Federal Ministry
for Economic Cooperation
and Development

Published by
giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Non-Motorised Transport Policy in India

The need for a reform agenda

Non-Motorised Transport (NMT) includes mainly walking, cycling and cycle rickshaws. All of them are green modes of transport: their carbon footprint is low, energy consumption is minimal and their local emissions are zero. In addition they are not dependent on fossil fuels and therefore inexpensive compared to motorised transport. Low-income households in India largely depend on NMT in their daily life. Also, active transportation in the form of walking and cycling has immense health benefits. Still, NMT is all too often neglected as a substantial mobility option in favour of capital and infrastructure intensive modes of transport.
(*Source: NTDCP Final Report 2013*)

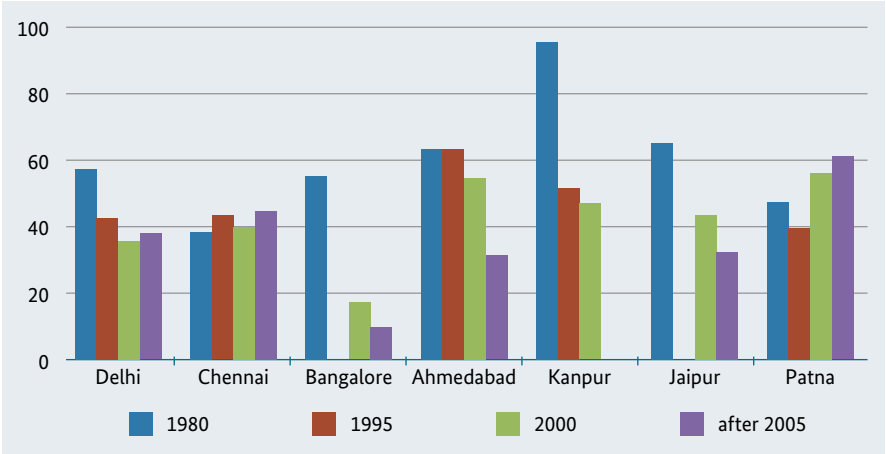
Most Indian cities are still compact in their design with high population densities and mixed land use — ideal preconditions for NMT as a substantial form of mobility for shorter trips and as a feeder to mass transportation services. Indian cities are expected to exceed 800 million inhabitants by 2050. The growing demand for mobility and the increasing motorisation rates are putting strain on the existing resources and are resulting in highly polluted and congested cites. In addition, the Indian real estate market is witnessing acceleration in many green field housing development projects to cater for the growing upper middle class which tends to follow the model of low density development and suburban sprawl.

It has thus become imperative to address the growing challenges in urban transportation and to maintain and further develop NMT as a key element in the transport system. This document is intended to assess the current NMT policy situation in India and to outline a broad policy reform agenda to support the development of NMT in India.

Recent trends in the modal share of NMT

The share of NMT (walking and cycling combined) in Indian cities in the early 1980's was in the range of 40–60 % of the total trips. A recent study for seven Indian cities has shown that the share of NMT has been declining in recent years (with few exceptions such as Chennai or Patna, see Figure 1).

Rickshaws — a unique type of NMT used for both passenger and freight traffic — hold a substantial modal share in most Indian cities. However, rickshaws are often blamed for creating congestion and hampering the flow of traffic — an assumption which was refuted by Tafari *et al.* (2007), stating that providing segregated lanes for NMT in fact considerably increases road capacity. Rickshaws are an important feeder service for public transport. Advani (2010) highlighted that 24 % of the Delhi metro trips are dependent on Rickshaws as feeder mode.



Source: Compiled from various sources – Delhi Metro Rail Corporation 2011; Leather *et al.*, 2011; Itrans 2009; Cept University 2008; Rites 2008; State Level Committee on Road Connectivity & Traffic Improvements 2008; Tiwari and Jain 2008; Wilbur Smith Associates 2008; Rites 2007; Department of Urban Development 2006; Tiwari 2001; Rites 1998a; Replogle 1992; Maunder and Four acre 1989; Pendakur 1988.

Figure 1: *Trends in modal share of NMT (Walking and Bicycle) since the 1980s*

The safety issue

One pressing issue concerning NMT is the safety for users. Cyclist and pedestrians have the highest share of traffic accidents in many cities. This is a result of increased urbanisation and infrastructure development that has given priority to motor vehicle movement over the past decades. According to a study by Mohan and Tiwari (2000), the number of road users killed in the cities of Mumbai, Delhi, Kota and Vadodara on selected highway locations shows that car occupants were a small proportion of the total fatalities whereas pedestrians, bicyclists, and motorised two-wheeler riders accounted for 60–90 % of all traffic fatalities.

A snapshot on current NMT policy in India

NMT has always been a key element of the transport systems in Indian cities, either as main mode of transport prior to introduction of mass transportation systems or as a last mile connector providing access to mass transit systems. The Ministry of Urban Development (MoUD) has encouraged Indian cities through various initiatives and programmes to adopt NMT as a key component of their integrated urban transport system. These initiatives are quite holistic and forward thinking, but have not necessarily yielded the desired results. An overview of the existing policies is given below:

- The vision of the *National Urban Transport Policy (NUTP)* has to be realised in cities by the local government. The policy clearly state that NMT should play the role of last mile connector for the urban transport systems and should also act as an independent mode of transport for short trips.
- The *National Mission for Sustainable Habitat*, under the Prime Minister's National Action Plan on Climate Change, has constituted a sub-committee specifically focusing on urban transport. The sub-committee listed out eight principles of sustainable urban transportation, of which the first two are 'walk' and 'cycle'.
- The Ministry of Urban Development has developed *Service Level Benchmarks (SLBs)* for urban transport to be undertaken by all Indian cities. These SLBs attempt to integrate the NMT system within the overall performance of the urban transport system by assessing NMT infrastructure and other key attributes to be monitored and maintained. This shall force cities to provide due focus on the upgrade of NMT systems.
- The *Jawaharlal Nehru National Urban Renewal Mission (JNNURM)*, launched in 2005, gave power to cities to undertake large scale infrastructure projects, including on urban transport. Preparation of a detailed project report, which was a pre-requisite in order to obtain funding for transport project, required NMT to be made an integral component of the transport system.
- A working group to provide recommendations on urban transport was set up when the *12th Five Year Plan* was being formulated. One of the key recommendations issued by this group was the creation of dedicated funds to improve, maintain and upgrade existing walking and cycling infrastructure.

Pre-2006, all urban and national policies aimed at investment in heavy transport infrastructure, while the NMT sector was neglected. This led to a deterioration of the level of service provided to the NMT users.

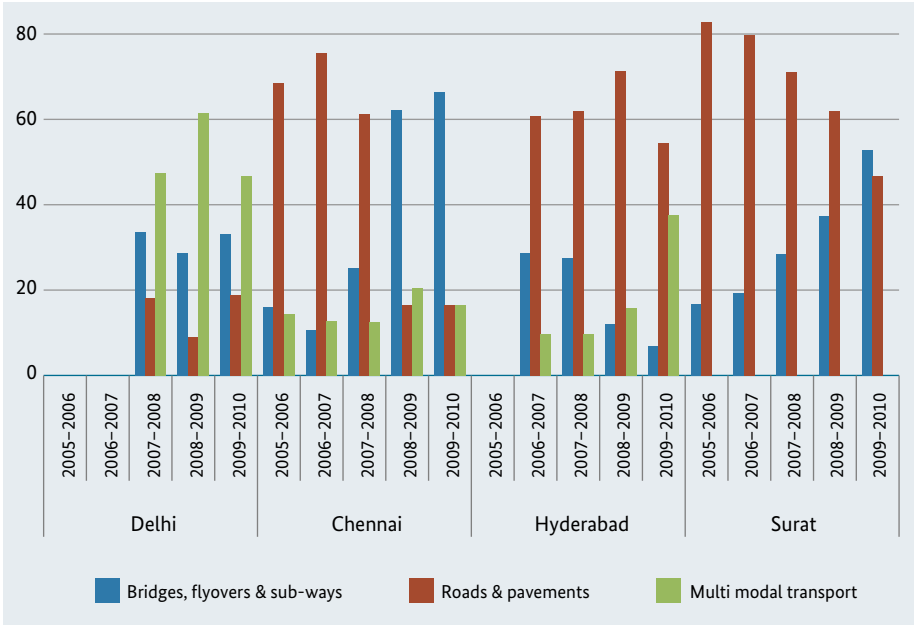
In 2006 MoUD adopted the National Urban Transport Policy (NUTP) which outlined the framework for improving the public transport system and laid emphasis of the developing infrastructure for safe use of NMT, and transport demand management

Figure 2: *Cycle rickshaws in Delhi's old town*

strategies. However there were no specific projects that directly aimed at improving NMT infrastructure. One step in the right direction was taken after the formation of NUTP, when the government linked JNNURM funds with the NUTP Vision. Again the implementation of the same has been disjointed as a complete integration of multi-modal systems is lacking. The biggest prevailing gap is still in the appropriate distribution of funds in the transport sector. The chart below highlights the dis-appropriate fund allocation within four Indian cities.

Source: Adapted from NUTP, JNNURM, 12th Five Year Plan, ICLEI Eco-Mobility Readiness assessment Final Report, and other sources.

Figure 3: Allocation of capital expenditure in the transport sector in four Indian cities in percent. Source: NMT Investment and infrastructure report



The way forward: Ideas for a reform agenda

In order to facilitate the development of NMT and to make it a convenient mode of transport, some policy recommendations are highlighted below, grouped according to the expected time frame.

Short-Term: Data collection

- ➔ The city authorities should take stock of their existing NMT situation and conduct surveys to collect data on NMT use. This will help the authorities in their overall planning.
- ➔ Safety data collection should reflect the casualties and injuries suffered by NMT users correctly. This will help the authorities to take immediate necessary action to protect the NMT users.

Short to Midterm: Implementation recommendations

- ➔ Adopt pedestrian and cycling friendly street design guidelines that focus on providing priority to NMT users and thus increase pedestrian/cyclist safety, comfort and convenience. The guidelines should be strictly followed during the design phase of any transportation and urban planning projects.
- ➔ Pedestrian plans should be made mandatory and conditional to any transport infrastructure funding in the cities.
- ➔ Funding, approval and clearance of all road projects should be conditional on adherence to pedestrian guidelines.
- ➔ Mandate road safety audits at different stages – preliminary design stage, post completion of preliminary design, detailed engineering design on a per km basis, construction stage, and pre-opening stage.
- ➔ The street design shall include traffic calming measures to reduce the speed of vehicles, and must facilitate pedestrians to remain at ground level with comfortable and safe access and minimum detours from the most direct path.
- ➔ All pedestrian facilities should be barrier free and promote universal accessibility by providing infrastructure means which assist those with special abilities/requirements, *e.g.* hearing and visual impairments.
- ➔ A central monitoring and evaluation committee should be created whose primary responsibility should be to monitor all urban transport projects being funded under the central government funding scheme and ensuring that they comply with the vision envisaged under the NUTP.
- ➔ The local authorities should create local walking and cycle route maps and promote the same to increase awareness amongst the residents of the city.
- ➔ Proper operations and maintenance of NMT infrastructure shall be encouraged by local authorities, and obstacle-free access to NMT infrastructure must be continuously enforced.

Midterm: Planning Recommendations/Financial Recommendations

- ➔ Initiate a process for enactment of a legislation that will comprehensively address pedestrianisation, the mandatory implementation of important engineering guidelines for walkways, traffic volume reduction measures, and strongly enforcing penalties on motorists for encroaching into pedestrian space or otherwise violating pedestrian rights.
- ➔ A dedicated NMT cell should be created within the planning authority at city level. This cell should be responsible for handling of dedicated NMT funds for planning, implementation and maintenance of NMT infrastructure.
- ➔ Master planning of cities should be done in line with the objectives defined under the NUTP and should be enforced according to the conditions specified under the central funding scheme.

Long-Term recommendations

- ➔ The central government should revise the NUTP after now almost 10 years and a clear mandate should be outlined for the NMT sector within it. This will provide a clear vision to the cities on the basis of which they can work.
- ➔ A national NMT framework outlining key parameters to be considered when planning for the urban transport system should be created for the cities. This will enable the cities to integrate NMT within their master plans in line with the mandate of NUTP.
- ➔ A formal road safety programme at the national level should be created that highlights the significance of cyclists and pedestrians as part of the overall transport system.

References and further reading

- Tiwari & Jain (2013), *NMT Investment and infrastructure report*. Available online at http://www.unep.org/Transport/lowcarbon/Pdf's/NMTInfrastructure_India.pdf;
- Impact of Raahgiri Day, *Participants Survey*, (2013), Amit Bhatt;
- SUTP Module 6: *Integrated Planning of Infrastructure*, MoUD, 2013;
- ICLEI Eco-Mobility Readiness assessment *Final Report 2013*: http://southasia.iclei.org/fileadmin/user_upload/documents/ecomobilityFinal_Report_28_August_2013.pdf;
- Advani, M. & Tiwari, G., (2006). "*Bicycle – As a feeder mode for bus service*";
- IDES, (2008), "*Policy Paper for Pedestrian Movement In the Bangalore Metropolitan Region – Draft Report*." Directorate of Urban Land Transport, Bangalore, Bangalore;

- State Level Committee on Road Connectivity & Traffic Improvements, (2008), "*Highlights and Recommendations of The State Level Committee on Road Connectivity & Traffic Improvements in Chennai.*" Chennai Metropolitan Development Authority, Chennai;
- Tiwari, G. & Jain, H., (2008). "*Bicyles in urban India.*" Urban Transport Journal, 7, (2);
- IL&FS Ecosmart Limited, (2006), "*City Development Plan-Delhi.*" Department of Urban Development, Government of Delhi, Delhi;
- Mohan, D. & Tiwari, G., (2000). "*Mobility, Environment and Saferty in Megacities: Dealing with a Complex Future.*" IATSS Research, 24, (1) pp. 39-46;
- Tiwari, G., Fazio, J., & Gaurav, S., (2007). "*Traffic Planning for non-homogeneous Traffic: Special issue on Transportation Research – Safety and Sustainability.*" Sadhana, 32, (4) pp. 309-328;
- Advani, M., (2010). *Public Transport Demand estimation: Case study Delhi.* Indian Institute of Technology;
- Replogle, M., (1992). "*Non-motorized vehicles in Asian cities, World Bank.*" Asia Technical Department Series (162);
- National Transport Development Policy Committee (NTDPC) *Final Report 2013*;
- Transport Department Delhi & DIMTS "*Bus Rapid Transit in Delhi*";
- DIMTS, (2012). "*Bus Rapid Transit System – Myths VS Reality.*" 2012 [08 June 2012], Delhi Integrated Multi-Modal Transportation System;
- Wilbur Smith Associates, (2008), "*Study on traffic and transportation: policies and strategies in urban areas in India.*" Ministry of Urban Development;
- SUTP (2003), Module 3d – *Preserving and Expanding the Role of Non-motorised Transport*. GIZ;
- GIZ/I-Ce (2009), *Cycling-Inclusive Policy Development: A Handbook*.

Prepared by Kartik Kumar with vital inputs from Ms Anumita Roychoudhary (Centre for Science & Environment) and Mr Anuj Malhotra (Centre for Green Mobility).

GIZ – Our work in the Sustainable Urban Transport Project

The Sustainable Urban Transport Project (GIZ-SUTP) aims to help cities achieve their sustainable transport goals, through the dissemination of information about international experience, policy advice, training and capacity building.

SUTP "Policy Briefing" is a service of the sector project "Transport Policy Advisory Services" on behalf of the German Ministry for Economic Cooperation and Development (BMZ). The SUTP "Policy Briefing" responds topical challenges and provides guidance to decision-makers.

- "Sustainable Transport: Sourcebook for Policy-makers in Developing Cities": http://www.sutp.org
- GIZ Transport and Mobility: http://www.giz.de/transport
- Extensive SUTP Photo Database: http://www.flickr.com/photos/sustainabletransport
- Capacity Building on Sustainable Urban Transport (CAPSUT): http://www.capsut.org
- Follow us on Twitter: https://twitter.com/_SUTP

Contact: transport@giz.de

Disclaimer

Published by
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Registered offices Bonn and Eschborn, Germany
Sector Project "Transport Policy Advisory Services"
Dag-Hammarskjöld-Weg 1–5
65760 Eschborn, Germany
T +49 61 96 79-13 57
F +49 61 96 79-80 13 57
www.giz.de/transport
www.giz.de

Author(s) Kartik Kumar, Anumita Roychoudhary, Anuj Malhotra

Layout Klaus Neumann

As at March 2015

GIZ is responsible for the content of this publication.

On behalf of
Federal Ministry for Economic Cooperation and Development (BMZ)

Division Water; Urban development; Transport

Addresses of the BMZ offices

BMZ Bonn
Dahlmannstraße 4
53113 Bonn, Germany
T +49 22 89 95 35 - 0
F +49 22 89 95 35 - 35 00

BMZ Berlin
Stresemannstraße 94
10963 Berlin, Germany
T +49 30 18 535 - 0
F +49 30 18 535 - 25 01

poststelle@bmz.bund.de
www.bmz.de