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SUSTAINABLE URBAN TRANSPORT STRATEGIES: A CASE STUDY OF MUMBAI REGION

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Abstract : The uncontrolled growth in urbanization and motorization generally contributes to an urban land use and transportation system that is socially, economically, and environmentally unsustainable. This paper uses Mumbai as a case study, which is the largest urban and economic centre of India, passing through an uncontrolled phase of rapid urbanization and motorization. The paper first evaluates the existing transportation and infrastructure system, national transportation policies, and urban transportation projects to determine if the current paradigm is moving toward or away from sustainable transportation. Furthermore, the principles for sustainable urban transportation are developed to see what significance national transportation policies have given to urban transportation from a sustainable transportation point of view. Finally some strategies are suggested, adoption of which may lead to a sustainable urban development and transportation system in Mumbai.

Key words:
•sustainable development;
•urbanization;
•motorization;
•integrated land use and urban transportation system

LITERATURE REVIEW:

Mr. R. B. Singh published his paper on 'Environmental and Infrastructural Sustainability: Major Challenges facing Indian Metropolitan Cities' (2006) states that commuting time in our four mega cities (Delhi, Calcutta, Chennai and Mumbai) has gone up by one third on an average during last 10 years, apart from larger travel time and loss of productivity, discomfort, higher emission levels and degradation of environment, it has also resulted in expensive drain on energy. Road space is highly inadequate at 6 per cent for Calcutta and 10 oer cent in Mumbai creating more and more congestion and crawling traffic movement.
A paper published in 2006 on 'Urban Traffic and Transportation Management' by Mr. P. R. K. Murthy and Dr. Shankar Viswanath states that in Mumbai, the number of vehicles has grown in the last four decades but the expansion f the road network has failed t keep pace with demand owing to city's geographical constrains. Unless, substantial investments are made to improve and develop mass transit systems, it will be very difficult to supply adequate road transport infrastructure to cater to the needs of private vehicle owners.

In 2007 V. S. Phadake published his paper on 'Urbanisation and Related Issues in the Mumbai Metropolitan Region'. In this paper the author states that the newly added urban population is confined to the same old transport corridors, causing problems both for the existing commuters and the newly added ones. There are attempts to accommodate some of the growing population into the city itself by promoting high rise buildings, but such attempts have their own risks as they would strain the existing infrastructure further.

INTRODUCTION:

Growth of urban transport along a sustainable path in cities is the foremost need of the hour; local pollution is a health hazard and Green House Gas (GHG) emissions are a global issue. Thus, the introduction of green transport is the current hot topic. The present urban transport scene in India, in general, is quite unsustainable; the use of cars and two-wheelers is rising, public transport (PT) is inadequate, while walking and cycling are becoming less popular.

India is a very large country with over a billion people and nearly 50 of its cities contain populations above 1 million each. Most cities, it appears, are not aware about the role and importance of urban transport. While large cities have initiated steps, many more cities (those comprising about 1 million population each) have not realised the unsustainability of present trends in urban transport growth. India, thus, needs a wide range of strategies to achieve sustainable urban transport.

Data Source:

Secondary data is collected through books, journals, articles, reports and internet.

Population Trend in Mumbai:

Mumbai, also called Bombay, is the capital city of the state of Maharashtra in India, and it's the most populous city in India. As the 4th most populous city in the world and one of the populous urban regions in the world, Mumbai has a metro population of about 20.5 million in 2010.

Mumbai's 2013 population is estimated at 19 million, but its total metropolitan area is home to more than 20.5 million. As with other metropolitan areas in India, Mumbai's population has grown very rapidly over the past two decades, and much of its population are migrants from other regions in the country who came seeking better employment opportunities.

Mumbai's population has nearly doubled since 1991, when its population was just 12.5 million. This rapid expansion has led to serious health-related issues, and a large percentage of the population lives in slums.

The number of people living in slums is estimated at 9 million, which is up from 6 million just a decade ago. That means about 62% of all Mumbaikers live in slums. Dharavi, the second largest slum in Asia, is located in central Mumbai and is home to 800,000 to 1 million people in just 2.39 square kilometres (or 0.92 square miles). This makes it one of the most densely populated areas on the planet with a density of a minimum of 334,728 people per square kilometre. It's also the most literate slum in India with a literacy rate of 69%.

Because land is at such a premium, residents of Mumbai frequently live in cheap, cramped housing far from work, so there are usually long commutes necessary on its busy mass transit system.

By 2020, Mumbai will have an estimated 24 million people with the highest population density in the world. While Greater Mumbai now has a density of 27,348 people per square kilometre, this will reach a peak of 101,066 per square mile, which will be the highest on earth.

Towards Sustainability:

To promote sustainable transport, the Government of India has taken six significant steps:

1. Finalised and issued the National Urban Transport Policy (NUTP) in 2006
2. Initiated demonstration projects with Global Environment Facility (GEF)
3. Strengthening the institutional set up
4. Initiating an ambitious capacity building programme
5. Support to improve both road and rail based mass rapid transit (MRT) facilities
6. Making emission norms increasingly stringent and improving quality of fuels

National Urban Transport Policy (NUTP)

The project, in partnership with the Ministry of Urban Development, Government of India, aims to strengthen capacities of government agencies national/state urban transport departments, municipal corporations and transport experts engaged in urban transport planning and regulations to reduce urban transport emissions causing environmental damage. The project will also demonstrate sustainable urban transport models in 10 cities in the country.

The main aim of NUTP is to promote sustainable transport in cities in India. Its main thrust is to:

•Bring about a more equitable allocation of road space with people, rather than vehicles, as the main focus
•Encourage greater use of PT and nonmotorised modes of transport (NMT) which include walking, cycling and cycle rickshaw
•Establish multi-modal integrated PT systems
•Address concerns of road safety, and
•Reduce pollution through changes in travel habit

Essential Ingredients of Sustainable Transport

There are four essential ingredients of sustainable transport:

1. Comprehensive mobility plan for the city
2. Compact city so that it is NMT and PT friendly
3. PT system to be citywide, multimodal and integrated
4. Interchanges with minimum time penalty

Role of Institute of Urban Transport India (IUT)

IUT is a professional body set up in 1997 under the purview of India's Ministry Of Urban Development (MOUD). The Secretary to the Ministry is its ex-officio President. It has more than 1,000 members spread throughout the country and provides professional support to the Ministry in implementing various projects. IUT is already assisting MOUD in the capacity building exercise under the GEF project and will continue the programme after the implementation of the initial phase of the project. The primary mission of IUT is to assist cities in developing transportation along a sustainable path. Accordingly, it has launched an awareness campaign to make small and medium sized cities aware of the adverse environmental consequences of inaction, introduce them to the importance of urban transport and to advise them on "how to start and where to start". Thereafter IUT will handhold cities and assist them in initiating steps to grow along a sustainable path until they develop in-house skills. Otherwise, these may end up as major problem cities of tomorrow requiring expensive solutions. Role of Institute of Urban Transport India (IUT)JOURNEYS November 2010 21

Delhi Situation

Delhi has nearly 6.1 million vehicles, mostly cars and two-wheelers. Delhi has taken action in nearly all areas to control air pollution over the past decade; 15-year-old commercial vehicles are off the road and transit freight traffic passing through Delhi is restricted. Nearly 300,000 buses, three-wheelers and a great number of taxis and private cars run on CNG. Other steps include pollution checks, public awareness, the use of catalytic converters and phasing out of old vehicles. Last year, nearly 0.3 million vehicles were checked and most had 'pollution under control' certificates. PT is being augmented by the Metro and buses, while NMT has been promoted by upgrading pedestrian and bicycle paths. In the context of the 2010 Commonwealth Games in Delhi, infrastructure has been upgraded through the construction of flyovers and bridges, road widening, junction and corridor improvements, street-scaping, installation of new street lights and signage, and the construction of new parking sites. This will provide long term benefits to the city.

CONCLUSION:

Sustainability requires more comprehensive and integrated planning, which accounts for a broad set of economic, social and environmental impacts, including those that are difficult to measure. Sustainability planning requires adequate stakeholder involvement to allow diverse perspectives and preferences to be incorporated. Sustainability tends to support transportation planning and market reforms that result in more diverse and economically efficient transportation systems, and more compact land use patterns that reduce automobile dependency. These reforms help increase economic efficiency, reduce resource consumption and harmful environmental impacts, and improve mobility for non-drivers. Although it is relatively easy to define the general type of policy changes that support sustainable transportation, it may be difficult to define exactly what degree of change is needed.

REFERENCES:

1.'Committee for a study on transportation and a sustainable environment' (1997) Toward A Sustainable Future; Addressing the Long-Term Effects of Motor Vehicle Transportation on Climate and Ecology, National Academy Press, www.nas.edu/trb.
2.Green Earth Society (2004) www.greeningearthsociety.org
3.J.S. Mathur, S. P. Agarwal, "Surface Transport in India", Printwell publishers Distributors, 1999.
4.'Mumbai Vision 2015: Agenda for Urban Renewal'; edited by R. Swaminathan and Jaya Goyal, Macmillan India Ltd., 2006.
5.'Sustainable Urban Development'; edited by R.B. Singh, Concept Publishing Co., New Delhi, 2006.
6.'Urbanisation, Development and Environment' edited by V. S. Phadake and Swapna Banergy Guha; Rawat Publications, 2007.
7.http://www.in.undp.org/content/india/en/home/operations/projects/environment_and_energy/sustainable_urbantransportprogramme/
8.http://www.lta.gov.sg/ltaacademy/doc/J10Nov-p13Singal_UrbanTransportIndia.pdf.
9.http://www.censusindia.gov.in/maps/Town_maps/Mum_slum_pop.aspx