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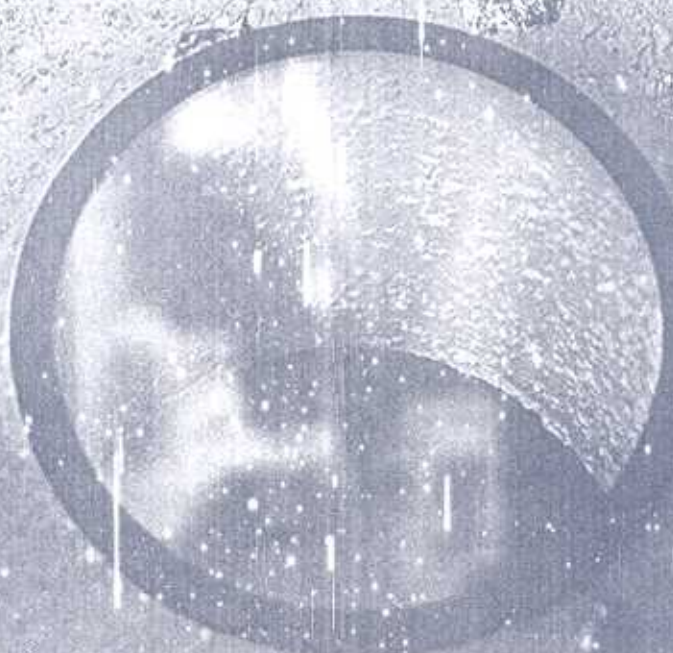
SUSTAINABILITY
in progress



Jasubhai MEDIA

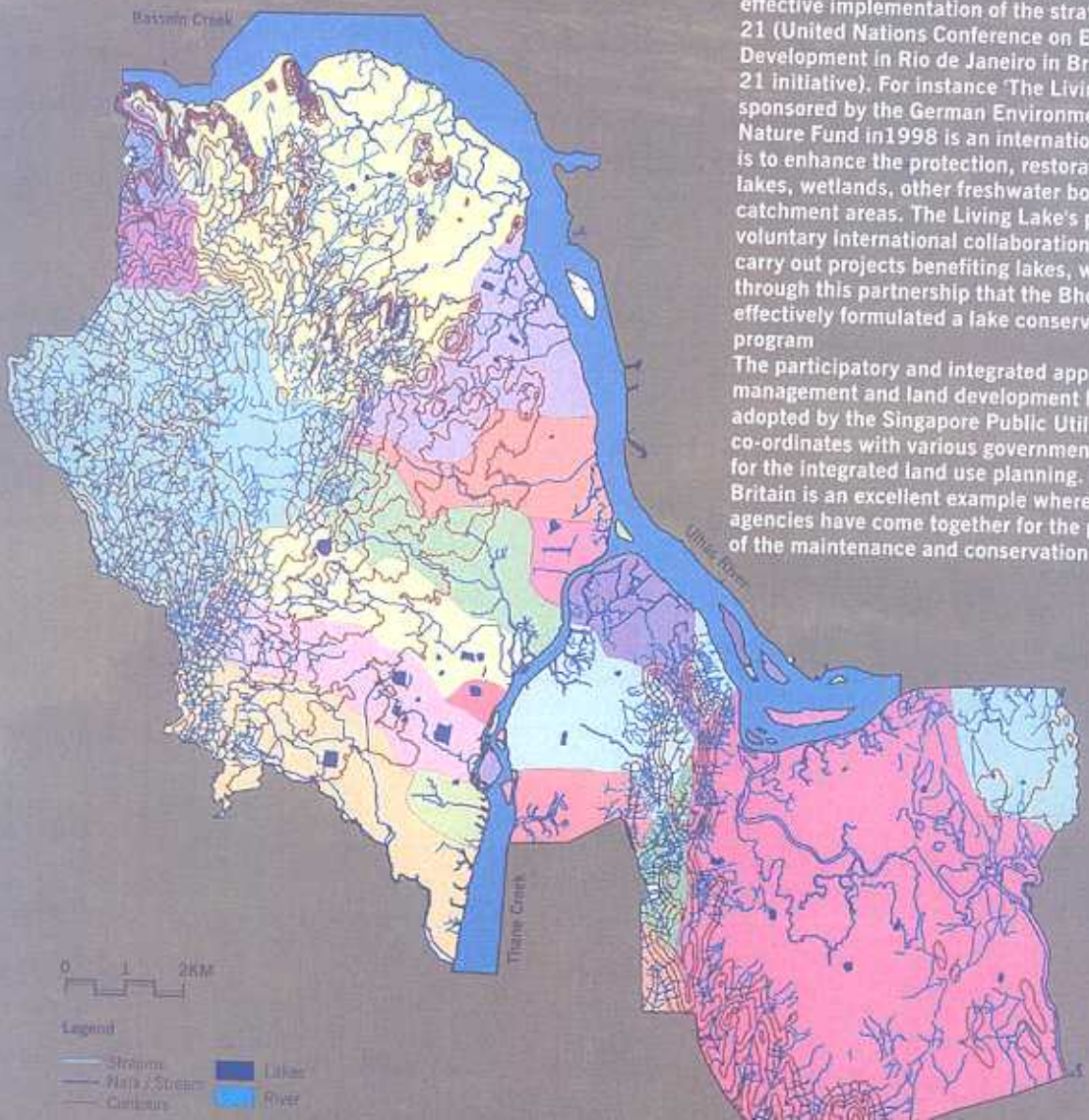
COLLABORATING WITH LAKES!

Text & Photographs : Pallavi Latkar

Planning has to integrate ecological considera for sustaining any human settlement in the fu We review how urban growth critically endange own survival, through a survey of the conditi lakes in the Mumbai Metropolitan Region.

Due to the advances made towards environmental conservation and economic development in the recent decades, the wisdom and value of aiming for development which is sustainable ecologically, socially, and economically has been accepted largely around the world. The need to manage freshwater resources in an integrated manner in order to facilitate their sustainable use has been addressed to varying degrees in previous international dialogues, examples including the Dublin Principles, Agenda 21,The Swedish Research Council for Sustainable Development, the World Water Vision etc. Various organisations all over the world have come together for the effective implementation of the strategies of the UN's Agenda 21 (United Nations Conference on Environment and Development in Rio de Janeiro in Brazil in 1992 and the Agenda 21 initiative). For instance 'The Living Lake Partnership' initially sponsored by the German Environmental Fund and the Global Nature Fund in1998 is an international network whose mission is to enhance the protection, restoration and rehabilitation of lakes, wetlands, other freshwater bodies of the world and their catchment areas. The Living Lake's partnership promotes voluntary international collaboration among organisations that carry out projects benefiting lakes, wildlife, and people. It is through this partnership that the Bhoj wetlands in Bhopal have effectively formulated a lake conservation and management program

The participatory and integrated approaches to water management and land development have been effectively adopted by the Singapore Public Utilities Board (PUB) which co-ordinates with various government ministries and agencies for the integrated land use planning. The Lakes District in Great Britain is an excellent example where various environmental agencies have come together for the phase wise implementation of the maintenance and conservation of the region. In



3. Sat image-mumbai city and the major lakes

conservation of all the lakes, most of which are in very poor condition due to encroachment, and pollution. HUDA has prepared an inventory for 170 lakes and is trying to treat the lakes not in isolation but as a part of the drainage basin of the city.

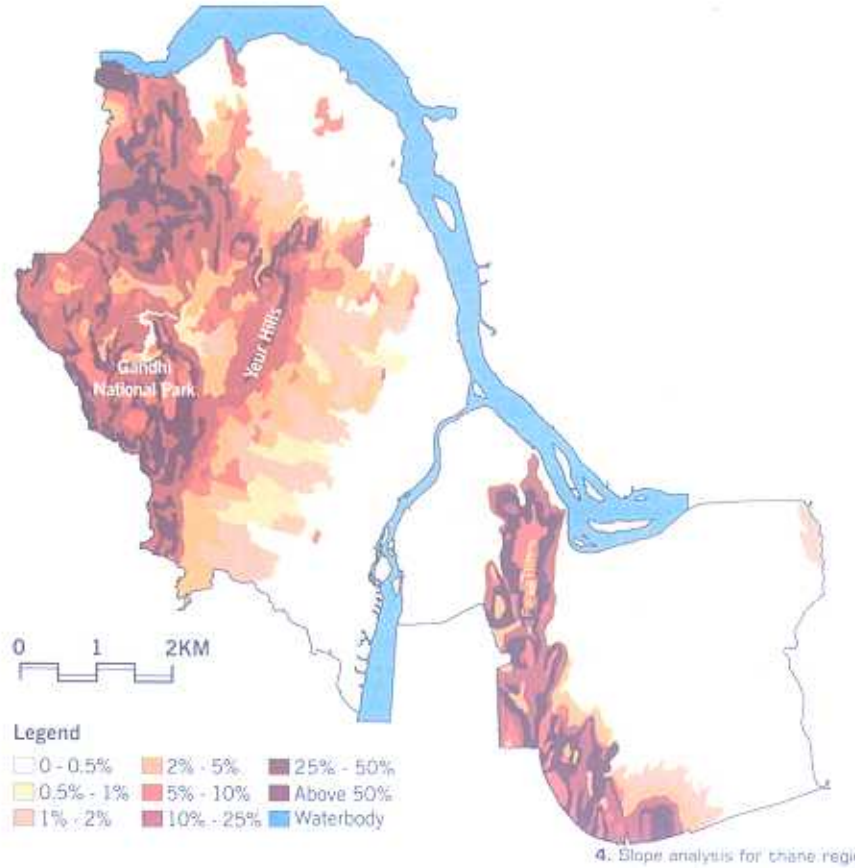
Though the benefits of ecological planning and collaborations with local authorities and NGOs for environmental conservation have been accepted by all, it still remains unexplored to its fullest in the city of Mumbai. Today the rapid and haphazard trend of urbanisation in Mumbai and its suburbs has extended relentlessly beyond its administrative boundaries. This explosive growth of urban areas has brought about fundamental changes, not only to the physical landscape, but also to people's perceptions of land and environment. Consequently, unsustainable pressures are placed not only on the environmentally sensitive landscapes but also to the basic natural processes that have contributed to the physical form of the city. The recent downpour and consequent flooding on 26th July 2005 has brought many environmental issues to the forefront. Not only is the city's infrastructure under question but its governance has also come under the scanner. The catastrophic damage to the life and property during the deluge in the city are clear indicators of how the planners and the official guardians of the city have failed miserably in controlling the development of the city.

The major green belt of the city consisting of the Sanjay Gandhi National Park, Aarey Milk Colony, Film City and the three lakes Tulsi, Vihar and Powai the region where the main sources of the four major rivers Mithi, Ohiwara, Poisar and the Dahisar river are located, lies sandwiched in between the two traffic corridors. This area is under severe threat today with pressures of rapid haphazard development, high and growing population density and relaxation of the building restrictions of no-development zones. Over the years, several concerned citizens have formed varied interest groups to protect the Powai Lake and/or its environment. The work of these groups clearly indicates there is will amongst the local citizens to protect the environment. But inevitably limited.

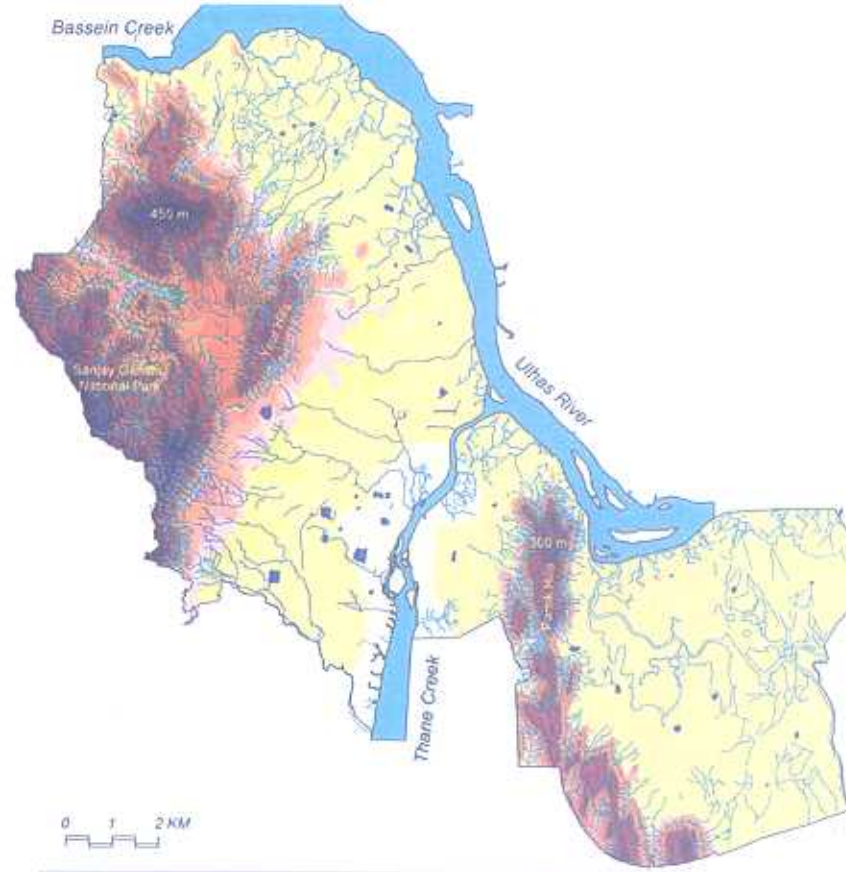
THE THANE REGION

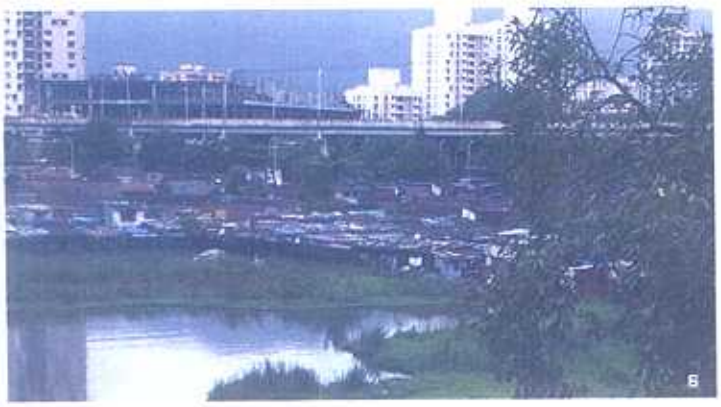
Thane historically known as the city of lakes has several lakes in existence earlier than 1881 and each one of them has a significant cultural and social significance associated with it. The total landscape of the region is unique because of its close proximity to the creek, river and the high altitude ranges with many natural and manmade water bodies. Surface depressions were used as a source of water conservation by the ancient civilisations, in the absence of nearby river course. These lakes also provided an intermediate storage in minimising the surface runoff and floods. Malgujari tanks, Talavs and Lakes were constructed and maintained by the kings and jahagirdhars in Maharashtra. However, over a period of time due to the demands of urbanisation, and centralised piped water supply system, development has slowly crept up to the banks of these lakes thereby converting the once sprawling water bodies into mere water tanks which are prone to degradation through development pressure, eutrophication and solid waste disposal. The strategic location of Thane region and the availability of the major infrastructural facilities to the Thane region have made it one of the most industrially advanced districts of the state of Maharashtra. Though there has been immense economic growth, little efforts were made to conserve the rich and natural resources of the region. On the contrary all the urban expansions and rampant construction activity in the region during the past two decades have had a negative impact on water systems as the site developments have ignored the local environmental and hydrological considerations.

Land use studies with respect to the built form, density, open space structures and activity patterns clearly indicate an incongruous pattern completely oblivious to the environmental aspects of the catchment area of the lakes. For instance a closer look at the major traffic and transportation routes within the city show how they have virtually cut across the natural drainage pattern of the region and in the process completely hampered the natural supply and the overflow systems of most of the lakes. The open space structure plan of the city also shows no connecting corridors for the natural ecosystems nor does it have any significant buffers along the major streams or in the lake vicinity. The major streams of the region are today dead concrete nallas drained haphazardly through the developments. The storm water drainage system has replaced the vibrant biologically active surface drainage ways which have become collectors and accumulators of a number of deleterious or polluting materials including oils and greases, toxic metals, and sediment, that are quickly transported through the system and discharged to the receiving water way without any detention and retention basins. The new developments towards the north of the city core depends heavily on bore wells and ground water for domestic, industrial and commercial use, as well as for all new construction activities. The ground water table in this area is comparatively high



4. Slope analysis for thane region





6. Present condition of one of the larger lakes i n thane (Siddheshwar Talav)
7. Waterbody next to the thane railway station (Hariyali Talav)

water holding capacity of the lakes and surrounding soil as well as indiscriminate ground water extraction will result in the decrease of the water table for the region.

There has been an attempt in recent times by the Thane Municipal Corporation to revive the dying lakes through bio-remediation techniques. These techniques have involved exhaustive lake specific studies, which in the absence of a comprehensive master plan, have not been as successful. In the above context, an elaborate study of the lake region was undertaken by us to prepare an 'Ecologically Integrated Lake Management Plan' which would take into consideration the natural and human ecology of the surrounding areas, explore and establish the linkages of the lakes in the larger context with the surrounding areas in an attempt to integrate the environmental aspects in the spatial planning process and development of the lakefronts.

Recently, Thane Municipal Corporation also won the CRISIL Award for the Excellence in Municipal Initiatives for 2004-2005 for its pioneering initiative in Ecological Integration of Lake Conservation and Management Programme. This programme has been a collaborative effort of all sections of the society, including elected representatives, technological service providers, local educational institutions, N.G.O.s and citizens for the redevelopment of Lakes. T.M.C. has also partnered with Central Government through the Ministry of Environment and Forest (MoEF) and State Government through MMRDA.

A BASIS FOR AN ALTERNATIVE SPATIAL PLANNING PROCESS

"Attitudes and perceptions of the environment expressed in town planning since Renaissance have, with some exceptions, been more concerned with Utopian ideals than with natural process as determinants of urban form. The design doctrines that have provided the inspiration for the built environment, since the Bauhaus movement of the 1920s, can no longer be seen as a valid basis for form. The application of the 'Design with Nature' philosophy has become to a growing body of practice, an accepted basis for land planning and management of natural resources." (Micheal Hough in City form and Natural process-1989 Routledge London and New York) In addition to this, the recent adoption of an international style of township design for residential developments all over has little to do with the inherent characteristic of the place. It is established and maintained in isolation, with little regard to the natural processes of the region, a predetermined design is simply imposed on its site. For instance, certain lands in a region that have been determined to be the primary ground water recharge areas for a stream or an underground aquifer as per the regional and zonal master plans should be specifically delineated on the plot, demarcated for the township design along with a prohibition on

mandatory environment impact assessment report for each large scale projects would prove to be a futile mathematical exercise. Such site-by-site scientific investigations do not effectively reveal the cumulative impacts of this disaggregated type of land development and hence the post development conditions persistently differ from the expert predictions.
There must be a greater reliance on the preservation of complete ecosystems and less on the attempts to mitigate the damage we have done to them. The traditional storm water drainage systems the conventional method of solving the problem of keeping the city's paved surfaces free of water, were never questioned before. Sewerage disposal systems are seen as engineering rather than a biological solution to the ultimate larger problem of eutrophication of major water bodies.

CONCLUSION

An environmental view of the city is an essential component of urban planning that has long been ignored. Diversity is ecologically and socially necessary to the health and quality of urban life. Most complicated and pressing environmental problems that now confront us are in reality land use and planning problems. The environmental studies of both the cities clearly demonstrate the fact that the disruption of the ecological equilibrium is due to the planning practice of zoning regulations which is not further deliberated upon through the provision of Comprehensive land use planning at zonal level. The focus of ecology can be global and generalised or local and very specific, but in either case the common unit of study is called an ecosystem. Whether large or small scale ecosystems all have common characteristics that are of critical importance to local planners. There is an urgent need for an alternative basis for land use planning and urban form that is in tune with the natural processes of the region in order to ensure sustainable development.An environmental view of the city is an essential component of urban planning that has long been ignored. Diversity is ecologically and socially necessary health and quality of urban life. Most complicated and pressing environmental problems that now confront us are in reality land use and planning problems. The environmental studies of both these cities clearly demonstrate the fact that the disruption of the ecological equilibrium is due to the planning practice of zoning regulations which is not further deliberated upon through the provision of Comprehensive land use planning at zonal level. The focus of ecology can be global and generalised or local and very specific, but in either case the common unit of study is called an ecosystem. Whether large scale or small, ecosystems all have common characteristics that are of critical importance to local planners. There is an urgent need for an alternative basis for land use planning and urban form that is in tur with the natural processes of the region in order to ensure sustainable development