Children, due to nutritional deficiencies, are 14 per cent more likely to be stunted in slums than in the non-slum areas.
- About 40 per cent of them are more likely to be underweight but children in both areas are likely to be equally wasted.
- Prevalence of medically treated TB is much higher in slums at 600 per 1,00,000 than 458 per 1,00,000 in non-slum areas. Only 66 per cent of the slum population is aware of spread of TB through air by coughing or sneezing compared to 77 per cent in non-slum areas.
- Tobacco use is much higher in slums with 9 per cent of women and 46 per cent of men using it in some form compared to four per cent and 35 per cent, respectively, in non-slum areas.
- Alcohol use is higher at 36 per cent in slums compared to 29 per cent in non-slum areas but 1 per cent of women in both segments consume it.
- In the slums, only 62 per cent of men, and in non-slum areas, 72 per cent, have a comprehensive understanding of HIV/AIDS, including

information about need for only one uninfected partner. Among women, fewer number have knowledge about reducing the risk by use of condoms and limiting sex with only one uninfected partner. Only half of the women have a comprehensive knowledge about it.

- One in four, that is, 23 per cent of women in slums have ever experienced spousal violence but higher than the 15 per cent incidence of such violence in non-slum areas.

Implications

Mumbai's slums have unique issues. They have to be seen in two ways: one, as an issue of housing and basic facilities, and two, as an issue of income poverty which calls for an altogether different approach where incomes would have to improve. Thus, a multi-pronged approach would be essential to deal with both poverty of supportive basic facilities and poverty of income. Both these broad dimension of dealing with poverty would have to be quick, sustained, and intense. The severity of the situation suggests that there is no escape from a mission critical approach. Conceptually and geographically, ring-fencing slums for benign neglect would only perpetuate and exacerbate the problem and become an apocalyptic nightmare. In fact, slums have not received the attention they demand.

Urban governance, its quality and decision making structures in the lower levels of administration have always been a challenge. The structural reforms, functional reforms and financial reforms in cities have been slow in coming, without which many issues would not get easily resolved. But reforms have to be pushed to cater to needs of the urban poor. Presently many of the urban poverty policies lack an integrated approach. The schemes like the Slum Development, Slum Rehabilitation Policies, Slum Sanitation, and Integrated Child Development Services (ICDS) operate under different departments at the local, state and national levels. Without integrated and pro-poor planning, it is difficult to make headway on extending the outreach to the urban poor who suffer from multiple disadvantages. Housing is a major issue that would be dealt with in phases. But the insufficiency of drinking water, poor quality of water, sanitation, health care, etc., could be an immediate priority, at least in those slums which are not slotted for imminent redevelopment.

It is logically assumed that as a greater number of people are added to the 'slum dwelling' category each year, the civic priorities ought to be decidedly repositioned. Slums are not an incidental but a critical aspect, needing more than a cursory attention in urban management because there are no cities in India without slums – the city of Chandigarh has 13 per cent living in slums! But every other slum pales before Mumbai's. Pandit Jawaharlal Nehru was perhaps the first luminary who politically commented on slums: 'They are a blot on the Society's conscience'. Pandit Nehru once remarked: 'It is bad enough to inherit slums but to allow them to grow is the society's fault; the government's fault'.

It is not a matter of financial allocations alone but a matter of simple competence emerging to tackle them. What has been mandated under law and rules, and the present approach would also help in marginally easing, if not entirely resolving the crisis. The goals of human development cannot be realised if the people, in this case one half of the city, live in an environment which is polluted, degraded, and dehumanising.

Mere increases in incomes would not resolve matters. Individual actions alone cannot make any dent but incomes have to increase in order to allow people to access a better quality of life. The rise in income has to be substantial so that individual actions are possible to take the slum resident out of the slums to better serviced environments. That cannot certainly happen *en mass*. Nor would it minimise the implications of the squalor and deprivation arising from the non-income forces across the slums. The space vacated by one slum dweller is surely going to be occupied by another who is waiting to expand his/her opportunities. Therefore, a slum-dweller deserves not patchy, incidental, but rather focussed attention,

probably positive treatment – or positive discrimination – to mainstream them into a city to which they contribute.

Residentially congested areas such as Dharavi being used as a workplace brings additional risks, including fire and health. In this Dharavi is not the only example; similar other slums too have this activity flourishing, even if on a smaller scale. Chemicals, including acid, are known to flow through the open drains because of tanning activity that flourishes there. However, the proportion of the problem is not of the same scale in other slums. Who knows what would be the situation as the other slums also grow or get denser?

To start with, slums were viewed as something convenient by the middle class because it provided the manpower for domestic work and other odd jobs. Gradually, eradication by demolition emerged as an option till the 1970s. They were targets for clearances, but in later decades the society and administration began to look at them as a housing solution in the absence of their inability to provide these areas with better facilities. That is why the upgrading of facilities in slums became a norm in the 1990s. Presently the concept of 'Inclusiveness' has moved towards rehabilitation and reconstruction. There have been failed attempts in the past decade and more. The situation can be better judged when measured, even roughly, on four critical parameters of provisioning, availability, access, and outcomes of the quality of housing and lives of the very poor. However, now with Dharavi as the epicentre of redevelopment, there is hope yet that a workable widely acceptable model emerges to the satisfaction of the slum-dwellers for replication across the city sooner or later.

Here, the crucial question is not 'what is being done?' The important aspect that will determine the future is: 'how much, and how quickly and efficiently are the actions taken?'

Elementary Education

Obverse: Photographs 1 and 2; this page: photograph 3, courtesy MCGM.

5. Elementary Education: Government and Private

Near Universal, but Quality is a Concern

Education is an essential mechanism enabling people to improve in life; a community without education is regressive. The more educated and literate a people, the greater the attainments in the human development indices which measure their quality of life.

Education is a fundamental right of every child. It is a fact that every child is born with an innate desire and need to learn. Education is also critical for improving the human condition. It is an enabling process leading to social progress. Economists stress its role in human capital accumulation, human rights activists press for it as a basic right, and politicians realise its value in raising awareness and leading to a greater participation in civic life.

The Goals

Primary education has been considered by the community of nations as one of the key fundamentals for socioeconomic advancement.

In 2000, the World Education Forum in Dakar, Senegal adopted a Framework of Action, committing to attain six specific goals related to achieve Education for All. In the same year, the United Nations outlined the Millennium Development Goals (MDGs) with a view to end poverty and to bridge the divide between the world's haves and have-nots.

Central to these are Goals 2 and 3 requiring governments to ensure that by 2015 all childen of school-going age complete a full course of good quality primary education; and eliminate gender disparity in both primary and secondary education by 2015.

Universalisation of Primary Education in India: Sarva Shiksha Abhiyan (SSA) (Box 5.1)

The Constitution of India states under Article 45 of the Directive Principles, that the State shall endeavour to provide free compulsory education for all children up to age of 14. This was converted to a fundamental right of every citizen through the 86th Constitutional Amendment of India in 2002.

After the 86th Amendment to the Constitution, universal primary education has been included in the ambit of Fundamental Rights under Chapter III of the Constitution. The Directive Principle pertaining to free and compulsory education has now been detailed in two Articles as listed below:

Article 21A: Right to Education

The state shall provide free and compulsory education to all children of the age group of six to 14 years in such a manner as the State may determine.

Article 45: Provision of Early Childhood Care and Education to the Children below the Age of Six Years

The State shall endeavuor to provide early childcare and education for all the children until they complete the age of six years.

The thrust towards human development has to continue, and social and economic progress sustained and improved relentlessly. Vigorous progress is not possible without rigorous efforts in these areas. Taking off from the MDGs, India's charter is articulated in the Sarva Shiksha Abhiyan (SSA) programme of the Ministry of Human Resource Development (HRD), Department of School Education and Literacy, Government of India. The MCGM has made several strides towards achieving the above goals through its interventions under SSA.

Box 5.1: Sarva Shiksha Abhiyan, a Catalyst for Achieving Universalisation of Elementary Education

The SSA was launched in 2001-02 by the Government of India as a national umbrella programme to make the right of Universal Primary Education an effective one. It spearheads the universalisation of education through a community approach, with specific focus on the quality of education.

It is a programme with a clear time frame providing an opportunity for the promotion of social justice through basic education. It visualises the involvement of the Municipal Governments, School Management Committees, Urban Slum level Education Committees, Parent-Teachers Associations and other grassroot level structures in the management of elementary schools. It is a partnership between the central, state and local Governments providing an opportunity to the states to enlarge their own vision of primary education.

Goals of SSA

- All children 6-14 to be enrolled in school by 2003.
- All children complete 5 years of education by 2007.
- All children complete 8 years of education by 2010.
- Focus on elementary education of satisfactory quality with emphasis on education for life.
- Bridge all gaps in gender and social category groups in the Primary stage by 2007 and in the elementary stage by 2010.

The programme realises the importance of Early Childhood Care and Education, and considers the age group of 0-14 as a continuum. All efforts to support pre-school learning in the Integrated Child Development Scheme (ICDS) centres or pre-school centres in non-ICDS areas are to be made to supplement the efforts being made by the Department of Women and Child Development, Government of India.

National Knowledge Commission (NKC)

Subsequent to the formation of the Sarva Shiksha Abhiyan in 2006, the Government of India set up the National Knowledge Commission (NKC). The NKC believes that providing universal access to quality school education is a cornerstone for development and a minimum necessary condition for any progress towards making India a knowledge society. The NKC recognises that the primary responsibility for school education is borne by the state government. However, positive changes in systems, particularly in providing resources and promoting organisational and other changes would require the involvement of the central and state governments together.

The most important areas of possible interventions would include:

1. Central legislation for the Right to Education, backed by financial commitment.
2. More flexibility in disbursal of funds.
3. Decentralisation and greater local autonomy.
4. Expansion of functional literacy.
5. Planning for school infrastructure.
6. Enabling and regulating mechanisms for private schools.
7. The collection and speedy dissemination of accurate and current data on schooling must be made a priority.
8. More coordination between different departments of government on School Education Policy, even while ensuring more autonomy to the local management of schools.
9. National evaluation body for monitoring quality.
10. Revamping school inspection. With a greater role for local stakeholders and greater transparency in the system.
11. Teachers and teacher training:

    Pre-service training needs to be improved and differently regulated in both public and private institutions, while systems for in-service training require expansion and major reform that allows for greater flexibility.
12. Reforms in the curriculum and examination system.
13. Use of Information, Education and Communication Technology.
14. English language teaching.

How close, or far, is Mumbai in reaching the goals set for universalisation of elementary education? Is education universal, and if not, how much ground requires to be covered? Are the schools and communities interlinked and aware of the significance of education's role in the development process? Has the approach towards delivering education to the citizens recognised that education is no more a mere aspiration but a significant human right? If so, what are the opportunities available to the citizens, regardless of their economic class and other impediments in accessing them? Are the students being educated or do they merely go to school? If they do, are they staying in school? What are the responsi-bilities of the authorities, given the commitment to the MDGs, and the SSA's rolling out, and of the parents in maximising the opportunities afforded by the policy and the programmes? The list of questions can be endless, but suffice it to say that the MDG and the SSA targets have to be met. While meeting these targets, what is significant is the quality of the outcomes. Mere fiscal and physical targets are not holistically indicative of achievements. Once classified as a right, funds ought never to be a constraint. While meeting these targets, what is significant is the quality of the outcomes. Mere fiscal and physical targets are wasteful if the outcomes are not as planned, substantial and measurable, or even obvious. Both the inputs and the outcomes come with a price tag – unremitting effort to stay the course.

In Mumbai, there are different mechanisms for imparting education of different levels, those which this report is interested in include: firstly, the status of education of the underprivileged population, trammelled by any number of constraints; and secondly, the status of the education offered with many takers for the expensive privately funded schools.

Like everything else in Mumbai, these two aspects of education service provision offer adequate contrasts. Quite obviously, they serve the two distinct classes of the city's population: the better off opting for the more expensive private schools while the poor go to the municipal schools. Mandated by law, the civic body offers primary schooling much like any other basic service, such as health, water or sanitation. In a similar vein to the provision of other basic services, in the provision of education too there are lacunae between the goals and provision of services, be it in the form of numbers, or the quality of teaching or learning. The civic body does not view secondary

Box 5.2: Obligatory Duty

Not long after the establishment of the formal local self-government in Mumbai, primary education came under the civic body's purview. Under the Mumbai Municipal Corporation Act, 1888, Section 61(q), primary education became its subject matter and the Department of Education was established by the civic body in 1907.

Half the funds for this legally mandated responsibility is provided by the Government of Maharashtra. But the MCGM has its own salary structure and staffing pattern which is different from that of the state in this sector.

The MCGM-run schools are free for all enrolled children. . . . In addition, MCGM also supports private schools through its support programme subject to eligibility and norms to be adopted.

The Government implements the Sarva Shiksha Abhiyan in Greater Mumbai through the MCGM. The schools of the MCGM are presently functioning under the SSA whereby management of the schools is carried out by the Ward Education Committee (WEC) formed under the SSA.

The primary education system of the MCGM is a major and obligatory duty of the civic body's activity and since Independence, its reach has grown from 400 schools to 1,188 primary, 49 secondary and nine for differently abled children. Mumbai has the largest number of schools in various languages, which has provided access to education to many underprivileged children in the city.

schooling to be a 'compulsory duty' but has 'accepted the responsibility' to 'fulfil needs' of the poor.[1] It runs 49 secondary schools.

Quality

Not just going to school, but learning as well is the key to individual and societal growth. While attendance merely meets a statistical purpose and infrastructure simply provides a platform, it is the quality of learning and teaching that distinguishes a school's value to both individuals and society. Quality is not easy to define; but at the very least, it has to be seen as an improvement over the current levels of teaching and learning (including retention of taught principles). Otherwise, the mere presence of everything, even in abundance, nullifies the very purpose of schooling without measurable learning (Box 5.2).

One measure is how much a student can read, write and do simple sums, after a specific number of years spent in school. A quick survey and on-the-spot testing of students by the Maharashtra Prathamik Shikshan Parishad early in 2005 had indicated that Mumbai had about 48,000 children between Standard II and VII who were virtually illiterate. Across Maharashtra's civic and zilla parsiahd schools, as many as 8.31 lakh students were in the same plight; they accounted for about 10 per cent of students.

It is hard to say if the learning is at the indefinable 'essential level'. Universalisation automatically brings in numbers, thereby putting pressure on the system that is supposed to monitor and enhance quality. But that has to be contended with, not made into an excuse. Needless to say, this analysis does not presume that all students in all schools are illiterate and that the system has failed, but the numbers and the incubation in school does point to a serious concern. Students have reported in their depositions before the Indian People's Tribunal that classroom interactions are boring.

1 *Administrative Report, 2007*, Education Department, MCGM.

At that time, the figures were described by officialdom as 'alarming' and 'frightening' but remedial measures were initiated using the same teachers better motivated to help improve the standards. Two things emerge from this: one is that there are poor learners who are only notionally being schooled, and the other points the neglect of teaching, or at the very least, the inadequacy of it. Half from each group were from each standard, almost equally divided by gender. In Standard III, half could not read or write simple paragraphs, or do simple arithmetic; this figure stood at 30 per cent in Standard IV.

Quality of education according to SSA consists of the following aspects:

- Basic Infrastructure and other Facilities.
- Management and Community Support.
- School and Classroom Environment.
- Curriculum and Teaching Learning Material.
- Teacher and Teacher Preparation.
- Opportunity Time (Teaching-Learning Time).
- Classroom Practices and Processes.
- Learners' Assessment, Monitoring and Supervision.

However, these indicators are based on objectively monitorable areas and measure the physical aspects of the schools as well as inputs of teachers. However, one of the most important parameter, of quality of education is the learning levels of the students as inferred from two important studies in this context – one by Prathamik Shikshan Parishad and the other by Pratham and UNESCO, both conducted in 2005.

The study focussed on the achievement of learning levels at respective grades. The study involved 6,849 children from 60 schools from Standards III and IV from municipal schools in Mumbai. The students were administered tests for assessing levels of reading, writing and arithmetic. It was found that in both Standards III and IV, just over 50 per cent of students could read a complete story or paragraph. Similar was the case with writing – except that 10 per cent students from Standard IV fared better than their counterparts from Standard III. The performance in arithmetic was most dismal less than one-third students were able to do basic subtraction (Table 5.1).

Table 5.1: Learning Levels of 3rd and 4th Standards from Municipal Schools

Particulars	3rd Std.	4th Std.
Reading Levels		
Can Read Story / Paragraph	54. 70	63.90
Word	15.30	13.30
Letter	22.50	16.60
Nothing	7.50	6.20
Writing Levels		
Can Write	52.55	60.45
Arithmetic		
Division	0.80	11.40
Substraction	22.60	28.40
Number Recognition	32.00	28.00
Nothing	44.60	32.20

***Source**: Pratham and UNESCO (2005)*

The report, *Universalising Elementary Education in India's Mega-cities*: *Issues from Mumbai and Delhi* brought out by the Pratham Resource Centre and UNESCO in 2005 is revealing in the levels. Standard III and IV students from these cities, involving 60 schools in Mumbai and 86 in Delhi from where 6,849 and 9,332 children were administered the tests. Half from each group were from each standard, almost equally divided by gender who could not read, write simple paragraphs or do simple arithmetic in Standard III and 30 per could not in Standard IV. There was no substantial difference between the genders. However, the reading skills of Marathi students were better, followed by Hindi and Urdu medium students.

Subsequently, no such testing has been reported. Therefore periodic assessments by outside testers should be mandatory in order to regularly maintain and monitor the quality of teaching and learning in elementary schools. But at the same time, the precise causes, including the students intelligence quotient,

may need to be tested so that the lacunae or otherwise of the teaching process or the capacity of the teachers could be profiled. A full understanding of this is required because so many tested so poorly, hence issues about the general level of teaching and learning would remain.

The irony is that despite proactive steps (mentioned in detail in the section on initiatives), the lacunae continue to exist in Mumbai and this is a major concern in terms of universalising primary education. A better understanding of the current gaps, inequities, and inadequacies can result in the formulation of initiatives to ensure a better quality of education for children, for families, for schools, and for communities.

In spite of the delay, in the enactment of the Right of Children to Free and Compulsory Education Bill, 2008, the very pattern of education – one run by the publicly funded municipal schools in Mumbai and the other by the private sector, including for profit – the

Box 5.3: The Rights, the Responsibilities

The issue of the state's responsibility towards educating children gained focus with the judgement in the *Unnikrishnan v State of AP*[2] case which said that 'by primary education, we mean the education, which a normal child receives by the time he completes 14 years of age.'

That judgement shed new light on the notion of the Right to Education whereby the free and compulsory education up to the age of 14 assumed the status of a Fundamental Right: 'though (the) right to education is not stated expressly as a fundamental right, it is implicit in and flows from the right to life guaranteed under Article 21 every child/citizen of this country has a right to free education until he completes the age of fourteen years and after a child/citizen completes fourteen years, his right to education is circumscribed by the limits of the economic capacity of the State and its development.'

The Indian People's Tribunal (IPT) has explained the phrase 'completes fourteen years' as the 'completion approach' which is often misunderstood as 'attains fourteen years' as the 'attainment approach'. The judgment is clear that the right is invested till the person completes 14 years of age: 'This includes not only free pre-school education but also includes nine years of free schooling. Therefore in the context of school education, the actual norm laid down by the Supreme Court is nine years of schooling and not eight years.'

According to the Centre for Child and the Law, National Law School of India University, Bangalore, even the Government's flagship programme – SSA – is wrongly based on the attainment approach and not on the completion approach; and is therefore contrary to the legal mandate. The IPT's interpretation is that right to education includes nine years of formal schooling from Standard I through IX.

Subsequent Government action was to evolve a Model Right to Education Bill, 2006. However, prior to that in 2002, the Constitution was amended to state that all children between ages of 6-14, as opposed to the 0-14 years age group have a fundamental right to free education. The Model bill, in the title 'The Right of Children to Free and Compulsory Education Bill, 2008' has been introduced in the Rajya Sabha but remains to be enacted.

***Source**: IPT (2008), Public Education in Mumbai: Rhgetoric or Rights?*
The Telegraph, *Kolkata, 26 January 2009*

2 AIR 1993 SC 2178.

issue of common standards would persist and be debated on. However, attaining that level would take a significant amount of time. Free education does not mean mere attendance but equal kind of education, similarity in imparting it as well as the environment in which it is imparted. Outcomes in so far as each student is concerned would be his/her ability to learn; the curtailment of quality of education should not be the choice of the state (Box 5.3).

Literacy in Mumbai

Besides reviewing school education, one needs to review the literacy levels of all age groups of the population in Mumbai as adult literacy rates have a direct bearing on school enrollment and student retention. In 1991, the population in Mumbai was 99,25,891 which increased to 1,19,78,450 in 2001. (Census 1991 and 2001). The literacy rate in Mumbai of 75.9 per cent (according to the Census of India, 2001) is higher than the national average of 64.8 per cent. The male literacy rate in Mumbai, which was only 76.63 per cent in 1991 increased to 81 per cent in 2001, which is higher than the national average of 75.3 per cent for males. The female literacy rate increased from 64.74 per cent to 70.89 per cent which is higher than the national average of 53.7 per cent for females. Today, it is expected that the literacy rate would be higher than in 2001 due to efforts made by the State Government and Municipal Corporation. Thus, increasing literacy levels in Mumbai are matched with an increase in enrollment at the primary level as will be seen further in the report.

Early Childhood Care and Education

According to Article 45 of the Constitution, the state is expected to provide early childhood care and education to all children below the age of six years. In Mumbai there are a host of play-schools and kindergarten (KG) classes conducted by the private sector. Some of these offer world-class educational programmes; e.g., the Montessori pre-schools and schools. For the poor, *Anganwadis* are managed by the ICDS scheme and *Balwadis* are managed by the MCGM. Given below in Table 5.2 are the number of Anganwadis and Balwadis in Mumbai in 2003-04 and 2007-08.

As demonstrated in the Table 5.2, almost 5 lakh poor children in Mumbai are provided early childhood care and education. In a span of five years, there has been an increase of 26 per cent in the number of Balwadis conducted by the MCGM. Also, as mentioned earlier, the MCGM now has a separate budget allocation for the Balwadis through which it provides a teacher and a helper to each Balwadi. In an effort to provide an opportunity for education in English at the primary stage, the MCGM has also introduced Lower and Upper KG classes in English since 2007-08.

There are no specific premises provided either by the ICDS or MCGM for the Anganwadis and Balwadis. These classes are conducted in rented premises or in community centres where available. The MCGM is required to take steps to provide its own premises for the conduct of its Balwadis and also

Table 5.2: Anganwadis and Balwadis in Mumbai (2003-04 and 2007-08)

	2003-04		2007-08	
	Number	Children	Number	Children
Anganwadis	NA*	NA	4,907	4,78,696
Balwadis	410	14,158	517	15,886
Total	410	14,158	5,424	4,94,582

***Source**: Data obtained from Education Department, MCGM (2008)*

***Note:** *Not Available*

further enhance the quality of educational programmes offered through it and bring the level of education in them to at least the level offered by the private sector. Thereafter, it could attempt to bring early childhood care and education to world class levels.

Growth of Schools in Mumbai

The increasing population in Mumbai also requires an increase in the number of schools in Mumbai. In Table 5.3 below, the growth in the number of schools in Mumbai from 2003-04 to 2007-08 has been mapped.

a full course in primary education to the under-privileged children.

As evidenced in Table 5.3, by and large in Mumbai, secondary education is provided by the private sector. Four types of secondary schools are conducted in Mumbai, that is, those that offer certificates of four different School Boards namely SSC, ICSE, CBSE and the International Baccalaureate Board or IB Board. The rapid growth of IB schools shows that a larger number of children in Mumbai are opting for international level school education. Unfortunately, the MCGM secondary schools number

Table 5.3: Schools in Mumbai (2003-04 and 2007-08)

Sr. No.	School Level	2003-04			2007-08		
		MCGM	Private	Total	MCGM	Private	Total
1.	1st to 7th *	1596*	477	2073	1612*	631	2243
	Secondary						
1	SSC	49	1235	1284	49	1299	1348
2	ICSE	-	42	42	-	52	52
3	CBSE	-	18	18	-	21	21
4	IB**	1	1	1	-	8	8
	Total	**50**	**1296**	**1345**	**49**	**1380**	**1429**

***Source**: Department of Education, MCGM; Department of Secondary School Education, Government of Maharashtra*
***Notes:** *MCGM and MCGM Aided Schools*
***International Baccalaureate Board or IB Board*

From the data given above, it is seen that the number of MCGM primary schools have increased marginally (1.00 per cent) over the past five years; however, the corresponding increase in private primary schools was 32.28 per cent. This indicates that there is a tendency of the population to prefer private primary schools which have hence increased accordingly. Nevertheless, the number of MCGM primary schools providing free education to children being 150 per cent more than private schools is evidence of the commitment of the MCGM to provide

only 49, indicating a significant gap in the supply of secondary schools vis-à-vis the demand for them. As the efforts of SSA begin to bear fruit in Mumbai, the demand for secondary schools will increase.

It must be noted here that children receiving free primary education through the MCGM schools have to join a private school for a secondary education. The private SSC secondary schools which enrol the MCGM children grew by 6.48 per cent. On the whole, it appears that more secondary schools are required in Mumbai.

Access to Education

Access has to be seen in two different ways – one being the availability of schools to join, and the ability to remain there; and the other being the physical access, in terms of negotiating a path from home devoid of risks to life and limb with the absence of any stress. Given both the numbers of schools and their locations, they can hardly be called neighbourhood schools; this is subject, of course, to the topography and demography of Mumbai. This has significance because the focus in this report is on primary schooling which involves children. Since the civic schools are not enough, there are a large number of private schools for elementary education with similar constraints of negotiating the route to attendance.

Table 5.4: Ward-wise Schools by Type, Teacher, and Student Strength in 2007[3]

Ward	Total Schools	Municipal	Teachers	Boys	Girls	Total	Population
A	39	15	553	10161	7819	17980	210847
B	32	11	209	4225	4080	8305	140633
C	24	10	120	2260	2258	4518	202922
D	76	22	534	9110	7771	16881	382841
E	87	46	710	12138	12325	24463	440335
F/S	69	42	624	12757	11441	24198	396122
F/N	122	65	1530	32585	29820	62405	524393
G/S	74	62	637	9903	9295	19198	457931
GN	93	54	1030	21350	20210	41560	582007
H/W	81	37	754	14643	14063	28706	337391
H/E	86	58	980	20563	20068	40631	580835
K/E	141	75	1376	30122	27918	58040	810002
K/W	127	58	1500	29175	27457	56632	700680
P/S	80	37	863	18209	16244	34453	437849
P/N	158	78	1708	35540	33103	68643	798775
R/S	94	31	1023	23803	20909	44710	589887
R/C	98	46	977	20054	18886	38940	513077
R/N	63	22	650	15074	12590	27664	363827
L	164	88	1761	36655	33292	69947	778218
M/W	90	47	1018	20323	18040	38363	414050
M/E	106	73	1376	30985	30647	61632	674850
N	122	77	1459	26113	24942	51055	619556
S	144	63	1407	28170	25427	53597	691227
T	84	45	796	13406	12644	26050	330195
Total	**2254**	**1162**	**23595**	**477324**	**441294**	**918573**	**11978450**

Source: *Data obtained from Education Department, MCGM (2007)*

Note: *Population as per Census of India, 2001*

3 Refer to Map in Chapter 1: Introduction, Mumbai, Overburdened City

Table 5.3 indicates schools by category – government and private; the latter include schools run by trusts, charities, and even as commercial enterprises, apart from those operated by government institutions for their employees' children. The break-up is interesting: admittedly, the civic body ran the largest number of schools – 1,162 primary and upper primary schools and the private sector accounted for 1092 schools in 2007. Together they account for 9,18,573 students (see Table 5.4). Simply put, for every student in a municipal school in Mumbai city, there are 2.86 students in private schools. With respect to the 2001 population, the proportion of schools to population varies from ward to ward.

Equitable access to elementary education also includes access to attention from the teacher which comes with an appropriate teacher-student ratio. It also means equitable access to spaces, both for school buildings and in classrooms, and equity between the two kinds of schools – the publicly funded and the private. The two kinds of schools actually tend to accentuate class differences and the local government should ensure parity by upgrading its offering. It becomes the duty of a government/municipal body not to shy away whatever burden that entails.

One major facility missing are playgrounds in the schools. Only 89 primary schools and 339 upper primary schools have playgrounds, accounting for a little over 36 per cent of all schools in that category run by the civic body. The substantive meaning of this inadequacy should not be missed, in that the absence of playgrounds can detract from the full development of a child, leaving the child without appropriate stimulus for growth.

Even if a school were to be within 1 km of the home, the many urban aspects of everyday life like busy roads, erratic traffic, absence of pedestrian crossings, in places the need to negotiate a railway crossing with a train passing by every so often, make for routine impediments to accessing a school. That explains why relatively better placed students depend on overloaded auto rickshaws or even badly organised, privately arranged school buses to get to school. In light of this, sadly, accidents are not a rarity. For instance, in Deonar, while the nearest school from the community is at an acceptable walking distance of 30 minutes, children have to cross a highway and then a railway line to make it to the school.

The municipal schools have a major role in the city's education function. Being free, they attract the children of urban poor, a major chunk being children of migrants, as evidenced from increasing demands for Hindi as medium of instruction. The biggest hurdle is faced by children of such families who shift from one construction site to another. Unstable livelihoods of the parents also add to the uncertain attendance by such pupils due to makeshift living arrangements. They account for a small proportion, but when the issue is universal education they become a relevant consideration requiring remedial action.

However, despite the low ratio with respect to the private sector schools, both the number of schools and students in them has been declining despite massive efforts to get out-of-school children into the classrooms, as shown in Table 5.5. Given the continuing influx of migrants, the larger size of the population living in slums and education being a question of affordability, the shift in numbers ought to have been in the other way around.

Table 5.5: Municipal Schools and Student Strength

Year	Schools	Students
2002	1191	539967
2003	1191	509955
2004	1188	485531
2005	1184	461604
2006	1170	435052
2007	1162	343976

***Source**: Data obtained from Education Department, MCGM, 2007*

In the long term, there is an indicative will of the government for quality education which is reflected in the budget of the Educational Department in MCGM. The budget of the Education Department for years 2007-2008 was 1,098.55 crore, and for 2008-2009 it was 1,360.62 crore. The SSA budget for the city is Rs 27.90 crore. Ten years back, the spending per child was approximately Rs. 800, and this has since increased by three-fold to approximately Rs. 2,800 per child.

In the absence of data with regard to private sector schools, except (Table 5.6) whether they are aided – i.e., receiving funding support from the government or unaided but functioning under the supervision of the civic authorities, and their numbers – this Report would focus on the public education component. If improvements are required, they are in the public sector; and if it is regulation, it is with regard to the private sector – selection of students for admission, fee structure, rampant levy of capitation fees, and collection of donations, etc. Since the fee-paying community is able to cope with the demands of this sector, attention perforce has to be on the urban poor who are users of civic schools.

The private sector's 373 unaided schools cater to 1,67,463 students and the aided schools number 450 with a student strength of 2,18,407 (Table 5.6). Together, they account for half of the total students who seek primary education in Mumbai. Unrecognised schools seem to have their place in the system, in that the MCGM has identified 10,571 boys and 9,119 girls as studying in Standards I to X across the city in such schools. As seen from the above table, though the number of private schools is less, the proportion of students served is higher (student to school proportion). However, the cost of sending a student to a privately run school is much higher, but the demographic and economic disparities seem to cope with it.

The spread of the schools across the city and its wards is uneven and this has significant implications. Table 5.7 indicates the glaring disparities in the situation that exists in the southern part of Mumbai compared to problematic areas like Wards M and L. There are 15 municipal schools in Ward A catering to 4,870 children, which means roughly around 325 children per school. However, in the Wards B, C, and D, 43 schools cater to 5,529 children, the ratio being 128 children per school. In the wards from A to D, altogether, we have 58 schools with less than 11,000 children vis-à-vis the problematic M zone. Ward

Table 5.6: Categories of Primary Schools, Teacher, Student Strength (2007)

Category	Schools	Teachers	Boys	Girls	Total Students
Municipal	1162	12870	193618	200981	394599
Aided	450	4163	114101	104306	218407
Unaided	373	3631	90396	77067	167463
Permanent Unaided	258	2767	76644	56397	133041
CBSE	5	115	2014	1986	4000
Railway School	2	12	321	271	592
Unrecognised	4	37	230	241	471
Total	**2254**	**23595**	**477324**	**441249**	**918573**

***Source**: Data obtained from Education Department, MCGM (2007)*

Table 5.7: Ward-wise view of Enrollment versus Student Strength of Municipal Primary Schools

Ward	Number of Municipal Primary Schools	Number of Students
A	15	4870
B	11	1884
C	10	905
D	22	2740
E	46	9952
F/S	42	8990
F/N	65	29325
G/S	62	13987
G/N	54	20463
H/W	37	9329
H/E	58	24020
K/W	58	19207
K/E	75	21052
P/S	37	12570
P/N	78	32623
R/S	31	12488
R/N	22	8933
R/C	46	13951
L	88	33115
M/W	47	15285
M/E	73	45881
N	77	25204
S	63	17175
T	45	10650

***Source**: Data obtained from Education Department, MCGM (2008)*

Table 5.8: Private (Unaided) Primary Schools

Ward	Number of Private Primary Unaided Schools	Number of Students
A to E	49	17299
F to G	57	29087
H, K, P, R	167	77546
L, N, S, T	72	30901
M	28	12630

***Source**: Data obtained from Education Department, MCGM (2008)*

M/East alone with 73 municipal schools for 45,881 children with a ratio of 629 children per school shows the glaring disparity.

On the other hand, going by Table 5.8, one sees the maximum number of private schools – in this illustrative case, only the unaided primary schools – in the Wards H, K, P, and R. The apparent reason is that the population in the slums in these four wards is relatively better off economically compared to their counterparts in M zone. Also, there are a number of private trusts and Muslim organisations predominantly working in the zone comprising these four wards. They also are also indicative of the changing trends in primary schooling with private schools increasingly occupying the education space.

Given the pyramidal structure of schools, especially in the municipal segment, issues of continuity of education of children have emerged. Of the 1,162 municipal schools, 248 are lower primary schools which are up to Standard IV, and 914 upper primary schools with Standard I to VII. Against this, the civic body runs 49 secondary schools with Standards V to X. This poses a challenge, automatically blocking a student's seamless progress from the primary to the secondary level of schooling; there are just not enough secondary schools to absorb all those who would want to complete a full school education.

Such students are left with two options: either to drop out or seek admission in private schools for further pursuit of elementary education, which could be unaffordable. Given the miniscule number of such civic secondary schools, they need to cater to large catchment areas and students, adding to the logistical problems. Girls are more affected as the schools available are less likely to be within the close vicinity of the older school or their homes. Also, they are less likely to afford them and even culturally find it diffcult to assimilate. This is a glaring example of absence of any effort at inclusiveness in education (Box 5.4).

There is the lack of choice of language specific secondary schools to the children from the vernacular medium, which forces a reduced access to any

opportunities for further education (see Box 5.5). (The number of schools by medium of instruction is presented in Annexure Table 5A-4.) These issues demotivate children from continuing their education unless they are willing to complete their secondary education in a language alien to them, which affects their overall learning quality. Based on their inadequate learning and various impediments along the way, it naturally flows that on completion of schooling their access to livelihood of choice is severely limited. Education, or the lack of quality education, thus seems to preclude the cycle of poverty that many children are born in and will live in throughout their lives. The private sector's sole provision of secondary schooling implies that post-primary education remains out of reach of the lower income groups.

There are other concerns as well. Due to the pace of population increase, and the resultant densities in different parts of Mumbai, schools are unable to provide adequate accommodation for the students. A large number of municipal schools work in two shifts, i.e., the same building is used twice during the day. Human resources too would be lacking to meet with the demand, even though there are instances of municipal schools being shut down for want of students – this is not a universal problem, but the trend is noticeable.

On the other hand, especially in the island-city and its suburbs where the population is constantly shifting towards the suburbs and extended suburbs, some of the school buildings have fallen vacant. This

Box 5.4: Why Girls Drop Out

If it is not gender discrimination at home or financial problems that result female students dropping out of civic-run schools in Mumbai, the answer can often be found in the lack of proper sanitation facilities in the school premises.

Girls studying in civic-run schools are vulnerable to gynaecological problems like urinary tract infections and irregular periods (to name just a few), due to inadequate sanitation facilities in the school, making this one of the reasons behind girl students dropping out of schools after Standard IV.

The study was undertaken as a part of the Adolescent Girls Health Education Programme initiated by the Mumbai Municipal Teacher's Union (MMTU) in 2004. Under this programme, teachers visited 800 municipal as well as 500 private schools and found out about the dismal sanitary conditions. The study revealed that 60 per cent of the 1,162 schools did not have proper toilets. Many of the schools had a single functional toilet being used by all students in that school. Other schools had more than one toilet but were not functional, or the toilets did not have water and were poorly maintained.

Sadly, most schools start health education for girls from Standard VIII onwards, when the student is about 13, even though puberty can start as early as 10 years of age with some girls. As a consequence, these students did not have any idea of reproductive health either.

The study also found that most girls refrained from going to school when they were menstruating. And girl students, who did attend schools, did not use the toilet facilities for as long as eight to ten hours, which gave rise to urinary infections and stomach ailments among other problems.

The Primary Education for All in the City of Mumbai, India, brought out by UNESCO in 2001 had cited statistics after a sampling of 293 civic schools. Half of them did not have separate toilets for boys, girls, and teachers. Toilets in 19 'simply did not exist' and in the rest, they were inadequate. The MCGM, however, in its October 2008 data on housekeeping, has listed 20 school buildings – some obviously run more that one school in shifts – as without toilet blocks. Some had one and some as many as 66 toilet blocks.

reduced demand has led to a situation where the civic body is constrained for space in the suburbs but has a surplus in other parts of Mumbai. While the student could shift at short notice, the civic authorities are not posited to act equally quickly in finding accommodation for the intra-city migration. It is not that the civic body is without enough buildings to house its schools. It owns 423, has rented 187, and 21 categorised as 'rent free'.

While overcrowded schools are a reflection of the increasing population pressures in a city already near saturation, it is generally true that the percentage of out-of-school children in the neighbourhood of an overcrowded school is relatively high. Another concern is the language mismatch of a community and the language of the school's instruction. Though both the private and the municipal school systems provide primary education in several languages, the home

Box 5.5: Strategise, Optimise

When the demand for seats in non-English medium municipal schools began to decline[4] (the fall across language groups was 22 per cent), the civic body increased its use of English as a medium of instruction in select schools, called *Mumbai Public Schools* (MPS).

As of 2008, MPS schools numbered a total of 58 with 9,887 students being taught by 107 teachers. On an average, there are 170 students per school with one teacher for every 92 students. While the former represents adequate positive steps towards the provision of elementary education, the teacher-student ratio is disquieting and would need attention.

The preference for English as a medium of instruction in schools is going to grow, especially for those urban poor parents who would like to see their children qualify for white collar jobs.

This kind of strategising shown in developing a new stream of schools to match the aspirations of the consumer – in this case, the parents, students, and in a larger sense, the society – is required to be shown in other areas of civic governance, including in managing its schools.

As of now, many schools on the island city are experiencing depletion in student strength because of the northward shift of the population. By one official account, at least 10 per cent of schools have very low student-strengths and about 40 per cent are overcrowded.

While amalgamating thinly attended schools would be an ideal move, depending on their location and accessibility requirements, the fact remains that a large number of schools, as many as 145 previously listed as schools, are currently vacant.

One way to adequately utilise these vacant buildings would be to use them for new better planned and designed schools in other locations where the demand is growing or already high. However, in all likelihood, there would be an issue withland being reserved or dereserved for future schools.

Should dereservation occur on a large scale, the civic body will foreclose the possibility of any new schools being opened on plots once meant for schools, destroying its chances to revamp existing structures for better use, thereby providing quality educational services.

***Source**: Times of India, September 2006 and Interviews*

4 Marathi by 34 per cent, Kannada by 24 per cent, and Gujarati by 37 per cent between 2001-2002 and 2005-2006.

language of the child may not be the medium of instruction in the neighbourhood school.

MCGM is one of the few municipal corporations in India which runs schools in eight medium of instructions, namely, Marathi, Hindi, Urdu, Gujarati, Tamil, Telugu, Kannada, and English; and yet this issue merits concern in some communities. For instance, an Urdu speaking community in Govandi and Tamil speaking community in Dharavi cannot put their children in school, especially beyond Standard IV, due to non-availability of a medium of instruction of their choice. And when a child shifts location due to a demolished slum, or via a rehabilitation process because of a project, the chances of finding a school in a medium of choice becomes difficult.

Redevelopment and Education

The Right to Education is intrinsically connected to the Right to Housing where without adequate security of tenure and potential threat of displacement, the worst sufferers are children and their school education. A recent study on the perceptions of project-affected persons, involving interviews of those resettled under the Mumbai Urban Transport Project, revealed that a little more than half the parents interviewed (55 per cent) reported that there were no schools at the relocation sites of the parents choice and the other available schools were far off. As a result, children have dropped out from schools. Declining access to services such as the Public Distribution System (PDS) and other essentials like water have reduced the parental motivation towards education as a priority, which has given way to the need for daily survival.

For instance the M Ward in Mumbai has the maximum resettlement colonies. A recent survey done by Pratham across 10 such colonies showed that 627 children out of 5,263 children were out-of-school; while this amounts to a just under 12 per cent of children in the surveyed area, it reflects poorly on the entire community's human development. Access is still a concern for poor children as a majority of them are forced to travel a long distance from their residential areas to remain in school. This further dilutes the ability of schools to retain students; this is where the local authorities have imposed a hardship.

Enrollment and Retention

The enrollment data in civic primary schools shows that a majority of children are in schools. But regular attendance and retention of these children is a major issue. Also many a times the dropouts are not accurately assessed (Box 5.6). For example, aggregate numbers do not account for migration or movement of children out of or into the island city, or even transfers into other schools within the city. While a school may show a high dropout rate it may actually be the case of children transferring to another school as opposed to choosing to discontinue with the school system altogether. Sometimes children are enrolled in multiple schools due to uncertainty of admission in private schools, especially in Standard I.

It has also been observed that schools in a system which looks only at enrollment as criteria continues to maintain the registers with children who were just enrolled but never attended the school. They do so as the contingency is based on enrollment numbers. In addition, two categories of children are not acknowledged in any retention analysis:

- Children who have never enrolled in school.
- Children who have migrated into the community and enrolled into that school, not at Standard I but at a higher standard.

Provisioning, and providing access and instruction is one thing; having children in school and then retaining them throughout the schooling process is altogether different in that a complex set of reasons determines who is in school and who is not, and for what period of time. There are two categories of out-of school children, one that did not, go to school ever and the other which dropped out after enrollment. There is an acute dearth of information on dropout rates with regard to all schools, even though some

Box 5.6: The 'Missing Million Children'

How many children have dropped out of primary schools? And how many are out of school? No one seems to know for there appears to be no specific number available, although different figures are floating in the administrative and academic spheres connected with school education.

According to the Maharashtra Prathamik Shikshan Parishad (MPSP) Mumbai, in its Annual Work Plan and Budget for 2007-08, the gross enrollment rate for children of the 6-11 year age group is 109.19, while the net enrollment rate is 96.27 and a cohort dropout at 6.41. For those in the 11-14 years age group, the figures are 108.73 and 87.27 with a cohort dropout at 21.

It is also seen that the actual number of out-of-school children in Mumbai is very small, about 5 to 6 per cent. In areas without schools, like Mankhurd, Govandi, Shivajinagar and Beganwadi slum areas, 35 per cent of children are out-of-school. This means that several school-going children, who fail to cross over to the next class, are re-enrolling in the same class for a couple of years. But where there are no schools, students who do not cross over to the next drop out and do not re-enroll. In this context, the constraints are travelling distance and fees. But the issue is perhaps a much larger one. A dropout is a student who enrols in Standard I but, for a variety of reasons, does not complete his/her schooling to the level of Standard VII or X, thereby opting out of the schooling process altogether (Chavan, 2006).

The Indian People's Tribunal's *Public Education in Mumbai: Rhetoric or Rights?* has looked at both the dropout and out-of-school children issues. It finds the statistics 'puzzling' in that the children from both the civic and private schools account for 1.1 million out of a total child population of 2.1 million. 'How do the government and the MCGM account for the remaining one million who are not in schools?'

Another study cites a survey in 2004 which had found 78,000 out-of-school children in Mumbai district with Mumbai Suburban not being identified separately. A Pratham report for MCGM in 2004 had identified 78,898 out of school children. Even if these were mainstreamed, it does not account for the missing one million.

It is possible that the household surveys do not actually cover every household. For instance, only 18,966 families out of 51,908 in Ward C; 85,191 out of 1,62,465 families in Ward F North; 1,31,739 out of 1,74,566 families in Ward G North; and 72,126 out of 1,90,264 families, as per the civic body's Education Department (MCGM's SSA survey between March and July 2008) were covered.

surveys have indicated that there are out-of-school children. They are spread across the wards and seem to be high in a few wards.

The figures vary and details of the latest survey done under the Sarva Shiksha Abhiyan by the MCGM are revealed in the Table 5.9. The survey done in March and July 2008 revealed that 3,110 boys and 3,375 girls in the age group of 6-14 years were out of school, and 1,975 boys and 1,557 girls with special needs were also not in school while 889 boys and 887 girls were brought into the schools. The figures for last year were 8,897 boys and girls in the out-of-school category and 1971 in the children with special needs category. A survey in 2004 for the SSA by the same department had indicated that 34,321 children were not in school.

Out-of-School Children

Table 5.9: Out-of-School Children (2007 and 2008)

Year	No. of Out-of-School Children 6-14 Yrs			No. of Out-of-School Children with Special Needs			Such Children Admitted to School		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
2007	4153	4826	8897	1256	715	1971	NA	NA	NA
2008	3110	3375	6485	1975	1557	3544	898	887	1785
Total	**7263**	**8201**	**15464**	**3231**	**2272**	**5515**	**898**	**887**	**1785**

***Source**: 2007 and 2008 Surveys for SSA Education Department, MCGM (2008)*

Box 5.7: Mobile Children–A Special Concern

In every city, there is a fraction of the child population that lives without one or both parents. These are the most vulnerable children, often working in exploitative situations; at the most vulnerable level, this group consists of street children, runaway and missing children, rag pickers, and so on. Consequently, these children are the hardest to reach. Such children are often found in specific locations such as railway stations, red-light areas, religious spots, and in specific unorganised sector industries and businesses. The education of these children is a significant challenge and rarely focused on in policy prescriptions.

Bringing working children into schools becomes difficult since their source of livelihood is based on their employment (Phatak, 2005)

Children with Disabilities

Although these children could also come under the broader category of vulnerability, children with disabilities (CWD) across socio-economic groups related to sight, auditory impairments and locomotor impairments, form another group needing specialised attention. Education holds even more significance for CWD, who due to their various impairments already face a challenge to cope with lives. CWD hailing from poor backgrounds are even more vulnerable.

Despite the progressive policies and effective provisions in laws there is still lack of effective implementation that keeps the children away from the benefits of these various policies.

Despite efforts, the problem persists (refer also to Annexure Tables 5A-1 to 5A-6).

Pre-Schools

Pre-schooling is the foundation for later learning. The lack of pre-schooling impacts a majority of children in their performance after school enrollment. Though a modicum of support for the urban poor does come from a small, ill-organised, poorly attended to network of ICDS facilities which are supposed to take care of the health of the child and childcare needs (see Chapter 6) pre-schooling has remained outside the government's agenda. Parents do prefer a school with

attached pre-schools and secondary schools, but time and again accessibility of such schools and affordability has been the challenge.

The MCGM takes care of the component of Early Childhood Care and Education (ECCE) through its Department of Social Development which identifies a volunteer for the Balwadi for the children in the age group of 0-3 years. Thereafter an NGO, which would support the honorarium of the volunteer and other expenses, is identified. The play material and other equipment are collected through donations. There are hardly any arrangements for food and refreshments for the children. With no specific budgetary allocation for a Balwadi in particular and the ECCE in general, in the education budget of the MCGM, a significant number of Mumbai's urban poor children are deprived of this facility.

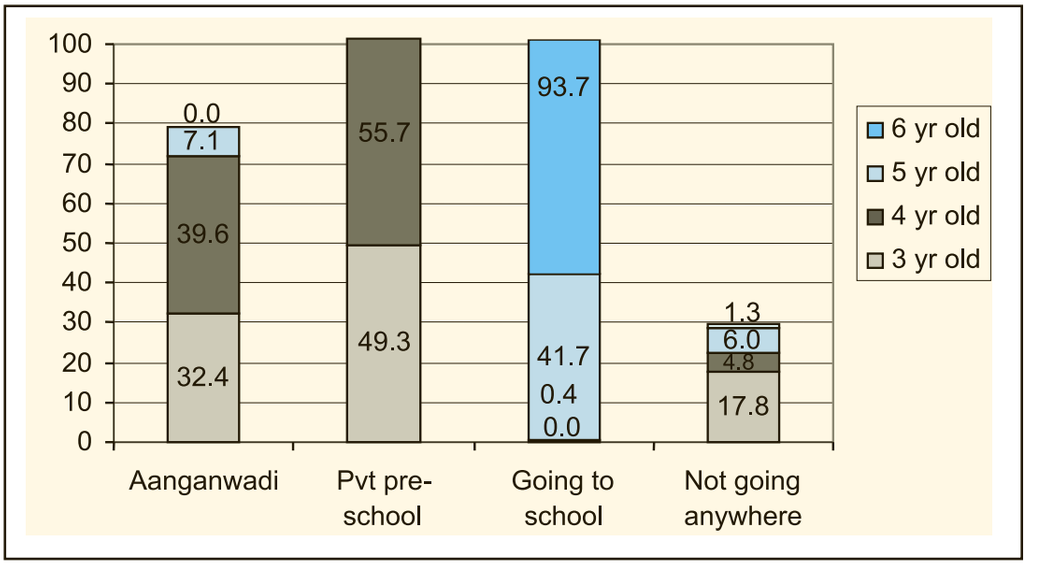
According to the 2001 Census, there are 13,64,423 children in the age group of 0-6 years, half of whom are of 0-3 years. These are crucial years of a child's growth and intellectual development, when adequate positive stimulus could imbibe in them the intent to learn. It is estimated that half this number would be from low socio-economic strata but out of this only 1,40,510 children have been enrolled in Balwadis (see Table 5.10), which means that only some

Table 5.10: MCGM Pre-School Coverage in the City of Mumbai

Sr. No.	Type	Management	No. of Centers	Boys	Girls	Total
1.	Balwadi	MCGM	431	7,313	7,185	**14,498**
		Private	1,939	56,500	57,826	**1,14,326**
		Total	2,370	63,813	65,011	**1,28,824**
2.	Anganwadi	ICDS	121	5,436	6,250	**11,686**
	Total 1+2	**Total**	**2,491**	**69,249**	**71,261**	**1,40,510**

***Source**: Data obtained from Education Department, MCGM (2008)*

Chart 5.1: Pre-School Coverage–Urban ASER 2006 Data, Mumbai



***Source**: ASER (2006)*

***Note:** Data Collected by the ASER team on Mumbai in 2006; this was not a full study.*

41 per cent children have access to 2,491 Balwadis. On the basis of one Balwadi for every 40 children, at least 5,015 Balwadis would be needed for the remaining 2,00,595 children. The number of children's, it must be noted, continues to grow.

Table 5.10 drives home the point that just 11.25 per cent of all children using this pre-primary facility are accommodated in the civic arrangement while rest opt for private, expensive pre-schools where fees could go as high as Rs. 40,000 per year. The unorganised sector, where housewives run crèche-cum-playschools, are cheaper and many, but are unregulated including in matters of safety requirements. Anganwadis as a pre-school facility have been discussed in detail in Chapter 6 where gross inadequacies have been noted.

Primary Schools

The data above demonstrates that a significant proportion of parents send their children to pre-schools. What comes out as an achievement of sorts for the MCGM is that only a significantly low

Table 5.11: Number of Schools, Pupils, and Teachers Ratio

Language	Schools	Pupils	Teachers	Teacher-Student Ratio	School-Student Ratio
Marathi	434	132725	5358	24.71	305.81
Hindi	234	111149	2687	41.36	474.99
English	46	21138	253	83.54	459.52
MPS (Std 8 & 9 only)	58	9887	107	92.40	170.46
Gujarati	96	11449	NA	NA	119.26
Urdu	203	96849	2295	422.92	477.08
Telugu	44	5176	198	26.14	117.63
Tamil	47	12999	403	32.25	276.57
Kannada	46	5172	147	35.18	112.43
Mentally Challenged	9	849	59	14.38	94.33
Aided Primary	450	218407	4300	50.79	485.34
Unaided Primary	631	300504	6745	44.55	476.23

***Source**: Data obtained from of Education Department, MCGM (2008)*

percentage of the five-year-olds are 'not going anywhere'. This is a reflection of the awareness that pre-school education is important. The other aspect which becomes clear from anecdotal evidence is that many parents, without the time to handle with household chores and children, prefer to send them to playschools.

The number of schools testifies to both the dimensions of the issue of education and the magnitude of the effort, even if it is not ideal in every sense but number alone – of schools, students, and teachers – do not convey much in terms of quality. Some quantitative parameters help understand the extent of reach. One is the student-teacher-student ratio and the other the number of students per school. Overcrowded classrooms and low teacher strength naturally convey deficiency of attention that could be bestowed on a pupil. Roughly speaking, Mumbai has a primary school for a population of 50,000.

this domain too there are teachers as well as students with a diverse set of competencies. Their other challenge is that most of the education budget is spent on the salary and other overheads with little left for aids that could make teaching and learning easier for both teachers and students. It is difficult for them to make learning joyful.

Table 5.11 indicates the widely varying teacher to student and school to student ratios, and the differentials on the basis of the medium of instruction. It is naturally bound to reflect skewed ratios across schools and across wards. This does not bode well for the quality of instruction, where not all students in all schools get the equal attention of the teachers. This is a matter of serious concern as students in the lower classes are needed to be kept constantly engaged and their curiosities addressed. A teacher beset with a huge number of students cannot be expected to help develop the innate ability to learn.

Box 5.8: Night Schools

Night schools are indeed a significant feature of Mumbai's school education system, especially for those (children of) migrants whose livelihood is tied to survival on the streets. In such cases, night schools afford these children a chance to keep up with the more formal education system.

The first set of schools was started by the communities of migrants who felt the need for self-improvement.

Most students join these schools, driven by their passion for bettering their own learning levels, but the reality remains that it is tougher to go to work during the day and study at night. Their attention span, after a day's exhaustive work, is said to be limited.

A large number of the night schools are over 100 years old and are recognised by the MCGM but a marked aspect of these schools is lower attendance, slow learning and poor results. It is not uncommon for the schools to get notices from authorities to explain poor performance.

The difference between these and the ordinary day schools is not in the syllabus but the availability of time, almost by half to a normal school student.

It is essential to understand that teachers of civic schools have their jobs cut out for them because they are dealing with children of not just diverse backgrounds, but also have pupils with parents who cannot provide the home-based support for their children, while the classroom teacher-student ratios are against them. However, as with other schools, in

Madarasas

According to the 2001 Census, Mumbai's Muslim population numbered 7,34,484, of which the Minority Commission, Government of Maharashtra reported 70,000 students attending as many as 466 madrassas (206 of which are officially registered). Most of the madarasas cater to religious and academic education

of the minority population but most of these cater to the lower economic strata of that society. Some madarasas do impart instruction up to Standard X with theology as a subject while in others children attend formal schools. The majority of these madarasas cater to population concentrated in areas of Muslim dominated areas like Chembur, Kurla, Jogeshwari, and Malwani. Of late, there has been a move from the Government of India to fund the madarasas under the SSA.

Children with Disabilities (CWD)

Social policy research has revealed that families with CWD experience a range of socioeconomic problems while trying to school their children. Unfortunately, the education of disabled children has been an ignored area both in the city and the country. Disability and inability to deal with it are closely linked with poverty. The needs of the special children are not understood by even the parents and the society.

It is assumed that all disabled children need special inputs of special educators and have to be sent to special schools. Special schools are few in number, disability specific, and are run by the voluntary sector. These schools are generally unaffordable and do not provide any special incentives like fee exemption, free uniform, textbooks, etc. (see also Box 5.7).

For instance, the literacy rate among disabled children is very low, only 17 per cent in the most serviced Mumbai area where there is a heavy concentration of special schools (NSSO Data-1991). In Mumbai there are about 35 special schools for children with disability.

Table 5.12: Data of Children with Disability in Slums of Mumbai

Type	Physical Impair-ment	Mentally Challenged	Visually Challenged	Speech Impair-ment	Hearing Impair-ment	Multiple	Other	Total
Total No. of 378 Children	179	41	50	92	66	8	814	

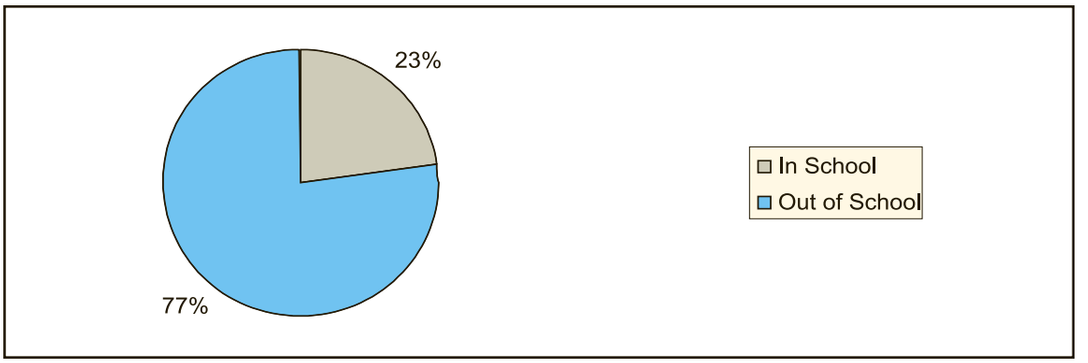
***Source**: Pratham (2008)*

Table 5.13: Special Schools run by MCGM for Specially Challenged Children

Total Number of Schools	Total Number of Divisions		Total Number of Students		Total Number of Teachers	
-	1 to 4	5 to 7/8	1 to 4	5 to 7/8	M	F
9	19	0	407	0	5	28

***Source**: Data obtained from Education Department, MCGM (2008)*

Chart 5.2: Schooling Status of Children with Disabilities



***Source**: Pratham (2008)*

Box 5.9: School-on-Wheels

The School-on-Wheels project is the flagship of Doorstep's attempts to take education to out-of-school children on the fringes of society. It imparts basic literacy skills to less settled groups of children: those who live on pavements, station platforms or street corners, and are often seen begging. These groups are mobile and usually without facilities to run classes in the areas they live. A bus provides the most suitable alternative for such a classroom. The interventions are:

- Basic literacy classes imparting the 3 Rs (reading, writing and arithmetic skills) in a non-formal setting.
- School drop-off service provided to communities within a few kilometres of the Colaba Municipal School and runs twice a day for morning and afternoon sessions.
- Children's book and toy library is set up in the bus itself.
- Educational sessions on social skills to help imbibe basic hygiene, health and safety practices. Such meetings often turn into problem solving sessions that address some of the unique problems faced by the kids.
- Recreational and educational field visits to museums, the zoo, a bank, hospital, and even a police station, the last being an attempt to dispel fears children have about policemen and for them to learn their rights and duties.

Though not universal to Mumbai, Table 5.12, relating to only slum children, is indicative of the extent of the problem. The Table 5.13 pertains to specially challenged children.

Redevelopment and Education

The Right to Education is intrinsically connected to the Right to Housing where without adequate security of tenure and potential threat of displacement, the worst sufferers are children, and by consequence, their school education. A recent study on the perceptions of project affected persons, involving

interviews of those resettled under the Mumbai Urban Transport Project, revealed that a little more than half the parents interviewed (55 per cent) reported that there were no schools at the relocation sites and the other available schools were far off. As a result of this children have dropped out from schools. Declining access to services like Public Distribution System (PDS) and other essentials like water have reduced the parental motivation for education as daily survival took priority over schooling.

For instance, Ward M in Mumbai has the maximum resettlement colonies. A recent survey done by Pratham across 10 such colonies showed that 627 children out of 5,263 children were out-of-school; while this amounts to a just under 12 percent of children in the surveyed area, this reflects poorly on the entire community's human development. Access is still a concern for poor children as a majority of them are forced to travel a long distance from their residential areas to remain in school. This further dilutes the ability of schools to retain students.

The Sarva Shiksha Abhiyan in Mumbai[5]

The SSA is implemented by the MCGM and a separate administrative section has been set up for it, under the Department of Education of the MCGM.

In the SSA, schools are grouped into clusters and one school out of a cluster is designated as a Cluster Resource Centre (CRC). The main function of the CRC is to provide training inputs and guidance to the schools in the cluster. A CRC set up in the urban area is called an Urban Resource Centre (URC). Greater Mumbai has 227 CRCs and it has 12 URCs in the six zones of Mumbai.

Enhancement of Infrastructure

The MCGM provides grants for repairing the existing school buildings or buying new furniture, to purchase teaching- learning equipments such as posters, charts, maps, tape-recorder, OHP, audio system, etc.

Improvement in the Role of Teachers and Teacher Training

The MCGM undertook several steps to improve the quality of teachers working in its school. Such as pre-service training which includes building a D.Ed college, in-service training to improve class room teaching, providing grants for teaching learning aid etc. The MCGM also runs a project of language development, where training programme for updating teachers is conducted and language lab and library have been set up.

Intervention to Ensure Access of the Educational Deprived Categories

The SSA has Alternative Education Initiative (AEI) such as Mahatma Phule Education Guarantee Scheme (MPEGS) for out-of-school children and school dropouts, remedial teaching for weak children and non-formal education classes. Free text books are provided to all children under SSA or through separate budget by the MCGM. Apart from that, Mid-Day Meal Scheme is implemented whereby *Khichadi* is provided daily to all children of Standard I to IV, and 200 ml flavoured milk to all children from Standard V to X. Provision is made for free school items to under privileged children. The MCGM also gives travel concessions in bus fare to the children staying in distant places. In addition to this, scholarships for outstanding students of Standards IV and VII which is given on the basis of separate exams.

Schemes for the Education of Disabled

One of the strategies of the SSA is to provide the education for children with special need. The SSA has a scheme of Inclusive Education for the Disabled (IED) which provides funds for the disabled children education. The MCGM further supports this scheme through the conduct of medical camps, schools for

5 *SSA Annual Report 2007-08*, Department of Education, MCGM, Mumbai

the mentally challenged, and provisions of ramps in schools.

Schemes for the Removal of Gender Disparity

This includes National Programme for Education of Girls at Elementary Level (NPEGEL) for providing additional support for education of underprivileged/ disadvantaged girls at elementary level. There is also a provision of Re 1 per day to girls for attendance at the primary and secondary schools level.

Community Participation

For the encouragement of community ownership of the local schools and to generate community responsibility for the education of the children, community representatives have become members of the ward committees for education. The MCGM Cell provides training to these community representatives to establish the public partnership.

Enhancing Administration of the School System

Acquiring accurate data about schools is a step in improving administration. For the collection of accurate and current data on schooling, the MCGM utilises its budget of data collection for the enhancement of school administration.

Innovation in Education

For the improvement of the quality of education for SC/ST children, MCGM provides for education of girls, computer education, balwadi teachers training, coaching of children for the scholarship examination for maths and science, etc. (see Boxes 5.8 and 5.9).

Use of Information and Communication Technology for School Education

The MCGM is taking special efforts for the use and training in computer technology such as, setting up the computer labs for secondary schools with computers and internet facilities.

Teaching of the English Language

In a step forward to meet the demand for education in English as a medium of instruction, MCGM has established 67 pubic schools to provide the English medium to the underprivileged children.

Initiatives of Municipal Corporation of Greater Mumbai[6] towards Improving Quality of Education in Municipal Schools

- Improvement in reading and maths has been the focus. Both the SSA and the NGOs are involved.
- Teachers training programmes for quality enhancement.
- Provision of teaching learning material and additional monetary provisions for innovations in teaching.
- Cutting down teachers' administrative responsibilities to better focus on good results.
- Focus on remedial education for laggards.
- Scholarship exams made compulsory to all students with provision of additional coaching.
- Community Development Centres (CDCs) set up since majority of the pupils are from the lower socio-economic group. The MCGM has 23 CDCs which help these students. The Community Development Officers (CDOs) arrange to provide needy students with educational material and by acquiring donations. Arrangements are also made for various other activities like non formal education centres, balbhavans, summer vacation classes, and vacation libraries. The CDOs' objective is to stem wastage and stagnation in schools. They liaise between the community and the school and make education relevant. They also work with special groups like the mentally challenged and the disabled. There are 14 para-professionals working with them.

6 *SSA Annual Report 2007-2008*, Department of Education, MCGM, Mumbai

- Public Private Partnership Cell.
- At the community level, NGO-run remedial educational classes and support classes to ensure retention and learning.
- School adoption programmes by NGOs and constant school follow ups.
- Provision of community libraries and teaching learning material for the children.
- Regular parent meetings to discuss the progress of the child and increase parent's involvement in the education of their children.

Initiatives for Ensuring Enrollment of all School Going Children

- School enrollment without age proof has been useful for children of migrating families.
- Under the SSA, the MCGM's Education Department is implementing various interventions such as teachers' training, distribution of Teaching of Learning Material (TLM), Integrated Education for Disabled (IED), Mahatma Phule Education Guarantee Scheme, Training of community leaders, mobilisation, computer laboratories, and distribution of 24 items.
- School Feeding Programme – supply of cooked food rich in protein and nutrition being done in all schools and even 180 private primary schools are also doing this. This is now extended to madarasas.
- Transitional Educational Centres (TECs) and special schemes under the National Child Labour Project for working children.
- Special provision of mobile teachers, distribution of material, free-of-cost operations have been undertaken for children with disabilities.

Conclusions

Human development is the expansion of enabling opportunities and education is one such medium, but Mumbai presents a mixed picture of plenty and poverty, of widespread development accompanied by pockets of deprivation, including in education where not just numbers of students but what they gain there matters. While quantitative expansion of schooling – both private and public – has been impressive, quality remains a question. There are data and measurement issues for any meaningful evaluation; however, adequate evidence is needed. For a comprehensive analysis of education in Mumbai, detailed data on several key areas would be needed, for instance, with regard to:

- Reliable estimate of out-of-school children.
- Accurate data on school attendance.
- Appropriate method of tracking dropouts
- Achievement or learning data for different levels.

A majority of the children in the age group of 6-14 years are in school but it is the group outside the education net which are the most difficult to deal with. Enrollment numbers simply state that children are on the school register. Attendance indicates the extent of student's actual attachment to school. The effective delivery and assimilation of knowledge needs continuous, and attentive attendance. Similarly the droupout rate is a good indicator of the efficacy or otherwise of the school system.

The local self-government has resources but a proactive partnership with citizens is required. Universalisation of elementary education is a challenge for which a committed partnership with citizens has to be developed; this would, of course, be a long haul.

Since being in school is not the only goal – it would be too superficial an intent – expected outcomes have to be specified. With quality as a minimum outcome, a special urban plan on education is called for. Only when all adults are literate and all children are in schools and learning, that the basic foundation of the human development of Mumbai will be possible.

In spite of the delay in the enactment of the Right of Children to Free and Compulsory Education Bill,

2008, in the very pattern of education – one run by the publicly funded municipal schools in Mumbai and the other by the private sector, including for profit – the issue of common standards would persist and be debated on, but attaining the level of the methodology and environment of learning offered by the private schools would take a significant amount of time. The provision of 'free' education, i.e., the absence of the responsibility of parents to pay a fee does not imply poor quality of education where attendance rates are the only measure of quality. Rather it implies the state's responsibility to provide quality education comparable to that received in private schools in both the methodology and environment of learning. Outcomes in so far as each student is concerned would be his/her ability to learn; the curtailment of quality of education should not be the choice of the state.

Recommendations

First and foremost, there is an urgent need to upgrade the image of the existing municipal school system whereby improvements can be possible in enrollment, and by enhancing quality of inputs and attention whereby dropouts can be reduced.

Upgrading Pre-school Education

To make education truly universal and treat the process as womb-to-tomb, pre-schooling has to be part of the mandate for public authorities. Anganwadis have to be integrated into this system to provide a comprehensive start to all children in this crucial sector, where if the pendulum swings by amplitude 20, the benefits in sectors like health is at least four times more.

Based on standards of care and education offered at pre-school centres, additional steps for Balwadis are required to be taken by the MCGM for bringing up the same to the desired standards. The standards should evolve by periodic review and revision based on peer and stakeholders' feedback.

There is a need for recast the municipal education policy to cover ECCE, backed with adequate budgeted funds.

The MCGM has over 1,162 primary schools but runs 431 Balwadis as well, while they should be an integral part of the schooling system. Provisions under the SSA could be used for the children in the age group of 3-5 years for the conduct of Balwadis.

Promoting Transition to Secondary Education

The kind of seamless move from primary to elementary schooling in the private sector is missing. There has to be a sharp focus on accessible and affordable secondary schooling. Given the number of municipal primary schools, there should be a proportionate number of secondary schools so that a student is not forced to hunt for a seat but encouraged to find one after his primary schooling.

Issue of Disabled Children

The issue of education of disabled children should not be looked upon as part of the system offered to everyone, but as special attention based on the type and severity of the disability is called for. In case of children with minor disabilities the idea of inclusive education should be promoted, but for children with special needs, special educators and special schools are required. A clear census of such disability-afflicted children would help to plan the programme in municipal schools.

Improving Access to Schools

- Attempt can be made to select five municipal wards considered backward and prepare a comprehensive report to do a SWOT analysis – strengths, weaknesses, opportunities, and threats – that need to be mitigated.
- Increase the number of schools in these wards as would be required.
- Ensure convergence between the various government departments like Housing, Education,

and ICDS etc., since the effort has to be comprehensive.

- Increase the number of publicly-funded government secondary schools across Mumbai and provide a synergy between the demand within the wards to cater to that first.
- Avoid dereservation of plots meant for schools and strategise use of school buildings depleted of students.

Improving Retention

- Provide free bus passes for children in municipal schools.
- Hostels for older children.
- Computer education in all schools.
- Issue identity cards for all children.
- Include pre-school in all municipal schools or provide pre-school education in the Anganwadis.
- Arrange at the school level for a special fund for vulnerable children.
- Track children via unique ID system with addresses at the time of admission and have trained officers to check those who are absent for a long spell.
- Change the image of municipal schools – name the schools.
- Stem the rate of stagnation at terminal points – the Standard IV.
- Establish Social Service Centres in schools through CDO's or the PP Cell.
- Revamp the concept of meaningful school social work.
- Community ownership through community learning centres and Government-funded support classes for children.
- Motivate girls to attend school, put in place an allowance scheme.
- Reward better performing teachers.
- Explore the possibility of providing play areas if distinct, individual school-specific playgrounds are not possible in the space-scarce city.

Improvement in Quality of Education

- Quality – Right to Education should include Learning Guarantee.
- Expect simple but valid outcomes from teachers.
- Regularly test students and monitor the mechanisms for evaluation of learning levels.
- Use teaching models developed by NGOs to make child-friendly education.
- Include remedial education as part of overall school programme.
- Start bridge courses for slow learners, non-achievers, and dropouts.
- Role of private players in improving the quality of education should be encouraged.
- Reintroduce the concept of school social work

Modifying Curriculum

Review educational curricula to include components of enterprise, life skills, conflict resolution, culture, human rights, and the environment as appropriate; broaden access to secondary and higher education; make use of cost-effective means such as distance learning; and promote knowledge transfer through volunteering and mentoring opportunities, including promotion of indigenous knowledge.

Health

Obverse: Photographs 1, 2, and 3; this page: photograph 4, courtesy MCGM.

6. Health: Quality is an Issue

Overwhelming Numbers and Under-serviced, but Poor at a Disadvantage

Health is related to the physical, economic, and social wellbeing of an individual and together makes for a healthier society. Wellbeing is both intrinsically and instrumentally an end in itself. The enjoyment of the highest standard of living, of which health is a crucial component, is the right of every person as a fundamental right of every human being. Article 25 of the Universal Declaration of Human Rights highlights the importance of health and healthcare as a right.

The Indian Constitution has directed the State to raise the level of nutrition, standard of living of people, the improvement of public health, elimination of poverty, and ignorance and unhealthy practices as part of its primary duties which is central to development. The economic development of a nation depends on the health and productivity of its people. Therefore, while computing the health index of a region, in this case Mumbai, health is one indicator of human development.

The reflection of a society's development is found and measured in their health and nutritional status. Indicators such as infant mortality rate, maternal mortality rate, provision of and access to healthcare services, and nutritional status of women and children thus assume importance. Health and nutrition is also instrumental in attaining higher productivity and economic welfare of the city residents.

The primacy of health in determining the future development of the people is asserted in the Millennium Development Goals (MDGs). Of the eight goals, which can be broken into quantifiable targets to be attained, three relate directly to health. These are:

Goal 4 : Reduce child mortality among children under-5 by two-thirds.

Goal 5 : Improve maternal health by reducing the maternal mortality ratio by three quarters.

Goal 6 : Combat HIV/AIDS, malaria and other diseases.

Goals 4, 5, and 6 are what should concern the state, civic or in the higher hierarchy of governance because variation successes in these would determine the pivot on which the society would turn. The MDGs have a direct bearing on health indicators (such as eradica-tion of poverty and hunger) and education-related indicators, which would boost health indicators. Health and education are interlinked. As access to and outcomes of education improve, so does health. Significantly, Mumbai needs to concern itself with the health of its population because despite the arguably high per-capita income and because of disparities and deprivations; more than half of the population lives in *visible* urban poverty, where poor incomes, consequent malnutrition, and unhygienic living conditions have a negative bearing on health indicators.

Health Policies

The adoption of the Alma Ata Declaration in India led to the idea of a healthcare system that is rooted in the community that could meet over 80 per cent of the healthcare needs of the population. The remaining 20

per cent would be met through referral to secondary or tertiary healthcare institutions (ICMR-ICSSR, 2000). Thus the 1983 National Health Policy aimed at 'an integrated, comprehensive approach towards the future development of medical education, research and health services…to serve the actual health needs and priorities of the country' (Government of India, National Health Policy, 1983).

The National Health Policy 2002 provided two key guidelines for providing health to the masses – equity and decentralization. These required Panchayati Raj Institutions (PRIs) and Urban Local Bodies (ULBs) to own primary healthcare management, strengthening primary healthcare institutions and generating alternative sources of financing.

The health sector planning in India has been mainly influenced by the thrust areas mentioned in the Five-Year Plans, the community development programmes, and the deliberations and recommendations of various committees appointed from time to time. The focus, however, was on reaching primary healthcare to the vast rural masses.

Health Programmes in India

Health is a subject whose responsibility is shared by central, state and local governance bodies. This ensures enough flexibility to permit the states' public health administration to design their own programme package according to their needs, and implement them through the decentralised public health machinery.

The Government has relied upon a 'vertical' implementation structure for major disease control and prevention programmes like the Immunisation programme, Tuberculosis (TB), Malaria, Leprosy, HIV/AIDS, Child Survival and Safe Motherhood (CSSM) Project. In 1997, the Reproductive and Child Health programme (RCH-Phase I) was launched incorporating child health, maternal health, family planning, treatment and control of reproductive tract infections, and adolescent health. The current phase, RCH-Phase II (2005-2010), aims at sector-wise, outcome-oriented, and programme-based approach with emphasis on decentralisation, monitoring and supervision which brings about a comprehensive integration of family planning into safe motherhood and child health.

Although it is true that the vertical programme system has been able to make a substantial dent in reducing the burden of specific diseases such as smallpox and malaria in the 1960s, there are also significant limitations. The first is that the structure is extremely expensive and difficult to sustain, and second, the concept of primary healthcare gets neglected. Vertical programmes for control of major diseases like the RCH (Phases I & II) and Universal Immunisation Programmes, would need to be continued till manageable moderate levels of prevalence are achieved. However, integration of the programmes will bring about a desirable optimisation of outcomes through a convergence of all public health inputs (Government of India, National Health Policy, 2002).

Integrated Child Development Scheme (ICDS)

The ICDS Programme launched in 1975, is the largest programme for the promotion of maternal and child health, and nutrition in India. As a multi-sectoral and multi-departmental programme, it reflected the Government of India's aim to improve the nutritional and health status of the underprivileged section of the population through a direct intervention mechanism. The programme covers 27.6 million beneficiaries with supplementary nutrition (the programme services and beneficiaries has essentially remained the same since 1975); focussing chiefly on children who are below six years, pregnant and lactating women and women in the age group of 15-44 yrs. The programme provides for an integrated approach converging all the basic services for improved childcare, early stimulation and learning, health and nutrition, water and environmental sanitation aimed at the young children, expectant and lactating mothers, and other women and adolescent girls in a given community.

The programme has been critically reviewed in the light of the *Human Development Report 2005*,

which found that about 47 per cent of India's children are undernourished and about a third are born with low birth weight. The Government of India has accepted that only about 46 per cent of the eligible beneficiaries access ICDS services.

Health Infrastructure

India has a vast healthcare sector in terms of population coverage, healthcare institutions, professional and para professional health staff, and healthcare spending.

This sector is broadly divided into public and private sectors. Estimates based on studies show that India's expenditure in the private health sector is as much as 4 per cent to 6 per cent of the GDP, in sharp contrast to less than 1 percent of the GDP which the governments spend (Duggal 1998). Only 17 per cent of all healthcare expenditure in India is borne by the government, making it one of the most privatised healthcare systems in the world.

Public health services in India consist of a network of health units that deliver primary healthcare. In rural areas, healthcare is provided through sub-centres, Primary Health Centres (PHCs), Community Health Centres (CHCs) and District Hospitals. In urban areas, healthcare is provided through the Urban Family Welfare Centres (UFWCs), Maternity Homes, Urban Health Posts (UHPs) and General Hospitals. The central government agencies such as ports, railways, etc., have their own healthcare services. The Employees State Insurance Scheme (ESIS), which includes hospitals and dispensaries caters to 84.98 lakh people and family units from the organised sector. (Health Information of India 2005)

The private health sector comprises of 'non-profit' and 'for-profit' healthcare providers. The 'Non-Profit' Health Sector includes voluntary organisations, charitable institutions, missions, and charitable trusts. The 'for-profit' sector represents general practitioners to specialists, registered trusts and private institutions. Although private healthcare forms a prominent sector, data on it is insufficient and inadequate. The private sector has better penetration in areas where the majority live. Moreover, there is another large chunk of practitioners, (estimated at about half as many as the qualified), who practice modern medicine without being qualified in any system of medicine. This is due to lack of government regulation and control. Health centres run by charitable institutions and NGOs form a small percentage of the Indian health system.

Gaps in Primary Health-Care

In 2000, the Government of India identified the following problems in providing primary healthcare:

- Persistent gaps in manpower and infrastructure, especially at the primary healthcare level.
- Sub-optimal functioning of the infrastructure available and a poor referral service (that leads to a sub-optimal utilisation of health services).
- A plethora of hospitals not having appropriate manpower, diagnostic and therapeutic services, medicines in the government, voluntary and private sectors of healthcare provision.
- Massive interstate and intrastate differences in performance as assessed by health and demographic indices, with the availability and utilisation of services being the poorest in the most needy states and districts.
- Sub-optimal inter-sectoral coordination.
- Increasing dual disease burden of communicable and non-communicable diseases as a result of ongoing demographic, lifestyle, and environmental transitions.
- Technological advances which widen the spectrum of possible interventions.
- Increasing awareness and expectations of the population regarding healthcare services.
- Escalating costs of healthcare and ever-widening gaps between what is possible and what the individual or the country can afford (Ramachandran 2000).

Household surveys show that people spend about 7-9 per cent of their annual consumption on healthcare

(Duggal 2001). Most of this expenditure is out-of-pocket and there is negligible coverage through insurance. Expenditure incurred to meet medical needs has emerged as the second-most important cause of rural indebtedness (Banerji 2005). The Government of India has been promoting privatisation and medical tourism in its quest for increased and improved healthcare and health finances.

Focus on Urban Health-Care in India

According to the 2001 Census while India has an average annual growth of 2 per cent during the last decade, urban India grew at 3 per cent, mega cities at 4 per cent and the slum population rose by 5 per cent. India's urban population accounts for almost 30 per cent of the population (approximately 285 million). More than 40 per cent of the urban population is living in slums. About 76 million of the total urban population in India falls under the 'Below Poverty Line' classification as defined by the Indian Government.

The need to develop public urban health services was first mentioned in the Sixth Five Year Plan. The Krishnan Committee was appointed in 1982 with the aim of developing urban health services. The Committee recommended that the health post staff should reach out to the community and involve the community in the implementation of the primary healthcare programme.

The skewed rural/urban availability of public health services is well known. It is true that the urban areas have more health facilities than the rural areas:

- 70 per cent hospitals and 85 per cent of hospital beds under public domain are located in urban/metropolitan areas. Thus, the ratio of hospital beds to population in rural areas is 15 times lower than that for urban areas and the ratio of doctors to population in rural areas is almost six times lower than that in the urban population (Central Bureau of Health Intelligence 2000 & 2001).
- The pattern of distribution of the private health sector is not very different; it too tends to be concentrated in urban/metropolitan areas – 60 per cent of hospitals, 75 per cent of hospital beds and 70 per cent of allopathic doctors are found in urban areas.
- Urban areas account for 70 per cent of Rs. 225 billion expenditure incurred on healthcare by the central and state governments.

However, it is equally true that problems in access to healthcare are different for the urban poor due to the 'socioeconomic distance' between the providers and the urban poor. These socioeconomic 'distances' increase the cost of healthcare for the urban poor, including social factors, such as the lack of culturally appropriate services, language/ethnic barriers, and prejudices on the part of providers. Data from urban slums show that the infant mortality rate (IMR) and under-five mortality rate (UMR) for the poorest 40 per cent of the urban population are as high as in the rural areas. Poor housing conditions, diseases, air, soil and water pollution along with industrial and commercial occupational risks, exacerbate the already high environmental health risks for the urban poor. The lack of safety nets and social support systems, as well as lack of property rights and security of tenure, further contribute to the health vulnerability of the urban poor (Deogaonkar 2004).

With the aim of filling these gaps, the Government of India has proposed the 'National Urban Health Mission' (NUHM) as a five-year mission for 429 cities including metros with the aim of improving the health of the urban poor and other disadvantaged sections, facilitating access to the health system. This will benefit 22 crore people, with the focus on a 5 crore slum population. The NUHM proposal states that all Indian cities with a population above 1 lakh, including state capitals and even district headquarters will be brought under its purview.

The Ministry of Health and Family Welfare (MoHFW), Government of India, has proposed the implementation of the NUHM programme via the strengthening of existing systems of public health service delivery, rationalising manpower and resources, and filling the gaps in service delivery through private-public partnerships. As far as possible,

the programme would converge with other urban poverty alleviation institutional structures of the Government of India such as the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) of the Ministry of Housing and Urban Poverty Alleviation (MoHUPA), the Rashtriya Swasthya Bima Yojana (RSBY) Scheme of the Ministry of Labour, and the Integrated Child Development Scheme (ICDS) from the MoHFW, Government of India.

Healthcare in Mumbai City

Mumbai has an enviable health infrastructure in comparison to other Indian cities, both in the private and public sectors. In the past, the city's business community has been involved in the provision of healthcare services chiefly via charities and trusts; however, today business houses are also actively exploring healthcare as a viable profit industry. The shift, however, is pronounced towards the expensive private sector. Broadly speaking, the municipal corporation's contribution has been seminal in developing the infrastructure of public healthcare in Mumbai. In the early part of the previous century, all the hospitals run in Mumbai were municipal-owned. In the 1950s, three-fourths of the 50 hospitals were in the public sector but it is now skewed towards the private hospitals and nursing homes. Table 6.1 depicts the picture of healthcare facilities in Mumbai (see also Box 6.1).

The intent and the provisioning of health facilities are at odds with the numbers. In virtually every aspect, the supply is behind the demand curve, be they the number of facilities leading to overcrowding of publicly-funded arrangements, their uneven spread adding to the out-of-pocket expenditure of health-seekers, which makes even the relatively inexpensive healthcare unaffordable. It suggests the need for the expansion of services across Mumbai. Stagnation or decline in public healthcare systems would only increase their ineffectiveness. Poor location also leads to another distortion; those close by use it for minor ailments ignoring the dispensaries which are the right places for attending to them.

The private sector has a dominant role in public health service delivery, albeit an expensive one. Take institutional births as a pointer to its role: in 2006, as many as 1,00,870 such births took place in private facilities – excluding the relatively nominal births at home – while the number in all publicly funded hospitals was 77,731. Similarly, on virtually every count, the private sector emerges as the player with an edge, at least in numbers. The number of general practitioners, put at 4,663 by the MCGM, 176 private hospitals, 32 hospitals run by various trusts, not necessarily on non-profit basis, and 1,258 nursing homes complete the picture.

Table 6.1: A Picture of Healthcare Providers in Mumbai

Type of Service Provider	MCGM Owned	Government Owned	Private Owned
Hospitals / Maternity Homes / Nursing Homes	51	29	1500
Beds	11700	9000	20000
Dispensaries / Clinics	185	50	30000
Post Partum Centres	30	-	-
Health Posts	176	-	-

Source: *Duggal (2004)*

Box 6.1: At Odds with Numbers

A major part of the health infrastructure that currently exists in the city was planned between 1950 and 1980 to cater to a population of about 52 to 70 lakh. Circa 2009, these very facilities are meant for more than twice the population at present. Because of this overburden on hospitals, the civic hospitals are constantly over-crowded and the list of complaints against these hospitals is seemingly endless.

Even though services offered by the municipal hospitals are more affordable than private health services, this does not necessarily mean that the urban poor have access to them. The inadequate capacity of facilities for primary and secondary healthcare and the lack of access of healthcare to the urban poor are two of the biggest drawbacks of the city's current civic health infrastructure.

It is essential to drastically increase and upgrade the health infrastructure and also prioritise the improvement of services at the primary level, including the improvement of physical infrastructure and trained staff. The pressure has to be taken off the referral hospitals.

About 21,200 out-patients are treated every day in the MCGM-run hospitals; being public institutions, they cannot refuse admission to any patient. So on any given day, a public hospital with an average of 500 beds receives a minimum of 1,500 patients (Public Health Department, MCGM, 2008, unpublished data).

The total bed capacity in the municipal hospitals being much below the optimal requirement, the private sector facilities come into play at great cost to the health-seekers. According to health experts, this is a shocking indicator of the huge gap in provision and access to healthcare in the city. The World Health Organisation (WHO) norm for provision is 1/550 population per bed; the ratio for Mumbai works out around 1/3,000.

An unfortunate side-effect of the patient-overload is the fact that hospital employees, from trained surgeons, doctors, resident doctors, interns, and even ward boys, are overworked and therefore tend to be stressed and appear, even if unintended, unfriendly. This also leads to difficulties in the doctors giving undivided attention to the cases. That is when even the best can fall short.

***Source**: Research Team at RCUES, AIILSG, Mumbai, 2008*

Fertility

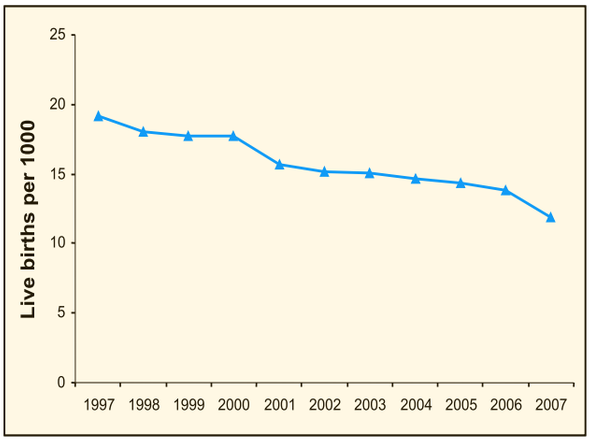
Given the better spread healthcare arrangements in urban areas, the common understanding is that urbanisation is strongly linked to increased levels of education, delayed marriages, and smaller families. As this section will demonstrate, lower birth rates in Mumbai control the city's population growth and trends, especially with regard to the number of live births as per the age of the mother and birth order. However, as would be indicated later on, early marriages seem to be the trend despite the high level of urbanisation. This paradox should cause concern.

Crude Birth Rate

During the last decade, the population of Greater Mumbai has increased from 10.9 million in 1997 to 13.07 million in 2007 as per the mid-year population estimates of the Department of Public Health, MCGM. The crude birth rate (CBR), however, declined significantly from 19.2 in 1997 to 11.87 in the same period (Graph 6.1). The current CBR in Mumbai is significantly lower compared to the CBR of 19.3 for urban areas of the state, and 18.8 for urban areas nationwide as estimated by the Third National Family Health Survey (NFHS-3). The National Population

Policy (NPP), 2001, of the Government of India aims at reducing the CBR to 15 by 2010, a target that has already been surpassed in Mumbai.

Graph 6.1: Birth Rate in Mumbai



***Source**: Data extracted from Public Health Department, MCGM, 2007-08*

The ward-wise birth rates, shown in Annexure, Table 6A-1, indicate that out of the 24 wards, four wards F/South, G/North, P/South and R/North have achieved significant reductions in CBR during the last decade. Ward C, in fact, has recorded the lowest CBR. However, wards like A and F/North have quite high CBR compared to the overall rate for the city.

Live Births by Birth Order

Given the trends in the CBR, an examination of live births by age of the mother and birth order helps understand the fertility pattern. As shown in Table 6.2 below, an astounding 80 per cent of women gave birth up to four children in the age group of 20-29. Around 90 per cent in the age group of 15-19 years had at least one live birth and 10 per cent of them had two live births in 2006. This indicates early marriages with a greater risk of maternal and neonatal mortality. For mothers in the age group of 20-24 years, 58 per cent had at least one birth, 36 per cent two births and the

Table 6.2: Live Births by Age of the Mother and Birth Order for Year 2006

Age Group of Mother	No. of Live Births										
	1	2	3	4	5	6	7	8	9	Not stated	Total
15-19	4803	442	-	-	-	-	-	-	-	15	5260
20-24	42637	26220	3476	-	-	-	-	-	-	30	72363
25-29	27938	31642	9998	2379	-	-	-	-	-	34	71991
30-34	6783	10016	4497	1774	749	-	-	-	-	25	23844
35-39	1313	2165	1202	531	339	207	-	-	-	6	5763
40-44	79	146	99	80	77	45	31	12	1	-	570
45 & Above	-	2	15	16	12	9	9	5	2	-	70
Total	**83553**	**70633**	**19287**	**4780**	**1177**	**261**	**40**	**17**	**3**	**110**	**179861**

***Source**: Data Extracted from Public Health Department, MCGM (2006)*

remaining 6 per cent, three births. But gratifyingly, the average number of births per woman is between 1.5 and 2, lower compared to the total fertility rate (TFR) for all-Maharashtra recorded at 2.31 under NFHS-3 (IIPS and Macro International, 2007).[1]

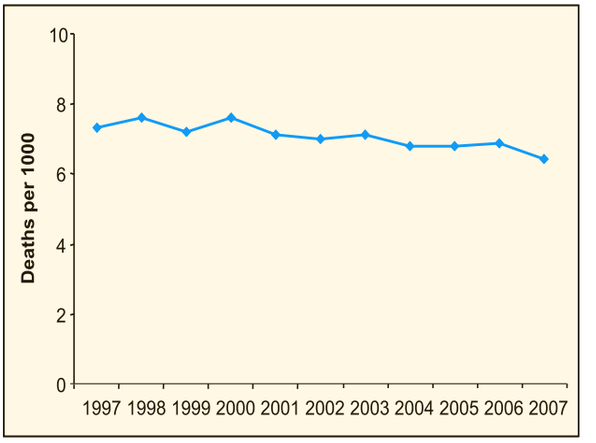
Mortality

With economic growth, relative affluence and availability of health facilities, the death rate declines in most societies. However, population growth is determined by the differential between the birth rate and the death rate. As long as the birth rate remains greater than the death rate, the population grows, as is evident in Mumbai.

Crude Death Rate

The CDR is gradually declining in Mumbai; as seen in Graph 6.2 the CDR was 7.3 per 1,000 people in 1997. It increased slightly to 7.6 in 2000 and has been steadily but gradually declining from 7.1 in 2003 to 6.89 in 2007. But not all the wards have experienced uniformly lower CDR as seen in Annexure, Table 6A-2. Wards such as D, E and F/South have experienced quite high death rates as compared to the overall rate for the city. Also the CDR in Mumbai is higher than the overall death rate for urban areas in Maharashtra at 5.6 (Public Health Department, MCGM [2006]). This coincides with lower life expectancy in the city as discussed in the next section. The higher death rate and lower life expectancy in Mumbai do have policy implications in terms of provision of medical facilities and other measures.

Graph 6.2 : Death Rate in Mumbai



***Source**: Data extracted from Public Health Department, MCGM, 2007-08*

Deaths by Age and Gender

Table 6.3 indicates the deaths by age and gender. Below one year of age, the percentage of male deaths was slightly higher in year 2007 and 7 per cent of total deaths occurred in this age group. In the age group of 1-4 years, the percentage of females was slightly higher than males and 2 per cent of the total deaths occurred among these children. Between the age of 15 and 64 years, the proportion of males in total deaths was significantly higher than females. Between 65 and 74 years, the gap narrowed in the proportion of males and females. Above the age of 75 years, the proportion of females was in fact greater than males and 22.5 per cent of the total deaths occurred in this group. This is again concurrent with the life expectancy of both genders in Mumbai and the longevity of females in general.

Life Expectancy

Life expectancy at birth is the average number of years a person would be expected to live assuming that the current mortality trends would continue. It represents the average life span and reflects the overall health of the population and quality of life. Trends in life expectancy for residents of different wards in Mumbai have been calculated as the arithmetic mean of reported ages at the time of death and are shown in

1 TFR represents the number of children born to a woman during her reproductive age span of 15-49 years and provides a good indicator of the growth of population. NFHS-3 estimates the TFR for urban areas in Maharashtra at 2.31, which is higher compared to the national rate of 2.06 for urban areas. The National Population Policy (NPP), 2001 aims to bring this rate down to 1.8 in the state by the year 2010.

Table 6.3. They suggest an overall low life expectancy at 56.8 years in 2007. Given the age and gender wise distribution of deaths in 2007, the life expectancy of males stood at 52.6 years, and that for females stood at 58.1 years (Public Health Department, MCGM [2006]). In comparison, the same for India as a whole is currently at 63.7 years, as per the *World Human Development Report, 2007-08*. For Maharashtra, it stood 67.7 and 71.2 years for urban males and females, respectively, in 2000.

Table 6.3: Death by Age and Gender for Year 2007

Age	Male	Female	Total
Below 1 year	3199	2693	5892
1-4	657	657	1314
5-9	222	219	441
10-14	658	584	1242
15-19	1213	698	1911
20-24	1636	908	2544
25-29	2416	1187	3603
30-34	2504	1054	3558
35-39	3131	1167	4298
40-44	3247	1185	4432
45-49	3918	1488	5406
50-54	4037	1644	5681
55-59	4263	1903	6166
60-64	4141	2420	6561
65-69	4645	3129	7774
70-74	4277	3482	7759
75 and above	9973	11791	21764
Total	**54137**	**36209**	**90346**

***Source**: Data extracted from Public Health Department, MCGM, 2007-08*

Causes of Death

The chief medical causes of death during the last few years are shown in Table 6.4. Heart attack caused the maximum number of deaths followed by tuberculosis, cancer, kidney failure, and HIV/AIDS. The increasing number of heart diseases is attributable to the sedentary lifestyles with lack of physical exercise and poor dietary habits. Tuberculosis, widely known as the poor man's disease, also has a very high rate of infection mainly due to unhygienic living conditions; it is not even known to those who spread it that spitting is a common cause of it. In case of HIV/AIDS, the incidence of the disease is low among the general population but higher among the high-risk groups such as commercial sex workers and transgender groups.

Table 6.4: Killer Diseases in Mumbai

Disease	Number of Deaths		
	2004	**2005**	**2006**
Heart attack	12666	11921	12606
Tuberculosis	8625	8836	9490
Cancer	5845	6050	6212
Kidney failure	2234	2109	2190
HIV/AIDS	1202	1272	1352
Malaria	415	387	433
Jaundice	342	240	227
Viral fever	28	26	27
Typhoid	17	13	12

***Source**: Times of India, Mumbai, 10 September 2008*
***Note**: Figures obtained from public and private hospitals in Mumbai by the Times News Network.*

Still Births

In 2006 (see Table 6.5), the total number of still births in the city was 5,223 and the proportion of males and females was almost equal. As regards the age of the mother, the majority of still births (36 per cent of the total) occurred for mothers in the age group of 20-24 years followed by 32 per cent among the mothers in the age group of 25-29 years. About 8 per cent of still births also occurred for mothers giving birth at the younger age of 15-19 years.

Table 6.5: Still Births by Age of Mother and Gender for Year 2006

Age of the Mother	Male	Female	Total
Below 15 years	-	-	-
15-19 yrs	213	211	424
20-24 yrs	947	951	1898
25-29 yrs	838	851	1689
30-34 yrs	422	426	848
35-39 yrs	164	162	326
40-44 yrs	15	17	32
45 & above	-	6	6
Total	**2599**	**2624**	**5223**

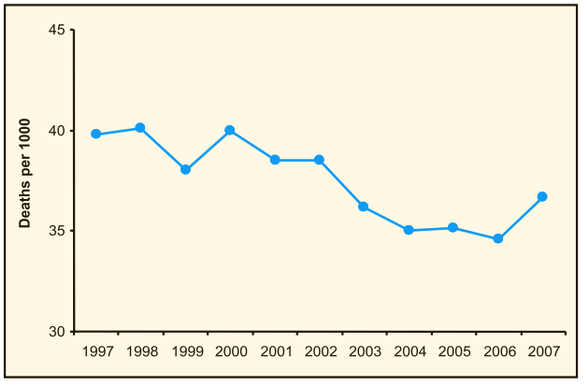
***Source**: Public Health Department, MCGM (2006)*

Infant Mortality Rate

Infant mortality rate (IMR) in Mumbai declined from 40.08 in 1998 to 34.57 in 2006 and increased to 36.66 in 2007 as seen in Graph 6.3 below. In comparison, the IMR was 37.5 for Maharashtra and 57 for the entire country in 2005-06 as per NFHS-3. However, in Kerala, which has performed better on almost all the health indicators compared to the other states, the IMR was only 15.3 as per the NFHS-3 estimates. This implies that even though the infant mortality has been declining in Mumbai over the last decade, the overall rate is still quite high.

The ward-wise infant mortality figures, reported in Annexure Table 6A-3, indicate that not all the wards have managed to lower the IMR during the last decade. In fact, Wards such as E, F/North, P/North and M/East have had consistently higher IMR compared to the entire city's average. Even in other wards, the IMR has not shown a consistent decline over the years and wide fluctuations can be seen from year to year, e.g., the IMR trends in Wards G/North, K/West, P/North and T.

Graph 6.3: Infant Mortality Rate per Thousand Births in Mumbai



***Source**: Data extracted from Public health Department MCGM 2007-08*

Infant Deaths by Age, Gender and Place of Occurrence

Infant deaths by age and gender in Mumbai are as shown in Table 6.6 below. Out of the 6,218 deaths in 2006, around 47 per cent occurred within seven days of birth and among them, 56 per cent were males. Similarly, 37 per cent of infant deaths occurred between 28 days and one year from the date of their birth and 51 per cent of them were males. Also, 92 per cent of the infants died within the area of birth, whereas, only 8 per cent died outside. Again, a very small number of infants born in Mumbai reportedly died outside the state.

Table 6.6: Infant Death by Age and Gender for Year 2006

Age	Male	Female	Total
Up to 7 days	1614	1286	2900
7 to 28 days	526	496	1022
28 days to 1 year	1180	1116	2296
Total	**3320**	**2698**	**6218**

***Source**: Data extracted from Public Health Department, MCGM (2006)*

Maternal Mortality

One of the Millennium Development Goals (Goal 5) is to reduce Maternal Mortality by three-quarters, between 1990 and 2015. Maternal mortality arises due to complications during pregnancy and childbirth, and is related to the availability and access to institutional facilities and skilled medical personnel at the time of delivery. A higher number of institutional births actually reduce the instances of maternal mortality as has been observed state-wide and nation-wide as per the findings of NFHS-3.

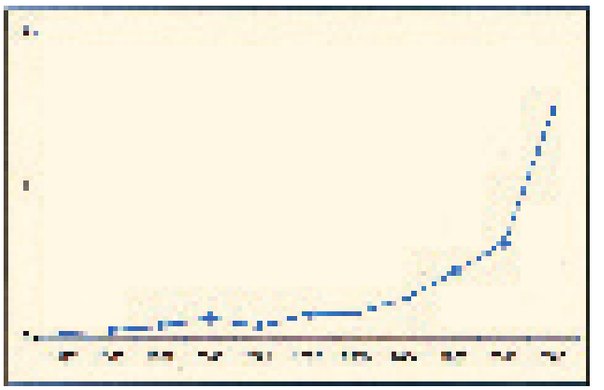
Institutional Births and Birth Weight

In Mumbai, 99 per cent of the births in the year 2006 were institutional births in government and municipal hospitals, maternity homes, private hospitals, and nursing homes as shown in Table 6.7. This percentage is far better compared to the national average of institutional births at 38.7 per cent and the state average at 64.6 per cent as per the NFHS-3 estimates.

Maternal Mortality Rate

The maternal mortality rate (MMR) was less than 1 per 1,000 live births for the last decade till 2006 in Mumbai as compared to the national ratio 3 per 1,000, as per SRS Bulletin of the Office of the Registrar General (IIPS and Macro International, 2007). It is worrisome that the MMR is a rising trend in the city as can be seen in Graph 6.4. It was 0.04 per 1,000 live births in 1997 but has been rising steadily from 0.09 in 1999 to 0.16 in 2002 and 0.63 in 2006. In year 2007, the MMR was 1.5 per 1,000 live births with 244 recorded maternal deaths, a steep increase compared to the yearly figures during the last decade. However, this steep increase in reported maternal deaths in 2007 can also be attributed to the fact that more causes of death are now associated with or classified as maternal mortality than in the earlier years. The ward-wise MMR figures are shown in Annexure, Table 6A-4 where F/South has shown quite high MMR compared to other wards in last few years.

Graph 6.4: Maternal Mortality Rate in Mumbai



***Source**: Data extracted from Public Health Department MCGM (2007-08)*

Table 6.7: Institutional Birth and Birth Weight in Year 2006

Weight	Type of Institution			
	Government & Municipal Hospital	Private Hospital	Home	Total
Low Weight(up to 2.5 kg.)	32679	38264	544	71487
Normal Weight (>2.5 kg.)	45052	62556	632	108240
Weight not Stated	-	-	134	134
Total	**77731**	**100820**	**1310**	**179861**

***Source**: Data extracted from Public Health Department, MCGM (2006)*

Nutritional Status

Adequate nutrition is critical for health and productivity of people. Malnutrition can result in greater susceptibility to infections, risk of adverse pregnancy outcomes for women, and growth retardation among children. Three standard indices of physical growth, i.e., height-for-age or stunting, weight-for-height or wasting, and weight-for-age or underweight, are used to measure the nutritional status of children. Stunting is the result of a failure to receive adequate nutrition over a long period of time and is also affected by chronic illness. Wasting represents a failure to receive adequate nutrition in the recent past and may also be due to recent illness. Being underweight may be due to acute as well as chronic malnutrition.

Table 6.8 below indicates the nutritional status of children in Mumbai and Maharashtra: 45.4 per cent of children below the age of five years were stunted and 15.9 per cent were severely stunted among the total children observed in Mumbai in 2005-06 as per NFHS-3. Similarly, 16.2 per cent were wasted, 3.5 per cent were severely wasted, 32.6 per cent were underweight and 10 per cent were severely underweight in the city. These figures are better than the overall observed percentages for the state but Mumbai has greater percentage of malnourished children on different indices compared to the averages for urban areas in the state.

Under the Integrated Child Development Scheme (ICDS) implemented in Mumbai, the nutritional status of children has been examined across the project areas. The findings are reported in Annexure Table 6A-5, which indicates that among the observed children across areas, 45-55 per cent have adequate diet. However, around 33 per cent boys and girls suffer from Grade-I malnutrition while 16-17 per cent children, with the exception of areas like Jogeshwari and Mulund West, suffer from Grade-II malnutrition.

As regards the nutritional status of adults in Mumbai and the extent of anaemia among its population, figures shown in Table 6.9 reveal that Mumbai's population is better off compared to the statistics recorded during NFHS-2 and for the urban areas as a whole in the country in NFHS-3. Still, the nutritional figures for the city are worrying as more than half of children between the age of 6-35 months and pregnant women are anaemic.

Table 6.8: Nutritional Status of Children in Mumbai and Maharashtra

	Height for Age		Weight for Height			Weight for Age			Total No. of Children
	-3D	-2D	-3D	-2D	+2D	-3D	-2D	+2D	
				Maharashtra					
Total	19.1	46.3	5.2	16.5	2.8	11.9	37.0	0.9	2465
Urban	16.4	42.3	4.6	14.1	4.9	9.1	30.7	1.5	1039
				Mumbai					
Total	15.9	45.4	3.5	16.2	2.4	10.0	32.6	0.0	238
Slum	16.1	47.4	4.0	16.1	2.0	11.6	36.1	0.0	158
Non-slum	15.7	41.5	2.5	16.4	3.1	6.9	25.8	0.0	81

***Source**: NFHS-3 (2005-06) state data obtained from IIPS, Mumbai*

***Notes**: 1. All figures as % of children under 5 years of age classified as malnourished based on the three anthropometric indices of nutritional status.*

2. Indices expressed in standard deviation units (SD) from the median of the 2006 WHO International Reference Population.

Table 6.9: Comparative Nutritional Status of Mumbai's Population

	NFHS-2	Urban	Mumbai
Nutritional Status of Ever Married Adults (Age 15-49)			
Women whose Body Mass Index is below normal (%)	32.6	20.7	15.4
Men whose Body Mass Index is below normal (%)	24.9	17.3	15.4
Women who are overweight or obese (%)	17.1	27.4	34.6
Men who are overweight or obese (%)	16.2	15.6	10.3
Anaemia among Children and Adults			
Children age 6-35 months who are anemic (%)	71.9	65.7	59.5
Pregnant women age 15-49 who are anemic (%)	57.8	60.1	59.2
Ever-married men age 15-49 who are anemic (%)	16.2	15.6	10.3

***Source**: Data from NFHS-2 obtained from UNICEF, Mumbai, 1998-99*

The study carried out by Hatekar and Rode (2003) also needs to be mentioned here. It measured the incidence of malnutrition among children below the age of five years living in *kutcha* slums in Mumbai and compared the results with those obtained among the tribal population in Thane. The findings of the study showed severe malnutrition to be marginally higher in slum areas of Mumbai than the tribal areas of Thane. The study found 28.7 per cent of boys and 30.27 per cent of girls in Mumbai, and 27.64 per cent of boys and 30.43 per cent of girls among the tribals in Thane as underweight. This study, thus, points to the urgent need for initiatives to improve nutritional status of children in Mumbai, and in particular, those belonging to very poor households.

Healthcare Delivery and Utilisation of Health Services

Against the backdrop of the birth rate, death rate, infant and maternal mortality rate, and nutritional status of the population, a review of the provision of health services in the city, in particular, its accessibility, affordability, delivery, and utilisation would be in order (Box 6.2). The MCGM provides the health services and related infrastructure as do the state government, public trusts, private organisations or institutions, and individual medical practitioners. While the services provided by the MCGM are targeted towards prevention as well as cure, the private sector services are mainly curative in nature. The three tier structure of health facilities run by the MCGM and other public and private agencies is shown in Table 6.10.

The MCGM runs an elaborate system of healthcare including dispensaries, health posts, medical colleges and speciality hospitals that being a primary obligatory duty as per Section 61 of the Municipal Corporation Act of 1888. The MCGM's Public Health Department's function is to provide a womb-to-tomb healthcare. However, given the sheer population size and the influx of people seeking medical treatment in Mumbai, the existing municipal public health institutions are grossly insufficient to meet the needs. That is another reason the large number of private institutions provide services at the primary, secondary, and tertiary level. The total category-wise number of public and private healthcare institutions in Mumbai is given in Annexure Table 6A-6.

Box 6.2: Why the Preferences

The general impression, or expectation, is that the poor go to the public hospitals and the well-off go to the private medical practitioners but it is not always so. In a study done in 1996, it was found that in at least half of the cases, the first approach is to the private doctor in a dispensary. The provider most commonly contacted (50 per cent) at the onset of the illness was the private practitioner.

Long-lasting relationships, a close proximity to their residence, and convenient timings were some of the reasons for resorting to private practitioners. The spread and convenient timings of the private doctors' clinics at strategic locations is not matched by the public sector – for a minor ailment one can go in the evening to the clinic without foregoing the day's work.

There were, however, limits to continuing private treatment. The lack of quick relief that people associated with minor conditions and the prospects of costly treatment led them to seek higher (public hospitals) care. In fact, these are the cases that could have been appropriately dealt with at dispensaries without the transfer of burden to the referral hospital.

Cost affordability was a reason cited in earlier rounds of NSSO surveys regarding why a particular service was sought, in this case public, for in-patient treatment. The main reason was the proximity of the hospital to their residences and the third was 'no option' which led to use of a private hospital, indicating that if a cheaper public facility was available, that would have been chosen.

A little over half users of the public hospitals, in this case, the KEM, Parel, belonged to the urban unorganised sector and over two-thirds had a per capita income then of less than Rs. 500 a month. Another half came from the close vicinity of the hospital itself, indicating the proximity as an important decider for choosing it. A quarter came from elsewhere in Mumbai. Public hospitals in Mumbai are free and have openly accessible facilities.

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Table 6.10: Healthcare Institutions in Mumbai

Public						Private			
Primary	**Number**	**Secondary**	**Number**	**Tertiary**	**Number**	**Primary**	**Number**	**Secondary & Tertiary**	**Number**
1. Health Posts	168	1. Peripheral Hospitals	16	1. Major Teaching Hospitals	4	1. General Practitioners (GPs)	4663	1. Nursing Homes	1258
2. Dispensaries	162	2. Maternity Homes	5					2. Hospitals	175
3. Post Partum Centres (PPC)	22	3. Speciality Hospitals	26					3. Super Speciality Hospitals	5

***Source**: Data obtained from Public Health Department and Epidemiology Cell, MCGM (2008)*

Primary Health-care

Table 6.10 details the availability of primary healthcare institutions run by the MCGM and the private general practitioners. The MCGM's range of services are via 168 health posts, 162 dispensaries, and 22 post-partum centres, the focus being mainly on the preventive aspects of healthcare. These institutions provide preventive services, such as immunisation, family welfare and maternal and child healthcare. However, given the total population in the city, the number of primary health institutions in the public health domain is surpassed by the number of private general practitioners (GPs). There are 4,663 registered GPs including allopathic as well as alternate therapies like *ayurveda* practitioners. The GPs provide primary healthcare to the people in the form of immunisation services and basic outpatient treatment for a variety of ailments that do not require hospitalisation.

Secondary and Tertiary Healthcare

At the secondary level, there are 26 maternity homes, 16 peripheral hospitals and five speciality hospitals for tuberculosis, leprosy, ENT, eye care and infectious diseases run by the MCGM. At the tertiary level, MCGM operates three major teaching hospitals, the King Edward Memorial (KEM) Hospital (Seth G.S. Medical College), Nair Hospital (Topiwala Memorial Medical College), and the Lokmanya Tilak Memorial Hospital, also known as Sion Hospital (Lokmanya Tilak Memorial College). The fourth major teaching hospital is the Nair Dental College which has not been considered in the total given in Table 6.10. However, the number of secondary and tertiary healthcare institutions managed by public bodies and trusts are inadequate for the huge population. This has led to the emergence of a large number of private hospitals and nursing homes across the wards in Mumbai. There are 175 private hospitals and 1,258 private nursing homes in the city, which provide curative healthcare services to the citizens.

Ward-Wise Availability

The ward-wise availability all healthcare institutions are shown in Annexure Table 6A-6. Over half of Mumbai's population lives in slums. The location and number of primary healthcare centres is also not proportionate to the number of slum dwellers in each ward. Again, the majority of the municipal hospitals are located in the island city, which supports a far smaller population when compared to the suburbs, adding to the logistic woes of the potential user. The municipal hospitals, and in particular the teaching hospitals, are well known for the quality of services offered by them. However, there is often tremendous pressure on these hospitals as people use them even for minor ailments and crowd their outpatient departments. It has also been observed that non-Mumbai residents also seek and use these services. However, there is no reliable data to state the exact number of patients coming from outside.

Even the private hospitals and nursing homes which far outnumber the public healthcare services are unevenly spread across wards and do not match the total population of the respective wards. For instance, Ward D supporting the population of 3.88 lakh is serviced by 85 private nursing homes and seven hospitals, whereas, Ward H/East with a population of 6.94 lakh, 75 per cent of whom are slum dwellers, has only 35 nursing homes. Again, there are wards like R/Central and North, which have more than 100 nursing homes catering to the population lesser than other wards (see Table 6.10). The quality and range of medical care provided by these private hospitals and nursing homes apart, they are often far too expensive for the poor households in the city, who nevertheless resort to them as public facilities are inadequate.

Proportion of Population Per Bed

The inadequacy of this infrastructure can also be deciphered from the proportion of population per hospital bed in the city as shown in Table 6.11. A higher population per bed indicates overcrowding in hospitals

and consequently, the inadequacy of health services. In municipal hospitals, there are 10,147 people per bed. In private hospitals, the total number of people per bed is relatively better at 487. This determines the choice for the urban poor, notwithstanding the costs involved in seeking treatment in private facilities.

The availability of hospital beds in comparison to the total population in different parts of the city is also disproportionate. For instance, 28 per cent of the population in the island city has 62 per cent of municipal hospital beds and 49 per cent of beds in private hospitals. The majority of population living in the eastern and western suburbs has to rely on numerically inadequate services available nearby or travel to the island city for medical care, further adding to their costs with respect to the choice.

use the inpatient facilities. However, comprehensive figures for the total expenditure on maternity homes are unavailable. There is a tremendous pressure on OPDs of teaching and peripheral hospitals. But as demonstrated earlier, the number of doctors and nurses is grossly inadequate to cater to so many patients. There is no clear estimate possible as to how many from outside Mumbai use these services, but it is believed to be quite large.

On the whole, the public health expenditure figures reveal that the yearly per capita health expenditure of the municipal corporation in Mumbai is Rs. 210. It is greater than the per capita health expenditure of Maharashtra at Rs 142.62 as per 2004-05 figures (CMDR 2006), but less than the per capita national health expenditure of Rs 275 (Duggal 2007).

Table 6.11: Hospital Beds and Number of People Per Bed in Mumbai

Area	Population (Mid-Year Estimates of 2007	Municipal Hospitals		Other Hospitals	
		Number of Beds	Population Per Bed	Number of Beds	Population Per Bed
City	3700098	6386	579	13577	273
Western Suburbs	5689012	2059	2763	8972	634
Eastern Suburbs	3888610	1702	2285	4723	823
Greater Mumbai	**13277720**	**10147**	**1309**	**27272**	**487**

***Source**: Public Health Department, MCGM (2006)*

Budgetary Allocation

Table 6.12 details statistics related to the number of patients using dispensaries and public hospitals as outpatients and inpatients, and the public health expenditure of the MCGM on these services. Over 25 lakh people use the municipal dispensaries spending approximately Rs 100 per capita per year for preventive treatment. In maternity homes, over 3 lakh patients use the outpatient services and over 1,40,000

This also highlights the burden of out-of-pocket health expenses on the people, which is actually higher in urban areas than rural. The per capita private health expenditure for Maharashtra state is estimated at Rs. 647.74, which is 80 per cent of the total per capita expenses per year on health. Figures for Mumbai are not available, but they are expected to be in the similar range.

Table 6.12: Vital Statistics on Public Healthcare Institutions

Institution	Description	Statistics for Year 2006
Dispensaries	OPD attendance	25,16,046
	Expenditure (Rs)	251,100,000
	Expenditure per capita (Rs)	100
Maternity Homes	OPD attendance	3,26,889
	Number of beds	965
	Indoor patients	1,42,386
	Number of deliveries	25,060
	Expenditure (Rs)	N.A.
Teaching Hospitals	Number of doctors	2,372
	Number of nurses	2,331
	OPD attendance	37,26,186
	Indoor patients	1,97,792
	Expenditure (Rs)	181,45,71,280
Peripheral Hospitals	Number of doctors	799
	Number of nurses	1,735
	OPD attendance	40,01,302
	Indoor patients	1,81,929
	Expenditure (Rs)	96,83,43,000
Total	Total expenditure on Public Health (Rs)	276,27,82,000
	Expenditure per capita (Rs)	210

Source: *Data extracted from Public Health Department, MCGM, 2007-08*

Choice of Healthcare

The critical question is the percentage of population using public health facilities. The study carried out by the World Bank (2003) focussed on the choices regarding the healthcare facilities as indicated in Table 6.13. As per the study, 35 per cent of the poor households earning less than Rs 5,000 per month in Mumbai use a municipal hospital. This percentage is negligible among those who earn Rs 10,000-20,000, and more than Rs 20,000 per month. On an average, about 21 per cent households in Mumbai use public health facilities and the rest go to private doctors or private hospitals, costs notwithstanding. Such choices were determined by the distance, cost and quality of health services offered in the two categories of facilities. There is a dramatic decline in the number of users of municipal health services with increase in incomes. Similarly, the quality of care as a reason for choice also gains precedence with increasing income. For the lowest income group, accessibility and affordability is a more important consideration than quality.

The household-based national surveys of the NSSO (1998) also suggest that the urban population in Maharashtra have shown a declining trend in the use of inpatient and outpatient facilities offered by public health facilities during 1991-2000. Only about 31 per cent of the population was using inpatient care and 18 per cent were using outpatient services in public health facilities as per these surveys. These findings also make a strong statement about the inadequacy of the provision of public health services.

Table 6.13: Choice of Healthcare Provider by Income and the Reason for Choice

Provider	Income of the Household Surveyed					
	< Rs. 5000	Rs. 5000-7500	Rs. 7500-10000	Rs. 10000-20000	>Rs. 20000	Household Average
Private Doctor	56.1	65.2	71.5	72.9	72.8	66.0
Municipal Hospital	35.3	24.8	15.4	7.2	3.0	21.1
Private Hospital	8.7	10.1	13.1	19.9	24.3	13.0
Reason for Choice						
Distance	33.5	36.4	33.1	29.7	22.6	32.9
Cost	33.0	20.0	10.7	3.3	1.3	17.3
Quality	32.3	42.7	55.3	66.1	74.8	48.8
Other Reasons	1.2	1.0	0.8	0.9	1.3	1.0

***Source**: World Bank (2003)*

Family Welfare and Maternal and Child Health

The Family Welfare and Mother Child Health (FWMCH) Programme is a National Programme being implemented by the MCGM since 1984. This is a grant-in-aid programme, where the salaries of the personnel are reimbursed by the state government. The broad objectives of the programme include:

- The expansion of family welfare services with an emphasis on maternal and child health through a variety of methods.
- Improving the quality of services.
- Strengthening the capacity to plan, manage and implement the family welfare programme in urban areas.
- Increasing the participation of private voluntary organisations and private medical practitioners in the programme.

Activities and Infrastructure

When the programme was introduced in 1984, 56 health posts were established under its outreach services in Mumbai. In 1988, India Population Project–V was started with 176 health posts and 30 post partum centres. Currently, there are 168 health posts and 22 post partum centres. A training cell has been established under this programme for improvement of services delivered. The Management Information System (MIS) Cell has also been established for monitoring and evaluation of the programme. There are a number of organisations who are working voluntarily in this project.

Immunisation

The Extended Programme of Immunisation was launched in 1978 for vaccines like DPT, OPV, DT, TT and BCG. This programme was converted to the Universal Immunisation Programme in 1985 to cover measles, HBV, and MMR in later years. Outreach camps in municipal hospitals, dispensaries and post-partum centres as well as private hospitals, give nine vaccines for preventable diseases under this programme. There are activities such as pulse polio immunisation, AFP surveillance, anti-rabies vaccine procurement and supply, etc.

Performance Indicators

As seen in the Table 6.14, the achievement rate of contraceptive pill users has increased dramatically along with a large increase in the number of cases. In case of immunisation coverage, however, the achievement rate has reduced steadily and also the number of cases in case of Hepatitis B and BCG vaccines. In case of programmes for immunisation like pulse polio (not shown in the table), the achievement rate has been more than 90 per cent in 2006-07. Overall, the declining public health immunisation coverage may be due to rising private immunisation services available in Mumbai. However, in the absence of data, it may be difficult to prove this conclusively.

follow up of defects, creating health consciousness among children, and providing a healthy and enabling environment in schools. The School Health Programme, however, is available only to municipal schools.

There are specific activities related to health assessment where inspection units carry out medical check ups for students up to standard IX. Curative services are also rendered through the school clinics and municipal dispensaries. In addition, there are seven special school clinics. Extensive health education is also imparted to students' parents and teachers by way of interviews of parents by Medical Officers and Health Visitors, health talks, domiciliary visits by

Table 6.14: Performance Indicators of the FWMCH Programme

Indicator	2005-06			2006-07			2007-08		
	ELA	ACH	%	ELA	ACH	%	ELA	ACH	%
Sterilisation	45,220	35,832	79	43,306	32,241	74	38,000	29,141	77
IUD cut	54,460	48,153	88	51,603	46,756	91	47,463	44,803	94
Oral pill users	22,260	17,315	78	21,759	17,535	81	188,877	223,584	118
Vit-A	5,33,883	2,95,398	55	5,33,883	2,19,266	41	234,695	177,359	76
ANC-reg	2,79,346	2,82,337	101	2,79,346	2,66,923	96	266,345	236,487	89
BCG	2,04,301	1,86,340	91	2,02,588	1,78,707	88	234,695	175,487	75
Measles	2,04,301	1,61,622	79	2,02,588	1,63,848	81	234,695	159,694	68
TT mother	2,24,731	1,54,924	69	2,22,848	1,61,066	72	266,345	160,753	60
Hepatitis B	2,04,304	2,21,680	109	2,02,588	1,22,765	61	234,695	130,157	55

***Source**: Data extracted from Public Health Department, MCGM, 2007-08*
***Notes**: ELA: estimated, ACH: achieved .*

School Health Programme

Health education through schools is a powerful means of improving community health and positively impacting the youth. The programme assists children's health by providing diagnostic services and teaching healthy personal habits, and preventive measures against ailments to promote physical, social, and nutritional wellbeing of children. The broad objectives of the programme are: the promotion of positive health, prevention of diseases, early diagnosis, treatment and

nurses, parent-teacher meetings, Health Parade Schemes, etc. The department has also launched the scheme for prevention of anaemia in adolescent girls in collaboration with UNICEF. 'Sight for Kids' is another project under this programme where children are assisted with free spectacles and ophthalmic surgeries. Table 6.15 provides details on the outcome of different activities carried out under the school health programme.

Table 6.15: Activities Undertaken under the School Health Programme

Activities	2003-04	2004-05	2005-06
Children with minor ailments referred to and treated at nearby municipal dispensaries	19141	26341	25906
Children with major defects referred for expert opinion, investigations, treatment and surgery	13372	13605	11021
Total attendance at special school clinics	41980	35991	29716
Children admitted for various ailments	297	243	185
Tonsillectomies	65	83	38
Major Operations were carried out	188	209	76

***Source**: Data extracted from Public Health Department, MCGM (2007)*

Mobile Health Unit

A Mobile Health Unit is attached to the Epidemiology Department and consists of teams of medical, nursing, clerical and labour staff engaged in community healthcare. The objectives of the health unit are to control outbreak of communicable diseases in city of Mumbai, deliver treatment to patients in the field, and impart health education to public on personal and environmental hygiene.

In the event of an outbreak of any communicable disease such as gastroenteritis, typhoid, infective hepatitis, leptospirosis, dengue, etc., the team visits the site and assists the ward staff to combat the disease. The Mobile Health Unit team also plays a key role in assisting the ward staff to control medical emergencies arising because of riots, demolitions, landslides, building collapses, etc., from time to time. Educative talks are given on matters of public health, personal and social hygiene, and environmental sanitation for prevention of diseases. Performance indicators of the mobile health unit for year 2004 and 2005 are shown in Table 6.16 below.

Table 6.16: Performance of the Mobile Health Unit

Activity	Year 2004	Year 2005
Morbidity Survey		
▫ Houses Covered	74110	42109
▫ Population Covered	439819	240989
▫ No. of I.D. Cases Covered	5072	5066
Health (Medical Camps)		
▫ No. of Camps	241	227
▫ ORS Packets Distributed	5719	6150
▫ Chlorine Tablets Distributed	3876	67000
▫ I.E.C.Display	-	3505

***Source**: Data extracted from Public Health Department, MCGM (2006)*

Programmes for Eradication and Control of Major Diseases

HIV/AIDS Control

The Municipal Corporation of Greater Mumbai (MCGM) reported the prevalence of 4,321 cases of HIV/AIDS in Mumbai in 2005. HIV/AIDS Control Programme is a national programme. As per the directions from the National AIDS Control Organisation (NACO), the Mumbai Districts AIDS Control Society (MDACS) was formed by the MCGM in 1998. The National AIDS Control Programme (NACP) was launched in India in 1987. Under WHO-funded Phase-1 of NACP, medical college testing facility for HIV and AIDS was started. The ASHA Project was started in the year 1992 as Targeted Interventions (TI) activity in red light areas in Mumbai.

The Sentinel Surveillance programme is undertaken every year during the period from August to October, as per the directives from NACO with duel objectives of finding the magnitude and prevalent trends of HIV/AIDS in the community in Mumbai. Table 6.17 summarises the findings of the surveillance report during the last few years.

Leprosy Control

The Acworth Municipal Hospital for Leprosy founded in 1890 by H.A. Acworth (the then Municipal Commissioner) now also has rehabilitation activities for leprosy patients in addition to medical services for inpatients. It also started OPD services and the Greater Bombay Leprosy Control Scheme; the latter has 10 peripheral clinics with diagnostic and treatment facilities available to Mumbai. After the advent of MDT in leprosy and after the repeal of the Lepers Act of 1898, the need for long term institution-based services became irrelevant and the beds in this hospital was reduced to 240. Graph 6.5 shows the declining number of patients of leprosy in Mumbai. The MCGM reported 88 cases of leprosy in the year 2005. Since 1991, the hospital is run by the MCGM as one of the specialised hospitals.

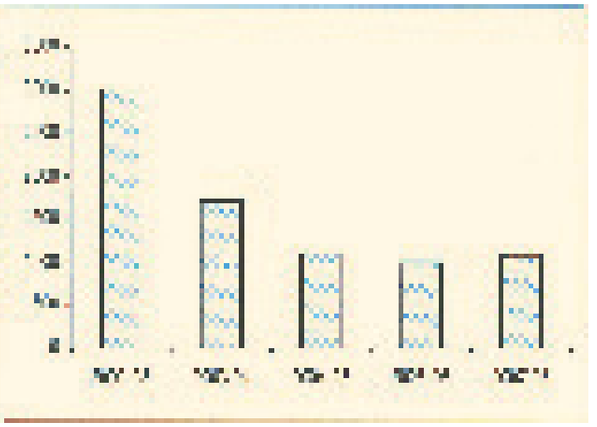
Table 6.17: HIV Sentinel Surveillance Report for Mumbai

Group	1998	1999	2000	2001	2002	2003	2004	2005
ANC	3.00	2.50	2.13	2.25	1.88	1.25	1.13	1.00
ANC (Ext)	-	-	1.75	2.00	1.09	1.37	1.63	1.75
TB	-	-	-	-	-	-	11.00	-
FSW	62.80	64.40	58.67	52.26	54.50	54.28	44.76	50.20
STD	37.20	40.00	33.33	21.05	14.84	18.40	15.90	19.4
IDU	-	-	23.68	41.38	39.42	15.60	28.00	12.8
MSM	-	-	23.94	23.60	16.80	18.40	9.60	6.00
Transgender	-	-	-	-	-	-	49.25	43.90

***Source**: Data extracted from Public Health Department, MCGM (2006)*

The implementation of the programme with the high risk behaviour population is currently done via the involvement of the non-governmental organisations (NGOs) in the city. There are 22 targeted intervention projects carried out through these NGOs among the high-risk groups like bar girls, commercial sex workers, migrant labourers, etc. The other activities of the MDACS include Integrated Counselling and Testing Centres, blood banks, Prevention of Parent to Child Transmission Centres, STI clinics, Anti Retroviral Therapy Centres, etc.

Graph 6.5: Number of Leprosy Patients in Mumbai



***Source**: Public Health Department, MCGM, 2007-08*

Tuberculosis Control (RNTCP)

A pilot project under the Revised National Tuberculosis Control Programme (RNTCP) started in October 1993 in Ward H/W, and was extended to H/East and K/East wards in 1995; and by 1999 it was extended all over Mumbai. The objectives of the programme are:

- To achieve and maintain more than 85 per cent cure rate among the new sputum smear-positive TB cases registered.
- To achieve and maintain detection of at least 70 per cent of the estimated new sputum smear-positive cases.
- To provide Short-Course Chemotherapy (SCC) to all those diagnosed with TB, the recommended duration of treatment to ensure that they are free of disease.
- To ensure the implementation of DOTS (Directly Observed Treatment, Short-Course) for treatment of all TB cases registered.

For smooth functioning and implementation of RNTCP, 'Mumbai District Tuberculosis Control Society (MDTCS)' was formed in 1998 under the chairmanship of the Additional Municipal Commissioner. The funds from Central Government are directly received by the society. Currently, there are 25 treatment units, one TB hospital, 581 DOTS centres, 38 NGOs and 2,829 private practitioners under this programme. The performance indicators for this programme are depicted in Table 6.18 below.

Table 6.18: Performance of the RNTCP

Indicators	2003	2004	2005	2006	2007
Annualised Case-Detection Per Lakh	206.66	204.97	203.94	209.00	222.00
Annualised Sputum Positive	60.80	63.54	63.13	60.32	66.65
Ratio Between Sputum Positive and Negative	1:0.92	1:0.94	1:0.92	1:0.86	1:0.76
Sputum Conversion New Sputum Positive Cases at 3 months (%) Months (%)	89.10	90.10	89.83	89.83	90.50
Cure Rate New Sputum Positive Cases (%)	85.24	85.85	85.83	85.45	86.38

***Source**: Data extracted from Public Health Department, MCGM (2007 and 2008)*

Malaria Control

Malaria is endemic to Mumbai and is human induced on account of the heavy construction activity, slums, etc. Due to this mosquitoes breed in stagnant water stored in households, during construction, in open drains and water accumulated during the monsoon season as well as uncontrolled growth of vegetation in unoccupied open spaces. Given the spread of the city and its huge population, it is quite difficult to control malaria with the existing infrastructure and machinery that the civic body has. The MCGM reported 25,403 cases of malaria in the year 2005. Table 6.19 shows the malaria control statistics. There is an increasing trend in the total number of positive cases. Especially alarming is the increased number of cases of falciparum malaria during the monsoon. There are also alarmingly high levels of deaths in the last few years. Another important facet of malaria prevalence is that the island city accounts for approximately 60 per cent of the total cases.

Table 6.19: Programme Statistics related to Malaria Control

Year	Blood Slides	Positive Cases	Slides Positivity Rate (%)	P.Vivax Cases	P.Fal.Cases	Deaths
2001	529486	12580	2.37	9591	2989	N.A.
2002	622449	13542	2.17	10370	2941	18
2203	647914	13522	2.08	10431	2280	12
2004	657050	14756	2.24	11635	2936	23
2005	665502	13452	2.02	10240	2819	75
2006	671043	17826	2.66	14189	3113	109
2007	670419	25403	3.79	20085	4604	122

***Source**: Data extracted from Public Health Department, MCGM (2007 and 2008)*

Conclusion and Suggestions

As one of the largest mega cities in the world, Mumbai supports a huge population base of more than 13 million. The city has experienced a consistent decline in the crude birth rate during the last decade and the death rate too has shown a gradual decline. The fertility per female is also between 1.5 and 2 which is well below the replacement level. On these indicators the city has performed better, but the overall life expectancy is lower in Mumbai compared to the state and the country as a whole. Also, significant health indicators like infant mortality and maternal mortality rate are a serious concern for the city. The IMR has shown wide fluctuations during the last decade and is still at a higher level. There are also some wards which are of particular concern due to persistently higher IMR. Maternal mortality also needs attention of the policy makers as it is gradually increasing.

The city has a good network of healthcare facilities, both public and private. However, there is tremendous pressure on these facilities, especially on municipal hospitals, due to the influx of patients from within the city's huge underclass – no other city has such an extent of that category – as well as from other parts of the state and the country. These services are cheap and are mainly accessed by poor households. However, due to overcrowding and limited number of medical personnel in public hospitals, most people in the city tend to use the private health network. The private health network is also spread well across the city and provides good quality services, but is quite expensive compared to the public health network. The per capita health expenditure in the public sector is also quite low compared to the large slum population the city supports.

Looking at the current provisioning, availability and affordability of health services in Mumbai and given the number of poor households living in the slums and the spread of lifestyle-related and other communicable diseases in the city, the following policy options emerge:

- Health being an important function of the civic authority, the expenditure needs to be stepped up significantly to add to the capacity of public health services to cater to a larger segment of the population. The coverage needs to be widened via the number of public health institutions with added facilities to accommodate more poor people. In addition to widening coverage, the process must also take into account an assessment in terms of coverage, timings, cost of health facilities offered and the referral process, possibly using the media to build the confidence of people in the health services being offered by medical personnel in these centres (to avoid unnecessary referrals).
- Three major challenges are to promote efficacious and the appropriate utilisation of health service infrastructure – what should be dealt with in a dispensary or outpost, and the manner of that treatment should be such that unnecessary referrals ought not to reach a hospital. In addition, infrastructure, location and access needs to be improved along with the timings of services offered.
- The public hospitals are always overcrowded and resources are spent on treating minor ailments in the OPDs due to a problematic referral system. The authorities need to strengthen the primary health institutions in order to ease the burden on the hospitals' outpatient facilities.
- Primary health institutions could be strengthened by the introduction of public-private partnerships in such establishments in order to widen their coverage and access, and work towards prevention of the common infectious diseases.
- As of now, a large proportion of the total expenditure on healthcare is out-of-pocket expenditure. The expenditure considered here comprises only the cost of medicines and consultation charges paid to doctors. If we consider the lost wages due to illness and the resultant loss of productivity, the total costs of healthcare would increase manifold. This only stresses the need for building healthcare infrastructure which lays greater emphasis on preventive, and not just the curative, aspect.
- The greater proportion of out-of-pocket expenses also brings out the issue of pre-paid health services (health insurance), its coverage, affordability and social security. The coverage under health insurance is grossly limited at present and this leads to economic and social burden on the families on account of healthcare costs. Thus, along with an increase in public expenditure on healthcare, the city's population needs an effective system of health insurance to make healthcare more affordable to the lower middle income and poor households.
- The burden of diseases such as, heart disorders, cancers, HIV/AIDS, tuberculosis, and malaria are a matter of concern for the city. The lifestyle-related diseases in particular need greater attention with their changing socioeconomic and cultural dynamics. It is expected that more and more people would fall prey to these diseases among those growing affluent. Further, it would be prudent to include preventive health practices and measures into the healthcare system at this stage.
- The health of the people cannot be considered in isolation to different policies and programmes being implemented. What is required is the integration of broad policy initiatives undertaken in the area of water supply, sanitation and infrastructure-building, with the health sector in order to cope with the health impacts of development initiatives in the growing city.
- Also, as will be demonstrated by the case-study of Kandivali in the R/South Ward, ward-level analysis is needed to design specific public health interventions for an area within the city which will, in turn, need to be an on-going exercise done once

every 10 years (at the very least) to ensure that the services being provided are up-to-date with the need/demand.

- Finally, we need to recognise that health is the key to the economic and social development. More funds, thus, need to be allocated to improve the health and nutritional status of the population. Malnutrition among women and children in the city would have long term impacts on the productivity of future generations. Hence, preventive initiatives need to be undertaken urgently to improve the health and wellbeing of the city population.
- Apart from perspective, focus and funds, the city needs simple competences to provide the qualitative edge to what essentially is an issue of numbers – and more importantly, the people.
- Taking cognizance of the fact that government health facilities do not have adequate reach in urban slums leading to low demand and poor utilisation, private-sector contracting of health service delivery has emerged as a possible option; this has been experimented with by various state governments with different levels of success. Partnerships with NGOs having experience in social mobilisation may be sought to strengthen community linkages with public sector services.

Key Terms

- Crude Birth Rate = (Number of live births in a year / mid-year population) X 1,000
- Crude Death Rate = (Number of deaths in a year / mid-year population) X 1,000
- Infant Mortality Rate = (Number of infant deaths in a year / number of births) X 1,000
- Maternal Mortality Rate = (Annual deaths due to pregnancy related causes / number of live births) X 1,000
- Maternal Mortality Ratio = (Annual deaths due to pregnancy related causes (women aged 15-49 years) / number of Births to Women Aged 15-49 years) X 100,000
- Total Fertility Rate per Woman is the Average Number of Children Born to the Woman During Her Reproductive Span of Age 15-49 Years.

Gender

Obverse: Photographs 1 and 3 courtesy AIILSG; photograph 2 courtesy MCGM; this page: photograph courtesy MCGM.

7. Gender

Visible and less than Equal, but Vital

In the Millennium Development Goals (MDGs), the third goal challenges discrimination against women. India's commitment to gender equality is evident from the fact that it is a signatory to the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), which was ratified on 25 June 1993. The Constitution of India confers equal rights and opportunities to men and women in the political, economic, and social spheres. Gender equality and the empowerment of women is one of the objectives of the Tenth Plan (2002-2007). The Government announced the National Policy for the Empowerment of Women in 2001 to bring about the advancement, development, and empowerment of women; to eliminate all forms of discrimination against women; and to ensure their active participation for sustainable development.

To the world, there is a stereotypical Mumbai woman – modern, well dressed, bold, social, and working. Still, the men outnumber women. To start with, Mumbai's gender ratio remains unfavourable to females, which are 809 women for every 1,000. Women face several constraints, which hampers their overall development. The woman is expected to play several roles, often in cramped quarters and in employment, often combining the two tasks; engaging a demanding, unequal, overcrowded city where all seems glossy but problems of inadequacy exists, often depriving individuals of their full potential. She is literally the less, though vital, half of Mumbai, a city sustaining rapid economic and cultural change.

Although the condition of an educated working woman is little better, yet she is expected to financially support the family. Illiterate working women (who also support their family and in some cases are head of the family), end up in informal sector work activities without much social security to look for; being a bringer of the second income neither makes her independent nor does it absolve her of her traditional functions of a homemaker. She has to balance herself between the two roles, the two identities, because the society continues to be male-dominated.

Those who live in 'gated towers' are a class apart but to a vast majority of the women life is a constant renegotiation of terms as they emerge. The middle class exposed to the public space have their concerns of the unknown press of people, for risks abound there though they may materialise less. The poor in slums have the embarrassment of finding privacy, and those in acute poverty with no shelter at all often have much less of it and often are on the margins of law. In the unorganised or the informal sector, the woman is a victim of a gender division even in wages and roles. For the poor – if urban poverty as portrayed in slums is a yardstick – the wage which a woman earns is a minor sign of empowerment.

Thus, it is clear that gender issues abound. But she has come far to be where she is, but not enough and the journey to this point has been hard. Though Mumbai had been, in the 1920s, conservative, even then it was called a modern city – *Urbs Prima in Indis* – and with good reason; a contradiction in a major urban conurbation. A few with determination and foresight started that journey and Mumbai's tapestry is richer for it. But the total empowerment of women is still elusive, for her base itself is weak as evidenced by the adverse child sex ratio.

In the last quarter of the nineteenth century, the Bombay Presidency saw the seeds of women's liberation being sown. Craving for freedom, the need to assert individual and collective self-worth was in the air, though it was less than a gentle breeze. Mumbai, at all times was perceived to be progressive, at least a notch ahead of other cities.

Women, of course were, as elsewhere in the country, oppressed and the Presidency was the stage on which social reformers such as Mahatma Jyotiba and Savitribai Phule fought against female infanticide, widow-burning, segregation of women from the public life, prostitution, and begging by destitute women to reduce gender inequality. They publicly organised widow-remarriages. They worked for legal reforms to give better lives to the women of India. Many city businessmen later helped in educational institutions, shelter homes and vocational training centres for women from where the first generation of women teachers, nurses, skilled workers and white collar employees such as typists, clerks, accountants and secretaries came out.

The enormous amount of literature of that time, produced by the Indian social reformers in Marathi, Hindi, Gujarati, and English bears witness to the path-breaking efforts. The first generation of English educated, empowered women of Mumbai became founders of the women's movement in the pre-Independence period. Most of them channelled their energies in building pioneer women's organisations such as the All India Women's Conference (AIWC), the Young Women's Christian Association (YWCA) and the Anjuman-e-Islam. They too fought against child marriage; mobilised public opinion in favour of voting rights for women; imparted basic skills such as tailoring, embroidery, cookery, childcare, folk and classical music and dance, letter-writing, etc., to women to make them efficient home-makers.

In the beginning of the twentieth century, the non-violent protest actions under Mahatma Gandhi's leadership ensured massive participation of women in Mumbai. Women family members of the freedom fighters gave up the *purdah*, participated in public functions, rallies, and demonstrations, and experienced prison life during the Quit India Movement in 1942. Dr. Usha Mehta, then a 12-year-old girl mobilised a group of children, called them the 'Monkey Army' which worked as messengers for those active in the freedom movement. Later on, she started a radio station near Mumbai to help the cause of Independence.

Post-independence, Mumbai has provided some of the highly educated women who did path-breaking work as educationists, industrialists, entrepreneurs, diplomats, public service officers and politicians. Mumbai is a place where women from all classes are seen working day and night, and their performance is often equal to their male counterparts. Mumbai has witnessed the fourth generation of the educated and working women in almost all sectors of activity – social, education, economic, and politics.

And yet, despite this remarkable and glorious legacy, which other cities and regions would happily adopt, Mumbai has some alarming issues vis-à-vis women status, which have a bearing on the city's human development, which are measured in terms of knowledge, health and income. This chapter would discuss those elements on the basis of available data.

Declining Child Sex Ratio

Sex ratios, as already stated earlier in this report, are adverse and have implications for social stability, and a negative impact on social arrangement including normal, easy monogamous pairings. If the ratios suggest a large positive effect on the likelihood of female marriage, they also suggests a largely negative effect on female labour force participation. However, as already noted, the male-female gaps are narrowing but not enough to bring the kind of balance expected in an urban setting. The ratio in 1961 was 663, in 1971 it was 716; this improved to 772 in 1981, progressed further to 818 in 1991 but dropped to 809 in 2001. This gender minority status seems likely to persist for some more time (Patel, 2007, p. 288). This deficit of girls will cause shortage of brides in the coming decades. Crimes against girls in terms of trafficking of girls, sale of brides, kidnapping, rape, child sexual abuse have already increased and this phenomenon will exacerbate in future (Box 7.1).

The other disturbing trend is the declining sex ratio at birth due to apparent selective abortion of female foetuses (Patel 2007). Educated families who believe in small family norm want at least one son. The propertied classes do not desire daughter/ daughters because after marriage of the daughter, the son-in-law may demand share in property. Hence, *the most skewed sex ratio is found* in the richest areas of Mumbai. The property-less classes dispose of daughters to avoid dowry harassment. But they do not mind accepting dowry for their sons. The birth of a son is perceived as an opportunity for upward mobility while the birth of a daughter is believed to result in downward economic mobility. A son is seen as social security for old age (Patel 2007).

The other disturbing trend is the declining sex ratio at birth due to apparent selective abortion of female foetuses (Patel 2007). According to the Mumbai Municipal Corporation, Public Health Department, in 2006, there were total births of 1,79,861 babies; out of which 93,702 were male and 86,159 were female. Thus the child sex ratio at birth in Mumbai was 919.5 girls for 1,000 boys during 2006. A deficit of 80.05 girls per every 1,000 boys born can be attributed to pre-birth elimination of girls. The impact of the male or male-first migration into Mumbai is a determinant which further skews this ratio.

The ward-wise data from the MCGM on child gender composition in different wards reveals a disturbing pattern. With 587 in Ward C, a ward which has no slums and thus does not have that inducer of lag, and wards like Ward A, which cover richer but not slum-free Colaba, and Cuffe Parade too, have not so gratifying male-female composition. These areas are dominanted by the rich and upwardly mobile in what is commonly described as the upper crust. Some of the ratios either have parity or could be worse than what prevails in the other not so developed districts of Maharashtra (Annexure Tables 7A-1 & 7A-2).

Sex Ratio of Some Communities

As the Annexure Table 7A-3 reveals, among Scheduled Castes (SCs) the overall sex ratio is favourable only in Wards B and D. But the sex ratio of the total SC population is much worse than the sex ratio among the total population of all of Mumbai. It could be attributable to more SC men migrating. However, with the Scheduled Tribes (STs), the disparity between them and others is sharper.

Box 7.1: Child Sex Ratio

The sex ratio for the 0-6 age group is a true indicator of the survival of the girl child, and is dependent on the ratio at birth and mortality. It shows if there has been any untoward intervention against a particular sex even before birth. It also reflects the social factors which influence the survival chances of boys and girls. An average of 105 to 106 boys per 100 girls born is the natural or ideal ratio which works out to 952 to 943 girls per 1,000 boys at birth. Anything drastically beyond this means that there is human intervention. The International Institute of Population Studies, in 1996-98, conducted a rapid household survey with a sample size of 1,000 households which showed that 131 boys were born per 100 girls in Greater Mumbai; this translated to 763 girls per 1,000 boys, which has now improved. Demographers hold that the actual figures could be low in part because of the under-enumeration of the girl child, a tendency seen across the country when parents tend not to report the birth of a girl child when asked about the number of children in the family. But under-enumeration cannot explain the vast gap in numbers between the sexes, as reflected in the sex ratio at birth.

Serious concerns have, therefore, been raised about misuse of pre-natal diagnostic techniques to opt for sex selective abortions in preference of a male child. It is believed that the proliferation of diagnostic clinics has made it easier and increasingly cheaper to access such services.

***Source**: Population First, Newsletter, 15 August 2005, p. 4*

Gender Pre-Selection

Apparently, there has been some active but clandestine misuse of advanced scientific techniques to enable the pre-birth medical termination of pregnancy (in case of the girl child) and foster the preference for boys which aggravates the gender parity. For past three decades, the commercial use of antenatal sex determination techniques leading to sex selective abortions of female foetuses has been a fact leading to adverse child sex ratio. Between 1977 and 1990, the most popular technique for sex determination was amniocentesis. From 1991 to date, ultrasound and imaging techniques have been used to determine sex of foetus. Even sex pre-selection techniques have been popular among the upwardly mobile population (Box 7.2).

Data provided by the Centre for Enquiry into Health and Allied Themes (CEHAT) and UNFPA, Maharashtra, show drastic increase in use of ultrasonography in Mumbai among pregnant women. This has gone up almost doubling from 21.4 per cent to 52.2 per cent (Table 7.1), which is alarming. However, one reason could also be close monitoring of foetal development; it cannot be that all cases were to determine if amniocentesis should be resorted to. However, the violation of the Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT Act) Act, 2002, to sustain the patriarchal bias against girl child is responsible for dearth of girls in Mumbai. This has been so despite a strong public education programme by the civil society in Mumbai, which sensitises the authorities to enact the laws.

Box 7.2: Gender Selection–Weak Monitoring

While the Pre-Conception and Pre-Natal Diagnostic Techniques (Prevention of Misuse) Act, 1994 is in force but the implementation is apparently poor consequently making poor child sex ratio. Some raids on clinics have brought to light some trends which can cause concern. Media reports earlier in 2007 had suggested that doctors whose clinics were raided and ultrasonic diagnostic equipment found in use, had claimed that they were unaware of amniocentesis as a tool to curb the birth of girl child.

The clinics in Mumbai were violating laws designed to curb sex-selective abortion of girls in India, a survey by Laadli Alliance, a coalition of 10 NGOs fighting to protect the girl-child, found. Worse, the clinics were registered with the MCGM, which raises questions about the effectiveness of monitoring of this illegal activity.

The survey, conducted between June and August in 2007, revealed startling figures pointing to a skewed sex ratio. Of the 47 sonography clinics surveyed in one ward – Ward M – alone revealed that only 40 could be traced, one had stuck to the law by keeping records. The rest had inadequate documentation, raising suspicion that the clinics may have been conducting pre-natal sex-determination tests in violation of the PCPNDT Act.

News reports quoted Bobby Sista, trustee of Population First as saying, that four teams with authorisation letters from the civic body surveyed sonography clinics. Seven of them were non-operational, and 39 were found to be flouting various rules of the PCPNDT Act. The Act mandates clinics to also display a notice in the local language and English that 'Determination of the sex of the foetus is banned and illegal'. They are required to have referral letters from doctors before a test, a record of those who took the tests but these were missing. One or the other was missing.

'What's shocking is that many doctors claimed that they were not even aware of the Act,' said Dr A.L. Sharada, programme director of Population First. It is precisely this 'lack of awareness' about the PCPNDT Act, whether real or a convenient excuse requires more regularly monitoring the clinics.

***Source**: www.infochangeindia.org, www.dna.com, 28 August 2007*

Table 7.1: Percentage of Pregnant Women who used Ultrasonography in Mumbai

Year	Percentage
1986-90	21.4
1991-95	33.5
1996-2000	52.2

***Source**: Shelly Saha, Ravi Duggal and Manasee Mishra: Abortion in Maharashtra – Incidence, Care and Cost, CEHAT, Mumbai, 2004, Table -17*

Literacy and Education

Literacy rates were 82 per cent for men and 72 per cent for women with the overall literacy rate of 77 per cent as per the 2001 Census (Table 7.2). This gender gap of 10 percentage points reveals that impact of the literacy mission has been different on men and women. The highest female literacy of 80 per cent was found in Ward C, and the lowest, 58.4 per cent in Ward M/E. Ward C is largely constituted by middle and upper class and has a large percentage of second

Table 7.2: Literacy Rates for Greater Mumbai

WARD	Population literate	Males	Females	Total literacy %	Male %	Female %
A	159110	96608	62502	75.5	79.4	70.1
B	106492	63639	42853	75.7	78.5	71.9
C	168997	108894	60103	83.3	85.1	80.1
D	315420	175146	140274	82.4	85.2	79.1
E	330377	195786	134591	75.0	78.0	71.0
F/NORTH	392542	234926	157616	74.9	80.2	68.0
F/SOUTH	317396	182917	134479	80.1	84.5	74.8
G/NORTH	437978	256703	181275	75.3	79.7	69.7
G/SOUTH	362301	220557	141744	79.1	84.8	71.7
H/EAST	441272	261299	179973	76.0	81.0	69.7
H/WEST	273371	150288	123083	81.0	84.4	77.3
K/EAST	645279	370180	275099	79.7	83.9	74.6
K/WEST	545236	301690	236067	77.8	79.5	73.5
L	571775	347989	223786	73.5	78.7	66.6
M/EAST	446213	270774	175439	66.1	72.3	58.4
M/EWEST	310671	182953	127718	75.0	80.8	68.1
N	480132	275540	204592	77.5	82.5	71.6
P/NORTH	601581	353461	248120	75.3	80.5	69.0
P/SOUTH	337807	200296	137511	77.2	81.9	71.1
R/CENTRAL	419602	229510	190092	81.8	84.7	78.6
R/NORTH	285824	165256	120568	78.6	82.7	73.5
R/SOUTH	447987	272145	175842	75.9	81.2	69.0
S	542745	316572	226173	78.5	83.4	72.5
T	267769	147944	119825	81.1	84.8	76.9
TOTAL	9207877	5109552	3819325	76.9	81.9	71.9

***Source**: Analytical Tables of MCGM;*
Literacy Rates; Census of India, 2001; Directorate of Census Operations, Maharashtra

or third generation of literate population while M/E Ward has the poorest Mumbaikars, a massive percentage of migrant workers who are illiterate, and even many of their children are out of school and working at the Deonar waste dumping ground of the Municipal Corporation. Though provision has been made for schooling for both boys and girls in across Mumbai in eight languages catering to all linguistic groups, Hindi and English are both increasing in popularity due to migratory trends and globalisation's emphasis on English as a universal language; however, this impact is not uniformly observed across the two genders. The dropout rates, a major issue especially among the girls is high; this is discussed in the chapter on Education. The girl students need remedial learning, computer literacy, and vocational education to mainstream themselves apart from higher comfort levels as they grow into puberty.

Several surveys, including ones conducted by Sahayog and Pratham, two civil society organisations, indicate that a substantive number of girls are out of school. Issues of access and equity, economic affordability, course content, and future prospects for these girls are apparently some of the major reasons behind their dropping out. If the child is from a female-led household, the nutritional deficiency and inadequate primary healthcare facilities are minimally attended to. It is useful that the Sarva Shiksha Abhiyan (SSA) has earmarked 30 per cent of its total financial allocations for girls' education.

Girls, especially those around 10 years of age and who have started menstruating tend to drop out from schools mainly because they find constraints in changing their sanitary pads in the absence of toilets in school. This is especially so in civic schools which, despite being in cities, lack this all-too important facility. However, improvements have been noticed in such schools where toilets have been later provided. The retention rate has to be linked to the provision of this privacy. A positive feature is the pro-female bias in the appointment of teachers in the civic schools. In 2007-2008, there were 4,324 male and 8,191 women teachers on MCGM's payrolls, accounting for two-thirds of the total strength, which would be of some comfort to the girl students.

Health of Women in Mumbai

Over the years as changes occurred in the socioeconomic profile of Mumbai, the stress levels

Box 7.3: A Woman's Plight

Apart from the general hardships of living in an area with a degraded environment and the lack of space, light and fresh air, women in slum areas also suffer from many other disadvantages. As noted earlier, reproductive labour for women constitutes a crucial aspect of their work lives. The slum household as a workplace is overstaffed, over-utilised and deprived of the most basic facilities. We found that among non-slum households, water from even common taps could be drawn directly through plastic pipes. In the slums, due to the longer distance and greater number of users of taps, water had to be carried home in large vessels, resulting in poor health status of women.

The open drains in slums are invariably clogged with solid waste thrown into them and had to be frequently cleaned by the women themselves. Due to the long queues at the municipal toilets, small children were made to defecate outside the house and the women were responsible for cleaning the area. In the absence of a specified area for garbage disposal, women had to be vigilant against the dumping of waste near their houses by others. As the lanes were not paved, the house was surrounded entirely by dirt and sludge. The women fought a constant battle to keep these out of their houses. The environment of the slum makes it necessary for women to undertake a heavy burden of work merely to make the house liveable.

***Source**: Madhiwalla and Jesani (1997).*

have brought changes in the pattern of illnesses and deaths. Stress could be caused by several factors, including the overcrowding of localities and homes, cramped spaces, prolonged periods of standing in local trains while commuting to and from work, physical invasion of personal space during such travel, and it can aggravate domestic violence and interpersonal tensions (see Box 7.3).

As per Table 7.3, mortality due to heart diseases and heart attacks and bronchitis declined for both men and women in the period from 2000 to 2005. The number of deaths due to tuberculosis declined for men but increased for women during the same period. While there was sharp increase in deaths due to cancer, pneumonia, senility and diabetes, the deaths due to HIV-AIDS increased by more than double across genders. Mortality due to accidental burns reduced for both men and women. Incidents of deaths were higher among women as compared to their male counterparts only in two categories, due to senility and accidental burns. Sharp rise in deaths due to chronic lever disease and cirrhosis among men and women can be attributed to either jaundice caused by unsafe water or alcoholism.

An alarming feature of women's health is the increase in the maternal mortality of women, which increased from 29 to 82 between 1895 and 2005. The positive feature is the decline in the infant mortality rate, which reduced as evidenced in the Table 7.4. Despite virtually all births being institutionally attended, the high maternal deaths are likely due to deterioration in nutrition standards. That could be due to non-functional Public Distribution System (PDS). Also, women get to eat last and the least. The percentage of pregnant women who are anemic is as high as 60 per cent in Mumbai according to NFHS-3, 2006. Ten per cent of all maternal deaths are due to unsafe abortion, which results into hemorrhage, infection, incomplete evacuation, cervical lacerations, uterine perforations, and thromboembolism and anaesthetic complications.

Nutrition and Reproductive Health

More than half of women suffer from nutritional deficiency diseases. Women from food secure homes have lifestyle diseases such as obesity, hyper tension and other heart diseases, whereas the problem in the

Table 7.3: Causes of Death by Sex for Year 2000 and 2005

Sr. No.	Main Causes of Deaths	Year 2000			Year 2005		
		Male	Female	Total	Male	Female	Total
1	Heart Diseases & Heart Attacks	15238	10373	25611	11591	8514	20105
2	Tuberculosis	6652	2693	9345	5773	3063	8836
3	Cancer	1506	1279	2785	3093	2780	5873
4	Pneumonia	1704	1369	3073	2891	2251	5142
5	Bronchitis (Lower Respiratory)	2310	1841	4151	2066	1719	3785
6	Chronic Lever Disease & Cirrhosis	1591	308	1899	2651	652	3303
7	Senility	1151	1485	2638	1430	1524	2954
8	Diabetes Mellitus	728	620	1348	969	810	1779
9	HIV AIDS	376	160	536	951	321	1227
10	Accidental Burns	451	1002	1453	389	517	906

***Source**: Public Health Department, MCGM, Mumbai, 16-10-2007*

Table 7.4: Important Health Indicators for Women in Mumbai

Year	Births	Infant Deaths	Infant Mortality Rate	Maternal Deaths	Maternal Mortality Rate
2002	185094	7142	38.59	31	0.17
2003	186414	6743	36.17	32	0.17
2004	185729	6505	35.02	50	0.27
2005	184171	6469	35.12	82	0.45
2006	179861	6218	34.57	114	0.63

***Source**: Public Health Department, MCGM (2007*

economically weaker segment is the high maternal mortality, and morbidity related illnesses, tuberculosis, and reproductive morbidity. Food secure homes are those which are able to provide 2,300 kcal per adult individual, a balanced diet and access is measured as the ability to purchase food, including from the PDS. However, there could be availability but those who can afford, may not provide milk, fruits, and green leafy vegetables to girls because of discriminatory practices.

Morbidity, or physical and mental illness, is a measurable indicator about an individual and society's wellbeing. It indicates the health status of various groups and inequalities in status among them and provides an idea of the gender injustice. Injustice can be in distribution of food, provision, access, and outcomes of healthcare, which have a bearing on the survival and health of women and their female offspring. Morbidity among women is a guide to their position in the household and the community. Some of them, who live in burdened circumstances and perform hazardous work roles, tend to show greater morbidity.

It is a fact that only 0.7 per cent of all births are institutionally attended. The civic government's statistics for 2007 indicate that during that year, of the 1, 79,861 deliveries 77,731 (43.3 per cent) were conducted in government and civic hospitals, 1, 00,820 (56 per cent) were conducted in private hospitals and nursing homes, and 1,310 (0.7 per cent) were at home, aided by relatives and neighbours. All institutional births were attended by doctors, nurses, and midwives of the hospitals. This preference for the private sector could be due to two causes.

1. After 1991, reduced budgetary provision for public health, number of beds in maternity wards has reduced and overcrowding is a marked feature.
2. The two-child norm being in force, the third pregnancy onwards, the woman is not eligible for ante- and post-natal care from public hospital.

Of the total hospital-based live births, 40,382 (22.45 per cent) births were by caesarean procedures. That can be explained as being due to commercial-minded doctors unnecessarily opting for caesarean section even when it is possible to deliver naturally as the fee for the same is higher. The other reason being that pregnant women in labour insist on it as they cannot bear the pain, or due to the fear that with natural birth their cervix would expand and their husbands may lose sexual interest in them.

Early childbearing is a major factor in poor health of the woman. In the age group of 15-44, nearly half, or 46 per cent women were mothers of one child, 39 per cent had by then two children and 11 per cent had already had three children. Thus a majority – or 85 per cent women in Mumbai in the reproductive age group had either one child or two children in 2006. The civic authorities' data, again for 2006, revealed the extremely low birth weight (ELBW) babies were

852 (0.47 per cent), very low birth weight (VLBW) were 3,138 (1.74 per cent), and low birth weight (LBW) were 67,497 (37.53 per cent). The total number of newly born low birth weight babies was 71,487 (39.74 per cent). This dismal picture is linked with the mothers' low health status, malnutrition and highly stressed life.

Malnutrition among Women and Children

The issue of malnutrition in Mumbai, and not in a distant, hilly tribal tract, gained attention after cases of severe malnutrition surfaced at Aarey Milk Colony during July 2007. The Bombay High Court's directive held the state government responsible for irregularities in tackling malnutrition. Erosion of public distribution system and malpractices in the state supported Mid Day Meal Scheme is held responsible for nutritional deficiency among the vulnerable sections, especially women and children in Mumbai (UNICEF 2007).

Studies on intra-household distribution of resources reveal that among the poorer households with gross malnutrition and nutritional deficiency, the deficiency among girls and women was 25 per cent more than men. The National Family Health Survey, (NFHS 2006, Vol. 1), has revealed that anemia among women in Mumbai is around 50-60 per cent. High rates of inflation leading to high prices of pulses, cereals and vegetables, and non-availability of safe drinking water to the poor has proved to be detrimental to women's health. For every three men using health care facilities in India, only one woman does so. In the 0-19 age group, the death rate of girls is higher than boys. In this context, budgetary cuts in public health expenditure have dire consequences for working class women and girls in India. In the budget, funds for the treatment of tuberculosis, malaria, filaria, and goitre eradication programmes have been reduced drastically.

The inadequate funds for the urban sanitation programme in each and every budget in the post-reform period for provision of clean water, toilets, and sewerage has given rise to higher incidents of water-borne diseases. It has increased the burden of women in terms of nursing the sick family members. Also, the drudgery of working class women who have to stand in long queues for many hours to obtain one bucket of water in the slums or wait for the odd-hour supply has its own negative implications on their health.

It has to be recognised that Mumbai is a city, preferred more for employment it offers than for the joy of living – a residence would often appear to be incidental to the survival choices made – and that is why women need special attention. Childcare centres, professionally managed but affordable, nothing fancy but eminently functional would be a basic requirement which remains unattended to. If childcare is neglected, which seems to be the case, a framework for equity would be missing.

A study by Neeraj Hatekar and Sanjay Rode (2003) based on survey of 1,006 households in Matunga (E & W), Dadar, Mahim, Bandra, Mankhurd, Kurla, Vikhroli (E & W), and Ghatkopar on the level of malnutrition among children in 0-5 age group in *kutcha* slums revealed that the extent of malnutrition, stunting and related deaths was similar to what prevailed in the tribal villages of Jawhar Taluka, Thane district. This is attributable to poor coverage of public health and sanitation facilities and nutrition programmes. As a result, continued bouts of diarrhoea become a classic correlation for malnourished children in Mumbai.

Given the statistics in the Table 7.5, it is evident that breastfeeding is even low in slums, and though higher, nowhere near being a universal practice even in the non-slum areas. Given the possible contamination of milk supplied to households, this poor level of breast feeding practice can have a huge impact on the infants. It may be noted that official entities promoting breastfeeding state that breast-feeding is not just the need but the right of a child so that from the initial stages there is sufficient attention to adequate nutrition. The deficiencies in this area are glaring. Propagation of this practice too seems to be less of a priority or has not made sufficient impact when it ought to be a basic health policy.

A disturbing trend is noticed with the extent the services are provided through the Anganwadis in taking further the goal of nutrition for the wellbeing of mother and child. According to NFHS-3, 96.7 per cent pregnant women and 98.7 per cent breastfeeding

Table 7.5: Feeding Practices of Children in Mumbai

Child Feeding Practices and the Nutritional Status of Children	Slum	Non-slum	Total
Children under 5 years breastfed within one hour of birth (%)	50.0	71.1	57.5
Children under 5 years who are stunted (%)	47.4	41.5	45.4
Children under 5 years who are wasted (weak) (%)	16.1	16.4	16.2
Children under 5 years who are underweight (%)	36.1	25.8	32.6

***Source**: Slum/Non-slum Indicators from NFHS-3, 2005 National Family Health Survey, NFHS 2006, Vol. 1, International Institute of Population Studies, Mumbai*

mothers did not receive any services. The food supplements were provided to only 3 and 1.3 per cent of them respectively, and health checks to 2.6 and 1.3 per cent of them. This appears to be sub-optimal and not in the least encouraging for the Integrated Child Development Scheme (ICDS). According to the *Human Resource Development Ministry's Status Report, ICDS, 2005*, across the entire country, the coverage is less than a quarter of the desired levels in urban areas, and it appears to be much less in Mumbai.

Table 7.6: Status of ICDS (Anganwadis) in Mumbai (November 2008)

No.of AW's sanctioned	5150
No.of AW's functioning	4940
No.of AW's reporting	4940
CDPOs sanctioned	28
CDPO in position	13
ACDPOs sanctioned	1
ACDPO in position	0
Supervisor sanctioned	194
Supervisor in position	78
AWW sanctioned	5150
AWW in position	4883
Helper sanctioned	5150
Helper in position	4587

***Source:** Monthly Progress Report, November 2008 : ICDS, Government of Maharashtra*

Tables 7.6 and 7.7 provide the landscape vis-à-vis ICDS coverage in Mumbai. Not only, as stated in the preceding paragraph, is the coverage poor at the centres but not all sanctioned units are functional on ground. Assuming correct reporting, the gap between the total population in the region and the number of children touched by the scheme is worrying, questioning the very efficacy of the scheme. This is so with regard to the quantitative aspects; an assessment of the qualitative outcomes could reveal some actionable status. It is unlikely that the children are missed but the mothers are fully attended to; however, a thorough study could well establish the contours of neglect in this crucial scheme.

The incidence of HIV has grown rapidly since the first surveys were performed in 1989. Alarmingly, large incidence rates of 51 per cent have been found among sex-workers in Mumbai (NACO 2007). The random testing of different segments of the population show different levels of incidence and the following data provides a snapshot for 2006. Spread of the disease into the general heterosexual population has been found in pregnant women in Mumbai, who approached antenatal clinics linked to MDACS, and showed incidence rates of 1.1 per cent in 2006 as seen in Table 7.8.

It would be interesting to determine whether a distinct male-dominant attitude among men leads to the easier spread of AIDs, and whether that is the prevalent attitude of males in our society. It can be assumed that the male-dominant lifestyle and mindset, coupled with the relative ignorance of the general population, specifically the female partners, could compound the issue of HIV/AIDS. This, if proven true in studies, would then require attention in all HIV/

Table 7.7: Coverage of Children Under ICDS, Mumbai, November 2008

Anganwadies Reporting		4940
No. of AWCs providing SNP for 21 days and above		4940
Total Population within project (survey figures)	Total Population (age 0 to 6 years)	603907
	Preg. & Lact. Women	53384
No. of Supplementary Nutrition Programme (SNP) Beneficiaries (Recipients)	Recipients 6 Months to 3 Years	139880
	Recipients 3 to 6 Years	180796
	Pregnant & Nursing Mother Recipient	39855
No. of Pre-School Education (PSE) Beneficiaries (3 to 6 Years)	No. of AWCs provided PSE for 21+ days	4940
	Boys actually attended 15 days or more	83637
	Girls actually attended 15 days or more	81108
Reported Live Births		4055
No. of Deaths (0 - 1 Year)		11
No. of Deaths (1 - 6 Years)		2
Classification of Nutrition Status	Normal	178495
	Grade I	118493
	Grade II	53441
	Grade III & IV	423
	Total No. of Children Weighed	350852

Source: *Monthly Progress Report, November 2008: ICDS, Government of Maharashtra*

AIDS related programmes in order to ensure a more healthy inter-gender relationship and, in the bargain, reduce risky behavior.

Only after 2006 has the MCGM been keeping records; earlier these were not systematic, and therefore were less reliable. The high rate, that is, 51 per

Table 7.8: Women Attending Antenatal Clinics Linked to Mumbai District AIDS Control Society (MDACS) (from January-December 2006)

Indicators	Numbers	Percentage
Number of New Registrations	125602	
Number of Women Counseled	117507	93.6 %
Number of Women who Accepted HIV Test	113020	96.2 %
Number of Women Found HIV Positive	1210	1.1 %

Source: *Mumbai District AIDS Control Society, Mumbai, 2006*

cent of sex-workers being infected by HIV could mean that the 'condom campaign' whereby the civil society organisations and health workers tried to persuade its use, failed. Many customers of commercial sex workers (CSW) refuse to use them. Child sex workers who account for 60 per cent of all CSW in Mumbai are quite helpless. Brothel based sex work is declining and has dispersed to community and society based sex work. It is on the rise in Jogeshwari, Malad, Mankhurd, Wadala, Dharavi, Andheri-Kurla-Ghatkopar triangle. Sex workers are not organised and cannot assert. Periodic medical examination takes place in brothels but not for other women sex workers. Once identified as HIV positive, the sex worker disappears and never reports to the hospital/clinic.

Women in the Workforce

Historically, only Mumbai, among other cities, was associated with modern working women creating a stereotype which hides several of their travails. Even in the comparatively modern and cosmopolitan city of Mumbai, the gender gap in male and female work participation rates is striking. For every male in the workforce, there is less than a female (see details in Chapter 3). This excludes the range of unpaid household work. It shows that tremendous majority of women in Mumbai are not getting regular employment.

Women in Information Technology

It is in the service sector that women's economic participation is increasing in Mumbai. Computer skills have become important for women's advancement. In engineering colleges, 30 per cent of the seats are reserved for women. This has also provided impetus for IT education for women. Educated women take up part time outsourced work, entrepreneurship and marketing and skill-upgrading activities. Outsourced

Box 7.4: Banking for Hope

The Sangini Women's Co-operative Bank was set up in 2007 by sex workers in India's biggest red light area by a handful of sex workers driven by a desire to save for a time when they stop earning from their present profession. It functions from three tiny rooms with the help of Population Services International (PSI), an NGO.

The uniqueness of the bank is in the way it operates. The savings are collected door to door by Collection Workers for depositing. There is a 'no minimum deposit' clause, and one can put as little as Rs.10 in the bank. Such is the response that within months of the bank's start-up, capital began to grow steadily and the amount remains invested in fixed savings schemes.

Earnings from the fund go partly towards paying savings interest to the bank's customers and the rest is used to pay salaries and give loans. It has over 1,700 of savings accounts at branches at Kamathipura, Vashi and Bhiwandi, and is well over Rs 20,00,000. The bank has even started a subsidised grocery store for Kamathipura's estimated 22,000 sex workers.

The bank is not just a setup for securing the future of the unfortunate sex workers. It is a ray of hope for their children to break the shackles that have bounded their mothers mercilessly for years.

***Source**: Express India, www.managementparadise.com/forums/archive/index.php/t-20747.html, 7 December 2007*

backroom operations – BPOs, also known as call centres – are attracting a sizeable section of English-speaking educated young women who are willing to surmount the challenge of odd work hours, matching the working hours of the outsourcing business overseas. The nature of work calls for working in rotation at shifts which has been accepted.

Women in Informal Sector

For women from economically weaker sections, the daily grind is taxing. The grim reality is that 92 per cent of women in the workforce who are in the informal sector have been documented by the researchers of Tata Institute of Social Sciences (TISS),

Box 7.5: Gender Bender

Sexual discrimination is a part of life in rural India. Ideally, education and an urban setup in these modern times should find India making things easier for women. Unfortunately, that is far from reality. The modern working woman, although much in demand in the job market, faces as much sexual discrimination as her rural counterpart, albeit in a different manner, sometimes, subtle.

Young women are the preferred choice in certain Mumbai job markets, be it retail stores or front offices of corporate houses. The average female to male ratio in department stores is 2:1. Walk into any mall in the city and you'll notice that the women shop assistants outnumber men. At front offices, where the job demands meeting and interacting with clients, chances are you will find only women employees.

But despite this, most of them do not get a fair deal from their employers.

Mumbai has over 60 malls and the number is growing. It is estimated that each mall employs approximately 500 people to take care of security, housekeeping, and parking. Apart from this, there are those hired by the individual shops. Here too the women outnumber men. Their average age is 19 to 27, indicating that younger, unmarried women are preferred. For men, it is 20 plus.

Jobs as sales assistants involve interacting with customers ensure stocks are replenished and displays are presentable and tidy. Women are paid less than Rs. 5,000 per month for the daily eight-hour shifts. Their male counterparts earn at least Rs. 3,000 more. Promotions for women from these managerial jobs are rare. Even annual increments are lower. Most employers view women as temporary employees who will leave once married. A high turnover helps keep their wages low.

However, the advantage of having female employees, who are viewed as friendly, docile and easy to control, outweighs 'permanent' male employees, who sooner or later join a union, strike work or even indulge in loud protests. Sexual discrimination also comes in the covert guise of taunts about personality, personal life or family background. In the worst case scenario, there is sexual abuse from supervisors, which is never reported, and no action is taken.

For women, there is one obvious factor that influences their job preference – the presence of good sanitation and toilet facilities. However, unfortunately, here too there is discrimination, as their 'toilet breaks' are monitored by a superior, who is usually a male.

***Source**: Research Team, RCUES, AIILSG, Primary Research conducted by All India Institute of Local Self Government, Mumbai, 2007*

Nirmala Niketan College of Social Work, University of Mumbai, and SNDT Women's University from which the following inferences can be drawn. Bhowmik (2006) stated that in the export-oriented industries, in the production of leather goods, toys, food-products, garments, diamonds and jewellery, piece-rate female labour is employed, working from shops or from home or from stigmatised labour markets in Dharavi, Behrampada, Andehri-Kurla, Jogeshwai, Mohammad Ali Road, among other places.

Use of home-based women workers as cheap labour has been in vogue since the early 1980s. The relationship between the formal sector and the decentralised sector is a dependent relationship where the former has control over capital and markets, and the latter works as an ancillary. The women workers who are in the decentralised sector have a high degree of labour redundancy and obsolescence. The women have less control over their work and no chance for upward mobility because of temporary, routine, and monotonous work (see also Box 7.4).

The link between the economic reforms and the push towards the informal sector is illustrated by data from the 56th, 59th, 60th, and 61st rounds of National Sample Surveys conducted during 2000-2005. Economic reforms have reinforced the trend of informalisation of the female workforce. Congenial state support has been provided to the corporate houses that are closing down their large units and using ancillaries, who employ unmarried girls (who are without responsibilities of families and children), on a piece-rate basis. Home-based work by women and girls is easily legitimised in the context of increasing insecurity in community life due to criminalisation of slums, riots, and massive displacements and relocations during the 1990s.

When subcontracted directly, home-based production efforts also depend on the family labour system, and the payment of wages is on a piece-rate basis. What hurts them more is the absence of safe environment, labour standards, social security and robust self-help groups (SHGs). According to the 2001 Census, 87 per cent of women in Mumbai were classified as non-workers, with M/East Ward reporting the highest – 90 per cent. This, therefore, is an area that deserves attention because the employment potential of women in this segment is largely untapped.

Domestic Workers

On the other hand, Mumbai has always absorbed women who are ready to work as domestic help. According to a study by Nirmala Niketan in 2000, the estimated number of domestic workers numbered about 6,00,000 out of whom 80,000 are full-time workers. About 40 per cent of the domestic helps were girls under 15 years of age. Many of them are female heads of their respective household. Abuse, generally verbal and to an extent physical, sexual exploitation, and the absence of occupational health and safety standards are marked features of their labour processes and labour relations.

The combined effects on these households of price rises are reduced quotas for PDS, reductions in healthcare facilities and educational facilities are severe. The fact that the female-headed households and poverty go hand in hand has been established by the findings of the Arjun Sengupta Committee Report, 2007, presented to Lok Sabha on 3 December 2007. In spite of multi-tasking, women do not get adequate income from their livelihoods to meet their basic needs.

The Domestic Workers Act, 2008 (GoI) and the Domestic Workers Bill, 2009 (GoM), which prescribes the benefits, social security, bonus, leave of absence, etc., would, if only rigorously implemented, go some way to help these hitherto unprotected but vital segment of workforce. Given the unorganised nature of this area of labour, it would expectedly be some time before all elements are implemented. Enforcement would be difficult, given the fact that child labour, despite laws in force, continues to be a reality; the law has not wished it away. This new enactment's implementation would be a true test of the government's willingness and ability to enforce social justice.

Girl Child Labour

A substantive section of domestic help comprises of girl child, working for precarious wages and their numbers appear to have increased. As per the 2001 Census, there were only 1, 297 girls as main workers and 209 girls as marginal workers, which may not reflect the reality on ground. It appears that the official data on child labour is highly underestimated. If one considers children working in local trains, bus stops, grocery shops, shoe-shine boys, newspaper vendors, waste pickers, hawkers, vendors, domestic workers, baby sitters, coolies, helpers in shops, the real picture will emerge. One place where the child workers are not found is at construction sites.

Another point to note is the manner in which a mother, who is a domestic help, takes a girl child as assistant – unpaid, perhaps as apprentice to the mother – who pulls her into the same occupation. Often, the girl child is placed with a house hold to work full time, including minding infants because the place of hard

Box 7.6: Homeless Girl Child's Struggles

Problems haunt the poor homeless girl child in cities, including Mumbai.

For street children, who eat, drink, bathe, work, and sleep in ubiquitous nooks and crannies of the city, life is a constant struggle from day one. But for the girl child on the street, the troubles increase manifold by the time she hits puberty. Surveys reveal that 16 is the average age of pregnancy among female street children. Since the mother herself is severely anemic, under-nourished, and scarcely receiving any care or medical attention during her pregnancy, babies are grossly underweight. Often they do not survive the first few months of life.

Living on the streets is dangerous – many girls are attacked and raped in the night when they are sleeping. That's why, while street urchins sleep on railway platforms and in open spaces, girls never sleep alone like the boys.

Marriage is often a matter of convenience for them, solely to seek protection from the gangs of young street urchins who search for easy prey. But, as is very often the case, marriage turns out to be a bad choice. The 'husband', himself a boy barely out of his teens, is likely to be 'high' on drugs like *charas* or 'solution' (glue), beats her and snatches all of her day's meagre earnings.

The day, for the female street child, starts at 5 a.m. Darkness affords her the privacy to perform her morning ablutions near the railway tracks. A bath is a luxury she can afford twice or thrice a week by shelling Rs. 1.50 at a Sulabh-run public bath.

And then begins the search for work, odd-jobs in homes as domestic help are welcome but difficult to come by. Or they sell *maal* – their word for trinkets like hair bands, pins, and clips on trains.

Here too, life's not easy for she has to content with the railway police and the railway staff. If caught, not only will her goods be confiscated, but she will also be sent to a 'remand home'.

And if everything else fails, her 'husband' finds her a 'job' – that of a sex worker.

***Source**: Research Team, RCUES, AIILSG, Mumbai, 2007*

work is also a place of refuge: a 'better home' to be in. They get meagre help because that phase constitutes a process of training and skill development for future employment elsewhere. These are more vulnerable to abuse than adult workers. Use of modern gadgets like washing machines and clothes dryers has not diminished, but only increased the demand for them.

Women Vendors of Mumbai

A seven-city study by the National Alliance of Street Vendors in India (NASVI) in 2000, including Mumbai revealed that the income of women vendors support the men. Most of the women street vendors belong to the households in which the male members were once employed as permanent employees and well paid in the organised and formal sector. Their unemployment due to closure or lockouts of their units, or due to retrenchment from the job has changed the profile of families. Due to male unemployment, their wives, daughters, sisters started street vending to make both ends meet. These women constitute 25-30 per cent of the total vendor population. Nearly 25-30 per cent of women vendors were earlier in formal employment which they later lost. Women vendors operate on a small scale due to limited access to credit, extension services and input subsidies (see also Box 7.7).

The total employment provided through street vending becomes larger when we consider that they sustain certain industries, especially small-scale, and provide low quality items by providing a channel to the consumers. These industries employ a large number of workers and they mainly rely on street vendors to market their products. In this way, street vendors help sustain employment in these industries.

Those who take to hawking on streets are those who could not secure a regular job or have dis-advantage of employable skills. They make no demand on government for jobs, nor do they beg, but they strive to sustain a modest but dignified life. Their lives on the street can be gruelling, but between the two genders, the women seem to earn less. A study by SNDT Women's University and International Labour Organisation (2002) shows that an overwhelming majority suffer from ailments related to stress – hyperacidity, migraine, hypertension, loss of sleep, among others (Bhowmik and More, 2001).

Women's Workplace Safety

Unlike the disorganised, scattered informal sector, the women in the organised sector have a better level of safety. Increasingly, a number of private and public sector employers are ensuring safety of women employees and workers as per the Supreme Court's directive (Vishakha vs. State of Rajasthan, 1997) that requires all workplaces to have a complaints mechanism with a complaints committee, special counsellor or other support services. A woman must head the complaints committee and no less than half its members should be women. The committee has to include an NGO/individual who is familiar with the issue of sexual harassment. The complaints procedure must be time-bound and confidentiality must be maintained. Complainants/witnesses should not experience victimisation/discrimination during the process (see Box 7.5).

Employers organise discussion on sexual harassment at workers' meetings, employer-employee meetings, etc., and prominently display the guidelines to create awareness about the rights of female employees. They are required to assist affected persons in cases of sexual harassment by outsiders. The state recognises sexual harassment as a serious offence, and the responsibility of the company/factory/workplace to prevent and deal with sexual harassment at the workplace and the liability of the company, etc. for sexual harassment by the employees or management. Not being aware of the law does not insulate employers from liabilities. Employers are formulating an anti-sexual harassment policy which must include *Freedom from sexual harassment is a condition of work that an employee is entitled to expect. Women's Rights at the Workplace are Human Rights.*

Box 7.7: Street Vending

It is a visible, ubiquitous facet of commerce in Mumbai. Of them, a good proportion are women, hawking mostly perishables, be they flowers, vegetables or fish, leaving the other items to their male counterparts. Apparently this has to do with their time management, of having to go home to run them as well. This implies a tighter schedule management since the perishables have to be sold both when they are fresh, needed by the consumers and yet, find time to get back home for their daily homemaker's grind.

A street or a nook near an important place, be it a railway station, a temple, a busy street used by people to and from work, or any public place where the potential customer could pass by, is a place to hawk on. They can be found on the railway station, foot over-bridges and there is a demand that they be provided space on the walkways.

Walkways, which are being built in several locations, are to ease the movement of pedestrians whose passage is hampered by a mix of traffic and vendors.

Evict them, and they are back soon enough at their places of hawking.

There are about 14,000 licensed vendors on civic lands alone, and an estimated 1,50,000 ply their trades. The civic body has not been able to legalise them to issue licences. That means most are illegal hawkers.

As with other things associated with Mumbai, the numbers are huge, estimates going up to nearly 4,00,000 vendors, but a TISS-YUVA Census of 1998 had put the number at 1,02,401; however, earlier informal estimates by the civic body were higher. The TISS-YUVA number was lower apparently because it was a count of those who were occupying public, not private land.

According to the National Policy for Urban Street Vendors, Ministry of Housing and Urban Poverty Alleviation, Government of India (2004) around 2 per cent of an entire city's population is normally engaged in street hawking. They are a large work force and perhaps the most vulnerable and victimised. Interestingly, the civic body plays no direct role in generating incomes for the citizens except for the salaries it pays the employees engaged in civic work. However, their inability to keep the vendors off the streets, regardless of the obstruction they cause to the smooth flow of pedestrians or even sometimes traffic because they spill over to the carriageways, has unwittingly helped providing livelihoods for good number of the citizens.

These vendors – more popularly called hawkers – make their pitches at any spot where they foresee good business potential, and are willing to put up with several risks: eviction, confiscation of their wares they hope to sell, forced bribes by the local musclemen, and even the usual grease money to the supervisory cadre of the civic body and the police. These bribes are to be paid regardless of the vendor being licensed or otherwise; majority are unlicensed and subject to relatively more of harassment. To them, the authority is not regulatory but predatory because the minions have a free play. The minions are the face of the authority.

Hawking also indicates a lack of proper town planning. For instance, when built, Nariman Point did not conceive of a single spot from where white collar employees could source their lunch or tiffin, and this gap was readily and hugely filled by the vendors. Perhaps the same would be the fate of the spanking new Bandra-Kurla Complex housing big corporate houses' head offices. This means urban planning ignores the need for this important service. The MMRDA's Draft Plan for 1995-2015 has no space assigned to the vendors. Another point that underscores this inadequacy of formal space for such commerce is to be found in vegetable vendors who take over entire streets outside the regular *mandais* set up by the civic body. Because the space inside is far too short, the vendors come to the streets.

***Source**: Economic and Political Weekly, Vol. 40, 27 May 2005*

There are issues of women's safety not just within the confines of a workplace like an office or an institution but also in the public spaces, because a vast section of them make their livelihoods virtually on the streets. How safe are the places, and how well are they able to ensure their safety as they negotiate with strangers? The situation can change from moment to moment and alert calls are conducted with hardly any mechanism, which would come to their rescue because even the authorities are seen by this section as predatory, not regulatory or supportive.

That apart, both classes of women: those who have better situations within the relatively secure office spaces or those who are in the public domain – some even live on the streets, often in the open, without as much as a shelter save a sheet to cover themselves when they sleep – are users of several common public spaces. They are on the trains, crowded but with provision for special compartments for themselves, which is hardly enough to meet every woman's need. They are on station platforms, etc., where safety can be a serious concern. Crimes may not be common place, but they do exist and potentially lurk everywhere.

Displaced Population due to Natural as well as Man-Made Disasters

Continual changes, including upgrading of infrastructure has led to displacement and relocation of people. The women have borne the brunt of the dislocation induced by road and flyover constructions, slum demolitions and abolition of informal sector markets during the last decade (see Box 7.6). In this situation, women's housing needs must be understood from the point of view of women's rights to a dignified life. They should not face any discrimination in exercising their housing rights due to their caste, race, age, religion and ethnicity. State and civil society initiatives must facilitate the process of women's empowerment through ensuring women's housing rights and women's space in the marketing zones. Gender sensitisation of the decision-makers in the housing industry and the elected representatives of the mainstream political bodies could help deal with these traumatic events for the affected.

Violence Against Women

Though Mumbai remains, so far, a relatively safe place in India, where women travel during day and night, the variety and intensity of crimes against girls and women have relatively increased. The Mumbai Police also meticulously maintain records of these crimes. As Table 7.9 reveals, cases of rape of minors, outraging modesty of women, intended insults to modesty of women, and dowry related mental and physical harassment are major crimes reported to the police. Next comes the crimes such as rape, dowry related suicides and misappropriation of *streedhan.*

Women's rights organisations and social work colleges providing institutional support to women victims/survivors of violence state that the official data project only tip of the iceberg. Actual reality is quite unnerving. Crimes such as child sexual abuse, abduction of adolescent girls for forced motherhood, begging, petty crimes, pornography, labour concentration camps, and domestic violence are rampant in the city; as per Dilaasa, a one stop crisis centre housed in Bhabha Hospital, 25 per cent of married women in Mumbai are victims/survivors of domestic violence. The other crimes include trafficking of girls and women for prostitution, bonded labour and organ trade which pose major challenge to civil society as well as law and order machinery. Protection from Domestic Violence Act, 2005 has recognised women's right to stay in matrimonial and natal home (see Box 7.8).

Elderly Women

In Mumbai, senior citizens have become a constituency thanks to the efforts of NGOs such as Dignity Foundation and AGNI. There are nearly 70 networks of elderly people, but the needs of elderly women are not yet articulated or acted upon

Table 7.9: Registered Crimes Against Women from 2000–06 in Mumbai

Sr.No.	Crime Heads	2000	2001	2002	2003	2004	2005	2006
1	Rape (i) Minor u/s 376 IPC	84	97	96	84	132	128	112
	(ii) Women	40	30	32	49	54	70	51
2	Outraging Modesty u/s 354 IPC	131	257	246	243	320	384	355
3	Intended Insults to Modesty of a Woman under section 509 IPC	59	54	52	33	81	106	101
4	(a) Dowry Related Murder u/s 304(B) IPC	13	13	10	8	13	8	17
	(b) Dowry Related suicides u/s 306 IPC	28	37	43	34	43	53	45
	(c) Dowry Related Mental & Physical Harassment u/s 498 (A) IPC	132	121	177	193	226	298	310
5	(a) Other than dowry related murders u/s 302 IPC	23	48	19	2	15	8	6
	(b) Other than dowry related suicides (A.D.)	14	19	8	8	4	6	7
	(c) Other than dowry related Mental & Physical Harassment	33	37	5	2	8	1	2
6	Misappropriation of Streedhan u/s 406 IPC	11	43	31	16	27	48	54

***Source**: Deputy Commissioner of Police (Preventive), C.B., C.I. D., Mumbai, November, 2007*

adequately. Attacks and murders of elderly women by strangers as well as known people have increased. There are no half-way homes or community centres, social clubs or old age homes exclusively for women. *Vardhana* project by Vacha tried to articulate needs and aspirations of aging women. *Jijamata Niradhar Yojana* by the Government of Maharashtra gives nominal cash to destitute elderly women which is snatched away from them by their relatives or local bullies as soon as they get it. This is a token gesture which hardly meets any needs.

Women with Disability

Mumbai has yet to become disabled-friendly in terms of addressing the needs of women who are physically challenged. Then only women with disability would be mainstreamed in terms of education, employment and skill development that can make them lead a dignified life. A database on women with disability is required to be built.

Box 7.8: Divorce Rates

Women from Mumbai top the list of divorcees across the country in 15-49 age group, says a new government survey. In Mumbai, 0.4 per cent women in 2005-06 have opted for divorce while in Delhi, it is 0.2 per cent. Kolkata and Chennai follow with 0.1 and 0.2 per cent, respectively.

***Source**: Ministry of Women and Child Development, Government of India*
www.karuthu.com/forum/printer_friendly_posts.asp?TID=2960

Implications and Suggestions

Mumbai's and women's development and growth are ensured if it is women-inclusive. Investment in women's development is a win-win formula for all stakeholders – individuals, communities, and authorities. Women must have say in decision-making bodies of urban governance as they play a crucial role in Mumbai's sustainable development.

Once the objective is clear, so do the steps to be taken, some of which include:

- Concerted efforts to arrest the declining child sex ratio by judicious implementation of PCPNDT Act, 2002, stringent punishment to doctors and laboratory owners for abuse of sex determination and sex selection technologies.
- Full utilisation of the 30 per cent component meant for girls in Sarva Shiksha Abhiyan.
- Conversion of one room in all civic schools into a crèche, so that poor girls with younger siblings can leave them there and attend the classes.
- Provision of more focussed attention to all health care issues of women, in general.
- Strengthening of the PDS and supply of good quality food grains, oil and soap to ensure better nutritional standards.
- Promotion of community based mental health intervention.
- Encouragement to NGOs and community based groups to provide ward wise update on the status of the child labour to build data base and develop remedial actions.
- Ensuring social security, labour standards, occupational health and safety at workplaces for women in the informal sector, small-scale industries, construction workers, rag pickers, scavengers, food-processing industries with special attention to sweat shops and garment industry.
- Provision of vocational training to develop skills in non-conventional areas so that women can be employed as taxi-bus drivers, plumbers, fitters, turners, electricians, carpenters, cobblers, and so on.
- Support from state to ensure access to information, finance, training and marketing for women entrepreneurs, SHGs, vendors, and self-employed women.
- Priority to women entrepreneurs and traders while allotting of shops by public sector and local government.
- Provision of crèche facilities, working women's hostels, and short stay.
- Exemplary assistance by law and order machinery to NGOs and community groups rescuing children forced into prostitution.
- Making Mumbai a disabled-friendly city.
- Construction of night shelters with toilets and baths for homeless women and girls;
- Provision of support to female-headed households managed by widows, deserted, divorced and single women in the area of education, health, housing and skill development.
- Generate gender disaggregated data to address strategic and practical gender needs of women.
- Affirmative action to protect interests of women in difficult circumstances, such as child prostitutes, homeless women, street girls, abducted girls, child brides, and women suffering from HIV/AIDS, and FHH.
- Setting up of halfway homes and counselling centres for elderly and physically challenged women.

Quality of Life

Obverse: Photographs 1 and 2; this page: photograph 3, courtesy MCGM.

8. Quality of Life: For People, Few Choices

Under the Veneer, Stress

The two determinants of a person's progress in life are good health and education, both of which are interlinked. Clubbed with incomes or purchasing power parity, they broadly indicate the level of attained human development. Education expands an individual's mental horizons, makes one amenable to reason, and thereby make proper choices which have a bearing on the individual's health. Health in itself is a major asset for a human being who is striving constantly to improve his economic and social status.

However, these are not the only factors that impinge on a person's wellbeing. A host of other factors the environment in which he or she lives or works influence the level of wellbeing

The wellbeing component is not easy to define as an index of wellbeing and would include the following aspects that evaluate life: healthy behaviour pattern, environment at work, the actual physical condition, the emotional element, and access to basic necessities including healthy inter-personal and social interaction. That could be a complex thing to develop as an index but this chapter would look at the various aspects of the environment in which a Mumbai citizen lives.

Much has been said about spaces, both the extent and kind, in which a person lives – cramped, crowded; the public spaces used are equally overrun by mass of people, be it on the street, the transport or the market, the air they breathe, the decibels that they are forced to tolerate. The entire city has open spaces of just 4.8 per cent of its total area of 22.78 sq km. In most cases, the workspaces are a mere table and a cellular phone. More people make footpaths their workplace or a business outlet. It is also home to the most unfortunate, braving the elements and a predatory state.

Inadequate Lifestyle Facilities

Mainly because of the burden of numbers, for a large section of the population lifestyle facilities concerning human welfare such as health care, education, roads, transportation, air quality, water and sanitation, among others, are missing due to insufficient provisioning of basic civic facilities. Its range includes the sense of security, the perception with regard to law and order, ease of movement, and choices that are not injurious to others. There are serious deficits, including those of open spaces, which would have to be overcome in time. But as numbers keep loading more pressures, the coverage of deficits becomes more and more difficult.

In one sense, equity enforces quality of life. The distribution of income gets reflected in the kind of life an individual leads but non-income indicators – as absence of facilities is an indication of non-income poverty – of living need to be considered as well. The non-income indicators that are more visible than mere income indicators get aggregated and then lose their meaning when looked at in per capita measures with inherent wide disparities, which show the extent of contribution that economic indicators have made to growth, or improvement to the quality of life. This is where Mumbai faces serious challenges.

Life expectancy numbers beyond what was determined in the 2001 Census are not available, as is also the case with literacy. Literacy, however, is not the best substitute for education or knowledge but a proxy one uses for want of an alternative. The life expectancy was 71 then, a year higher than the average for all of Maharashtra. Adult literacy was at 85 per cent. Another positive indicator of good health is the number of safe, institutional deliveries. Dropout rates are high and though not fully determined, the problem of out-of-school children is a concern.

If completion of middle school education, matriculation or secondary education per lakh population is considered, it is highest for Mumbai and its suburb at 28,305 and 27,052 per lakh population respectively. If a graduate degree is a criterion, then Mumbai and Mumbai Suburban had 9,153 and 10,056 per lakh population, respectively. It appears a particular section in Mumbai values education and strives to improve both educational attainments and skills for the job market. This section may be the middle and upper middle classes. But there is more to living in Mumbai.

Land Use

Mumbai was the first Municipal Corporation to adopt the concept of a development plan and the first development plan was formulated in 1964. The second development plan came into force in 1990-93 and is valid upto 2013. It may be further added that as per the provisions of Development Control (DC) Regulations 56 & 57, many lands in the industrial zone are allowed to be used for residential/commercial purposes. The total area in industrial zone is 4,582.7 hectares, 21,028.72 hectares is for residential development, 1,756.88 hectares is allowed for commercial development, and 19,289.46 hectares is for non-development zone under the provisions of DCR 56 and 57.

As it would not be possible for the Municipal Corporation of Greater Mumbai alone to undertake such a large programme with its own funds, attempts have been made in the new development plan to incorporate the participation of the citizens in the development of the city.

Transfer of Development Rights (TDR)

The sites reserved for various public purposes are to be handed over to the MCGM free of cost and free of encumbrances by the landowners. Owners in turn will receive transferable development rights equal to the permissible built up area of the land to be surrendered, which can be used on any other plot in the same Ward (not in the island city) or on any plot lying to the North of the TDR generating plot (but not in the island city). Details of lands acquired for open space reservation by granting TDR from 1991 up to 31/12/2007 is given below:

- Garden = 48.42 hectares
- Recreation Ground = 84.86 hectares
- Play Ground = 65.54 hectares

(Transfer of Development Right [TDR] in 2006-2007).

Accommodation Reservation

As per the modified regulations by the Government of Maharashtra, the Municipal Corporation is entitled to develop the municipal lands reserved for public purpose of housing the dishoused (HD), municipal staff quarters, municipal housing, welfare centre, dispensary, maternity home, library, market, etc., through private participation. As per modified regulation, the Municipal Corporation is entitled to develop the reserved lands through a suitable agency wherein a specified percentage of built up of amenity of the reservation would be available free of cost to MCGM.

Slum Redevelopment

The development plan also provides for redevelopment of the existing slum areas with higher Floor Space Index (FSI) of 2.5. (Normally, an FSI of 1.33 is permitted in the island city whereas an FSI of 1.0 is permitted in the suburban area.)

Urban Renewal Scheme

The development plan provides higher FSI of 4.00 to undertake urban renewal schemes by the MCGM and the Maharashtra Housing and Area Development Authority (MHADA), a government agency involved in housing. This provision will enable redevelopment of old dilapidated municipal and other tenanted buildings and to make available vacant land for various civic amenities.

Roads, Traffic, and Transport

The city of Mumbai has a network of roads, consisting of highways, main arterial roads, and other minor roads covering almost all areas of the city. While improving roads, the required works of laying water mains, sewer lines are also being carried out in road projects. For pedestrians new footpaths are being constructed and existing footpaths are being improved with interlocking paver blocks along with facilities for physically challenged (handicapped) persons in such road works. The project approach also includes provision of traffic amenities, such as lane marking, informative signage for disciplining/helping vehicular traffic as also street name boards, tree guards, railing etc., for helping road users. The central median is being provided and beautified on important roads in the city.

Since 1989, the Municipal Corporation has taken up regular programme of concretisation of arterial roads, major roads and links to have speedy dispersal of traffic on major corridors. These works are now being done by using ready mix concrete and latest machineries to minimise pollution and noise nuisance. Total length of the road network in Mumbai is 1,941.42 km out of which the City has 506.48 km, the Western Suburbs have 927.65 km, and the Eastern Suburbs have 507.05 km of roads. A total length of 437 km of roads, i.e., in City 154.85 km, Western Suburbs 153.12 km, and Eastern Suburbs 129.03 km of roads have been already concreted by the Corporation.

The Municipal Corporation decided to improve all the roads (1,941.42 km) in a phased manner. Till May 2008, in the City area, 31.51 km of roads in asphalt, 18.67 km. of roads in Inter Connected Block Pavement and 1,16,103 sq m of junction area in Inter Connected Block Pavement were improved. In the Western Suburbs, 8 km of roads in asphalt are improved whereas in Eastern Suburbs, 4.15 km of roads in asphalt have been improved.

There are different types of vehicles plying on the roads of Mumbai. They consist of cars, taxis, trucks, buses, three-wheelers, two-wheelers, bicycles, handcarts, bullock-carts, tonga, etc. The total number of vehicles in Mumbai in year 2007-2008 was 16,31,837. Their composition was 53.1 per cent two-wheelers, 30.9 per cent cars, 3.6 per cent taxis, 3.6 per cent heavy vehicles, 8.5 per cent, three-wheelers and others 0.3 per cent. It is estimated that there would be 1.87 million vehicles by the year of 2010 at the present rate of addition of 384 vehicles per day.

The BEST Undertaking operates 3,587 buses on 370 routes, carrying 43 lakh passengers daily. In order to reduce the pollution and also to conserve precious petroleum, in Mumbai City and the suburbs, the BEST Undertaking is presently implementing a Fleet Upgradation Programme wherein the buses are running on 10 per cent Bio diesel and 1,070 on CNG.

There are about 48,886 metered and 8,844 tourist taxis in Mumbai operating on petrol, diesel, and CNG. CNG is clean fuel and as per the data available till March 2008, there are 46,721 metered and 290 tourist taxis, 540 cars, 290 private buses, 95,813 auto rickshaws and 986 goods carriers operating on CNG. In addition, there are 256 autorikshaws, 1,753 metered and 307 tourist taxis, 4,182 cars, 22 buses and 3,545 goods carriers running on Liquefied Petroleum Gas (LPG) in Mumbai.

Access to Urban Amenities

Commuting

Prior to moving to the traditional amenities, a look at a major stress-inducer would be appropriate – the north-south commuting. It is a striking feature of a linear city of Mumbai which only now has begun to move towards making travel within the city more

multi-modal and facilitates easier east-west access as well. A 9- or 12-rail car rake carrying commuters beyond its physical capacity is an iconic representation of Mumbai, overcrowded, purposeful and punctual. The two suburban systems operated by both Western Railways and Central Railways stretch 319 km. One is from Churchgate to Virar (60 km), to be expanded soon to Dahanu; Chhatrapati Shivaji Terminus (CST) to Karjat (54 km); and to Kasara (67 km). The harbour line railway operates between CST to Panvel covering (48 km) and Wadala to Andheri (21.3 km).

With the municipalised BEST bus service, Railways together ferry nearly 10 million persons across the city every day to and from work. It is a reality peppered with death: some 4,000 people die annually falling off the trains, precariously hanging on to it for the commute or are crushed between the train and the platform while boarding or getting off, in crossing the tracks to avoid overcrowded foot-over-bridges, getting run over by the very trains they call their lifelines. The precise bus from home to the station to catch the appointed 'local', negotiating the mass of people with similar intent on the platforms to reach workplaces on time is a routine matter.

It is not a simple enterprise for a minute's loss can mean a missed train. Moreover, each train carries some 5,000 people, thrice the designed capacity, eight people standing per square meter for journeys that can last an hour or more if from the suburbs, and more if from outlaying cites. They travel south in the morning to work, return north after the day's work, are uncomplaining because they know it has to be borne with fortitude; it is their armour. The crush of people on board a local train is so high that the railways had to invent a term 'super-crush density'to describe it.

It could be self-serving when people justify the commute; they do it because they have to undergo that outrageous trip, without which they would not be able to make their living. Trains at 5.30 a.m. arriving at Borivali from Virar have no place for a new passenger to put his toe in and yet, there are people attempting it every day. Getting into the stations is also an ordeal because of number of hawkers and other commuters. All this detracts at least four hours from their workday lives, which means less time to socialise and much less time for the families. It is the salient travel pattern of Mumbai.

Unremitting Pressures

More trains are being added – in January 2009, both the systems were operating a total of 2,606 train trips a day, carrying between them over 6 million commuters daily – and yet the demand remains higher than the supply. Improvements are constantly being made but nothing has happened that would make palpable difference to the city commuters which admittedly, is cheaper due to huge subsidised ticket prices. New rolling stock is being added, new tracks are being laid, and yet, it is never enough. There is one significant reason for this: more people are travelling into city from distant suburbs.

For example, number of First Class season ticket holders from Dahisar went up from 6.33 lakh in 2007 to 8.44 lakh in 2008 – a rise of 33.4 per cent. The Second Class season ticket holders went up from 38.12 lakh to 53.07 lakh – an increase of 39.22 per cent. Similarly, the increases were 48.29 per cent, 107.33 per cent and 21.09 per cent for First Class pass holders from Mira Road, Naigaon, and Nalasopara; with regard to commuters using the Second Class from the same area, the rise was 40.08 per cent, 92 per cent and 46.27 per cent, respectively. This also implies the population shift from the city due to cheaper housing and new migrants taking up homes there. This is true of other distant locations like Thane, Dombivli and Kalyan as well.

According to a World Bank study in 2004, there is another layer of commuters who have a different pattern than those who strap-hang over long distances: the highest commute frequency is only 1-2 km and more than 40 per cent of the workers and half of poor workers commute less than 2 km indicating the quick access from poor areas which are slums raised to meet occupational opportunities. The distribution, however, has a long tail. Approximately, 19 per cent of all

workers and 11 per cent of poor workers commute more than 10 km. This means, one-way commute distance is 5.3 km for all workers and 3.9 km for the poor.

The study used household income of Rs 5,000 per month as the poverty line though the official poverty line for urban Maharashtra is Rs. 594 per person per month (Table 8.1). It is revealing that 44 per cent of the working population goes on foot to their place of work. This percentage goes up to 61 per cent in respect of working people below poverty line, possibly reflecting the cost and time taken for commuting by public transport, the inadequacy of public transport itself, and the ease with which one can set up one's dwelling unit in Mumbai.

Table 8.1: Main Modes of Travel to Work

	Total		Income Less than Rs. 5,000	
	Frequency	**Percent**	**Frequency**	**Percent**
On foot	2447	43.8	727	60.8
Bicycle	173	3.1	73	6.1
Train	1267	22.7	192	16.1
Public bus	902	16.1	173	14.5
Auto Rickshaw	100	1.8	15	1.3
Taxi	8	0.1	0	0.0
Own two wheeler	477	8.5	8	0.7
Own car	148	2.7	0	0.0
Other's car	8	0.1	2	0.2
Other	57	1.0	5	0.4
Total	**5594**	**100.00**	**1195**	**100.00**

***Source**: Urban Poverty and Transport: The Case of Mumbai, World Bank (2004)*

Hurdles Everywhere

Commuting woes are not confined to users of 'locals' that, in the least, once aboard, takes one to the destination on time, discomforts notwithstanding. Those who cannot cope with this daily trauma and can afford a vehicle, also find that in the absence of adequate road spaces they are forced to travel at speeds of 5-8 km per hour during peak time. Road rage as a manifestation of stress is beginning to be reported and the solution has to be found in rapid, efficient adequate public transport which takes less road space but moves faster. The investment in this direction is already on for a string of metros. It would, however, be some time before they are operationalised and the impact felt.

If 44 per cent of working persons go to work by walk, it implies a big number. Do they have footpath to walk on in safety? It is not just near the stations but in most places in the city where road-widening is almost invariably at the cost of the sidewalks; they forever shrink in Mumbai where less people use the roads in their cars than pedestrians are able to what is rightfully theirs. If not narrow, they are an obstacle course because of encroachments. In road development or improvement projects, the pedestrians' needs are taken up, if at all, as a low priority. The 50 skywalks at great expense are a solution but these obstacles cannot be or would not be removed.

On the basis of the 2001 Census, access to basic amenities such as electricity, sanitation and drinking water facilities can be measured. The percentage of

households with no access to electricity in Mumbai and Mumbai Suburban is only 2.16 per cent and 2.09 per cent, respectively. This advantage disappears when another amenity, latrines is considered. Only 44 per cent of households have access to them. Another amenity is the access to drinking water facility within or near the premises a household occupies. The percentage of those without access to this amenity was 2.52 in Mumbai, 3.0 in Mumbai Suburban but these figures need to be taken with some caution.

Travails of Living

The disparities in the supply of treated drinking water in different areas are striking. Though Mumbai has a maximum average water supply of 200 litres per capita daily (lpcd), the supply in different areas of the city is skewed. Slums get less than even 90 lpcd which is by one count, the average supply (Table 8.2). Other areas receive as high as 300-350 lpcd. Estimates vary and one puts it is at as low as 25 lpcd in slums. This, despite a supply of 3, 450 million litres per day, from five lakes pipes over long distances, leakages ensure lower supply. *At present the water demand will increase and is anticipated to reach around 4,408 MLD in the year 2011 and 4,949 MLD by the year 2021.*

Waking up at odd hours to fill and store water in homes already cramped, sleep deprivation, or having to schedule household chores to coincide with water supply, can adversely impact the homemaker; worse, if she happens to be working too. Though treated and routed through a huge network of and balancing reservoirs, treatment plants, the water from lakes with uncontaminated catchments have shown during quality checks that the water at the consumer end of the supply chain could be contaminated. For instance, a fifth of the 57,875 samples collected during 2002-03 had bacteriological contamination. The polluted samples depending on the wards, ranged between 10.8 and 28.5 per cent. In 2007-08, 12.47 per cent of all samples were contaminated compared to the previous year's 9.05 per cent. The contamination is higher during monsoons.

The water is completely treated with pre-chlorination, alum-dozing, settling, filtration and post-chlorination before supplying to consumers. The treated water is stored in the Master Balancing Reservoirs (MBR), MBR I at Yewai (134 MLD), at Bhandup Complex (246 MLD) and MRI II at Yewai (123 MLD) and further distributed to 28 service reservoirs spread through the city by a complex network of inlet mains, which remain charged for 24 hours. These service reservoirs in turn supply water to the consumers in different water supply zones at suitable time for the duration varying from 90 minutes to 24 hours depending on area of the zone, topography, consumers habit, etc.

To ensure good quality of water supply at the consumer end, regular water quality monitoring is carried out. The total number of samples collected were 37,939 during 2007-2008 and 4730, i.e., 12.47 per cent, were found contaminated. The range of percentage of contaminated samples for wards is 6.21-17.27 per cent. The maximum percentage of

Table 8.2: Water Requirement and Average Supply

Purpose	Maximum	Average	Minimum
Drinking, Cooking & Dishwashing	50	40	30
Bathing	50	25	15
Toilet Flushing	50	40	30
Washing Clothes	50	20	15
Cleaning & Gardening	25	10	-
Car Washing	5	-	-
TOTAL	**230**	**135**	**90**

***Source**: Mukherjee (2006)*

contaminated samples were found in L Ward (17.27 per cent), followed by C Ward (16.46 per cent) while minimum percentage of contaminated samples were from P/N Ward (6.21 per cent). Generally, the contamination is in the form of bacteriological content.

It is observed that water contamination is high during the monsoon months. To reduce the contamination, mortar lining of old water mains for the length of 95 km (i.e., 44 km in the City, 34 km in the Western Suburbs and 17 km in the Eastern Suburbs) was carried out in Mumbai City.

A multi-pronged programme is taken up for Sujal Mumbai Abhiyan under Distribution Improvement Project, in which various works will be carried out such as installing water meters on all the connections for implementing Telescopic Rate Structure, providing water connections with Prepaid Water meters to the inhabitants on unauthorised slums/structures and improving tertiary water supply network through six zonal contractors.

Air Quality in Mumbai

Pollution levels in terms of Exceedence Factor (EF) during the period 1997-2004 are presented for major cities of Maharashtra in Table 8.3 where EF is the ratio of measured annual mean concentration of a pollutant to the annual standard for that pollutant (see Box 8.1). The extent of pollution in a city is presented in relative terms of pollution levels (low, moderate, high or critical), which is defined on the basis of EF. The four air quality categories are EF > 1.5 – critical pollution; EF between 1 and 1.5 – high pollution; EF between 0.5 and 1.0 – moderate pollution; and EF < 0.5 – low pollution. Mumbai showed Critical EF for Suspended Particulate Matter (SPM), low to medium EF for Sulphur Dioxide (SO_2) and Oxides of Nitrogen (NO_X) parameters. Given the rise in road traffic, which has been 6.39 per cent last year, the dated data has to be taken with caution.

This data shows that for Mumbai, the SO_2 levels have reduced considerably during 1997 to 2004. This can be due to the use of low sulphur content fuel by the industries. With respect to NO_x, all the three cities have shown a sharp increase from 1990 to 1998 mainly due to the rapid increase in vehicular population. This holds special context for Mumbai and its suburbs where although 80 per cent of the population uses public transportation, traffic congestion is still high due to higher traffic density. However, both SO_2 and NO_X levels have remained within the prescribed limits despite the increase in their levels over the year.

Table 8.3: Pollution Levels in Terms of Exceedence Factor (EF) of Major Cites in Maharashtra: 1997–2004

Sr. No.	Districts	SPM			SO_2			NO_x		
		1997-98	2000-01	2003-04	1997-98	2000-01	2003-04	1997-98	2000-01	2003-04
1	Mumbai	C	-	C	L	L	L	M	-	L
2	Thane	C	M	M	L	L	L	M	L	L
3	Nashik	H	H	H	M	M	L	M	L	L
4	Pune	C	C	C	-	-	-	M	H	M
5	Nagpur	H	C	C	L	L	L	L	L	L
6	Chandrapur	H	H	C	L	L	L	M	M	M
7	Solapur	H	C	C	L	L	L	M	M	M
8	Kalyan	C	M	-	L	-	-	L	M	-

***Source**: Maharashtra Pollution Control Board (2007)*

***Notes**: C - Critical, H - High , M - Medium, L - Low.*

Box 8.1: Pollution and Ailments

Studies on health impacts of air pollution have shown that high levels of SPM, NO_X (Oxides of Nitrogen) and HC (Hydro Carbon) were causing an increased incidence of respiratory diseases like tuberculosis, cardiovascular diseases and asthma. A study by the Environmental Pollution Research Centre (EPRC) at KEM Hospital, Mumbai, indicated that cases of interstitial lung disease (inflammation of capillaries) have increased from 1,479 in 2000 to 1,871 in 2004. Cases of bronchitis and allergic rhinitis have also increased. It was found that about 10 per cent of the population of Chembur suffers from bronchitis and respiratory distress as a result of air pollution.

***Source**: Maharashtra Pollution Control Board (2007)*

Monitoring of particles of 10 micrometers or less (PM_{10})[1] levels was included in Central Pollution Control Board (CPCB) stations during 2001. In general, PM_{10} levels exceeded the CPCB standard of 60 µg/m^3 in all three cities during this period. A decreasing trend in PM_{10} concentrations was observed in Nagpur. Mumbai also showed a decreasing/ consistent trend, whereas Pune showed an increasing trend. Since PM_{10} has proven to adversely affect human health, proper control and mitigation of its emission requires urgent attention.

The MCGM regularly monitors ambient air quality for criteria air pollutants, namely, Sulphur Dioxide (SO_2), Nitrogen Dioxide (NO_2), Ammonia (NH_3), Suspended Particulate Matter (SPM), and Lead. The MCGM's ambient air quality monitoring network comprises six receptor-oriented monitoring sites spread all over Mumbai. Every day, three sites are monitored with frequency of each site at least twice a week throughout the year for four air pollutants. Air quality levels are evaluated for its compliance with ambient air quality standards for SO_2, NO_2, NH_3, SPM and Lead covering all monitoring sites under residential zones.

Air pollution index has been computed by giving weightage to the different air pollutants. Air quality is considered to be harmful when the air pollution index exceeds 100. Air pollution index comprising of three air pollutants SO_2, NO_2, and SPM ranges from 14 per cent to 158 per cent.

1 PM is Particulate Matter.
SPM is Suspended Particulate Matter.

The major sources of pollution in Mumbai can be categorised as industrial, transport, and domestic (Table 8.5). It is observed that industrial emission load is reduced considerably due to closing of some of the industries shifting to other state and change to better fuel quality. The emission load of transport sector is reduced substantially due to use of better quality fuel and vehicles adhering to stringent emission standards and frequent checking of vehicles of PUC by the Transport Department (Box 8.2).

Noise Levels

Awareness about noise affecting the health is increasing amongst the citizens of Mumbai. There are two types of noise pollution prevailing in Mumbai: conventional noise sources such as factories, railways, airplanes, vehicular transport, commercial activities; etc. and non-conventional sources or social sources such as loudspeakers, radio, TV, commonly used hi-fi music-systems, and open-air theatre, etc.

Noise levels are monitored all over Mumbai. The levels of noise are measured in decibels (dB) and compared with Central Pollution Control Board (CPCB) standards. They exceed the prescribed standards (Table 8.5) at practically all over Mumbai in different area categories. The maximum noise levels are recorded at the airport and in industrial areas. Besides this, state government strictly follows the norms of court by keeping constant vigil and by attending noise nuisance complaints.

Table 8.4: Air Quality Levels Monitored at Various Traffic Junctions using Mobile Monitoring Van

Sr. No.	Site	Concentration – µg/M³														
		SO_2			NO_2			NH_3			SPM			LEAD		
		05-06	06-07	07-08	05-06	06-07	07-08	05-06	06-07	07-08	05-06	06-07	07-08	05-06	06-07	07-08
1	Worli	21	12	14	39	27	31	78	54	75	185	150	185	0.19	0.19	0.22
2	Khar	19	12	11	67	51	47	79	67	70	278	266	258	0.20	0.24	0.27
3	Andheri	16	10	11	51	46	47	79	61	71	220	308	281	0.13	0.27	0.25
4	Bhandup	24	12	14	49	33	34	73	59	62	255	220	268	0.17	0.20	0.35
5	Borivali	14	10	8	25	17	19	75	54	50	170	118	132	0.12	0.13	0.15
6	Maravli	27	20	18	74	51	54	263	176	199	401	392	439	0.29	0.48	0.56
	C.P.C.B. Standards		60			60			100			140			0.75	

***Source**: MCGM, Environment Status Report of Brihanmumbai 2007-2008*

Table 8.5: Range of Noise Level Alongwith the Standards (2000-2008)

Sr. No.	Area	Prevailing Noise Levels in Mumbai	C.P.C.B Standards*	
			Day dB/A	Night dB/A
1	Residential	53-83	55	45
2	Commercial	66-106	56	55
3	Traffic	64-96	65	55
4	Air Port Area	80-99	65	55
5	Silence Zone	48-91	50	40
6	Industrial	86-99	75	70

***Source**: Central Pollution Control Board and EIG, MCGM, 2000-2008*

Box 8.2: Pollution and Policemen

A study of the health status of Mumbai's 78 traffic policemen posted at busy traffic junctions has shown that they were exposed to high levels of CO (carbon monoxide) and other pollutants. They often suffered from eye irritation, dyspnoea, and high incidence of colds and coughs.

Pollutants from the traffic also have volatile organic compounds (VOCs) including benzene, ozone and other toxics, which adversely affect blood and human nervous system causing anamia, brain dysfunctions and kidney damage. At high concentration, CO (more than 50 parts per million [ppm]) for several hours cause headache, asthenia, giddiness, and nausea. At low concentrations (corresponding to above 2.5 per cent carboxyhaemoglobin in blood or about 13ppm CO in air for a long duration) individuals with weak hearts are placed under additional strain.

Combustion oxidises both the nitrogen in the fuel and some of the nitrogen present in the air, producing several oxides of nitrogen. However, NO and NO_2 are known to have adverse environmental or biological effects.

***Source**: Maharashtra Pollution Control Board (2007)*

Solid Waste Management

Municipal Solid Waste Management is an obligatory duty of the MCGM. This includes street sweeping, collection of solid wastes, its temporary storage, removal, transportation, and disposal (see Boxes 8.3 and 8.4). The approximate quantity of solid water generated in Mumbai is over 9,500 metric tonnes per day (MTPD). It is broadly classified as 3,800 MT of biodegradable waste, 1,700 MT of recyclable waste, 1,000 MT of inert matter, and 3,000 MT of construction waste and silt. Citizens of Mumbai on an average generate 475 gm. of garbage per day. The composition of garbage is 52 per cent wet organic matter, 13 per cent dry organic matter, 15 per cent sand and earth and 10 per cent paper and recyclables. Plastic composes 10 per cent, and it causes maximum hindrance such as clogging of drains, choking the gutters and its combustion poses health hazards due to the release of toxic gases and thickness is not biodegradable. The MCGM has banned the use of plastic bags below the 50-micron thickness size as a preventive measure in accordance with the Government of Maharashtra Gazette Plastic 2005/ CR-38/TC3 of 3 March 2006. Table 8.6 indicates wardwise generation of waste (including debris, silt) in Mumbai City.

Most of the municipal solid waste is collected and disposed of at three landfill sites, but the disposal is mainly in the nature of dumping/landfilling with very little localised treatment and disposal in the form of vermin composting or simple composting. *Presently, the solid waste dumping grounds at Deonar and Mulund are in operation. After closure of Gorai Dumping Ground, a new site at Kanjur has been selected which will take care of increasing waste.*

The MCGM has proposed to develop all the three dumping grounds into 'Integrated Waste Processing and Disposal Facilities on Public Private Partnership Basis'. The Waste Management strategies prepared for the dumping grounds include :

- Scientific partial closure with impermeable layer, LFG collection system, composting and sanitary landfill with leachate collection at Deonar Dumping Ground.
- Processing of biodegradable waste using bio-mechanisation process at Mulund Dumping Ground.
- Composting facility and development of Sanitary landfill with leachate collection and gas collection systems at a proposed site at Kanjur Marg.

Table No. 8.6: Average of Refuse, Silt, Debris Per Day (Municipal and Private Vehicles)

Ward	Refuse Generated in MT / Day	Silt / Deb. Generated in MT / Day	Disposal for Refuse in MT / Day	
			Deonar	Mulund
A	399	47	292	107
B	163	36	145	18
C	254	39	193	61
D	549	48	399	149
E	484	33	454	30
F/S	340	48	328	12
F/N	383	68	322	61
G/S	444	65	405	39
G/N	619	128	496	123
H/E	366	94	295	71
H/W	408	70	362	46
K/E	496	16	366	130
K/W	445	13	389	56
P/S	352	70	0	352
P/N	359	99	0	359
R/S	254	45	0	254
R/C	276	127	0	276
R/N	147	46	0	147
L	584	131	505	79
M/E	273	78	273	0
M/W	274	72	274	0
N	331	79	306	25
S	384	94	0	384
T	246	38	0	246
TOTAL	**8831**	**1583**	**5804**	**3027**

***Source**: Solid Waste Management Department, MCGM (2009, unpublished data)*

***Note:** Calculation of Refuse as per Capacity of each Type of Refuse Vehicle utilised by MCGM.*

Box 8.3: Example of Peoples' Participation: Advanced Locality Management (ALM) for Clean City Programme in Mumbai

Involving community residents in 'Advanced Locality Management' is another new model based on the voluntary association of the residents with the goal of improving and maintaining cleanliness, and waste reduction in their areas. The basic principle of this concept is 'Self-governance' by the people and the municipal body concentrating on dissemination of information, awareness building, management and maintenance of services required at local level. The main component of the partnership is the segregation of dry and wet garbage, handling over of the dry waste to the waste pickers, and composting of the wet waste within their compound/locality. On the part of Municipal Corporation, it provides house to house waste collection and other civic services in the area. In Mumbai, the ALM concept envisages greater involvement and interaction of MCGM with neighbourhood groups in the wards. These groups form the ALM Street Committees and coordinate with the respective ward office for better management of civic related issues, e.g., garbage, street adoption etc. At present there are about 668 ALMs in the city.

Selected Steps under ALM in Mumbai:

- Reduce the waste generated and what is generated should be reused and recycled. This step is more applicable to dry waste.
- Store the wet and dry waste in containers of choice, e.g., bin, bags, drums, etc., prior to disposal.
- Disposal of the separately stored wet and dry waste through separate channels of convenience. Dry waste is disposed through scarp dealer, waste pickers and sweepers. In few ALMs, composting is done by residential colonies. About 5 tonnes of biodegradable waste is composted per day.

The other major issue is the huge quantities of construction waste that plagues the city due to the continuous construction activity. An estimated 10,000 tonnes of rubble is generated daily and perhaps only a quarter of that taken away for landfills at construction sites elsewhere. This disregard for civic requirement of keeping even road margins free by the builder/ developer is a major menace to the citizens who find footpath space virtually unavailable.

Quality of Sea Water

A walk on any beach in the city would reveal the flotsam and jetsam that get washed ashore, indicating the way it is polluted. Sea water quality is hardly a citizen's concern though it largely affects the environment. Many storm water drains too have their outlets into the sea. Monitoring of the sea water quality in Mumbai by the Maharashtra Pollution Control Board shows that during 2004-05 and 2005-06 Mumbai's seawater was most polluted. The Dissolved Oxygen (DO) and Biological Oxygen Demand (BOD) values for Mumbai show high pollution due to industrial activity; despite industrial relocation policies, very few of them have been relocated. In all the 12 locations monitored in 2005-06, the Biological Oxygen Demand exceeded the limits laid down.

Storm Water Drainage Network

Mumbai is lined on the west by Arabian Sea and is intercepted by number of creeks. The tidal variation is a major consideration in the system of Storm Water Drains (SWD) for releasing rainwater as well as wastewater into sea. The present SWD system in city is more than 100 years old and is about 480 km long. This network consists of underground drains and laterals built on the basis of population and weather conditions. The SWD system comprises a hierarchical network of roadside surface drains which measure

Box 8.4: Not Economic!

Disposal of biomedical waste is a major issue but the gratifying aspect is that government and civic hospitals appear to be more compliant with rules under the Bio-Medical Waste (Management and Handling) Rules, 1988 by Ministry of Environment and Forests, Government of India, but doctors in the private sector are shocked when asked to fall in line.

The Rules state: 'It shall be the duty of every occupier of an institution generating bio-medical waste which includes a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory, blood bank by whatever name called to take all steps to ensure that such waste is handled without any adverse effect to human health and the environment.'

Official reports concede that by and large, there is 'insufficient compliance' and that the private hospitals were bigger offenders.

In April 2008, when 20 doctors were fined for just discarding the waste from their premises, they were shocked and had wanted that they should have been given more time to get their act together before being penalised with about Rs 20,000 per violation. Some were surprised, while they ought to have known that such waste carry infections.

Some five contractors have been licensed to carry and dispose of biomedical waste but they may be insufficient because of the widely dispersed locations of the waste-generators. But individual doctors just dumping the biomedical waste in dustbins is callous. Biomedical waste is a major concern and the Bombay High Court's intervention is sought in public interest litigation to ensure conformity to rules to ward off any health hazard to unsuspecting citizens.

However, some doctors argue their case against engaging agencies to collect the waste on economic grounds. A group of doctors in Ghatkopar tied with a service provider who charged Rs. 325 per month plus other charges. One of them complained that it was too much for the 8 kg of syringes, cottons and bandages he used every month. The rates were 'not economical'.

***Source**: www.medindia.net, 11 April 2008; Daily News and Analysis, 28 January 2008*

approximately about 2,000 km mostly in suburban Mumbai; underground drains measure about 440 km in the island city, and major or minor nallahs of about 200 km and 87 km respectively. There are 86 outfalls which discharge all the surface run-off into rivers and the Arabian Sea. The underground system is nearly 70 years old and is capable of handling rain intensity of 25 mm per hour at low tide which is inadequate. With the discharge of storm water and drainage into the Arabian Sea, any variation in the tides has major bearing on the system which results in flooding and water logging.

The old SWD system is capable of handling rain intensity of 25 mm per hour at low tide. If the rain intensity is more than 25 mm per hour and high tide occurs, there is always a possibility of water logging. There are 107 major out-falls in city which drain to Arabian sea directly, four at Mahim creek, and four at Mahul creek. There are 29 out-falls in western suburbs draining directly into sea while 14 drain into Mithi river which ultimately joins Mahim creek. In eastern suburbs 14 out-falls discharge in Thane creek while eight discharge in Mahul creek. In the suburbs and extended suburbs area, open SWD are constructed on both sides of road.

Table 8.7: Area Coverage by Underground Sewerage Network in Mumbai.

Sr. No.	Ward	Total Ward Area (Based) on Arcinfo GIS Maps of S.O. Dept.	Developable Area Prior to Year 2000	New Area available (due to Conversion of Industrial Land & Release of NDZ Areas.	Total Develop-able Area (excludes Reserved Areas viz CRZ, Airports, Lakes & National Park	Contributing Area by 2001 - 02	Additional Contributing Area after Commissioning of MSDP - 1 Project in 2004	Additional Contributing Area comple-ting part of Component - 1 of MSDP Stage - II priority works (from year 2008)	Net Contributing Area	% of Net Contributing Area w.r.t. Total Developable Area
		sq.km.	sq.km.	sq.km.	sq.km.	sq.km.	sq.km.	sq.km.	sq.km.	
1	2	3	4	5	6	7	8	9	10	11
1	A	10.652	9.776	0	9.776	8.948	0	0	8.948	91.53
2	B	2.727	2.727	0	2.727	2.672	0	0	2.672	98.00
3	C	2.000	2.000	0	2.000	1.960	0	0	1.960	98.00
4	D	8.096	8.096	0.198	8.294	8.228	0	0	8.228	98.00
5	E	7.191	7.191	0.627	7.818	7.662	0	0	7.662	98.00
6	F/N	12.471	12.471	1.822	14.293	9.146	0	0	9.146	63.98
7	F/S	9.470	9.470	2.865	12.335	9.186	0	0	9.186	74.47
8	G/N	8.642	8.642	0.485	9.127	8.634	0	0	6.634	72.68
9	G/S	9.258	9.258	2.331	11.589	11.357	0	0	11.357	98.00
10	H/E	13.341	13.341	0.395	13.736	8.928	0	0	8.928	65.00
11	H/W	9.231	9.231	0.246	9.477	6.160	0	0	6.160	65.00
12	K/E	23.903	17.858	4.923	22.781	15.608	0	0.300	15.908	69.83
13	K/W	22.600	21.179	1.273	22.452	17.362	1	0	18.362	81.78
14	P/N	45.058	26.721	7.885	34.606	13.842	1	0	14.842	42.88
15	P/S	24.284	10.529	1.743	12.272	4.909	1	0	5.909	48.15

Sr. No.	Ward	Total Ward Area (Based) on Arcinfo GIS Maps of S.O. Dept.	Developable Area Prior to Year 2000	New Area available (due to Conversion of Industrial Land & Release of NDZ Areas.	Total Develop-able Area (excludes Reserved Areas viz CRZ, Airports, Lakes & National Park	Contributing Area by 2001 - 02	Additional Contributing Area after Commissioning of MSDP - 1 Project in 2004	Additional Contributing Area comple-ting part of Component - 1 of MSDP Stage - II priority works (from year 2008)	Net Contributing Area	% of Net contributing Area w.r.t. Total Developable Area
		sq.km.	sq.km.	sq.km.	sq.km.	sq.km.	sq.km.	sq.km.	sq.km.	
1	2	3	4	5	6	7	8	9	10	11
16	R/N	18.000	8.584	0	8.584	3.434	2	0.246	5.680	66. 16
17	R/C	50.000	30.043	6.465	36.508	14.603	5	0	19.603	53.69
18	R/S	17.780	11.832	3.267	15.099	6.040	2	0	8.040	53.24
19	L	15.504	15.313	1.894	17.207	9.660	0	0	9.660	56.13
20	M/E	30.666	27.105	2.264	29.369	10.367	0	0	10.867	37.00
21	M/W	17.419	16.731	3.051	19.762	7.585	2	0	9.585	48.50
22	N	26.457	17.223	3.358	20.561	7.987	3	0.150	11.137	54.16
23	S	28.278	20.154	3.032	23.186	13.359	1	0	14.359	61.92
24	T	40.360	12.952	2.189	15.121	8.770	2	0	10.770	71.22
		453.388	**328.427**	**50.293**	**378.720**	**214.806**	**20.000**	**0.696**	**235.502**	**62.18**

***Source**: Municipal Corporation of Greater Mumbai (2009)*

***Note:** Percentage Area Coverage with respect to Total Developable Area.s*

In practice however, in addition to storm water, they carry sewage overflow from septic tank, surface water, etc. The operation and maintenance of these SWD is carried out regularly. The length of open SWD in Mumbai is about 1,990 km. The flow from this open SWD is discharged either into nallas, culvert, creek or sea. This open SWD becomes an eyesore due to throwing of garbage by citizens and creates unhygienic conditions.

Sewage Treatment

It is an obligatory duty of the Municipal Corporation of Greater Mumbai to provide sanitation and waste water disposal facilities to the citizens of Mumbai. Proper and safe sewage disposal is essential as 80 per cent of diseases in India are caused by water borne pathogens.

One of the responses to dealing with the problem of domestic sewage is establishing a network of Sewerage Treatment Plants (STPs). Mumbai, with its huge population is a high consumer of water and also a generator of effluents. Mumbai's water consumption being 3,300 million litres per day, it generates effluents of 2,640 million gallons per day out of which around 1,500 mld is treated using various sewage treatment facilities. Table 8.7 indicates wardwise coverage by underground sewerage network in Mumbai.

Recreational Facilities

Providing recreation facilities to the citizens is a discretionary duty of the Municipal Corporation under Section 63 of Mumbai Municipal Corporation Act 1888. The Corporation provides recreational facilities to the citizens by way of maintaining gardens and providing playgrounds, recreational centers, water fountains, and mass-scale tree plantation to keep the ecological balance and to ward off the effects of air pollution. The Corporation also aims to provide facilities for recreation, encouragement to sports, art works, cultural activities, maintenance of health and hygiene of the citizens, etc. (see Table 8.8). Not only the citizens of Mumbai but people from all walks of life are reaping the benefits of these variegated facilities.

Table 8.8: Recreation Facilities in Mumbai

Sr. No.	Category	Number
1	Gardens	263
2	Gardens attached to Municipal Buildings	23
3	Playgrounds	289
4	Recreation Ground	321
5	Zoo	1
6	Fountains	53
7	Traffic Islands	268
8	Band Stands	7
9	Rockeries	3
10	Nurseries	26
11	Terrace Gardens	7
12	Strip Gardens	21
13	Statues	69
14	Trees Planted on Roads	4915
15	Trees Planted other than Roads	4760
16	Tree saplings distributed	53630

***Source**: Superintendent of Gardens, MCGM, Environment Status Report of Brihanmumbai, 2007-08*

Modern play apparatus are installed in several gardens and playgrounds to provide necessary fun and frolic to the children. On various roads, open spaces and playgrounds, 9,675 trees were planted. Trees planted on roads are provided with tree guards. A total of 53,630 saplings were distributed to the citizens of Mumbai for plantation in their premises during the year (see Table 8.8).

There are 165 playgrounds maintained departmentally by the Municipal Corporation. These playgrounds are renovated and provided with grill fencing and neon gate, proper illumination, lawn, walking track with murum cover, sprinkler systems, and greenery in Mumbai. The playgrounds are advantageous to the children of the city to enjoy its benefits. Table 8.9 indicates wardwise recreational facilities available in Mumbai city.

Table 8.9: Gardens, Recreation Grounds, Playgrounds, Open Spaces in Mumbai

Ward	Gardens	Playgrounds	Recreation Grounds	Parks	Open Spaces	Plots	Private Organisations Maintaining Facility
A	-	-	07	01	08	16	08
B	01	07	02			10	04
C	-	-	16	-	01	17	08
D	-	03	14	01	10	28	14
E	-	03	19	-	05	27	03
F/S	01	07	24	-	01	33	06
F/N	03	10	26	-	04	43	11
G/S	04	07	07	02	08	28	10
G/N	05	06	15	02	05	33	10
H/E	06	05	03	-	-	03	NA
H/W	13	08	21	02	02	31	NA
K/E	13	19	23	06	-	14	NA
K/W	21	19	23	03	05	13	NA
P/S	20	09	22	-	-	16	NA
P/N	12	27	21	01	-	61	NA
R/S	14	26	07	04	04	30	NA
R/C	11	24	26	-	09	34	NA
R/N	04	32	13	-	-	25	NA
L	15	13	10	02	-	NA	5
M/E	11	05	14	-	-	NA	01
M/W	14	19	12	-	-	NA	13
N	15	11	09	-	-	NA	04
S	15	13	10	-	02	NA	12
T	11	20	12	01	-	NA	03

***Source**: Superintendent of Gardens, MCGM (2009, unpublished data)*

***Note:** NA: Information Not Available*

Conscious Civic Body

The MCGM, according to earlier Environment Status Reports, has acknowledged the need for ensuring that the city should be cleaned up and some of the salient features and recommendations of the report are:

A. One of the major problems facing the city is growth of slums resulting into burden on the civic infrastructure. Low cost housing needs to be provided to urban poor.

B. Traffic pollution is a major contribution in air pollution. To abate this:
   i. Quality of vehicle fuel has to be constantly improved. PUC must be stringently implemented.
   ii. Roads in the city should be widened and concretized in a phased manner.
   iii. Use of public transport facility should be improved and encouraged. It is necessary to introduce Metro-Railway, Sky-Bus, Ferry Boat, etc., in the city.
   iv. Traffic signals should be synchronised and more subways, flyovers and bridges should be constructed to minimise the idling at the traffic junctions.
   v. Pollution due to construction activity should be controlled by taking proper preventive measures.

C. Waste Management and Disposal:
   i. Biodegradable solid waste must be segregated at the source itself and used for composting at the decentralised level.
   ii. Metals and plastic must be separated and recycled.
   iii. Night sweeping must be implemented all over Mumbai.

D. Industrial wastewater must be treated before letting out into municipal sewers lines. Old pipelines should be replaced. Sewage and drinking water mains should be prevented from contamination.

E. Mithi river water and coastal water quality should be improved; ponds and lakes in the city should be cleaned.

F. Mangroves and other tree plantation must be encouraged.

G. Noise pollution should be monitored all over Mumbai and controlled effectively.

Eco-Housing

Environmental considerations in housing and planning for housing are recommended which will save energy consumption. The MCGM should consider proposals for promoting eco-housing in case of all new projects that would be received by it. This would incorporate wastewater reuse, on-site solid waste management, and energy conservation measures that would be environment friendly.

The civic body also has a plan on solid waste management, keeping in view the long term requirements. Since land is a scarce resource, it would aim at optimising the available disposal sites to the maximum extent possible. This will need to be achieved through:

- Conscious reduction of solid waste reaching the disposal site (by way of waste segregation at source, localised recycling, localised/community level vermi-composting, etc.).
- Customised technology solutions for treatment and disposal. The MCGM is currently undertaking an evaluation of appropriate technologies for waste treatment/recycling and disposal. The treatment and disposal options shall be projectised and implemented expeditiously.
- Development of scientific landfills at Kanjur Marg, Mulund and Deonar Dumping sites, and closure of Gorai dumping station.

From a long term perspective, awareness campaigns need to be implemented by the Municipal Corporation continuously through residential areas, schools and colleges, so as to minimise waste generation and its management at source. Major generators of waste should be encouraged to take

up on-site waste management through appropriate treatment.

Index Construction

In an attempt to quantify wellbeing, several studies which offered quantification of wellbeing were examined. These included the Quality of Life index as presented by FICCI and Ernst and Young in their report, *Indian Real Estate*, and the City Development Index as developed by the UNDP. The results are given below.

Quality of Life Index

This is an attempt to measure intangibles such as environmental pollution, crime and safety, recreation and leisure options as a measure of socioeconomic wellbeing.

The index is constructed taking into consideration the following:

- Environment – environmental indicators such as quality of air and living conditions
- Public transport – to measure extent of convenience for daily commuting. Hence, the number of auto rickshaws, taxis and buses per unit population to measure intra-city accessibility
- Perception of crime and safety – reverse ranking applied with higher number being assigned lower score
- Hospitality and leisure.

The resultant city rankings are as follows:

1.	Greater Mumbai	2.	Delhi
3.	Chennai	4.	Hyderabad
5.	Bangalore	6.	Kolkata
7.	Panaji	8.	Chandigarh
9.	Pune	10.	Ahmedabad

Greater Mumbai has scored the top position on this index of FICCI and Ernst and Young. A large supply of hotel rooms as well as huge and elaborate multi modal public transport system appear to have contributed to Mumbai securing the top position. It has the best possible leisure activities available in the country. Mumbai is set to upgrade its suburban rail service facilitating the commuting between the large suburbs and the city centre.

City Development – Comparative Picture

An attempt has been made to make a comparison of various major cities across India with Mumbai and also some important cities of Maharashtra with Mumbai (Tables 8.10 and 8.11).

These indicators include percentage of slum population, per capita water supply, sewerage treated as percent of water supply, disposal of solid waste as a percent of municipal solid waste, storm water drain as a percentage of road length, tarred road density, and population served per park and garden. The Ministry of Urban Development, Government of India, website was accessed to get the project reports of respective cities submitted for assistance under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) to acquire relevant data. There could be shortcomings of data available particularly for cities across India, while data seems to be more understandable and uniform in respect to cities of Maharashtra.

The observation from the above two tables is that Mumbai far outstrips other cities in percentage slum population, provides comparatively good water supply, and solid waste and storm water disposal system; however, sewerage treated facilities are inadequate, and so are the road network and public parks and gardens. Needless to say, these conclusions are somewhat tentative. The database being rather fragile, the authors would have like to develop city development index based on theses available indicators.

Conclusion

Though Mumbai leads in terms of economic growth amongst major cities in the country, there are several areas relating to equity which are far from satisfactory. The human development of Mumbai calls

Table 8.10: Some Indicators of Municipal Services Across Different Cities in India

Sr. No.	Parameters	Units	MUMBAI (2006)			Delhi (2006)	Bangalore (2006)	Chennai (2006)	Hyderabad (2006)	Ahmedabad (2006)
			Island City	Suburbs	Total					
1	2	3	4	5	6	7	8	9	10	11
1	Area (2001)	Sq. Kms.			438	1483	226.16	176	172	190.48
2	Population (2001)	Nos.	2,956,426	9,021,970	11,978,396	13,850,507	5,685,884	4,344,000	3,633,000	3,520,085
3	Density (Pop. / Sq. Kms.) (2001)				27348	9340	10135	24700	21122	18445
4	Slum Population (2001)				6,900,000	2,148,310	1,489,950	747,936	1,411,000	883770
5	% of Total Population (2001)	%			57.60	15.51	26.20	17.22	38.84	25.11
6	**Water Supply**									
	Total Water Supply	MLD			3,100	3307	995	550	585	690
	Avg. Per Capita Water Supply	LPCD			259	360	73	90	162	143
	Connection / 1000 Population	Nos.			31	112	62	-	103	76
7	**Sewage System**									
	Sewer Length	Kms.			1500	7000	NA	2583	2400	1384
	Sewage Generated	MLD			2600	3587	721	NA	589	500
	Sewage Treated	MLD			1100	2307	306	478	113	496
	Sewage Generated as % of Water Supply	%			83.87	108.47	72.46	-	100.68	72.46
	Sewage Treated as a % Water Supply	%			35.48	69.76	30.75	86.91	19.32	71.88
8	**Solid Waste**									
	Solid Waste Generated	MTPD			7025	7700	3395	3400	2240	2095
	Per Capita Waste Generation Per Day	Kg / D			0.59	0.56	0.60	0.78	0.62	0.60
	Solid Waste Collected & Disposed	MTPD			6600	6000	2715	1000	2038	2053
	Solid Waste Collected & Disposed as % of Generated	%			93.95	77.92	79.97	29.41	90.98	98.00

Sr. No.	Parameters	Units	MUMBAI (2006)			Delhi (2006)	Bangalore (2006)	Chennai (2006)	Hyderabad (2006)	Ahmedabad (2006)
			Island City	Suburbs	Total					
1	2	3	4	5	6	7	8	9	10	11
9	**Storm Water Drainage**									
	Storm Water Drain Length	Kms.	531	2460	2991	1694	NA	NA	70.49	346
	SWD as a % of Road Length	%	104.94	171.55	154.18	-	-	-	30.00	26.11
10	**Road Network System**									
	Road Length	Kms.	506	1434	1940	**28500	3500	2780	235	1325.1
	Road Density (Kms. / Sq. Kms.)		-	-	4.43	19.20	15.48	15.80	1.37	6.96
	Road Length / Lakh Population (Meters.)	Mtrs.	5.06	14.34	19.40	285.00	35.00	27.80	2.35	13.25
	Tarred Road Length	Kms.	506	1434	1940	NA	2800	NA	NA	1256.5
	Tarred Road Density (Kms. / Sq. Kms.)		-	-	4.43	-	12.38	-	-	6.60
11	**Open Space, Parks & Gardens**									
	Parks, Playgrounds, Open Space	Nos.	230	523	753	14500	705	395	709	100
	Area (Hectare)	Ha	119	321	440	NA	1635	110	NA	129
	Population / Park & Garden	Nos.	12854	17250	15908	955	8065	10997	5124	35201
	Other Natural Open Space (Area)	Ha	NA	NA	5432	NA	NA	NA	NA	NA

***Source**: Government of India, Ministry of Urban Development, website: www.jnnurm.nic.in.*

***Notes:** 1. MTPD - Metric Tones per Day, MLD - Million Liters Per Day, LPCD - Liters Per Capita Per Day, TPD - Tones Per Day.*

*2. ** Includes all types of Roads. Arterial Roads, Sub arterial roads, minor arterial roads and collector roads.*

Table 8.11: Some Indicators of Municipal Services Across Different Cities in Maharashtra

Sr. No.	Parameters	Units	MUMBAI (2006)			Thane (2006)	Pune (2006)	Nashik (2006)	Nagpur (2006)
			Island City	Suburbs	Total				
1	2	3	4	5	6	7	8	9	10
1	Area (2001)	Sq. Kms.			438	128.23	243.96	259	217.65
2	Population (2001)	Nos.	2,956,426	9,021,970	11,978,396	1,261,517	2,538,473	1,077,236	2,052,000
3	Density (Pop. / Sq. Kms.) (2001)				27348	9838	10405	4159	9428
4	Slum Population (2001)				6,900,000	420027	1,025,000	NA	740,000
5	% of Total Population (2001)	%			57.60	33.30	40.38	-	36.06
6	**Water Supply**								
	Total Water Supply	MLD			3,100	362	797	210	480
	Avg. Per Capita Water Supply	LPCD			259	287	306	150	200
	Connection / 1000 Population	Nos.			31	63	38	130	96
7	**Sewage System**								
	Sewer Length	Kms.			1500	NA	975	NA	NA
	Sewage Generated	MLD			2600	210	432	NA	235
	Sewage Treated	MLD			1100	54	288	157	100
	Sewage Generated as % of Water Supply	%			83.87	58.01	54.20	-	48.96
	Sewage Treated as a % Water Supply	%			35.48	14.92	36.14	74.76	20.83
8	**Solid Waste**								
	Solid Waste Generated	MTPD			7025	500	1100	225	875
	Per Capita Waste Generation Per Day	Kg / D			0.59	0.40	0.43	0.21	0.43
	Solid Waste Collected & Disposed	MTPD			6600	20	836	93	620
	Solid Waste Collected & Disposed as % of Generated	%			93.95	4.00	76.00	41.33	70.86
9	**Storm Water Drainage**								
	Storm Water Drain Length	Kms.	531	2460	2991	NA	788	NA	621
	SWD as a % of Road Length	%	104.94	171.55	154.18	-	45.03	-	32.56

Sr. No.	Parameters	Units	MUMBAI (2006)			Thane (2006)	Pune (2006)	Nashik (2006)	Nagpur (2006)
			Island City	Suburbs	Total				
1	2	3	4	5	6	7	8	9	10
10	**Road Network System**								
	Road Length	Kms.	506	1,434	1,940	280	1,750	1,974	1,907
	Road Density (Kms. / Sq. Kms.)		-	-	4.43	2.18	7.17	7.62	8.76
	Road Length / Lakh Population (Mtrs.)	Mtrs.	5.06	14.34	19.40	2.80	17.50	19.74	19.07
	Tarred Road Length	Kms.	506	1434	1940	169	1202	1546	1527
	Tarred Road Density (Kms. / Sq. Kms.)		-	-	4.43	1.32	4.93	5.97	7.02
11	**Open Space, Parks & Gardens**								
	Parks, Playgrounds, Open Space	Nos.	230	523	753	65	NA	215	95
	Area (Hectare)	Ha	119	321	440	102	NA	145	150
	Population / Park & Garden	Nos.	12,854	17,250	15,908	19,408	NA	5,010	21,600
	Other Natural Open Space (Area)	Ha	NA	NA	5432	4,800	NA	3,823	4,356

Source: *Government of India,Ministry of Urban Development, website: www.jnnurm.nic.in.*
Notes: *MTPD - Metric Tonnes per Day, MLD - Million Liters Per Day, LPCD - Liters Per Capita Per Day, TPD - Tonnes Per Day.*

for addressing these concerns with greater determination and political will by policymakers as well as implementers. A good city, a 'well developed' city as seen in skyscrapers and not the slums, in mere provision of facilities, inadequate or adequate but inaccessible, do not contribute to improvements in the human development of the individuals or the population.

The Way Ahead

Obverse: Graphic courtesy AIILSG; this page: photograph courtesy MCGM.

9. The Way Ahead: Future Tense

Hard Decisions, New Paradigms Needed

Human Development is possible when the environment is conducive; it does not occur in vacuum. Human development needs a policy approach that is loaded in favour of the people as individuals and as a collective where the allocations are not just substantial but focussed, where they are optimally and usefully deployed, where the resources created enable a maximisation of access and constantly, and the outcomes are improved not as an accident but overt endeavour.

The Human Development Index is a composite of three dimensions of human development: long and healthy life measured by life expectancy; education measured by adult literacy and enrollment in schools and a decent standard of living measured by purchasing power parity, income, etc. It does not include indicators such as gender or income inequality and more difficult to measure indicators like respect for human rights and political freedoms. It, however, provides a broad perspective on the attained human progress and the complex relationship between income and wellbeing. In short, it is all about how good things are for the citizens.

Can Mumbai, which is overburdened by numbers, whose existing resources are overstretched and wide economic disparities with their built-in social layering, enable such human development? Mumbai as a mega city is constantly managing crisis of one kind or another, the biggest being the very size of the issues it is perennially confronted with. The problems are aggravated by the ever-increasing population and attempts to meet the huge pent-up demand for even basic services that impinge on health and education, which in turn have a bearing on incomes.

Each thematic chapter in this report has offered a set of options which would help tweak the system to the citizens' advantage. But one area which would be the most arduous to tackle is in reducing the income disparities, because of the unorganised and informal nature, and the huge size of the service sector. Each set of suggestions, at the end of the respective chapters together would help plan a set of useful actions.

The huge constraints adumbrated in earlier chapters sufficiently indicate the magnitude of the tasks involved in advancing human development. The *Maharashtra Human Development Report* 2002, published soon after the 2001 Census looked at the entire State, with revenue districts as the unit for intra-state comparison of attainments. The Maharashtra HDR had ranked Mumbai Suburban at the top, Mumbai district next to it among all districts. That, for all purposes, placed Mumbai city which is a combination of the two districts at the apex in Maharashtra.

Taking the analysis further in terms of drawing a picture for policy making and formulation, it was felt necessary to develop a Human Development Index (HDI) for the wards of the city of Mumbai. Ward level analysis is complex and has several limitations. Ward boundaries have been drawn somewhat arbitrarily. The population is dynamic. Livelihood opportunities keep shifting and changing their characteristics. The availability of data and its reliability were two major

constraints in constructing a HDI for the wards. Data for indicators like life expectancy at birth and income are not available. Hence, surrogates had to be identified. If data was available, it often was not usable. For eg., data on health conditions like the incidence of diseases was incomplete as it covered only the public health sector facilities and not the private sector health facilities, which account for a sizeable proportion of health care facilities in India and particularly in Mumbai. Enrollment of school-going population is being collected from the various schools in which children are enrolled leading to high levels of enrollment in those wards in which schools which have earned a reputation are located. Similarly, data on infant mortality was, in recent times being, collected from the hospitals/health centres where deaths were registered, and not as per place of residence, which meant that the wards in which public health care hospitals exist record high infant mortality rates. Not only did data availability for primary/leading indicators prove difficult but other data, which is needed to calculate ratios to make the leading indicators meaningful, was not available. The leading example is the non-availability of data on age-wise population, which was needed to calculate literacy rate, enrollment ratio and work participation rate. With these limitations on the availability of data sets an attempt was made to calculate an index which would measure human development levels using surrogates (proxies). Hence the index that is being presented below uses the three dimensions identified by UNDP and the methodology identified by the same. However, the indicators chosen to represent each of these dimensions do not correspond to those in the international reports of UNDP. The index so constructed has been titled 'Human Development Measure across the Wards of Mumbai' to reflect this difference in the methodology of calculation.

Gathering Data Differently

Developing the HDI values for the wards, which form the MCGM – or for that matter any other local body's perspective – would help them plan goals, make budget allocations, design implementation programmes to fill the gaps in each of them so that at the composite level, Mumbai becomes a better place, where lives are changed. It so transpires that even during the next Census, special efforts would have to be made to design questionnaires and mine data appropriately so that a ward- and section-wise (section being a sub-unit of a civic ward) picture emerges.

Strengths and Weaknesses

As discussed in the preceding chapters, Mumbai has both strengths and weaknesses, both reflecting in the numbers it hosts. The big asset is the people's 'can-do' attitude, the fortitude to bear the inadequacies, and the willingness to silently suffer which is mistaken for resilience. Its weaknesses, again, originate from the very same number of people, half of whom make a contribution to the economy, but given their skill sets, do not get sufficient returns and are consigned to the category of the urban poor; even the employed can be poor – a job is no sign of prosperity.

Mumbai has weaknesses, and the hidden and visible differentials because it has not been nurtured. All efforts by all agencies have been directed towards managing the shortages like rationing water, if not in quantities then in duration of supply, which implies lower forced consumption; in constantly maintaining roads which have less life than are known to be possible; of providing more trains after the demand has gone far ahead than is fiscally and physically possible to do, fast enough to eliminate the deficit. It has always been a management model where the dictum is to catch up, somehow.

Housing

It was the *Urbis Prima in Indis* but it is now at best an imperfect city. The management model whose other tenet is 'what you cannot do, ignore' has left wide gaps in every sector. Half the population is without even minimally acceptable standards of housing; those who call themselves the middle classes and live in more stable units grandly call them 'flats' simply because they are more formal. The slum redevelopment programme where the developer can

sell additional space in the open market to subsidise housing for the poor has been threatened due to the economic slowdown.

Health

On the health front, a lot is left to be desired. Weaknesses of the public sector apart, it may be appropriate to point out that many hospitals, run as trusts and registered with the Commissioner of Charities, are not so favourably disposed towards poor patients despite the accord of having received largesse from the state. Such hospitals need to support the poor in need, if not by opening up all beds then at least a modest proportion – 10 per cent. Compliance has been poor in this which leaves the bulk of the poor out of the system though they would like to benefit from it.

The public hospitals may be useful but they have a serious image problem. In the health sector, the facilities are extensive and continuously funded, but the quantity of facilities is no alternative to quality; both have to go hand in hand and be accessible to all sections of the populations in the city.

Education

Similarly, with education the numbers of facilities may not be an issue – there are enough schools available; but the question of managing them appropriately to maximise access and outcomes remains. Given the resources available in terms of vacant or partly vacant premises, it is possible for the civic authorities to capitalise them to fund the process of improvement in education sector. Fortunately, the Right of Children to Free and Compulsory Education Bill has been passed by Parliament and could well be a tool to ensure greater equity in access. That should, however, not leave the civic schools free to continue with the philosophy of 'poor education for the poor'.

Incomes

Relocation policies of the past sent the manufacturing industrial units out of Mumbai and with that, the decline in formal sector jobs pushed the city to the informal sector, but the per capita incomes are so high that the income differentials are glossed over. That approach of citing per capita incomes as a measure of the city's primacy among its peers is a false approach, for it blinds everyone to the visible urban poverty. The industrial relocation did not also decongest the city as was hoped, though even the wholesale markets were shifted to the Mumbai Metropolitan Region (MMR).

Migrants not at Fault

Migrants can be cited for only one fault they bring to the city with them – the burden on the civic infrastructure but otherwise, they are participants in its economic growth, as cited in the chapters on slums, and on economy, livelihoods, and equity. They are not to be turned away for they cannot be so treated because of the ironclad constitutional guarantees; they have the right of free movement and taking up residences at places of their choice. It must be recognised that they come to Mumbai not because it is a place of residence by choice, but that despite all hardships including in housing, they choose to come here because of the scope for livelihoods it offers.

However, this exercise chose to tread a risky path, using available official data, varying in timelines, pegged to different years, some estimates on occasion, to develop a broad landscape Table. It highlights various significant indicators at the ward-level. They range from 2001 Census household survey to some statistics with regard to schools which are between one and three years old.

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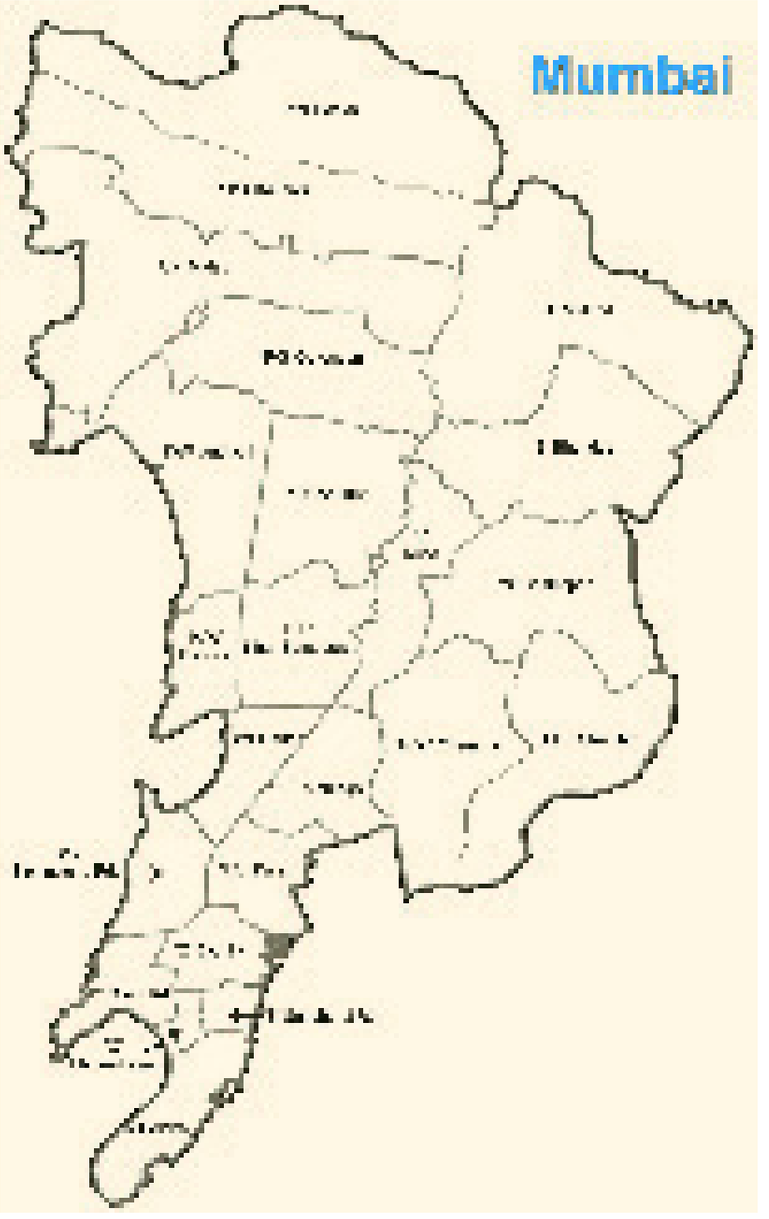
1 *Census of India, 2001*
Ward-wise area figures are taken from Bombay District Gazetteer, p. 623.
Public Health Department and Epidemiology Cell, MCGM (2008).
Sarva Shiksha Abhiyan, Department of Education, MCGM (2008).
Dr D.P. Singh, Professor, Centre for Research Methodology, Tata Institute of Social Sciences, Mumbai (2008).

Snapshot Profile of Mumbai

- Ward C has no slum population at all. It is indeed an exception. On the other end of the spectrum, using the same prism as it were, Ward K/East has the highest population of 8,10,002 and Ward B has the lowest, 1,40,633; but Ward L with 6,58,972 has the highest slum population. On the other hand, Ward S with 85.83 per cent has the highest proportion to the total population. Ward D is the only one with fewer than 10 per cent of the total population in slums.
- In terms of population densities, the slum-free Ward C has 1,14,001.12 persons per sq km perhaps the highest for any ward in the country, whereas Ward S has 9,477 persons per sq. km.

Map 9. 1 : Wards, their Popular Name-Identities and Boundaries of Mumbai



Map not to Scale

- The worst sex ratios are in South Mumbai with 631 in Ward E's slums and 587 in Ward C. The best sex ratio in slums is in Ward T at 830. In the non-slum segment, the worst is in Ward C with 887 and the best in Ward H/West at 968.
- With regard to child sex ratios, the best is in the slum segment in Ward A at 952 and the worst at 889 in Ward R/Central.
- The overall literacy rates for males and females is less then 50 per cent indiviually. However, the literacy rate for males is best in Ward C at 53.7 per cent and for females in Ward R/Central at 37 per cent. Whereas Ward M/East indicates the lowest literacy rate for males and females at 40.1 and 26 per cent, respectively. But as a proportion of a segment's population, the best is in Ward S at 77.6 per cent, in the slums and the worst in Ward B at 47.2 per cent. The Literacy rate is the highest at 86.4 per cent amongst the non-slum population in Ward H/West and the poorest at 75.5 per cent in Ward M/East.
- Work force participation rates are highest in slum areas of Ward B and lowest in Ward M/West. Among the non-slum areas, it is the lowest in Ward N, whereas the marginal workers are least in Ward B indicating a positive answer. However, the Ward P/ North consist of the highest number of marginal workers. On the other hand, Ward B has highest number of main workers at 46.3 per cent.
- In health indicators, the birth rate is the lowest at 7.68 in Ward C and highest at 16.42 in Ward A while the death rate is the lowest at 4.93 in Ward S and highest at 14.85 in Ward F/South.
- The infant mortality rate at 15.59 is the lowest in Ward F/South and highest at 66.47 in Ward M/West.
- Maternal mortality rate at 0.17 is the best in Ward R/North and 3.84 in Ward F/South.
- With regard to healthcare facilities, both private and public, Ward K/East with 799 dispensaries fares better amongst all wards, while Ward N with 13 dispensaries is the most poorly provided.
- With regard to provisioning of Anganwadis, the poorest with none are Wards B and C, and the best with 492 is Ward M/East.
- With regard to hospitals – private, public, trusts and nursing homes – not one is to be found in Ward A and B, but the lowest number of hospitals is in Ward C at 5 and the highest number of 131 in R/Central.
- The best arrangement with regard to schooling is in Ward L where 164 schools, civic and private, with a sanctioned strength of 1,761 teachers and enrolled strength of 36,655 boys and 33,292 girls, taking it to a total of 69,947 pupils. But the best pupil-teacher ratio of 30 students to a teacher is in Ward G/South. The worst is in Ward C with 24 schools and 120 sanctioned posts for teachers, 2,260 boys and 2,258 girls, taking it to a total of 4,518. But there are 45 students to a teacher in Ward M/East.
- The largest number of out-of-school children between the ages of 6-14 years is 1,490, more or less equally divided between boys and girls, in Ward M/East.
- With regard to essentials and population, the better wards are: Ward D has 82.56 per cent of households with bank accounts; 85.64 per cent possess television sets; 65.17 per cent with telephones and 25.71 per cent have cars; 99.42 per cent in H/West have electricity; and 99.52 per cent have a tap; 45.61 per cent of households in Ward M/East use kerosene; and 75.82 per cent have an LPG connection in R/Central.
- With regard to access to essentials, at the lowest rung only 2.39 per cent of the households in Ward B have cars, 86.79 per cent in Ward C have electricity, 39.93 per cent use kerosene but Ward M/East has 32.82 per cent of households with bank accounts, 51.85 per cent with television sets, 14.99 per cent with telephones, 84.88 per cent have a tap, and 20.43 per cent with LPG connections.

This snapshot profile of Mumbai, along with the perspectives presented earlier should enable

appropriate actionable plans and resource allocations. The weaknesses which are visible have to be addressed by a proactive city corporation (see Annexure 9A-1).

It would be useful to note that:

- Ward C does not have any slums; hence, rest of the indicators in respective categories related to slums are not applicable to this ward.
- The variation is sex ratios, particularly for the slums should be correlated to migration as they include males who, if married, have their families in their native places. Child sex ratio deserves equal attention. It is may be closely linked to the population densities.
- The proportion of work participation needs to be viewed in light of total slum, and non-slum population.
- Literacy levels when considered in isolation may not lead to realistic conclusions. The variation between the wards, slum and non-slum, and gender should also be correlated to in-migration. Stabilised, a second generation migrant may have a different profile.
- The statistics related to birth rate, death rate, infant mortality rate and maternal mortality rate should be correlated with the respective trends in previous decades, data for which are not in the table. The present status of a ward regarding an indicator might appear adverse, but in reality it may have performed better in previous year or otherwise.
- Healthcare infrastructure needs to seen in the light of the total population and population density in the respective wards for sufficiency of services. But wards with bigger or preferred hospitals may have service-seekers from other areas as well.
- Enrollment is bound to be low where the number of schools itself is less. But the Pupil-Teacher Ratio (PTR) in this case could be adverse, as number of students per class may be more if the child population of school going age of that area is higher. On the contrary, the PTR could be positive also.
- The number of out-of-school children mentioned in the table is based on sample survey which did not cover equal and all population in each ward. Hence, the actual number of out-of-school children would be higher than presented. Therefore, the variation in number of boys and girls should not be interpreted as specific trend.

These qualifiers highlight the need for more disaggregated and rigorous data collection. The big picture can often be misleading.

Options Offered

It would be appropriate to enable civic bodies of Mumbai's satellite cities in the large urban agglomeration, including Mumbai and elsewhere within the state, to seek that data be collected in the future by the Census and other agencies in a manner which would help construct the human development index at the disaggregated level. The circumstances in all wards in any city are never similar. Variables are a reality, mostly determined by the economic attainments of populations housed there. Without disaggregated data at the ward level, meaningful decentralised action plans cannot be prepared and acted upon. That would be an imperative if informed planning is to be in place. Without knowing precise details, it is not possible to plan for outcomes. And outcomes are what matters the most.

Governance is the Key

Mumbai's governance arrangement, in the context of the way the city is administered under the relevant Mumbai Municipal Corporation Act, 1888, is seen by a major section of the policy-makers and population as having stood the test of time. But numerous agencies, their tasks haphazardly distributed between centre, state and city, are involved, some duplicating a few of the roles of the civic body. It is being debated whether that model requires to be retained, modified, or entirely changed, or have it run by a Chief Executive Officer, as is sought by certain groups. But the discussion has indicated that in

matters that touch the lives of the citizens, the civic body is at the cutting edge. They have a vital bearing on the citizen's lives.

Perhaps citizens may not realise it or take it for granted but apart from the railways, which provide commuter services, the civic body is the one with which the citizens come into contact on a daily basis. The streets and the encroached sidewalk they try to walk on, the bus they use to move about in, the hospitals they use, the hygiene therein and in restaurants, and the schools their children go to are all municipal-owned or regulated. The civic body is the first level of government a citizen has contact with, whether he is a tax payer or not. How well that performs influences the quality of services.

An empowerment of the city government to decide on economic and service delivery components in all spheres, true to the spirit of the 74th Amendment to the Constitution would be essential. A city corporation knows the city best. The elected city government has to drive the policies without having to look at others in the hierarchy it is caught up in, because nothing short of transforming the infrastructure speedily would shift the city from the tipping point it has reached towards degeneration. There has to be sharp sector focus and mission approach and strengthen the foundations for a healthy city – healthy in the sense that it satisfies the citizen.

The Way Ahead

The way cities are growing to mega cities, a local self-government is not anymore adequately local enough to deal with these issues with ease; they are up against the numbers. The local self-government institutions are dealing with increasingly large spaces, the populations therein unremittingly increasing to the extent of being unmanageable. Such growth threatens to impose dysfunctionalities on a city. Congestion often tends to neutralise the gains of urbanisation.

There is just so much any municipal body can do, however efficient or how high it enhances its efficiencies. With regard to Mumbai, there are limits of jurisdiction and policy formulation that could go to mitigate the emerging crisis, if that were to be presumed not to have emerged already. The policy that is required, but is more likely to be politically misunderstood, is to island the city. By islanding, it is not suggested that it be isolated, or convert it into a city state, or prohibit entry of migrants, but it implies that disincentives must be put in place. The disincentives have to be such that the lure of Mumbai should diminish and provide counter-magnets which provide increased pulls.

This policy had once been in place, and led to the development of Navi Mumbai. It was conceived as a counter-magnet which would draw people to the new location. But in reality, the pace of populating the place was so slow that it soon morphed into a dormitory for Mumbai. So have other cities which are rapidly growing. The first error was to have developed by reclaiming areas like Nariman Point simultaneous to the development of the new city adjacent to Mumbai on the mainland. The second was not sufficiently encouraging economic activity which robbed that place of its attraction. Later decongestion policies, including locating industries have not decongested Mumbai.

Despite substantially diminished manufacturing, the service sector was attraction enough to inspire population shifts to Mumbai. Now, a policy churning that would necessarily enable the neighbouring cities, which have absorbed most new migrants, to manage to provide them sufficiently rewarding livelihoods is required. It cannot be that they cast their populations' weight on Mumbai everyday. Inter-linking the other cities north of Mumbai with each other, and developing economic activity there is the path to tread. If it cannot decongest Mumbai, it would prevent increased burdens on a city about to collapse. An inclusive vision plan with that objective is needed for Mumbai has to be improved and sustained.

Aspirations and Reality

Mumbai as a city has aspirations. Going by dreams and plans articulated by major stakeholders,

they are big, perhaps even workable but firm timelines and plans, and quick implementation are required. That would serve the intended purposes, whether they are of the Municipal Corporation of Greater Mumbai, the single entity at the cutting edge in the areas so relevant to human development, i.e., health and education; the Mumbai Metropolitan Regional Development Authority (MMRDA); the Maharashtra State Road Development Corporation (MSRDC); or any special purpose vehicles that are in place or may emerge in the future.

For instance, there is a laudable reference to make Mumbai immigrant friendly, but prescriptions are limited to those who would come, including expatriates, who would help make such a centre part of an integrated global activity, providing skills and developing mental synergies with what the rest of the world is doing. It leaves the issue of those who are at the bottom of the pile untouched. It calls for investment in infrastructure with which there can be no quarrel, because even for the present level of economic activity that is a very weak sector.

Use Satellites Cities

Migration has been an asset as well as a major detractor for the additions it provides to Mumbai's existing population. But the satellite cities should realise that migrants are a resource base to be deployed for growth of their own areas and provide relevant infrastructure. Their best has to be used for the new, growing cities' benefit than merely rest content by providing them with a habitat and no more. Without economic activity of their own, ignoring the social capital, these cities may slide into unforeseen problems. Economic activity with participation of those residing there provides a bonding that is significant to a place's growth in other dimensions – social dimension included.

Encouraging this vigorously with huge investments to seed the initial but robust activity in these satellite cities would be of enormous benefit to Mumbai. The vocal and indeed well-meaning business lobbies which seek – and rightly so – improvements in Mumbai should also acknowledge that it has clear limitations of space and can take in no more. They should, even as they press for increased investments in Mumbai to catch up with the deficits in infrastructure, encourage development aimed at self-sufficiency of these half a dozen cities.

Contemporary Mumbai continues to be the powerful magnet for capital investment, non-polluting production activities and opportunities for work, and living with higher levels of consumption, though increasingly only for a narrower section of the population. It continues to draw the migrant who becomes the urban poor in most cases. He moves to a city, not knowing that there is a human development index; his aspiration itself is a big indicator of his search for improving his life's chances.

The service sector has taken the dominant role in Mumbai which is related to knowledge and research, marketing and other professional expertise; including in the entertainment and backroom business processes; which demand high skills. What kind of room would that leave for the poor rural migrant who is forced to first task himself with acquiring skills for a role in an urban environment? As the city is getting restructured to accommodate new activities and the kind of workforce it requires, it would be a good opportunity to restructure the MMR region itself to induce higher levels of activities to make them real counter-magnets, something that has not happened so far.

Future Scenario

This report visualises a scenario of the future, at least in the mid-term where, should the economic activity in those areas grow sufficiently, it is quite possible that Mumbai's residents take employment there as well as commute to those locations (see Box 9.1). The trains that go back empty to northwards in the morning and south in the evening could carry passengers, which reflects poor utilisation of resources. Mumbai should satisfy those already residing there

and those who want to come in there. That is possible by appropriate economic planning, which takes the several local bodies into confidence and ensure realisation that shift of development to their cities is in everyone's, including their, interest. A burden-sharing debate should be expeditiously initiated.

Box 9.1: Time it did

Some significant policies being proposed or even unveiled across the Mumbai Metropolitan Region or the Mumbai Urban Agglomeration are interesting in that they offer insights into efforts at developing new options to deal with the pressures on Mumbai.

One is to build about half a million small housing units to be rented out, the responsibility to implement this large-scale project possibly vests with the Mumbai Metropolitan Regional Development Authority. This is similar to the Bombay Development Department's efforts of the 1920s when Worli was more or less on the outskirts of the city.

Another is to enable buses to ply across the entire MMR, notwithstanding the ownership of the fleet which in all cases are municipalised. Hitherto, they were mostly limited to some marginal inter-linking but have the potential to improve. There have been disputes on plying between civic bodies which claim losses due to the inroads made by each other. A single authority to manage inter-modal, inter-city transport within the MMR would seem natural.

The two railway systems – the Central and the Western – are planning to improve the speed and frequency of services by redesigning and respacing their signalling arrangement to allow for quicker movement of the commuter trains. New lines, new trains, more coaches – all point to augmentation.

But how would these initiatives impinge on Mumbai?

Would new residents of new colonies proposed in MMR, which have higher floor space index to make it profitable for developers as well as provide more space to use as homes, stay there and commute to work in Mumbai? Would that decongest Mumbai but keep the burden on infrastructure high during daytime?

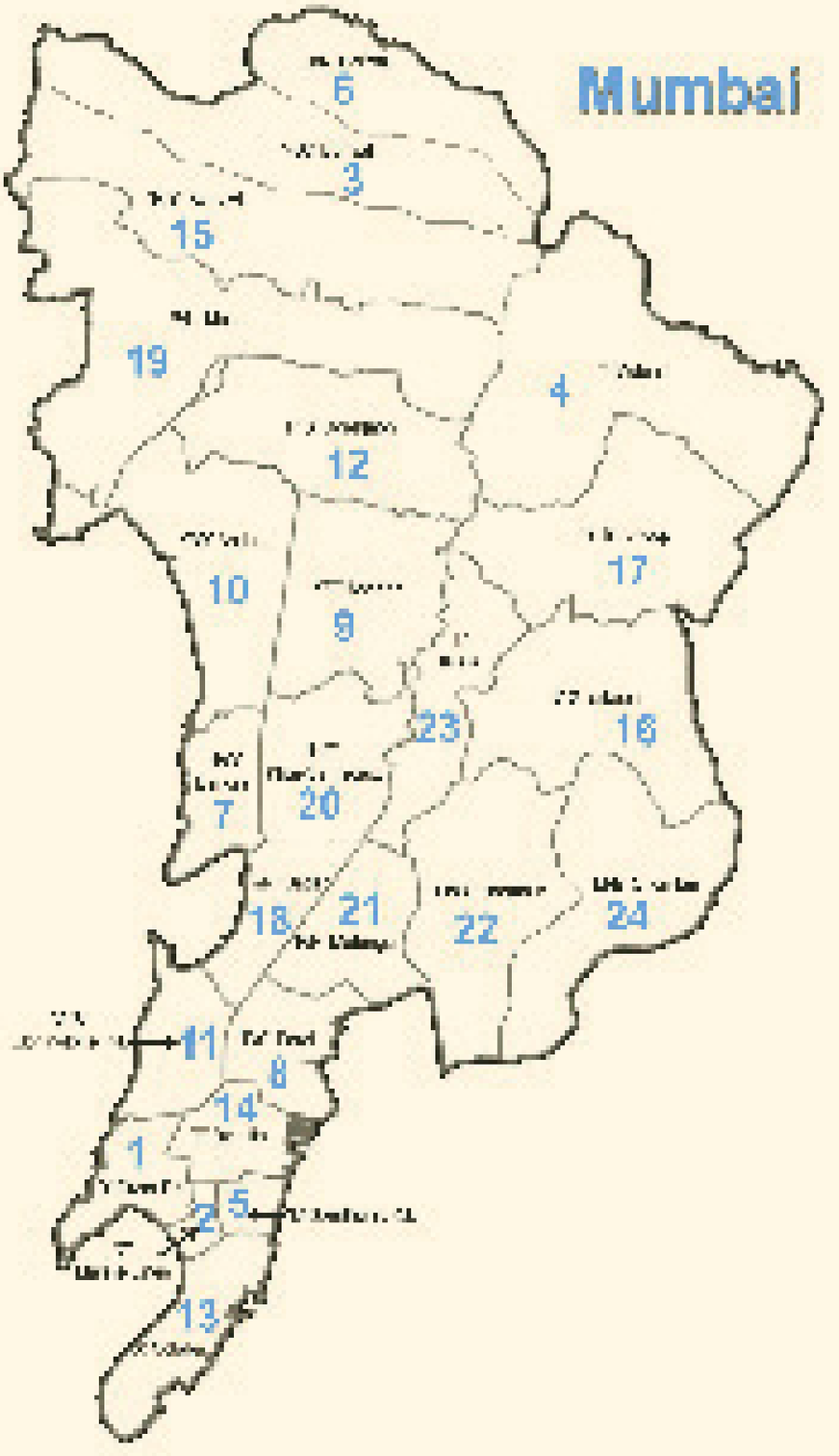
Would the higher frequency of trains solve the problems of commuting of the existing populations, or invite more to stay afar but depend on Mumbai? Would the buses operating across MMR meet the demand for easier travel on the east-west axis?

Is it a policy for decongesting Mumbai or merely further mitigating the gaps, ameliorating existing conditions, or work a whole new paradigm that helps Mumbai, its citizens and those living in the entire MMR?

No new word on comprehensive investments on economic activities in the MMR sufficient to ensure new jobs has come forth yet.

It is high time it did.

Human Development Measure for Wards of Mumbai City



No.	Ward	Areas Covered under Wards
1	A	Upper Colaba, Middle & Lower Colaba, Fort South, Fort North, and Esplanade
2	B	Mandvi, Chakala, Umarkhadi, and Dongri
3	C	Khara Talao, Kumbharwada, Bhuleshwar, Market, Dhobi Talao, and Fanaswadi
4	D	Khetwadi, Tardeo, Girgaon, Chaupaty, Walkeshwar, and Mahalaxmi
5	E	Mazgaon, Tadwadi, 1st Nagpada, 2nd Nagpada, Kamathipura, and Byculla
6	F (North)	Matunga and Sion
7	F (South)	Parel, Sewri, and Naigaum
8	G (North)	Dadar, Mahim, and Prabhadevi
9	G (South)	Prabhadevi, Worli, Chinchpokli, and Lovegrove
10	H (East)	Khar Scheme, Hill Road & Turner Road, and Santacruz (East)
11	H (West)	Slaughter House, Colwada & Bandra Hill, Pali Hill, Danda, Khar Scheme, Khar and Pali, Hill Road & Turner Road, Santacruz West, Santacruz Central, and Juhu
12	K (East)	Vile Parle East, Andheri East, Jogeshwari East, Goregaon, and Village Maroshi
13	K (West)	Vile Parle West, Juhu, Andheri West, Versova, Madh, and Jogeshwari West
14	L	(New Mills) Kurla, (Station Takia)Kurla, Swadeshi Mills, Chunabhatti, Khajuribhatti & Kasaiwada, Bazar Church Hall, Naupada, and Seven Villages
15	M (East)	Chembur Proper, Mahul, Trombay, Govandi, Vadavali, Borla, and Mankhurd
16	M (West)	Chembur Proper, Mahul, Trombay, Govandi, Vadavali, Borla, and Mankhurd
17	N	Ghatkopar, (Kirol) Ghatkopar, Panjrapol, and Vikhroli
18	P (North)	Erangal and Daroli, Malad West, Malad East, Kurar, Dindoshi, Chincholi, Vadhwan, Valnai, Malvani, Akse and Marve, and Manori Island
19	P (South)	Goregaon and Village Maroshi, Aarey, Eksar Pakhadi, and Malad (East)
20	R (Central)	Borivali and Shimpoli, Eksar and Mandapeshwar, Gorai and Kulvem, Kanheri, and Magathane
21	R (North)	Eksar and Mandapeshwar, Magathane, and Dahisar
22	R (South)	Kandivli and Charkop, Poisar, and Akurli
23	S	Vikhroli and Bhandup
24	T	Mulund East, Mulund West, Nahur, Tulsi, Gundgaon, Vihar, Sai, and Klerobadi

***Source**: Census of India, 2001*

Human Development Measure for Wards of Mumbai City*

The Human Development Index (HDI) developed by the UNDP is an attempt at measuring the quality of life. Human development is the process of expanding people's choices and the formation of human capabilities through investing in people. The HDI is a composite index of three basic components of development: longevity, knowledge and income. Longevity is leading a long and healthy life and is represented by life expectancy at birth. Knowledge is represented by two educational variables, namely, adult literacy and combined primary, secondary and tertiary gross enrollment ratio with two-thirds weightage given to the former and one-third to the latter. This component of educational attainment refers to the capability of acquiring knowledge for communication and participation in community life. The third component is a decent standard of living as measured by GDP per capita in purchasing power parity (PPP) terms in US dollars.

An index is calculated for each dimension of development. Hence, Dimension Indices for Education, health and income are calculated. For this, the minimum and maximum values (goal post) are chosen for each indicator. The performance in each dimension is expressed as a value between 0 and 1 by using the following formula.

The HDI is then calculated as a simple average of the dimension indices.

The method outlined here is the internationally accepted method of calculating the HDI. However various difficulties are encountered when attempts are made to calculate the HDI for other regions. Taking the specific case of Mumbai, an HDI was desired by the policy makers of the city to guide their policy decisions. Initially an inter city index was sought to be calculated. However, comparable data on the indicators spelt out in the international HDI were not available. Hence, data on several indicators of human development which were available on the JNNURM (Jawaharlal Nehru National Urban Renewal Mission) were collated and the status of various cities on those indicators was sought to be compared.

These indicators include percentage of slum population, per capita water supply, sewerage treated as percent of water supply, disposal of solid waste as a percent of MSW (Municipal Solid Waste), storm water drain as a percentage of road length, tarred road density and population served per park and garden. The data source being Government of India's Urban Development Ministry website under JNNURM.

The observation from the Table HDM-1 is that Mumbai far outstrips other cities on the indicator percentage slum population. Sewerage treated facilities are inadequate, and the road network and public parks and gardens is/are less as compared to other cities. However, it provides comparatively good water supply and solid waste and storm water disposal system.

Needless to say, these conclusions are some what tentative.

** The Human Development Measure was developed by Dr Sangita Kamdar, SKVM's NMIMS University, Mumbai.*

Table HDM-1: Indicators of Municipal Services Across Different Cities of India

Sr. no.	Parameters	Mumbai (2006)				Delhi (2006)	Bangaluru (2006)	Chennai (2006)	Hyderabad (2006)	Ahmedabad (2006)
		Units	Island City	Suburb	Total					
1.	Area (2001)	Kms	NA	NA	438	1483	226	178	172	190
2.	Population (2001)	Nos	2956426	9021970	11978396	13850507	5685884	4344000	3633000	3520085
3.	Density (Pop. / Sq. Kms.)		NA	NA	27348	9340	10135	24700	21122	18445
4.	Slum Population(2001)	Nos	NA	NA	6900000	2148310	1489950	747936	1411000	883770
5.	% of Total Population	%	NA	NA	57.90	15.51	26.20	17.22	38.84	25.11
6	**Water Supply**									
	Total Water Supply	MLD	NA	NA	3100	3307	995	550	585	690
	Avg. Per Capita Water Supply	LPCD	NA	NA	259	360	73	90	162	143
	Connections / 1000 Pop	Nos	NA	NA	31	112	62	NA	103	76
7	**Sewage System**									
	Sewer Length	Kms	NA	NA	1500	7000	NA	2583	2400	1384
	Sewage Generated	MLD	NA	NA	2600	2587	721	NA	589	500
	Sewage Treated	MLD	NA	NA	1100	2307	306	478	113	496
	Sewage Generated as a % of Water Supply	%	NA	NA	83.87	108.47	72.46	NA	100.68	72.46
	Sewage Treated as a % of Water Supply	%	NA	NA	35.48	69.76	30.75	86.91	19.32	71.88
8	**Solid Waste**									
	Solid Waste Generated	MTPD	NA	NA	7025	7700	3395	3400	2240	2095
	Per Capita Waste Generated Per Day	Kg. / D	NA	NA	0.59	0.56	0.60	0.78	0.62	0.60
	Solid Waste Collected & Disposed	MTPD	NA	NA	6600	6000	2715	1000	2038	2053
	Solid Waste Collected & Disposed as % of Generated	%	NA	NA	93.95	77.92	79.97	29.41	90.98	98.00

Sr. no.	Parameters	Units	Island City	Suburb	Total	Delhi (2006)	Bangaluru (2006)	Chennai (2006)	Hyderabad (2006)	Ahmedabad (2006)
9	**Storm Water Drainage**									
	Storm Water Drainage Length	Kms	531	2,460	2991	1694	NA	NA	70.49	346
	SWD as a % of Road Length	%	104.94	171.55	154.18	NA	NA	NA	30.00	26.11
10	**Road Network System**									
	Road Length	Kms	506	1434	1940	**28500	3500	2780	235	1325
	Road Density	Kms Sq Km	NA	NA	4.43	19.20	15.48	15.80	1.37	6.96
	Road Length /Lakh Population	Mtrs.	5.06	14.34	19.40	285.00	35.00	27.80	2.35	13.25
	Tarred Road Length	Kms	506	1434	1940	NA	2800	NA	NA	1256
	Tarred Road Density	Kms Sq Km	NA	NA	4.43	NA	12.38	NA	NA	6.60
11	**Open Space, Parks & Gardens**									
	Parks, Playgrounds, Open space	Nos	230	523	753	14500	705	295	709	100
	Area	Ha	119	321	440	NA	1635	110	NA	129
	Population / Parks & Garden	Nos	12854	17250	15908	955	8065	10997	5124	35201
	Other Natural Open space	Ha	NA	NA	5432	NA	NA	NA	NA	NA

Source: *Government of India, Urban Development Ministry, website: www.jnnurm.nic.in*

Notes: *1. MTPD –Metric Tones Per Day, MLD – Million Liters per Day, LPCD – Liters Per Capita per Day, TPD – Tones per Day.*

*2. ** Includes all types of Roads, arterial Roads, Sub-arterial roads, Minor arterial roads and Collector roads.*

Taking the analysis further in terms of drawing a picture for policy making and formulation, it was felt necessary to develop a Human Development Index (HDI) for the wards of the city of Mumbai. Ward level analysis is complex and has several limitations. Ward boundaries have been drawn somewhat arbitrarily. Population is dynamic. Livelihood opportunities keep shifting and changing their characteristics. Availability of data and its reliability were two major constraints in constructing a HDI for the wards. Data for indicators like life expectancy at birth and income are not available. Hence, surrogates had to be identified. If data was available, it often was not usable. For example, data on health conditions like the incidence of diseases was incomplete as it covered only the public health sector facilities and not the private sector health facilities, which account for a sizeable proportion of health care facilities, in India, and particularly in Mumbai. Enrollment of school-going population is being collected from the various schools in which children are enrolled leading to high levels of enrollment in those wards in which schools which have earned a reputation are located. Similarly, data on infant mortality was in recent times being collected from the hospitals/health centres where deaths were registered, and not as per place of residence meant that the wards in which public health care hospitals exist record high infant mortality rates. Not only data availability for primary/leading indicators proved difficult but other data, which is needed to calculate ratios to make the leading indicators meaningful, was not available. The leading example is the non-availability of data on age-wise population which was needed to calculate literacy rate, enrolment ratio and work participation rate. With these limitations on the availability of data sets, an attempt was made to calculate an index which would measure human development levels using surrogates (proxies). Hence, the index that is being presented below uses the three dimensions identified by UNDP and the methodology identified by the same. However, the indicators chosen to represent each of these dimensions do not correspond to those in the international reports of UNDP. The index so constructed has been titled 'Human Development Measure across the Wards of Mumbai' to reflect this difference in the methodology of calculation.

In the HDI used for international comparisons, the three components of the HDI are longevity, knowledge and standard of living. The Human Development Measure (HDM) approximates these dimensions using the following indicators to identify levels of human development at the ward level. The indicators chosen to measure human development levels are as follows:

Education: Literacy rates were available from the Census documents. Literacy rate is the number of literates as a percentage of total population. In the internationally used HDI, literacy rates are given a weight of 2/3 and 1/3 weight is given to combined gross enrollment ratios. While gross enrollment ratios were available for the wards of Mumbai there was a difficulty in using this indicator. The data was collected from the schools and not from the residence of the individual. Hence, wards in which there was concentration of good/reputed schools indicated high gross school enrollment. These difficulties lead to discarding the use of gross enrollment ratios as an indicator of education levels. At the next stage, out of school children data was decided to be included with 1/3 weight. Again, converting this data to a meaningful ratio met with difficulties as age-wise population was not available. Hence, it was decided to use only literacy rates as an indicator for attainment in education.

Health: Life expectancy at birth is the indicator used in the internationally used HDI formula. As data on this indicator was not available, a proxy was suggested, namely, average age at death. The argument being that if the average age at death is high it would approximately mean that life expectancy is high. Average age at death was calculated by the MCGM officials using the formula: total age at death divided by total deaths.

A second indicator for health was available, namely, infant mortality rates. Infant mortality rate is the number of infants dying before age one per 1,000 live births. Data was made available by the MCGM. The data for the year 2006 was used, as till 2006,

MCGM collected data on infant deaths on the basis of the place of residence. Since 2006, it has been collecting data from the place of death namely hospitals.

Both data sets were combined together with equal weights.

Income: It is difficult to collect data on income in a city like Mumbai which has a large part of its population traveling from different places of residence to work places. Hence, proxies had to be identified. Slum population was a likely indicator as it represents poor living conditions and hence lowers the quality of life. Data for this indicator was available from the Census documents. Additionally, work participation was identified as an indicator to indicate employment opportunities. Hence, the extent of main and marginal workers was proposed to be included in the income dimension. However, this indicator posed some problems. Since main and marginal workers were combined together, in wards where there was a larger percentage of marginal workers the work participation rates went up. But having larger marginal workers could not be considered as a sign of prosperity of the ward. So only main workers as a percentage of total population was considered as a proxy for income. It was then argued that the percentage of main workers to total population, when high, indicated that more members of a family had to work to keep the family going, and hence cannot be considered to be a correct reflection of the economic status of the family and thereby the ward. This led to the use the data of marginal workers as a percentage of total population alone, and it combines with percentage of slum population in total population as it would represent appropriately the lower or poorer status of the family and then the ward. Marginal workers are defined as those workers who had not worked for the major part of the reference period (i.e., less than six months).[1]

Both data sets were combined with equal weights.

The final choice of indicators was as follows:

- Education: adult literacy as a percentage of total population 2001.
- Health: Infant mortality rate, 2006 was taken along with the average age at death for the period 2004-2006.
- Income: slum population as a proportion of total population and marginal workers as a percentage of total population.

An additional point to be considered was the maximum (goal post) and minimum for each indicator to calculate the dimension index, as the indicators used to define the various dimensions have not been used in international calculations. It was decided to make the Human Development Measure a relative concept for comparison amongst the wards themselves, and so the figure for the highest attainment across the wards would be considered as the maximum goal post and the lowest attainment, the minimum. The implication of this for the HDM is that there would be one ward with a value near 1 on the HDM and that would be the best ward. At the other extreme there would be another ward with the value near zero being given to it and that would be the worst ward. This does not mean that the wards with value 1 and rank 1 is perfect but it would mean that it was the best amongst the wards of the city of Mumbai.

The international HDI has indicators which are output indicators and which are positive in nature in the sense a high figure is a sign of higher attainment. In the HDM, due to lack of availability of data sets, indicators had to be combined together which were positive and negative in nature. Indicators like percentage of slum population, infant mortality rate may be considered to be negative in nature as lower the figure higher the attainment. Taking into consideration this problem, it was decided to adopt the following methodology for calculating the Human Development Measure for the city of Mumbai:

1 Main workers are those who had worked for the major part of the reference period (i.e., six months or more) are termed as Main Workers.

This means that

In case of indicators like IMR and slum population, it meant that the best situation was the lowest figure. In case of a negative sign, the absolute value was taken.

The HDM was then calculated as 1- average of dimension indices

The Actual Calculations

For example Ward A:
The education dimension was calculated in the following manner:
(83.28 minus 75.46) / (83.28 minus 66.12) = 0.4557

The health dimension was calculated as follows:

The dimension index for the indicator infant mortality rate being:

(9.42 minus 33.88) / (9.42 minus 66.47) = 0.4287

The dimension index for the indicator Age at Death being:

(60.73 minus 50.61) / (60.73 minus 39.3) = 0.4722

The Dimension indices on infant mortality rate and the age at death were combined together by giving them equal weights.

i.e., 0.4287 + 0.4722 = 0.4505

The Income Dimension :
The dimension index for percentage population living in slums:

(zero minus 28.88) / (zero minus 85.83) = 0.3365

The dimension index for percentage of marginal workers in total population being:

(1.0766 minus 1.827) / (1.0766 minus 3.0383)

The dimension indices on the above two indicators were combined together by giving equal weight.

Hence, 0.3365 + 0.3825 = 0.3595

The next step involved combining all the 3 dimension indices by giving equal weights:

(0.4557 +0.4505 + 0.3595) / 3 = 0.4219

The Human Development Measure is then derived by:

1 minus 0.4219 = 0.58

Ward A's Human Development Level is thus 0.58 for the period 2001-2006. This gives Ward A rank 13 across the Wards of Mumbai.

Interpretations and Implications of the HDM

Ward D has the highest value on the HDM and hence the highest rank. On the other side is Ward M/E with the lowest value and rank. On the indicators taken into consideration for constructing HDM and which have been discussed above, Ward D showed higher attainment and hence figures as the best ward on the HDM. The opposite is the case with Ward M(E).

The average HDM for Mumbai is 0.56 and the wards which lie above this average are as follows:

D (Grant Road), C (Marine Lines), R(C) (Borivali), T (Mulund), B (Sandhurst), R(N) (Dahisar), H(W) (Bandra), F(S) (Parel), K(E) (Andheri East), K(W) (Andheri West), G(S) (Elphinstone Road), P(S) (Goregaon), and A(Colaba).

The wards which lie below the Mumbai average are as follows:

E (Byculla), R(S) (Kandivali), N(Ghatkopar), S(Bhandup), G(N) (Dadar), P(N) (Malad), H(E) (Khar Santacruz), F(N) (Matunga), M(W) (Chembur West), L(Kurla) and M(E) (Chembur East).

It may be observed that most of the wards which lie below the Mumbai average are the eastern wards. The concentration of backward wards on human development indicators may be attributed to large migrant population, low and insecure levels of live-lihood activity, large scale unauthorized housing as indicated by slums, and poor education and health facilities.

Surprisingly, Ward A (Colaba), which is considered to be one of the best and richest ward in Mumbai in terms of income, has a rank of 13 and is just above the Mumbai average HDM. This is possibly due to fairly large concentration of slum population in this ward.

Another tentative observation is that Mumbai historically grew around certain clusters of old habitations which, in due course, coalesced into the megapolis. The HDM values of the wards around these clusters of old habitations show relatively better values.

The results of this study call for area specific interventions and improvements in the data collection methods and processes so that interventions and measures on human development indicators become more meaningful.

Table HDM-2: Human Development Measure

	Ward	Ward Name*	Total Population 2001	Slum population 2001	% Slum Popto Total Pop 2001	Marginal Workers 2001	Marginal to total Pop 2001	Literacy Rate 2001	Infant Mortality Rate 2006	Average Age at Death 2004-06
1	A	Colaba to Metro	210847	60893	28.88	3852	1.8269	75	33.88	50.61
2	B	Dongri	140633	18746	13.33	1514	1.0766	75	31.56	53.81
3	C	Marine Lines	202922	0	0.00	2962	1.4597	83	35.88	60.49
4	D	Nana Chowk (Grant Road)	382841	38077	9.95	4357	1.1381	82	9.42	60.73
5	E	Byculla	440335	52230	11.86	7002	1.5902	75	56.27	48.42
6	F/N	Matunga	524393	304500	58.07	11492	2.1915	74	50.27	47.52
7	F/S	Parel	396122	141653	35.76	7362	1.8585	80	15.59	46.41
8	G/N	Dadar	582007	324886	55.82	13894	2.3873	75	35.70	53.95
9	G/S	Worli	457931	151506	33.08	8594	1.8767	79	31.80	52.48
10	H/E	Santacruz	580835	457622	78.79	12248	2.1087	75	33.29	50.19
11	H/W	Bandra	337391	138541	41.06	5555	1.6465	81	52.30	57.96
12	K/E	Andheri (East)	810002	472226	58.30	13853	1.7102	79	25.99	55.01
13	K/W	Andheri (West)	700680	316065	45.11	11247	1.6052	77	27.89	54.69
14	L	Kurla	778218	658972	84.68	17806	2.2880	73	54.56	45.88
15	M/E	Chembur (East)	674850	523324	77.55	17729	2.6271	66	66.47	39.30
16	M/W	Chembur (West)	414050	283557	68.48	12580	3.0383	75	57.93	51.47
17	N	Ghatkopar	619556	435009	70.21	13278	2.1431	77	32.83	52.05
18	P / N	Malad	798775	508435	63.65	19415	2.4306	75	28.91	51.11
19	P/S	Goregaon	437849	210591	48.10	10472	2.3917	77	16.45	51.89
20	R/C	Borivali	513077	173160	33.75	6953	1.3552	81	16.35	58.58
21	R/N	Dahisar	363827	169662	46.63	4511	1.2399	78	20.10	49.98
22	R/S	Kandivali	589887	326235	55.30	12028	2.0390	75	28.17	51.28
23	S	Vikhroli Bhandup	691227	593300	85.83	17430	2.5216	78	18.76	50.94
24	T	Mulund	330195	116250	35.21	6365	1.9276	81	19.53	56.97
		Mumbai	**11978450**	**6475440**	**54.06**	**242499**	**2.0245**	**77**	**34.57**	**52.16**

Note: ** as per MCGM.*

	Ward	HDI	Rank
1	A	0.58	13
2	B	0.71	5
3	C	0.89	2
4	D	0.96	1
5	E	0.54	14
6	F/N	0.41	21
7	F/S	0.67	8
8	G/N	0.49	18
9	G/S	0.66	11
10	H/E	0.47	20
11	H/W	0.68	7
12	K/E	0.67	9
13	K/W	0.66	10
14	L	0.29	23
15	M/E	0.05	24
16	M/W	0.33	22
17	N	0.52	16
18	P/N	0.47	19
19	P/S	0.59	12
20	R/C	0.84	3
21	R/N	0.69	6
22	R/S	0.54	15
23	S	0.51	17
24	T	0.76	4
	Total	**0.56**	

	Ward	Area	HDI	Rank
1	D	Nana Chowk (Grant Road)	0.96	1
2	C	Marine Lines	0.89	2
3	R/C	Borivali	0.84	3
4	T	Mulund	0.76	4
5	B	Dongri	0.71	5
6	R/N	Dahisar	0.69	6
7	H/W	Bandra	0.68	7
8	F/S	Parel	0.67	8
9	K/E	Andheri (East)	0.67	9
10	K/W	Andheri (West)	0.66	10
11	G/S	Elphinstone Road	0.66	11
12	P/S	Goregaon	0.59	12
13	A	Fort	0.58	13
Average for Mumbai			**0.56**	
14	E	Byculla	0.54	14
15	R/S	Kandivali	0.54	15
16	N	Ghatkopar	0.52	16
17	S	Vikhroli Bhandup	0.51	17
18	G/N	Dadar	0.49	18
19	P/N	Malad	0.47	19
20	H/E	Khar Santacruz	0.47	20
21	F/N	Matunga	0.41	21
22	M/W	Chembur (West)	0.33	22
23	L	Kurla	0.29	23
24	M/E	Chembur (East)	0.05	24

	Ward	Ward Name	HDM	Rank	% Slum Pop to Total Pop	Marginal to Total Pop	Literacy Rate	Infant Mortality Rate	Average Age at Death
	CITY		**2001-2006**		**2001**	**2001**	**2001**	**2006**	**2004-06**
1	A	Fort	0.58	13	28.88	1.83	75.46	33.88	50.61
2	B	Dongri	0.71	5	13.33	1.08	75.72	31.56	53.81
3	C	Marine Lines	0.89	2	0.00	1.46	83.28	35.88	60.49
4	D	Grant Road	0.96	1	9.95	1.14	82.39	9.42	60.73
5	E	Byculla	0.54	14	11.86	1.59	75.03	56.27	48.42
6	F/N	Matunga	0.41	21	58.07	2.19	74.86	50.27	47.52
7	F/S	Parel	0.67	8	35.76	1.86	80.13	15.59	46.41
8	G/N	Dadar	0.49	18	55.82	2.39	75.25	35.70	53.95
9	G/S	Elphinston Road	0.66	11	33.08	1.88	79.12	31.80	52.48
	WESTERN SUBURBS								
10	H/E	Khar Santacruz	0.47	20	78.79	2.11	75.97	33.29	50.19
11	H/W	Bandra	0.68	7	41.06	1.65	81.01	52.30	57.96
12	K/E	Andheri East	0.67	9	58.30	1.71	79.66	25.99	55.01
13	K/W	Andheri West	0.66	10	45.11	1.61	77.82	27.89	54.69
14	P/N	Malad	0.47	19	63.65	2.43	75.31	28.91	51.11
15	P/S	Goregaon	0.59	12	48.10	2.39	77.15	16.45	51.89
16	R/C	Borivali	0.84	3	33.75	1.36	81.78	16.35	58.58
17	R/N	Dahisar	0.69	6	46.63	1.24	78.56	20.10	49.98
18	R/S	Kandivali	0.54	15	55.30	2.04	75.94	28.17	51.28
	EASTERN SUBURBS								
19	L	Kurla	0.29	23	84.68	2.29	73.47	54.56	45.88
20	M/E	Chembur East	0.05	24	77.55	2.63	66.12	66.47	39.30
21	M/W	Chembur West	0.33	22	68.48	3.04	75.02	57.93	51.47
22	N	Ghatkopar	0.52	16	70.21	2.14	77.50	32.83	52.05
23	S	Bhandup	0.51	17	85.83	2.52	78.52	18.76	50.94
24	T	Mulund	0.76	4	35.21	1.93	81.09	19.53	56.97
	MUMBAI		**0.56**		**54.06**	**2.02**	**77.34**	**34.57**	**52.16**

Human Development across Wards in Mumbai

A Radar Profile[1]

Information on the three primary indicators of human development at the ward level in Mumbai would serve quite useful policy purpose. The analysis based on human development measures addresses this issue. This note seeks to supplement such information and analysis in terms of radars of select proxy indicators to draw policy messages.

A radar chart is a graphical method used to display ratings on select indicators of performance. It is useful to assess performance or achievement in terms of each indicator. Generally, the chart is drawn for five to 10 indicators. Performance or achievement ratings are measured in terms of standardized scores ranging from '0' to '5' with the former indicating nil achievement and the latter being a measure of full achievement.[2] The radar chart, thus, would depict areas of relative strength and relative weakness as well as a snapshot of overall performance. In other words, radar charts can be used to display achievements by indicators relative to well-defined targets for each of them. The size of the shaded area would co-vary with performance by the specified indicator. Symmetry in and the extent of the shaded area of the chart would indicate an equally good/bad performance across indicators.

Radar Profiles of Human Development: Mumbai

In order to draw radar charts/profiles of human development across wards in Mumbai, the following indicators were considered, which would bear upon the three major dimensions of human development. They are: (i) total literacy rate (2001); (ii) proportion of slum population (2001); (iii) proportion of marginal workers[3] (2001); and (iv) infant mortality rate (IMR) (2006). Total literacy rate is used as a measure for knowledge; relative shares of slum population and marginal workforce as surrogate for measures of deprivation in standard of living or income; and IMR to gauge the health status. Information on all these indicators is normalized *a la* HDI rule with reference to the goalposts given below.

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1 The radars were prepared by Dr Suryanarayana, Indira Gandhi Institute of Development Research, Mumbai. The author would also like to thank Dr Sangita Kamdar from whose base paper the data for calculations of radars is incorporated. Mr Asoke Basak, and Dr Seeta Prabhu for her comments and discussions.

2 Radars are drawn as follows. One may use a two-dimensional chart to display the score on each indicator. To begin with, draw a circle with as many spokes or radii as achievement indicators. Label each spoke with the indicator title on the perimeter of the circle. Then partition the spoke to represent increments in the rating scale. Mark the centre of the circle where the spokes join as zero (no performance), and the terminal point of the spoke on the perimeter as 'five' (full or targeted achievement). Plot ratings by each indicator on the corresponding spoke and the locus of such plots would give the radar chart.

3 A marginal worker is one who has worked for less than 180 days during the reference period.

Table 1: Goalposts for the different indicators

Indicator	Maximum value	Minimum value
Literacy rate (%)	100	0
Slum population (%)	100	0
Marginal workers (%)	100	0
Infant mortality rate (per 1000 live births)	72	0

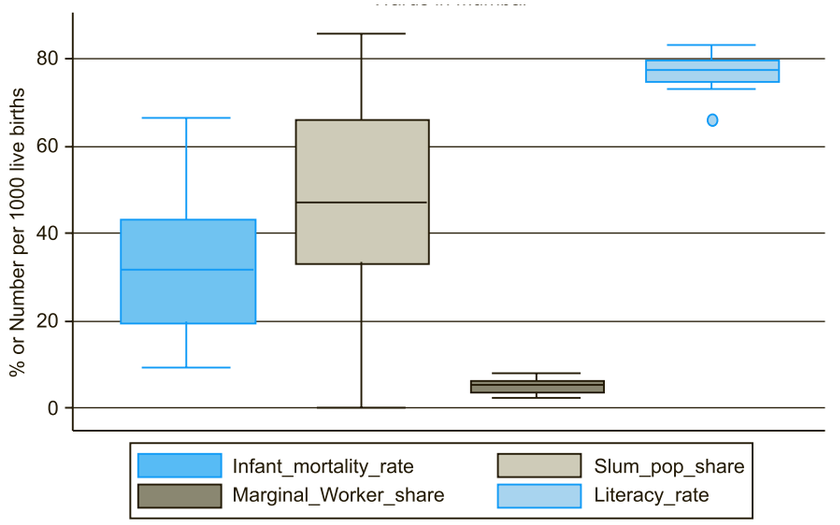
The goalposts fixed for literacy rate, slum population (%) and marginal workers (%) are at their lower and upper bounds. As regards IMR, there could be several options for the maximum value. To begin, one may consider the observed maximum across wards in Mumbai (66.47 per 1,000 per live births (Table [ii] in the Annexure) or the observed maximum in the urban sector across states (52 in Orissa as per the Sample Registration System [SRS] for 2007) or the maximum across states (72 in Madhya Pradesh in 2007 [SRS estimate]).[4] Since the second option is ruled out for Mumbai where IMR in ward M/E is 66.47 per 1,000 live births, IMR for Madhya Pradesh has been considered as a conservative estimate of the upper bound.

Among the four indicators,[5] the last three are measures of deprivation. Since human development is a measure of achievement, these three indicators of deprivation are transformed into measures of achievement by taking their complements. Finally, their scale is changed to fall in the interval 0 to 5 to facilitate the Radar plot.

Options were also explored to consider indicators of public access to sanitation facilities like toilets. However, such information could be obtained for the slum population only. Due to non-availability of such information for the non-slum population, the analysis was restricted to just four indicators listed above.

The estimates of the four different indicators and their radar scores are presented in Table (ii) in the Annexure. Their radar profiles presented below bring

Chart 1: Human Development Dimension Wards in Mumbai



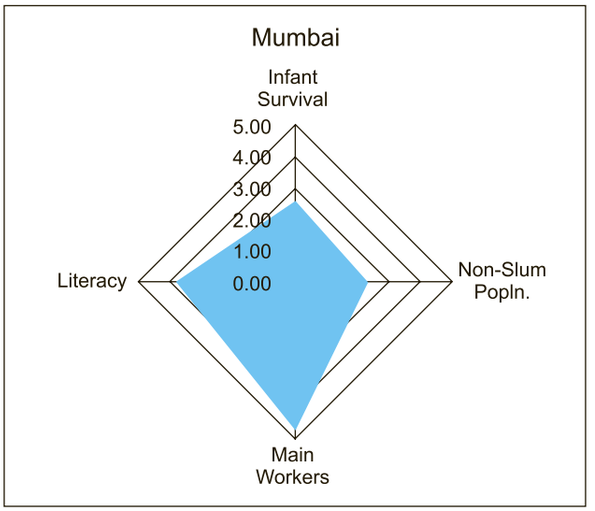
***Source**: ASER 2006*

4 Office of the Registrar General, Government of India (2008): *SRS Bulletin: Sample Registration System*, Vol. 43, No.1, p. 1.

5 It may be noted that the indicators listed here differ from the set used to define the human development measure in three respects: (i) this list does not include average age at death; (ii) marginal workers are considered as a proportion of total workers and not population; and (iii) the goalposts are not fixed at observed sample extreme values but at lower and upper bounds. Accordingly, these results differ in details.

out contrasting performances of wards by the four indicators considered.

Salient Features of the Radar Profiles



(i) Ward D, followed by Ward R/C, stands out for both symmetry and near-exhaustion of the circle by the shaded area. In other words, these two wards have performed well by all the four indicators.

(ii) Though Ward C has creditable performance in three of the four indicators, it loses out due to its poor performance in infant survival rate.

(iii) Infant survival rate is one measure by which several wards (including Mumbai as a whole) have lost out.

(iv) Wards which share similar and better than the median performance are G/S, R/N, T, F/S and K/W.

(v) Ward M/E has radar, which brings out sharp lopsided development marked by poor performance on both infant survival and non-slum population criteria. Other wards, which fall into a similar category are L, M/W and F/N.

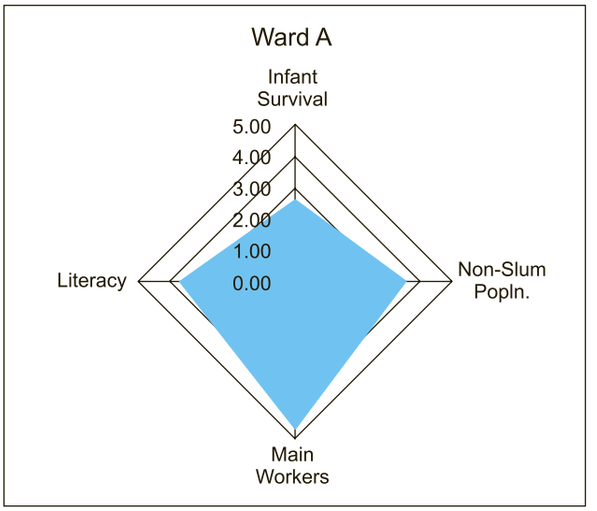
(vi) Ward M/E is not only the worst performer but also an outlier in terms of literacy outcome across wards in Mumbai (Table [ii] in the Annexure and box plot below).

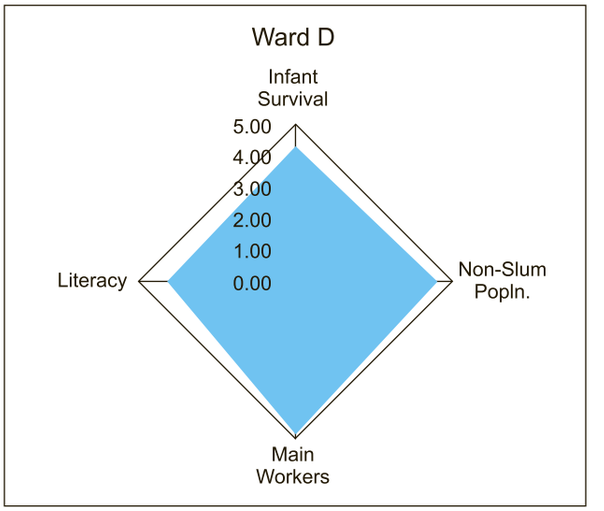
(vii) Finally, the aggregate profile for Mumbai as a whole brings out inadequate performance with respect to infant survival and non-slum population factors. The box plot below brings out the uneven performance across wards on account of these two factors quite perceptibly.

Main Messages

The messages which emerge from the analysis are as follows:

- Even within metropolitan Mumbai, there are wards performing quite poorly in terms of infant survival rate. This feature is perceptible at the aggregate profile for Mumbai as well. This is one area which calls for serious policy attention and response.
- Another factor, which accounts for inter-ward differentials in human development radar profiles, is the share of non-slum population. Hence, habitation is another issue, which has to be addressed on a priority basis.
- As regards educational achievement, though the spread across wards is relatively less, Ward M/E is not even in the mainstream and needs policy focus.
- Lack of sound information base on all related indicators of human development is a constraint on situation review, policy choice, and evaluation. Hence, there is an urgent need to address this issue by improving or setting up a sound institutional capacity for human development monitoring in Mumbai.


Ward A
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward D
Infant Survival
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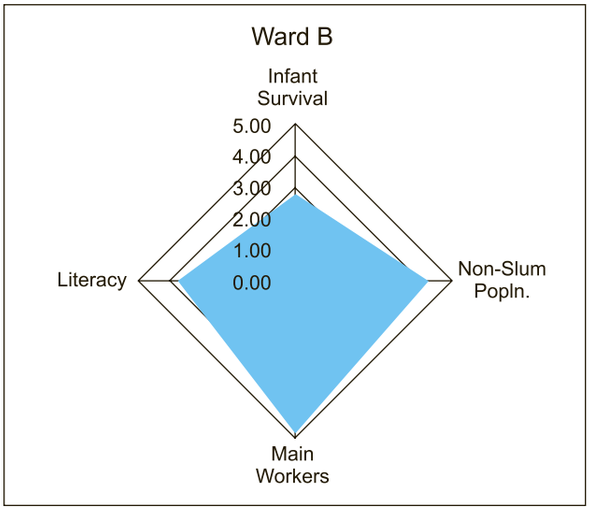
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward B
Infant Survival
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4.00
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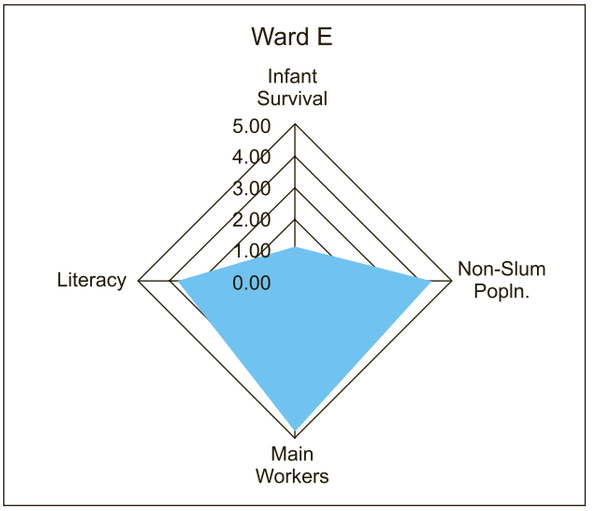
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward E
Infant Survival
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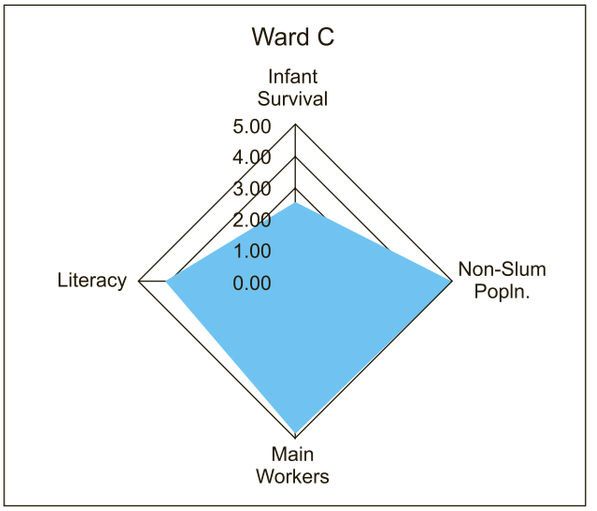
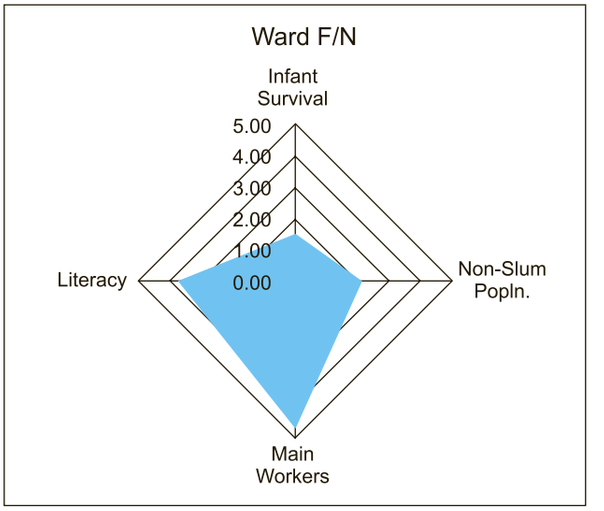
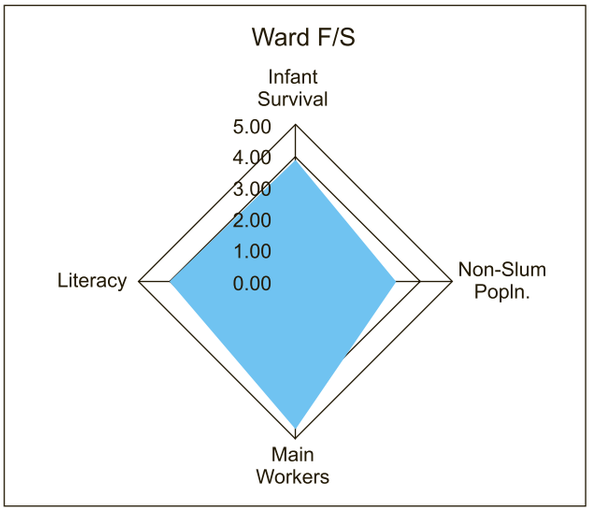
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward C
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward F/N
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward F/S
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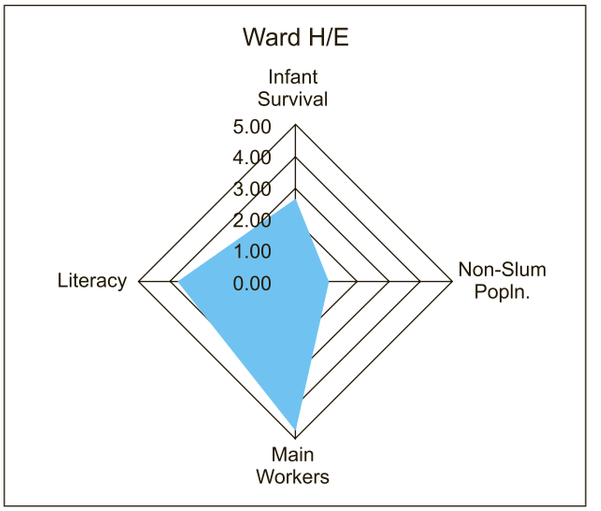
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers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Infant Survival
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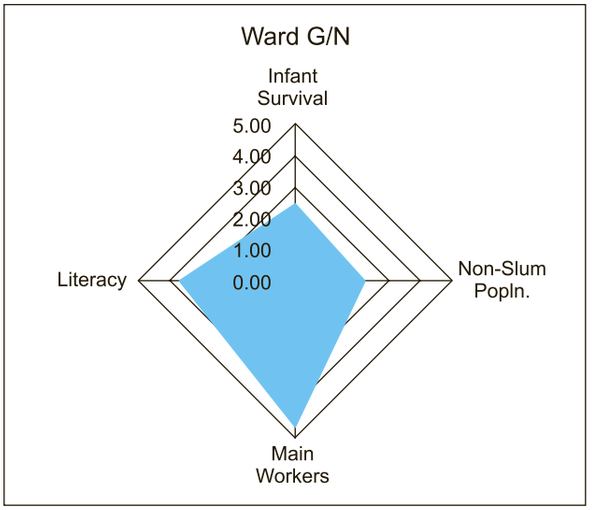
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward G/N
Infant Survival
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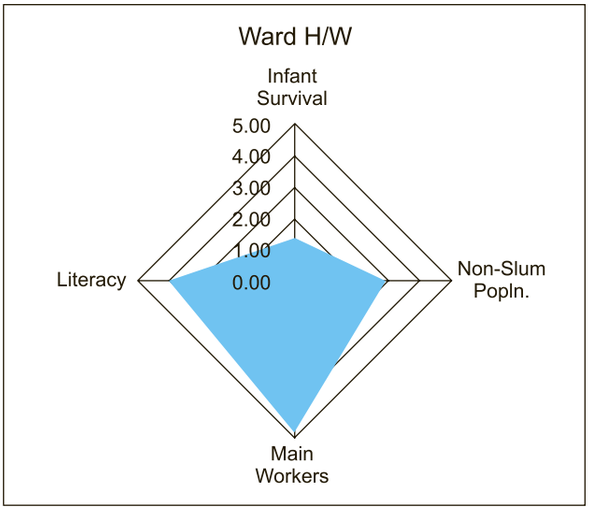
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward H/W
Infant Survival
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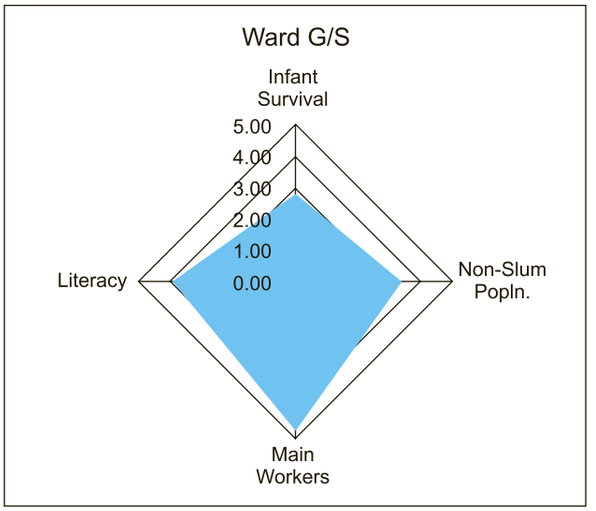
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward G/S
Infant Survival
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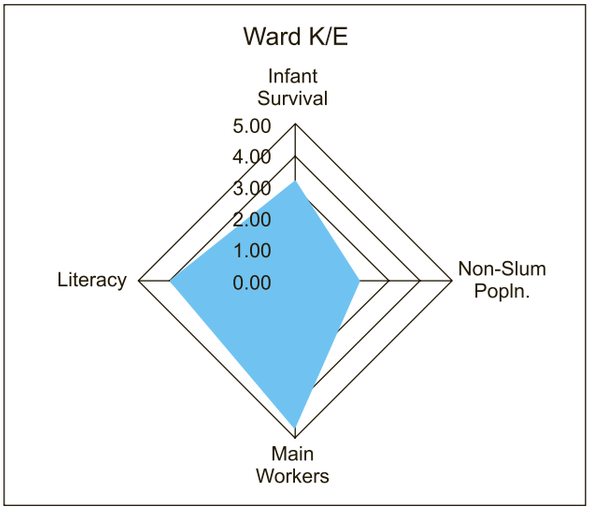
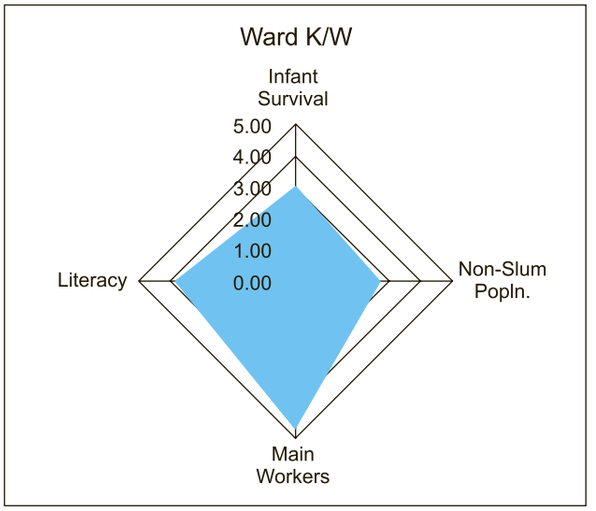
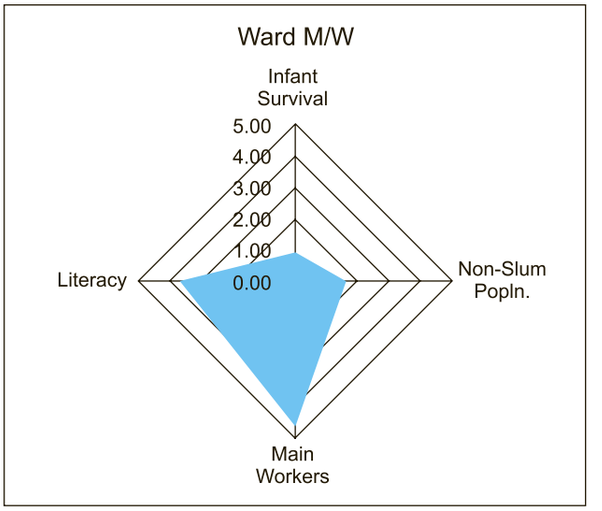
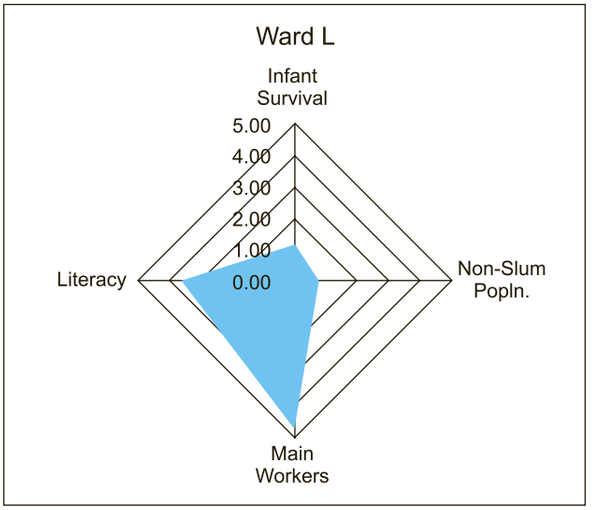
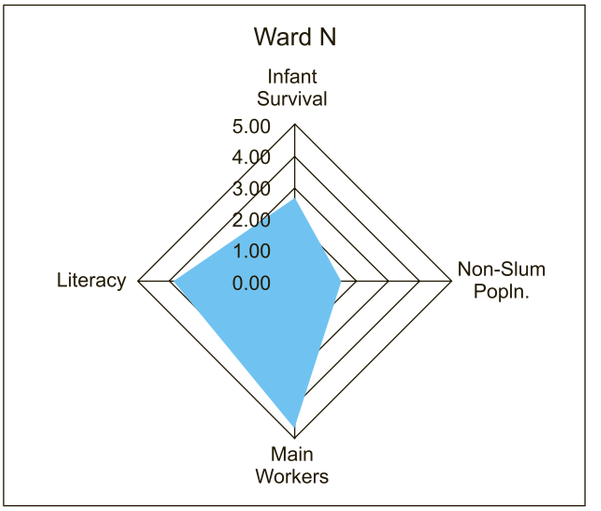
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers

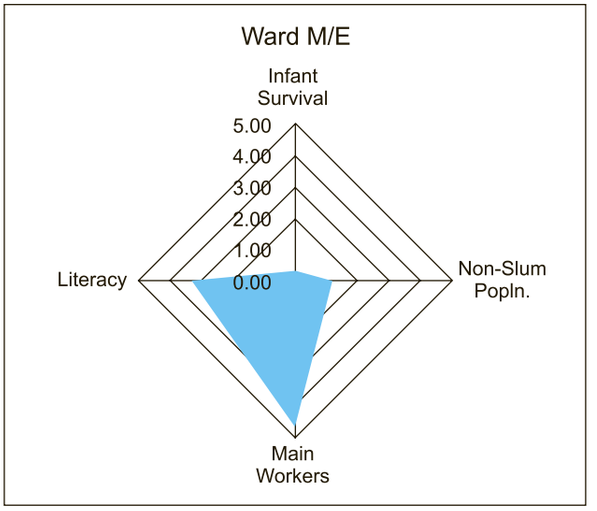

Ward K/E
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward K/W
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward M/W
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward L
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward N
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward M/E
Infant Survival
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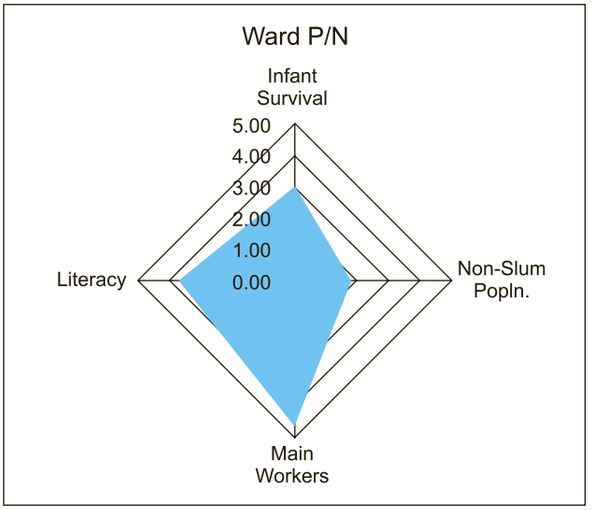
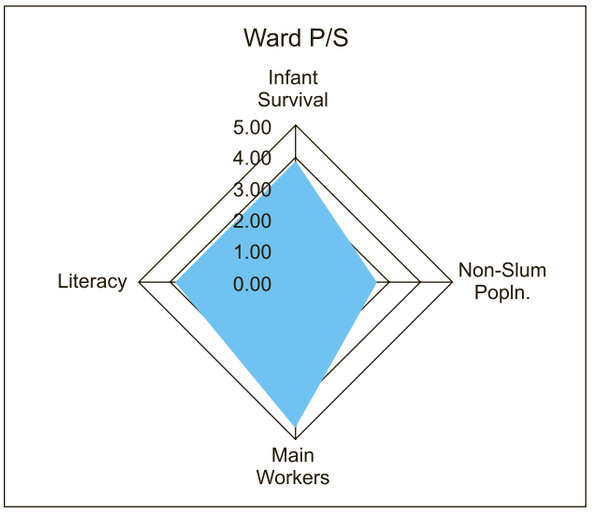
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward P/N
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward P/S
Infant Survival
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4.00
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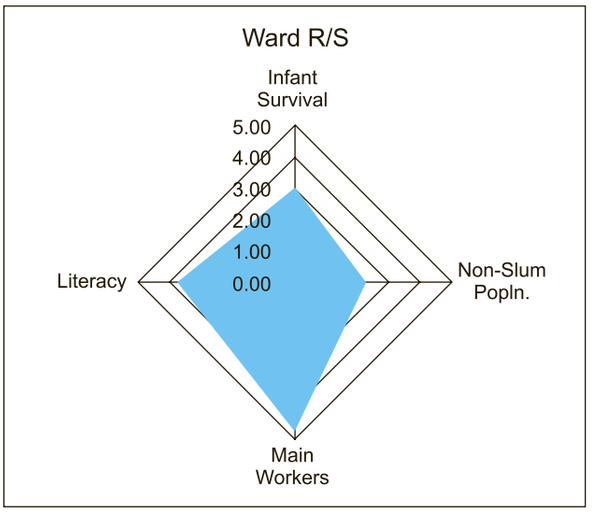
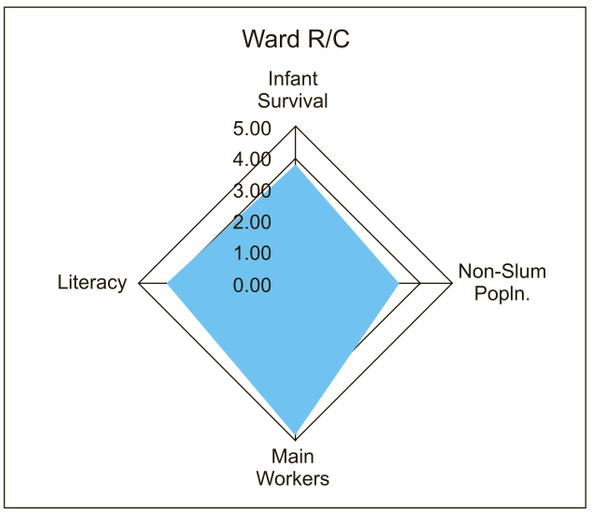
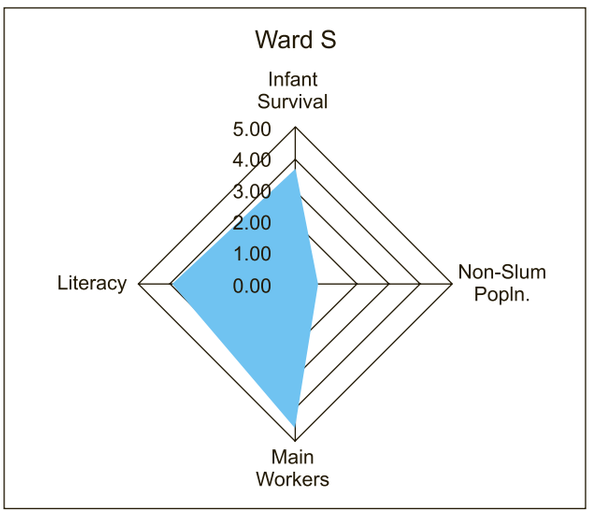
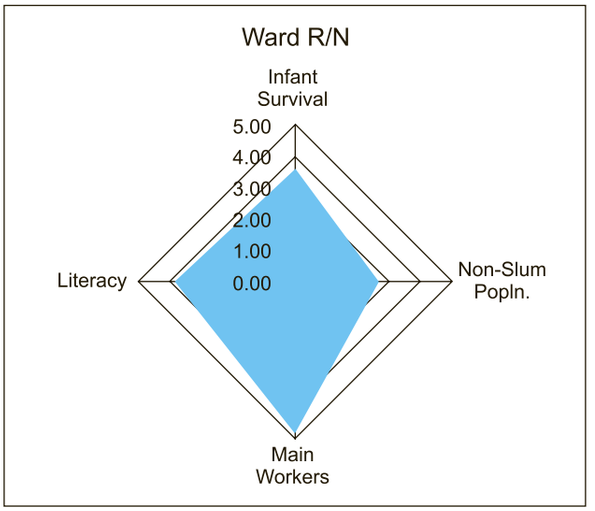
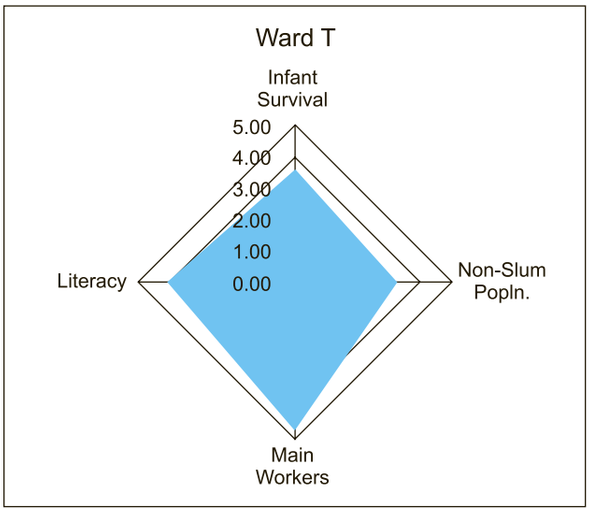
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward R/S
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward R/C
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward S
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward R/N
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers


Ward T
Infant Survival
5.00
4.00
3.00
2.00
1.00
0.00
Literacy
Non-Slum Popln.
Main Workers

Annexure

Table (i): Areas covered under different wards in Mumbai

No.	Ward	Areas
1	A	Upper Colaba, Middle & Lower Colaba, Fort South, Fort North, and Esplanade
2	B	Mandvi, Chakala, Umarkhadi, and Dongri
3	C	Khara Talao, Kumbharwada, Bhuleshwar, Market, Dhobi Talao, and Fanaswadi
4	D	Khetwadi, Tardeo, Girgaon, Chaupaty, Walkeshwar, and Mahalaxmi
5	E	Mazgaon, Tadwadi, 1st Nagpada, 2nd Nagpada, Kamathipura, and Byculla
6	F (North)	Matunga and Sion
7	F (South)	Parel, Sewri, and Naigaum
8	G (North)	Dadar, Mahim, and Prabhadevi
9	G (South)	Prabhadevi, Worli, Chinchpokli, and Lovegrove
10	H (East)	Khar Scheme, Hill Road & Turner Road, and Santacruz East
11	H (West)	Slaughter House, Colwada & Bandra Hill, Pali Hill, Danda, Khar Scheme, Khar and Pali, Hill Road & Turner Road, Santacruz West, Santacruz Central, and Juhu
12	K (East)	Vile Parle East, Andheri East, Jogeshwari East, Goregaon, and Village Maroshi
13	K (West)	Vile Parle West, Juhu, Andheri West, Versova, Madh, and Jogeshwari West
14	L	(New Mills) Kurla, (Station Takia) Kurla, Swadeshi Mills, Chunabhatti, Khajuribhatti & Kasaiwada, Bazar Church Hall, and Naupada & Seven villages
15	M (East)	Chembur Proper, Mahul, Trombay, Govandi, Vadavali, Borla, and Mankhurd
16	M (West)	Chembur Proper, Mahul, Trombay, Govandi, Vadavali, Borla, and Mankhurd
17	N	Ghatkopar, (Kirol) Ghatkopar, Panjrapol and Vikhroli
18	P (North)	Erangal and Daroli, Malad West, Malad East, Kurar, Dindoshi, Chincholi, Vadhwan, Valnai, Malvani, Akse and Marve, and Manori Island
19	P (South)	Goregaon and Village Maroshi, Aarey, Eksar Pakhadi, and Malad East
20	R (Central)	Borivali and Shimpoli, Eksar and Mandapeshwar, Gorai and Kulvem, Kanheri, and Magathane
21	R (North)	Eksar and Mandapeshwar, Magathane, and Dahisar
22	R (South)	Kandivli and Charkop, Poisar, and Akurli
23	S	Vikhroli and Bhandup
24	T	Mulund East, Mulund West, Nahur, Tulsi, Gundgaon, Vihar, Sai, and Klerobadi

Source: *Census of India (2001)*

Table (ii): Estimates of Human Development Proxy Indicators and their Radar Scores

		Human Development proxy indicators				Radar scores			
Sl. No.	**Ward**	**Infant mortality rate (Number/ 1000 live births)**	**Slum pop to total pop (%)**	**Marginal to total workers (%)**	**Total literacy (%)**	**Infant survival rate**	**Non-slum population**	**Main workers**	**Total literacy**
		2006	**2001**	**2001**	**2001**	**2001**	**2001**	**2006**	**2001**
1	A	33.88	28.88	4.06	75.46	2.65	3.56	4.80	3.77
2	B	31.56	13.33	2.69	75.72	2.81	4.33	4.87	3.79
3	C	35.88	0.00	2.90	83.28	2.51	5.00	4.86	4.16
4	D	9.42	9.95	2.74	82.39	4.35	4.50	4.86	4.12
5	E	56.27	11.86	4.09	75.03	1.09	4.41	4.80	3.75
6	F/N	50.27	58.07	6.00	74.86	1.51	2.10	4.70	3.74
7	F/S	15.59	35.76	5.24	80.13	3.92	3.21	4.74	4.01
8	G/N	35.70	55.82	6.36	75.25	2.52	2.21	4.68	3.76
9	G/S	31.80	33.08	4.83	79.12	2.79	3.35	4.76	3.96
10	H/E	33.29	78.79	5.70	75.97	2.69	1.06	4.71	3.80
11	H/W	52.30	41.06	4.28	81.01	1.37	2.95	4.79	4.05
12	K/E	25.99	58.30	4.60	79.66	3.20	2.09	4.77	3.98
13	K/W	27.89	45.11	4.16	77.82	3.06	2.74	4.79	3.89
14	L	54.56	84.68	6.43	73.47	1.21	0.77	4.68	3.67
15	M/E	66.47	77.55	7.91	66.12	0.38	1.12	4.60	3.31
16	M/W	57.93	68.48	8.25	75.03	0.98	1.58	4.59	3.75
17	N	32.83	70.21	6.31	77.50	2.72	1.49	4.68	3.87
18	P / N	28.91	63.65	6.66	75.31	2.99	1.82	4.67	3.77
19	P/S	16.45	48.10	6.19	77.15	3.86	2.60	4.69	3.86
20	R/C	16.35	33.75	3.67	81.78	3.86	3.31	4.82	4.09
21	R/N	20.10	46.63	3.33	78.56	3.60	2.67	4.83	3.93
22	R/S	28.17	55.30	5.32	75.94	3.04	2.23	4.73	3.80
23	S	18.76	85.83	7.27	78.52	3.70	0.71	4.64	3.93
24	T	19.53	35.21	5.27	81.09	3.64	3.24	4.74	4.05
	Coefficient of Variation (%)**	46.45	51.02	30.53	4.70	-	-	-	-
	Mumbai	**34.57**	**54.06**	**5.43**	**77.34**	**2.60**	**2.30**	**4.73**	**3.87**

***Note*:** *** Estimates of coefficient of variation are not weighted for population size.*

Annexures

Table 2A-1: Districts from where more than 10,000 Migrants Enumerated in Greater Mumbai during 1991-2001

District	Greater Mumbai	Sex Ratio	Mumbai Suburbs	Sex Ratio	Mumbai	Sex Ratio
State of Maharashtra						
Ranagiri	91352	874	59994	978	31358	703
Satara	**65292**	**770**	**44088**	**927**	**21204**	**513**
Pune	53602	1169	40211	1187	13391	1117
Raigarh	44744	935	29069	1109	15675	679
Sindhudurg	41447	1172	32617	1187	8830	1121
Kolhapur	**26083**	**695**	**14959**	**1015**	**11124**	**397**
Sangali	21945	952	16363	1044	5582	724
Thane	19814	1444	15741	1435	4073	1479
Solapur	19680	1137	15597	1168	4083	1027
Ahmednagar	16702	1143	12663	1174	4039	1051
Nashik	13759	1379	10528	1445	3231	1188
District Maharashtra*	13682	809	4854	940	8828	745
State of Uttar Pradesh						
Jaunpur	**69077**	**505**	**59233**	**521**	**9844**	**413**
Azamgarh	**38605**	**508**	**31232**	**540**	**7373**	**386**
Basti	**29935**	**437**	**20231**	**495**	**9704**	**329**
Siddarth Nagar	**27399**	**339**	**20472**	**376**	**6927**	**241**
Varanasi	**26638**	**616**	**23001**	**632**	**3637**	**519**
Gorakhpur	**24718**	**362**	**21513**	**364**	**3205**	**345**
Allahabad	**24634**	**424**	**18825**	**445**	**5809**	**361**
Pratapgarh	**23673**	**490**	**15366**	**504**	**8307**	**465**
Gonda	**18228**	**385**	**12371**	**475**	**5857**	**226**
Sultanpur	**14379**	**471**	**10628**	**494**	**3751**	**410**
Deoria	**12782**	**363**	**10988**	**350**	**1794**	**449**
Ghazipur	**12000**	**479**	**11058**	**485**	**942**	**412**
Santravidas Nagar-Bhadohi	**11253**	**410**	**10146**	**419**	**1107**	**339**
District of UP*	**28967**	**452**	**16515**	**454**	**12452**	**449**
Kolkata	**23297**	**561**	**16544**	**611**	**6753**	**451**
Gulberga	18765	1040	13341	1032	5424	1062
Dakshina Kannada	**14630**	**840**	**12031**	**935**	**2599**	**500**
Tirunelveli	13719	780	7727	857	5992	689
Chennai	12189	964	9099	986	3090	904
Kachcha	13815	1104	11637	1197	2178	714
Ahmedabad	10221	1422	7634	1509	2587	1198
District Gujarat*	10543	1147	7992	1316	2551	747
Delhi	13445	961	10310	962	3135	958
Pali-Rajasthan	11889	632	9370	637	2519	613
Darbhanga	**11799**	**256**	**8283**	**290**	**3516**	**183**
District Bihar*	**10957**	**269**	**6608**	**287**	**4349**	**243**

Source: *Census of India, 2001 – special table on inter-district migration, 1991-2001*
Notes: ** Unspecified District. Figures in bold denotes very poor ratios of under 600 per 1,000.*

Table 5A-1 : Enrollment as on 31.08.2008

Ward	Mumbai Public School A				Total	Primary School B							Total	MC School C	Old Secondary School D						Total	New Secondary E		Total	Total (A+B+C) +D+E)
	Jr. Kg.	Sr. Kg.	1	2		1	2	3	4	5	6	7			5	6	7	8	9	10		8	9		
A	0	0	0	0	0	1060	1052	1014	974	305	315	261	4981	0	698	633	486	411	325	191	2744	25	0	25	7750
B	0	0	0	0	0	377	410	338	289	167	150	118	1849	0	98	118	134	203	291	224	1068	50	0	50	2967
C	0	0	0	0	0	139	128	139	135	127	114	108	890	22	0	0	0	0	0	0	0	0	0	0	912
D	28	33	66	85	212	446	512	430	453	305	287	266	2699	30	133	101	95	232	273	160	994	30	0	30	3965
E	32	25	94	64	215	2142	2262	1932	1743	1159	1121	986	11345	0	405	374	359	477	415	366	2396	136	0	136	14092
F/N	41	100	52	22	215	4922	4733	4510	4201	3890	3792	3580	29628	30	136	148	143	640	603	355	2025	754	0	754	32652
F/S	129	120	97	47	393	1244	1420	1328	1284	1132	1097	1053	8558	30	135	156	141	326	361	331	1450	30	0	30	10461
G/S	198	218	232	103	751	2248	2022	2134	2094	1537	1337	1272	12644	43	592	655	635	1183	1015	854	4934	240	74	314	18686
G/N	57	83	108	46	294	3716	3696	3210	2957	2501	2304	2276	20660	20	313	239	254	657	602	398	2463	285	37	322	23759
H/W	150	176	212	82	620	1267	1581	1379	1303	1323	1296	1249	9398	66	0	0	0	188	253	240	681	199	10	209	10974
H/E	206	282	615	660	1763	3178	4031	3573	3483	2980	2958	2921	23124	82	222	260	294	982	902	534	3194	700	0	700	28863
K/E	274	278	253	106	911	2177	3255	2977	2930	2869	2756	2800	19764	0	82	122	131	108	135	131	709	1280	0	1280	22664
K/W	175	156	179	0	510	2878	3177	3137	2799	2446	2290	2256	18983	24	273	271	254	471	535	389	2193	497	0	497	22207
P/S	264	173	84	20	541	2072	2046	1983	1925	1503	1536	1473	12538	28	521	549	647	829	857	664	4067	359	134	493	17667
P/N - 1	96	97	74	0	267	1692	2252	2060	2050	1855	1875	1802	13586	0	164	183	178	265	391	267	1448	485	0	485	15786
P/N - 2	60	45	108	108	321	2616	3171	2771	2638	2673	2590	2300	18759	0	31	30	31	1385	1413	1013	3903	129	20	149	23132
R/S	285	147	49	0	481	2371	2008	1866	1939	1547	1386	1430	12547	133	0	0	0	153	231	243	627	706	76	782	14570
R/C	0	0	0	0	0	2052	2037	1927	1835	1898	1841	1918	13508	87	17	12	17	556	482	382	1466	129	0	129	15190
R/N	0	0	0	0	0	1225	1598	1310	1295	1104	1123	1052	8707	0	0	0	0	0	0	0	0	160	0	160	8867
L - 1	143	139	152	139	573	2860	2358	2246	2266	2143	2135	1878	15886	89	0	0	0	159	150	63	372	494	0	494	17414
L - 2	72	67	15	17	171	3404	3418	3064	2993	2664	2561	2462	20566	0	0	0	0	0	0	0	0	327	0	327	21064
M/W	96	77	20	0	193	2093	2616	2415	2383	2621	2400	2330	16858	20	0	0	0	0	0	0	0	877	152	1029	18100
M/E	100	100	39	35	274	8759	7721	6953	6598	6068	5556	4877	46532	0	0	0	0	0	0	0	0	294	0	294	47100
N	187	163	80	63	493	3631	3592	3639	3789	3359	3242	3280	24532	74	545	530	502	1113	1004	861	4555	948	34	982	30636
S	89	89	60	22	260	2598	2737	2501	2434	2288	2377	2235	17170	45	0	0	0	0	0	0	0	264	0	264	17739
T	134	156	90	49	429	1536	1667	1503	1510	1615	1513	1601	10945	26	0	0	0	257	260	180	697	448	0	448	12545
Total	**2816**	**2724**	**2679**	**1668**	**9887**	**62703**	**65500**	**60339**	**58300**	**52079**	**49952**	**47784**	**396657**	**849**	**4365**	**4381**	**4301**	**10595**	**10498**	**7846**	**41986**	**9846**	**537**	**10383**	**459762**

Source: *Department of Education, MCGM*

Table 5 A-2 : School Building as on 31.08.2008

					Vacant sch bldg			Running School Bldg		
Ward	**MCGM Owned**	**Rented**	**Rent free**	**Total**	**MCGM Owned**	**Rented**	**Rent free**	**MCGM Owned**	**Rented**	**Rent free**
A	7	6	0	13	0	6	0	7	0	0
B	11	11	0	22	5	11	0	6	0	0
C	10	17	0	27	3	16	0	7	1	0
D	13	21	0	34	4	18	0	9	3	0
E	19	33	0	52	0	17	0	19	16	0
F/N	21	5	0	26	1	5	0	20	0	0
F/S	18	20	0	38	1	18	0	17	2	0
G/S	20	10	0	30	0	0	0	20	10	0
G/N	21	11	1	33	3	7	0	18	4	1
H/W	13	11	2	26	0	6	0	13	5	2
H/E	15	6	0	21	1	0	0	14	6	0
K/E - 1	11	4	1	16	0	2	0	11	2	1
K/E - 2	9	2	1	12	0	1	0	9	1	1
K/W	16	8	2	26	1	3	1	15	5	1
P/S	9	1	0	10	0	1	0	9	0	0
P/N - 1	10	1	0	11	0	0	0	10	1	0
P/N - 2	16	2	0	18	0	0	0	16	2	0
R/S	16	0	0	16	2	0	0	14	0	0
R/C	14	1	5	20	0	0	0	14	1	5
R/N	8	1	2	11	0	0	0	8	1	2
L	37	6	6	49	0	5	1	42	3	6
M/W	13	2	0	15	0	0	0	13	2	0
M/E	24	1	0	25	0	0	0	24	1	0
N	31	4	0	35	1	3	0	30	1	0
S	19	3	0	22	0	1	0	19	3	0
T	22	0	1	23	1	0	0	21	0	1
Total	**423**	**187**	**21**	**631**	**23**	**120**	**2**	**405**	**70**	**20**

Source: *Department of Education, MCGM*

Table 5A-3 : Articles & Milk in MCGM Schools Date :10-9-2008

Ward	Note book			Uniform			Kits			Shoes /Socks			Milk		
	Required	Received	Balance	Required	Received	Balance	Required	Received	Balance	Required	Received	Balance	Required	Supplied	Less
A	66450	66450	0	8514	8514	0	7823	7823	0	7822	6912	910	1550000	418500	1131500
B	14760	14760	0	5862	5862	0	6028	6028	0	6028	6028	0	0	0	0
C	8662	6066	2596	1766	1766	0	879	879	0	1562	1562	0	5870	5870	0
D	40448	38558	1890	8099	8099	0	4094	4094	0	11691	11691	0	356400	96228	260172
E	131750	13750	118000	26746	6000	20746	13419	13419	0	12036	12036	0	57058	58755	-1697
F/N	360319	267303	93016	68268	58138	10130	33550	30013	3537	32243	25020	7223	2954400	280152	2674248
F/S	97708	97708	0	21202	21202	0	10771	10771	0	10468	10468	0	896400	84321	812079
G/S	197325	117325	20000	36570	36570	0	20999	20999	0	21033	21033	0	1832200	194670	1637530
G/N	206320	206320	0	39672	39672	0	21459	21459	0	10673	10673	0	1973200	532764	1440436
H/W	81280	66767	14513	16540	0	16540	10392	10395	-3	7769	7446	323	919200	91044	828156
H/E	288939	50000	238939	53240	0	53240	27245	15000	12245	27203	15000	12203	1163916	1145313	18603
K/E	210573	30210	180363	43484	40484	3000	38034	21532	16502	24190	20242	3948	1938527	189739	1748788
K/W	232421	232421	0	43866	43866	0	21812	21812	0	21812	21812	0	1856800	232421	1624379
P/S	187906	187906	0	34920	120	34800	17460	0	17460	17460	17460	0	1790000	107404	1682596
P/N	243053	233617	9436	73739	0	73739	34963	27395	7568	37673	36075	1598	3764600	232500	3532100
R/S	52221	10000	42221	25360	10050	15310	10147	10147	0	11807	11807	0	1002800	69606	933194
R/C	164489	136867	27622	26627	25114	1513	9081	8494	587	14379	11114	3265	1309600	99846	1209754
R/N	77092	77092	0	8801	0	8801	9515	9515	0	9345	9345	0	708800	50220	658580
L	36979	36922	57	36979	35680	1299	36979	32925	4054	36979	32044	4935	15107	15000	107
M/W	90000	0	90000	16558	16558	0	16558	16558	0	16558	16558	0	1476400	90000	1386400
M/E	340605	0	340605	93284	47642	45642	47647	47647	0	43528	43528	0	3381400	253618	3127782
N	290309	276861	13448	28644	14822	13822	87405	88398	-993	26654	26654	0	804540	249561	554979
S	148715	0	148715	30135	0	30135	15480	0	15480	16480	14969	1511	1301000	82782	1218218
T	116975	0	116975	22942	827	22115	11470	1174	10296	11378	1326	10052	72560	69850	2710
TOTAL	**3685299**	**2226903**	**1458396**	**771818**	**420986**	**350832**	**513210**	**426477**	**86733**	**436771**	**390803**	**45968**	**31130778**	**4650164**	**26480614**

Source: *Department of Education, MCGM*

Table 5A - 4: Mediumwise No. of Schools, Pupils & Teachers in MCGM Schools

Language	Schools	Pupils	Teachers
Marathi	434	132725	5358
Hindi	234	111149	2687
English	46	21138	253
MPS	58	9887	107
Gujarathi	96	11449	540
Urdu	203	96849	2295
Telagu	44	5176	198
Tamil	47	12999	403
Kannada	46	5172	147
Mentally Challenged	9	849	59
Secondary	49	43078	954
New Secondary	127	10383	133
Total	**1393**	**460854**	**13134**
PRIVATE PRIMARY			
AIDED	450	218407	4300
UNAIDED	631	300504	6745

Source: *Department of Education, MCGM (2008)*

Table 5A-5: Status of Schools in Mumbai

Status	No. of Schools	Teachers Sanctioned	Boys	Girls	Total
Aided	450	4163	114101	104306	218407
Municipal	1162	12870	193618	200981	394599
Unaided	373	3631	90396	77067	167463
Per Unaided	258	2767	76644	56397	133041
CBSE	5	115	2014	1986	4000
Railway	2	12	321	271	592
Unrecognised	4	37	230	241	471
Total	**2254**	**23595**	**477324**	**441249**	**918573**

Source: *Department of Education, MCGM (2008)*

Table 5A - 6 : Schools, Teachers & Pupil under Sarva Shiksha Abhiyan

Ward	No. of Schools	Teachers Sanctioned	Boys	Girls	Total
A	39	553	10161	7819	17980
B	32	209	4225	4080	8305
C	24	120	2260	2258	4518
D	76	534	9110	7771	16881
E	87	710	12138	12325	24463
F/S	69	624	12757	11441	24198
F/N	122	1530	32585	29820	62405
G/S	74	637	9903	9295	19198
G/N	93	1030	21350	20210	41560
H/W	81	754	14643	14063	28706
H/E	86	980	20563	20068	40631
K/E	141	1376	30122	27918	58040
K/W	127	1500	29175	27457	56632
P/S	80	863	18209	16244	34453
P/N	158	1708	35540	33103	68643
R/S	94	1023	23803	20909	44712
R/C	98	977	20054	18886	38940
R/N	63	650	15074	12590	27664
L	164	1761	36655	33292	69947
M/W	90	1018	20323	18040	38363
M/E	106	1376	30985	30647	61632
N	122	1459	26113	24942	51055
S	144	1407	28170	25427	53597
T	84	796	13406	12644	26050
Total	**2254**	**23595**	**477324**	**441249**	**918573**

Source: *Department of Education, MCGM (2008)*

Table 6A-1: Ward-wise Birth Rate in Greater Mumbai

Ward	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
A	21.08	21.96	19.66	19.82	18.46	18.01	17.50	16.60	17.40	16.42
B	18.93	18.91	19.08	27.36	15.74	16.11	18.90	15.00	14.90	13.62
C	11.13	9.45	10.95	17.01	10.31	9.15	11.90	8.50	8.10	7.68
D	13.57	12.93	12.50	14.66	12.97	12.23	12.00	11.50	11.20	10.16
E	19.40	18.33	18.68	21.44	16.16	16.20	15.70	15.90	15.10	14.50
F/S	22.03	20.28	20.29	21.30	22.75	21.82	16.80	15.50	17.30	14.09
F/N	20.55	19.82	19.78	20.45	14.08	13.40	16.10	15.40	14.20	16.23
G/S	15.65	14.76	13.71	16.34	20.09	19.45	14.20	13.20	15.50	12.02
G/N	20.51	20.20	20.68	18.60	12.07	11.55	14.50	14.30	13.90	12.92
H/E	20.57	19.65	19.70	19.57	16.88	15.76	15.40	15.30	11.40	13.65
H/W	17.34	15.87	15.56	15.45	14.73	13.96	13.40	13.60	12.40	12.20
K/E	17.25	16.00	15.21	15.47	15.18	14.36	14.40	13.90	13.30	13.02
K/W	16.79	16.17	15.38	15.62	14.62	14.26	14.50	14.40	13.90	13.69
P/S	32.77	20.99	19.46	17.72	27.71	26.91	15.40	15.20	14.60	13.99
P/N	11.30	16.44	16.70	17.73	8.67	8.06	14.80	15.30	14.70	15.04
R/S	25.89	24.77	25.89	17.50	12.07	11.43	14.70	15.00	17.90	15.00
R/C	-	-	-	15.78	11.56	11.14	17.10	12.40	11.00	12.45
R/N	24.42	21.03	19.50	17.31	24.98	23.86	15.90	15.40	17.00	15.04
L	20.14	19.13	18.09	17.91	17.13	16.63	16.20	16.10	16.80	15.80
M/E	20.85	19.62	18.51	21.72	17.50	17.40	16.40	17.40	16.50	14.97
M/W	19.16	17.40	17.53	14.01	14.85	14.12	13.60	13.40	12.90	12.53
N	20.52	18.60	19.15	19.05	16.23	15.40	15.00	14.70	14.20	13.78
S	15.62	13.90	14.66	14.96	13.48	13.28	12.70	12.90	12.60	12.30
T	21.30	19.99	19.85	19.73	19.22	17.67	16.80	18.90	15.70	14.64
GM*	19.24	18.02	17.72	17.68	15.73	15.11	15.10	14.70	14.30	13.76

Source: *Public Health Department, MCGM (2006)*
Note: ** GM – Greater Mumbai*

Table 6A-2: Ward-wise Death Rate in Greater Mumbai

Ward	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
A	11.59	12.53	10.28	11.72	11.96	11.21	11.40	11.70	9.50	9.83
B	9.45	11.05	10.00	13.93	9.02	8.04	7.90	5.60	7.60	6.95
C	8.65	9.22	7.70	13.77	8.09	7.58	7.90	7.30	6.50	6.63
D	9.17	10.14	9.51	10.59	9.41	9.00	9.70	9.60	8.50	10.83
E	11.78	12.83	18.96	15.72	11.64	11.23	11.60	13.20	8.90	11.77
F/S	12.50	12.69	11.56	15.75	14.43	13.86	13.70	12.70	11.10	14.85
F/N	10.30	10.47	9.53	11.05	9.16	8.85	9.70	9.80	8.90	9.44
G/S	6.17	6.70	6.13	7.29	8.15	7.89	7.30	7.00	6.40	6.28
G/N	9.30	10.20	9.21	9.17	8.58	8.35	7.80	7.40	7.20	7.41
H/E	6.12	7.05	6.31	6.55	6.36	6.12	5.80	4.70	8.60	5.34
H/W	8.84	8.92	8.47	9.28	10.23	9.70	9.30	8.70	8.60	8.66
K/E	5.76	5.57	5.59	5.95	6.35	6.30	6.00	6.00	6.00	5.73
K/W	6.14	6.76	5.88	6.41	6.65	6.48	6.60	5.70	6.40	6.31
P/S	5.57	7.12	4.88	-	6.38	6.19	5.90	5.80	5.70	5.68
P/N	5.69	5.79	5.65	7.05	5.33	5.06	5.50	5.50	5.60	5.51
R/S	6.04	6.70	6.63	5.46	5.46	5.31	6.00	5.80	6.00	5.48
R/C	-	-	-	7.04	5.46	5.33	6.70	6.20	5.10	5.85
R/N	8.83	8.34	7.33	5.72	5.81	5.66	6.10	6.40	6.40	6.90
L	5.86	6.14	5.24	5.51	4.62	4.49	5.10	4.00	5.70	5.39
M/E	5.62	5.08	5.33	7.09	5.57	5.63	5.70	5.90	5.70	5.81
M/W	6.75	6.83	6.73	5.70	6.39	6.64	7.00	5.50	6.90	6.50
N	6.49	6.85	6.07	8.92	6.31	6.17	6.10	6.00	5.80	5.82
S	4.92	5.36	4.70	5.32	4.55	4.80	5.10	5.90	5.30	4.93
T	6.40	7.27	6.76	7.05	7.45	7.37	7.30	7.20	7.10	6.95
GM*	7.30	7.69	7.24	7.58	7.10	6.91	7.10	6.80	6.80	6.89

Source: *Public Health Department, MCGM (2006)*
Note: ** GM – Greater Mumbai*

Table 6A-3: Ward-wise Infant Mortality Rate in Greater Mumbai

Ward	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
A	40.34	38.53	39.37	41.79	41.88	41.46	39.95	40.81	63.56	33.88
B	35.74	34.95	35.93	36.92	36.60	32.37	25.05	43.58	48.36	31.56
C	44.87	52.20	33.14	37.93	32.97	32.65	22.98	49.59	54.80	35.88
D	32.10	32.57	31.12	52.53	29.19	29.66	27.63	29.13	26.59	29.42
E	44.99	48.05	51.44	54.58	44.53	43.73	42.37	45.69	37.98	56.27
F/S	43.50	45.71	46.53	50.79	41.50	40.95	51.29	56.72	69.41	15.59
F/N	57.47	58.04	57.55	62.33	49.15	50.24	39.94	53.19	31.11	50.27
G/S	38.07	38.34	36.88	38.16	26.62	27.22	35.14	30.06	27.72	31.80
G/N	45.08	43.93	36.83	40.09	34.03	35.33	25.88	39.12	16.25	35.70
H/E	35.35	34.96	34.89	37.52	34.06	34.28	32.67	31.28	37.98	33.29
H/W	30.48	31.52	30.59	32.90	35.00	35.08	32.60	34.66	47.59	52.30
K/E	32.19	32.55	30.70	31.98	30.42	31.02	29.73	23.91	27.40	25.99
K/W	38.15	37.01	31.61	32.89	46.96	46.47	44.38	33.52	11.46	27.89
P/S	19.36	28.47	27.90	-	20.85	20.66	33.43	32.81	44.35	16.45
P/N	70.86	45.32	38.71	38.42	100.12	103.90	55.77	32.35	31.16	28.91
R/S	35.79	37.39	34.13	32.49	31.05	31.45	25.38	30.31	25.82	28.17
R/C	-	-	-	32.74	40.65	39.68	21.40	20.87	33.94	16.35
R/N	34.91	34.89	29.31	35.27	27.50	27.59	37.48	33.61	35.47	20.10
L	43.40	42.63	40.48	43.15	31.14	30.82	28.31	42.51	32.47	54.56
M/E	57.28	58.35	58.70	63.20	59.18	57.52	57.53	41.02	60.68	66.47
M/W	40.61	42.16	39.39	41.84	40.18	40.98	40.37	39.36	42.76	57.93
N	38.44	40.08	34.98	37.55	35.91	36.38	34.52	20.53	33.33	32.83
S	35.29	37.10	37.29	33.11	26.73	25.88	22.67	36.39	26.80	18.76
T	27.77	27.52	24.55	26.11	42.08	44.59	40.87	18.64	30.01	19.53
GM*	39.86	40.08	38.01	40.48	38.51	38.59	36.17	35.02	35.12	34.57

Source: *Public Health Department, MCGM (2006)*
Note: ** GM – Greater Mumbai*

Table 6A-4: Ward-wise Maternal Mortality Rate in Greater Mumbai

Ward	2001	2002	2003	2004	2005	2006
A	-	-	-	-	0.25	0.53
B	-	-	-	-	-	0.48
C	-	-	-	-	-	-
D	-	-	-	-	0.22	0.24
E	-	-	-	-	0.14	2.01
F/S	0.11	0.34	0.43	1.39	3.40	3.84
F/N	-	0.14	0.11	0.35	0.50	1.83
G/S	0.11	0.22	0.30	0.40	0.65	0.67
G/N	-	0.15	0.11		0.35	0.37
H/E	0.10	0.21	0.22	0.75	0.70	0.46
H/W	0.20	0.42	0.43	0.21	0.44	-
K/E	0.16	0.34	0.42	0.25	0.09	0.26
K/W	-	-	-	-	0.19	0.29
P/S	0.08	0.25	0.43	-	0.44	0.30
P/N	-	0.15	0.08	0.39	0.40	0.46
R/S	0.28	0.29	0.26	0.21	0.10	0.52
R/C	0.17	0.17	0.10	0.15	0.00	0.43
R/N	0.11	0.11	0.17	0.17	0.45	0.17
L	-	-	-	0.08	0.21	0.30
M/E	0.08	0.17	0.17	0.48	0.34	0.18
M/W	0.33	0.50	0.52	0.00	0.35	0.53
N	0.10	0.20	0.21	0.63	0.63	0.43
S	-	-	-	0.11	0.43	0.54
T	0.16	0.17	0.17	0.15	0.18	0.57
GM*	0.06	0.17	0.17	0.27	0.45	0.63

Source: *Public Health Department, MCGM (2006)*
Note: ** GM – Greater Mumbai*

Table 6A-5: Malnutrition Status Under ICDS Project Areas in Mumbai (April 2007-March 2008)

Project area	Normal		Grade-I		Grade-II		Grade-III		Grade-IV		Total Children Weighed	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
					(Figures as percentage of total children weighed as shown in the last columns)							
Andheri (U)	47.56	44.36	35.64	37.09	16.71	18.38	0.1	0.16	0.00	0.00	4716	4500
Andheri-2	52.80	50.82	32.46	33.20	14.39	15.48	0.4	0.50	0.03	0.03	3398	3229
Andheri-3	52.19	49.60	35.72	36.64	11.99	13.31	0.1	0.45	0.00	0.00	4219	3968
Bhandup (East)	54.67	50.99	32.49	34.48	12.64	14.31	0.2	0.22	0.03	0.03	3980	3648
Bhandup (West)	51.44	49.64	34.60	35.16	13.86	14.90	0.1	0.29	0.00	0.00	3983	3771
Bandra (West)	55.32	55.58	33.17	31.98	11.45	12.29	0.1	0.15	0.00	0.00	4908	4719
Borivali-1	47.72	47.98	33.46	34.61	18.82	17.40	0.0	0.00	0.00	0.00	1052	1017
Borivali-2	48.84	45.62	33.95	35.46	17.09	18.75	0.1	0.17	0.00	0.00	2492	2293
Colaba	59.01	56.16	29.13	32.72	11.86	11.30	0.0	0.00	0.00	0.00	666	593
Dharavi (U)	52.53	51.14	36.75	36.74	10.69	11.99	0.0	0.12	0.01	0.02	10210	9538
Ghatkopar (U)	52.93	50.11	34.36	35.19	12.59	14.46	0.1	0.24	0.01	0.01	7648	6985
Ghatkopar-2	47.09	43.91	35.66	36.50	17.05	19.10	0.2	0.46	0.02	0.03	6435	5932
Goregaon (East)	52.63	51.58	31.55	32.54	15.72	15.67	0.1	0.20	0.01	0.01	8003	7587
Goregaon (West)	56.14	53.80	29.83	30.89	13.70	14.88	0.3	0.43	0.00	0.00	6072	5543
Gowandi (U)	47.38	46.94	31.86	32.04	20.70	20.96	0.1	0.06	0.01	0.00	11707	11844
Jogeshwari (U)	51.22	48.11	40.96	42.74	7.74	8.83	0.1	0.30	0.00	0.02	5027	4677
Khar (West) and Santacruz (East)	54.81	53.15	30.72	31.25	13.93	14.70	0.5	0.77	0.05	0.13	7880	7428

contd.....

Table 6A-5 contd.....

Project area	Normal		Grade-I		Grade-II		Grade-III		Grade-IV		Total Children Weighed	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Khar Santacruz	52.62	51.16	29.45	30.86	16.91	16.67	0.7	0.99	0.44	0.33	686	606
Kurla (U)	54.46	53.26	34.20	34.84	11.11	11.46	0.2	0.40	0.01	0.04	7461	6797
Mahim	50.26	50.39	33.86	34.50	15.88	15.12	0.0	0.19	0.00	0.00	573	516
Mankhurd (U)	32.54	32.41	30.65	30.09	36.73	37.43	0.1	0.07	0.00	0.00	14358	13997
Mulund (East)	50.50	50.35	33.69	33.21	15.81	16.40	0.0	0.04	0.00	0.00	2594	2433
(Figures as percentage of total children weighed as shown in the last columns)												
Mulund (West)	55.68	57.12	36.78	33.82	7.57	9.08	0.0	0.00	0.00	0.00	3831	3622
Prabhadevi	57.20	56.50	30.68	31.07	12.05	12.39	0.1	0.03	0.00	0.00	6205	5796
Red light area	50.72	49.53	34.15	35.41	15.10	15.01	0.0	0.02	0.02	0.02	4284	4117
Vikhroli	51.74	47.42	34.69	36.84	13.44	15.62	0.1	0.12	0.00	0.00	5385	4899
Wadala and Shivdi	47.99	47.03	35.17	35.10	16.80	17.71	0.0	0.16	0.00	0.01	7871	7515
Worli (U)	43.72	43.11	37.59	37.70	18.64	19.14	0.0	0.05	0.00	0.00	8214	7692
Total	**49.72**	**48.17**	**33.75**	**34.18**	**16.40**	**17.42**	**0.1**	**0.21**	**0.01**	**0.02**	**153857**	**145364**

Source: *Data obtained from UNICEF, Mumbai Office, 2008*

Table 6A-6: Ward-wise Provision of Health Services in Mumbai

Ward	Total Population	% in Slums	Health Posts	Dispensary	PPC	Private GPs	MCGM	Hospitals Government	Private/ Trust	Nursing Homes
A	213626	42.41	2	7	0	18	1	4	1	16
B	140762	17.93	2	4	0	59	-	-	5	-
C	224932	0	3	5	0	75	-	-	2	2
D	388081	17.44	5	6	0	185	-	-	7	85
E	455465	56.96	6	12	1	308	4	4	21	21
F/S	710348	16.07	7	9	1	98	-	-	2	-
F/N	702470	63.97	7	7	1	378	1	-	3	43
G/S	563195	53.66	6	13	1	321	-	2	-	21
G/N	590609	61.5	8	10	1	227	1	-	46	45
H/E	694093	75.79	7	6	1	72	1	1	-	35
H/W	373987	44.71	6	8	1	70	1	1	5	65
K/E	888491	63.2	11	10	2	776	-	1	10	97
K/W	867950	45.18	9	4	0	354	1	-	3	110
P/S	520061	57.31	6	10	1	64	1	-	-	58
P/N	1025989	75.1	10	5	2	-	2	-	-	106
R/S	829127	63.7	7	6	1	287	1	1	-	-
R/C	420700	66.47	8	6	1	106	1	-	-	128
R/N	508214	56.42	4	3	1	51	-	-	1	53
L	920081	80.00	12	9	1	447	1	-	-	78
M/E	1070093	79.99	9	5	2	-	1	2	-	34
M/W	437676	43.32	7	4	1	360	1	-	-	70
N	684642	68.68	10	2	1	-	2	-	2	107
S	866000	18.34	10	8	2	388	1	-	66	-
T	437873	45.42	6	3	0	19	2	1	1	84
Total	**14544465**	**55.67**	**168**	**162**	**22**	**4663**	**23**	**13**	**115**	**1258**

Source: *Data obtained from Public Health Department and Epidemiology Cell, MCGM (2008)*
Brihanmumbai Mahanagarpalika – Public Health Department at a Glance, 2007-2008

Table 7 A-1: Ward wise Sex Ratio of Greater Mumbai

WARD	N.HH	TOT .P	TOT.M	TOT.F	Sex Ratio
A	43661	210847	121644	89203	733
B	27225	140633	81055	59578	735
C	39657	202922	127901	75021	587
D	79131	382841	205459	177382	863
E	80970	440335	250867	189468	755
F/N	112574	524393	292759	231634	791
F/S	80777	396122	216366	179756	831
G/N	120643	582007	322009	259998	807
G/S	92525	457931	260186	197745	760
H/E	119823	580835	322635	258200	800
H/W	73874	337391	178140	159251	894
K/E	175859	810002	440992	369010	837
K/W	149161	700680	379291	321389	847
L	151964	778218	442090	336128	760
M/E	133416	674850	374611	300239	801
M/E	86911	414050	226431	187619	829
N	129228	619556	333989	285567	855
P/N	171009	798775	439106	359669	819
P/S	95188	437849	244500	193349	790
R/C	117294	513077	271126	241951	892
R/N	83433	363827	199798	164029	821
R/S	128995	589887	335157	254730	760
S	148731	691227	379474	311753	822
T	73540	330195	174380	155815	894
TOTAL	**2515589**	**11978450**	**6619966**	**5358484**	**809**

Source: *Analytical Tables of Greater Mumbai Municipal Corporation, Population & Sex Ratio, Census of India, 2001, Directorate of Census Operations, Maharashtra*

Table: 7A-2 Ward Wise Child Sex Ratio of Greater Mumbai

WARD	P_06	M_06	F_06	CSR
A	23552	12331	11221	910
B	14494	7490	7004	935
C	14389	7489	6900	921
D	29191	15278	13913	911
E	45924	23953	21971	917
F/N	62890	32640	30250	927
F/S	39152	20588	18564	902
G/N	65320	33808	31512	932
G/S	44811	23212	21599	931
H/E	69655	36072	33583	930
H/W	31661	16344	15317	937
K/E	86518	44799	41719	931
K/W	75243	39099	36144	924
L	102963	53509	49454	924
M/E	102218	52662	49556	941
M/W	49627	25749	23878	927
N	72855	38087	34768	913
P/N	100715	52310	48405	925
P/S	50113	26135	23978	917
R/C	52873	27722	25151	907
R/N	42398	22415	19983	892
R/S	74862	39145	35717	912
S	79893	41696	38197	916
T	33106	17244	15862	920
TOTAL	**1364423**	**709777**	**654646**	**922**

Sources: *Analytical Tables of Greater Mumbai Municipal Corporation, Child Sex Rato, Census of India, 2001, Directorate of Census Operations, Maharashtra*

Table 7 A-3: Sex Ratio of Greater Mumbai for SC and ST

WARD	P_SC	M_SC	F_SC	SR SC	P_ST	M_ST	F_ST	SR ST
A	9073	4760	4313	906	2715	1474	1241	842
B	5325	2635	2690	1021	1121	579	542	936
C	1633	882	751	851	285	202	83	411
D	17741	8854	8887	1004	828	445	383	861
E	19594	9926	9668	974	1504	829	675	814
F/N	24183	12685	11498	906	4610	2525	2085	826
F/S	17837	9236	8601	931	2536	1328	1208	910
G/N	49959	26055	23904	917	2129	1194	935	783
G/S	38124	19778	18346	928	4938	2611	2327	891
H/E	28250	14783	13467	911	2178	1220	958	785
H/W	7621	3869	3752	970	2440	1264	1176	930
K/E	24239	12708	11531	907	5245	2759	2486	901
K/W	16807	8749	8058	921	5503	2771	2732	986
L	39096	20365	18731	920	3422	1963	1459	743
M/E	45694	24257	21437	884	4972	2692	2280	847
M/W	55390	29481	25909	879	2256	1270	986	776
N	44416	23181	21235	916	5494	2995	2499	834
P/N	23885	12640	11245	890	5331	2853	2478	869
P/S	16767	8879	7888	888	5903	3067	2836	925
R/C	17460	9037	8423	932	5393	2700	2693	997
R/N	8141	4231	3910	924	3380	1751	1629	930
R/S	19792	10674	9118	854	4796	2645	2151	813
S	35993	18810	17183	914	7324	3880	3444	888
T	18018	9346	8672	928	6817	3505	3312	945
TOTAL	**585038**	**305821**	**279217**	**913**	**91120**	**48522**	**42598**	**878**

Source: *Analytical Tables of Greater Mumbai Municipal Corporation, Sex Ratio for SC and ST, Census of India, 2001, Directorate of Census Operations, Maharashtra*

Life Expectancy and Average Age of Death*

The Human Development Reports all over the world are based on life expectancy as one of the three indicators. Although the figures of life expectancy of Mumbai City as a whole are available, the life expectancy figures ward-wise are not available. Life expectancy for birth for India was 69.25 years in 2008. With economic growth and increase in literacy, life expectancy is showing a steady upward improvement since there is a high positive correlation between these three indicators. The following table shows how the life expectancy in India has increased over the lat six years.

Table HDM 1: Life Expectancy in India, 2003 to 2008

Year	Life expectancy at birth	Rank	Percent Change	Date of Information
2003	63.62	161	–	2003 est.
2004	64.35	162	1.15%	2004 est.
2005	64.35	162	0.00%	2005 est.
2006	64.71	162	0.56%	2006 est.
2007	68.59	144	6.00%	2007 est.
2008	69.25	144	0.96%	2008 est.

It is to be noted that this life expectancy is the life expectancy at birth. It is not the life expectancy of the people who die today. In Mumbai city, the ward-wise average age at the time of death is available since this is compiled from the death certificates issued by the respective ward officers. The next table list this ward-wise average age.

Considering the fact that literacy as well as per capita income is much higher in Mumbai as compared to the India average, it can be reasonably expected that the life expectancy in Mumbai would be about 18 years higher than the average age of death in Mumbai.

The average age of the persons dying today is about 50 years. So the current average age at death needs to be compared with the life expectancy at birth figures from 50 years ago. We find that there is a high positive correlation between literacy and life expectancy. As literacy increase by 10 per cent, the life expectancy increases by about six years. Since the literacy figures of Mumbai are about 8 per cent higher than the Maharashtra average, it can be reasonably expected that life expectancy in Mumbai would be roughly six years higher than the average for Maharashtra. This would give a life expectancy of 70 years fro Mumbai in the year 2006, which more or less correlates with the average age of death ward-wise +18 years. The difference in ward-wise average of death is because of lower income, lower literacy and consequent lack of infrastructural facilities in the poorer areas.

** Public Health Department, MCGM.*

Table HDM 2: Ward-wise Average Age

Ward	2001	2002	2003	2004	2005	2006
A	48.65	54.27	48.61	50.11	50.25	51.52
B	53.64	51.95	53.34	52.35	54.22	54.86
C	57.87	59.44	59.92	60.80	60.36	60.30
D	58.33	59.72	59.49	60.33	60.81	61.04
E	47.55	47.06	48.35	48.57	48.59	48.09
F/N	46.85	46.82	46.29	47.06	46.06	46.11
F/S	46.56	47.53	47.82	47.55	47.58	47.44
G/N	50.28	51.75	52.54	52.13	52.39	52.93
G/S	51.05	51.37	55.02	52.94	54.23	54.67
H/E	48.08	48.70	49.36	60.22	49.77	50.57
H/W	55.78	57.38	57.18	57.80	58.47	57.60
K/E	52.89	53.85	53.62	54.35	54.81	55.88
K/W	52.60	52.89	54.74	54.06	54.35	55.65
L	44.57	45.33	45.98	45.64	45.57	46.43
M/E	40.07	40.51	38.08	39.31	39.16	39.43
M/W	48.85	49.21	51.03	50.65	51.65	52.10
N	49.27	49.93	50.16	51.78	51.99	52.39
P/N	48.90	49.64	49.90	50.43	51.30	51.60
P/S	48.54	50.84	50.70	51.46	51.44	52.78
R/C	54.38	55.77	57.50	58.57	58.31	51.87
R/N	47.86	49.84	50.24	50.49	49.08	50.37
R/S	48.54	49.06	50.94	49.85	51.58	52.42
S	52.48	49.67	49.49	49.59	51.51	51.72
T	53.66	54.69	55.37	56.07	56.39	58.44
Average	**50.30**	**51.31**	**51.42**	**51.76**	**52.08**	**52.63**

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Ward	Population (Slum and Non-Slum) (2001)					Sex Ratio (2001)					Literacy Rate (2001)				Work Force Participation	Work Force Participation Rate (Slum and Non-Slum) (2001)				Health Indicators (2006)				Health Care Infrastructure (Public and Private) (2008)		Anganwadi (2007)	Total Number of Schools, Teachers. Total Enrollment, Pupil-Teacher Ratio (2008)						Enrollment (Mentally Challenged) (2008)	Out of School Children between 6 & 14 age (Based on Sample Survey - 2008)			Presence of CWSN Children between 0 to 18 age (Based on Sample Survey - 2008)			Households with Specif c Assets and Utilities (%) (2001)							
	Total Population	Slum Population	Slum Population (%)	Non-slum Population	Density (P/Sq Km)	Sex Ratio	Sex Ratio (Slum)	Sex Ratio (Non-Slum)	Child Sex Ration (CSR) (Slum)	CSR (Non-Slum)	Literacy Rate (Male)#	Literacy Rate (Female)#	Literacy Rate (Slum)	Literacy Rate (Non-Slum)	Marginal Workers	Work Force Participation Rate (Slum)	Work Force Participation Rate (Non-Slum)	Mainworkers (Slum) (%)	Mainworkers (Non-Slum) (%)	Birth Rate	Death Rate	Infant Mortality Rate	Maternal Mortality Rate	Dispensa-ries (No.)	Hospitals (No.)	Anganwadi (No.)	Schools (No.)	Teachers (Sanctioned) No.	Boys (No.)	Girls (No.)	Total	Pupil-Teacher Ratio	Enrollment (Mentally Challenged) (2008)	Boys (No.)	Girls (No.)	Total	Boys (No.)	Girls (No.)	Total	Bank A/C	TV	Telephone	Car	Electricity	Tap	Kerosene	LPG
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
A	210847	60893	28.88	149954	18479	733	787	712	952	885	45.8	29.6	60.8	81.4	3852	40.6	46.9	37.2	45.7	16.42	9.83	33.88	0.53	27	Not Available	75	39	553	10161	7819	17980	33	Not Available	138	121	259	7	6	13	65.55	71.32	41.28	17.40	90.23	87.24	19.50	60.20
B	140633	18746	13.33	121887	57168	735	638	751	891	945	45.3	3.05	47.2	80.1	1514	48.5	38.6	46.3	37.7	13.62	6.95	31.56	0.48	65	Not Available	0	32	209	4225	4080	8305	40	Not Available	4	7	11	6	6	12	57.33	70.17	43.15	2.39	90.98	91.64	5.95	39.66
C	202922	Not Applicable	Not Applicable	202922	114001	587	Not Applicable*	587	Not Applicable*	921	53.7	29.6	Not Applicable*	83.3	2962	Not Applicable*	50.4	Not Applicable*	48.9	7.68	6.63	35.88	Not Available**	83	5	0	24	120	2260	2258	4518	38	22	5	6	11	5	7	12	70.39	72.03	54.40	4.00	86.79	86.43	3.93	44.54
D	382841	38077	9.95	344764	57744	863	740	878	898	913	45.7	36.6	71.0	83.6	4357	42.3	41.4	41.1	40.2	10.16	10.83	29.42	0.24	196	93	23	76	534	9110	7771	16881	32	30	9	6	15	2	0	2	82.56	85.64	65.17	25.71	98.86	98.17	5.48	67.87
E	440335	52230	11.86	388105	59424	755	631	773	912	918	44.5	30.6	64.9	76.4	7002	44.2	38.2	42.2	36.6	14.50	11.77	56.27	2.01	327	50	68	87	710	12138	12325	24463	34	Not Available	35	22	57	13	8	21	57.89	68.34	37.32	5.93	90.87	90.42	20.34	53.74
F/N	524393	304500	58.07	219893	43482	791	731	882	920	943	44.8	30.1	68.8	83.2	11492	37.2	35.5	34.4	34.3	14.09	9.44	50.27	1.83	393	55	172	122	1530	32585	29820	62405	42	30	194	181	375	44	60	104	52.95	66.38	30.82	8.11	95.01	87.90	13.93	34.40
F/S	396122	141653	35.76	254469		831	788	855	922	887	46.2	33.9	74.9	83.0	7362	35.2	35.6	32.9	34.0	16.23	14.85	15.59	3.84	115	9	76	69	624	12757	11441	24198	39	30	69	58	127	61	41	102	70.67	76.97	32.85	3.94	93.59	94.56	25.72	46.97
G/N	582007	324886	55.82	257121	58260	807	735	908	928	939	44.1	31.1	69.6	82.4	13894	38.4	36.4	35.5	34.7	12.92	7.41	35.70	0.37	246	93	270	93	1030	21350	20210	41560	40	20	256	334	590	155	128	284	59.10	72.47	31.81	6.40	95.69	96.49	11.90	36.13
G/S	457931	151506	33.08	306425		760	732	774	940	924	48.2	31.0	73.1	82.1	8594	39.7	38.4	37.3	36.8	12.02	6.28	31.80	0.67	341	25	165	74	637	9903	9295	19198	30	43	70	65	135	65	38	103	56.85	71.45	28.83	6.40	93.13	93.61	21.85	39.01
H/E	580835	457622	78.79	123213	43621	800	777	893	928	947	45.0	31.0	73.6	84.9	12248	39.6	37.8	37.0	36.7	12.20	8.66	52.30	0.46**** (Combined for H/E and H/W)	86	38	393	86	980	20563	20068	40631	41	82	258	243	501	144	114	258	52.13	68.54	27.88	4.19	94.53	97.27	37.40	44.37
H/W	337391	138541	41.06	198850		894	797	968	941	933	44.5	36.5	73.3	86.4	5555	37.1	36.6	34.7	35.5	13.65	5.34	33.29		85	73	114	81	754	14643	14063	28706	38	66	108	95	203	37	24	61	74.39	81.14	58.27	24.33	99.42	99.52	5.43	61.91
K/E	810002	472226	58.30	337776	31831	837	817	866	933	928	45.7	34.0	76.9	83.6	13853	36.7	37.8	34.8	36.5	13.02	5.73	25.99	0.26	799	113	274	141	1376	30122	27918	58040	42	28	122	146	268	164	110	274	72.11	78.29	40.16	8.21	97.39	97.90	26.36	58.37
K/W	700680	316065	45.11	384615		847	761	925	934	913	44.1	33.7	69.8	84.4	11247	39.2	38.0	37.1	36.9	13.69	6.31	27.89	0.29	367	119	214	127	1500	29175	27457	56632	38	24	188	217	405	110	119	229	71.17	76.31	52.97	18.89	96.34	96.96	16.56	65.00
L	778218	658972	84.68	119246	57817	760	741	876	923	933	44.7	28.8	72.2	80.59	17806	35.8	34.3	33.4	32.7	15.80	5.39	54.56	0.3	469	80	459	164	1761	36655	33292	69947	40	Not Available	307	267	574	202	145	347	55.34	65.19	23.68	2.77	93.07	92.54	10.52	24.81
M/E	674850	523324	77.55	151526	19827	801	785	859	950	900	40.1	26.0	63.4	75.5	17729	35.9	35.2	32.9	32.9	12.53	6.50	57.93	0.53	16	39	492	106	1376	30985	30647	61632	45	Not Available	587	678	1490	200	175	387	32.82	51.85	14.99	3.18	87.35	84.88	45.61	20.43
M/W	414050	283557	68.48	130493		829	790	919	929	921	44.2	30.8	71.5	82.8	12580	33.5	36.0	30.5	34.1	14.97	5.81	66.47	0.18	372	74	275	90	1018	20323	18040	38363	38	20	71	80	151	48	37	85	58.60	72.06	32.36	6.73	96.71	96.07	37.24	45.64
N	619556	435009	70.21	184547	11175	855	826	928	917	897	44.5	33.0	74.0	85.8	13278	34.0	33.9	31.3	32.9	13.78	5.82	32.83	0.43	13	114	257	122	1459	26113	24942	51055	35	74	46	79	125	169	131	300	60.35	74.75	31.74	5.82	96.89	97.34	36.50	49.72
P/N	798775	508435	63.65	290340	19241	819	775	901	930	912	44.3	31.1	72.2	80.8	19415	36.8	36.4	33.9	34.7	15.04	5.51	28.91	0.46	17	110	258	158	1708	35540	33103	68643	40	133	123	122	245	72	55	127	50.99	66.48	31.22	4.89	92.96	93.27	13.76	39.95
P/S	437849	210591	48.10	227258		791	707	877	922	915	45.7	31.4	71.5	82.4	10472	40.3	36.6	37.4	34.7	13.99	5.68	16.45	0.3	81	60	222	80	863	18209	16244	34453	40	Not Available	71	80	151	44	34	78	54.64	67.73	37.91	6.98	93.07	93.30	14.51	45.22
R/C	513077	173160	33.75	339917	18912	892	800	943	889	919	44.7	37.0	74.5	85.5	6953	38.4	36.2	36.3	35.2	12.45	5.85	16.35	0.43	121	131	46	98	977	20054	18886	38940	40	Not Available	114	153	267	40	39	79	79.27	81.21	54.15	7.31	94.63	94.72	15.24	75.82
R/N	363827	169662	46.63	194165		821	745	893	890	893	45.4	33.1	72.3	84.0	4511	38.2	36.3	36.7	35.3	15.04	6.90	20.10	0.17	59	54	118	63	650	15074	12590	27664	43	89	38	49	87	58	44	102	61.31	71.58	40.68	5.16	89.92	93.25	12.45	53.12
R/S	589887	326235	55.30	163652		760	687	860	905	924	46.1	29.8	71.8	81.0	12028	39.6	36.7	37.3	35.0	15.00	5.48	28.17	0.52	301	6	290	94	1023	23803	20909	44712	44	87	59	75	134	65	48	113	57.85	66.12	32.36	5.47	91.63	90.93	37.48	48.04
S	691227	593300	85.83	97927	Not Available*****	822	811	887	915	922	45.8	32.7	77.6	84.0	17430	34.5	35.7	32.0	33.6	12.30	4.93	18.76	0.54	408	69	436	144	1407	28170	25427	53597	38	45	211	267	478	202	157	359	70.04	76.22	27.65	3.58	98.12	98.05	27.81	47.10
T	330195	116250	35.2	213945	9477	894	830	930	926	915	44.8	36.3	74.9	84.5	6365	37.8	35.9	35.1	34.3	14.64	6.95	19.53	0.57	28	89	150	84	796	13406	12644	26050	33	26	27	24	51	62	30	92	71.67	79.82	51.62	9.86	96.82	97.73	9.34	61.06
Total	11978450	6475440	54.06	5503010		800	770	859							242499								0.63	5015	1499	4847	2254	23595	477324	441249	918573		849	3110	3375	6710	1975	1557	3544									

Colour Code:
Highest values or more adverse values – to be interpreted in context of respective indicator
Lowest values or favourable values – to be interpreted in context of respective indicator
* Not Applicable – Ward C doesn't have slums and so the corresponding indicators related to slums are not applicable in case of Ward C
** Not Available – The f gures are not available
*** Density is combined for few Wards as individual Density for these Wards was not available
**** MMR combined for Ward H/E and H/W as individual MMR for these Wards are not available
# Literacy Rate (Male or Female) = [Literate (Male or Female) (Ward)/Total Population (Ward)] × 100

Sources:
Census 2001
Ward wise area f gures are taken from Bombay District Gazetteer, page no. 623
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