



## BICYCLE RESEARCH REPORT NO. 22

March 1992

### **SUSTAINABLE TRANSPORTATION STRATEGIES FOR THIRD WORLD DEVELOPMENT, by Michael R Replogle**

**-The bicycle: the most appropriate technology for traffic in Africa and Asia**

**-Third World cannot afford motor traffic**

#### The Key Facts

Whilst pedal-driven vehicles form a substantial proportion of traffic in Asian countries like China, India and Bangladesh, bicycles are a rarity in much of Africa and Latin America. However, the latest findings of the World Bank show the bicycle to be the ideal alternative to motor traffic even in these countries, since this would allow them to save the scant resources of foreign currency which they at present spend on cars.

#### Contents

The importance of the bicycle in the third world varies greatly from country to country. In most African countries the vast majority of individual journeys and freight transports over short distances are made on foot, but in many parts of Asia a high proportion of journeys are made on bicycles.

In China there are more than 270 million bicycles, and in the cities every second person now owns one. In India there are 25 times as many bicycles as motor vehicles on the roads. Pedal-driven trishaws are the commonest means of transport on the streets of Dhaka, Bangladesh, and in Thailand, Indonesia and Pakistan bicycles and tricycles play a similar key role. However, in much of Latin America, the islands of the Caribbean and Africa, bicycles and tricycles are extremely rare.

There are many and varied reasons for these differences. Investments, subsidies, taxes and tariffs, infrastructure, regulations, topography, climate, culture, lifestyles, the level of income and its distribution, and patterns of land use all have a part to play. Many of these factors are determined by the technocrats and elites who are responsible for investments, the government and its policies; they always back cars, and refuse to take cycling seriously. In fact, many third-world countries have even taken steps to discourage the use of cycles and cycle-rickshaws.

The World Bank, which uses the resources of rich countries to finance traffic schemes in the third world, must itself take part of the blame. In a statement



issued in 1986 it even identified cyclists and pedestrians as the cause of many traffic-jams.

If cycle technology were to spread from Asia to countries with low levels of cycle use, this could improve the chances of encouraging cycling there. The bicycle offers an answer to traffic problems especially for countries where large numbers of people live on very low incomes and where no adequate public transport system is available, and for countries with serious debt problems mainly resulting from their imports of oil and motor vehicles.

A recent report on a World Bank project in Ghana confirmed this only a short time ago. Road-building and the provision of lorries have proved not to be an economical or reliable means of reaching the villages. Instead, roads should be built with a basic surface and the use of non-motorized vehicles encouraged. The bicycle, says the World Bank, takes up very little space and is the most easily financed and environment-friendly transport available; as such it an appropriate answer to the traffic problems of the third world.

Report "Sustainable Transportation Strategies for Third-World Development", by Michael A Replogle, in: Nonmotorized Transportation 1991, published by TRB, Transportation Research Record No 1294, Washington, DC.

Addresses TRB Transportation Research Board, National Research Council, Washington DC, USA; Michael A Replogle, Institute for Transportation Development Policy, 8407 Cedar Street, Silver Spring, Md 20910, USA.



## Transportation Research Record 1294

---

### Contents

<b>Foreword</b>	v
<b>Sustainable Transportation Strategies for Third-World Development</b> <i>Michael A. Replogle</i>	1
<b>Importance of Nonmotorized Transport in India</b> <i>A. C. Sarna</i>	9
<b>Role of Nonmotorized Transport Modes in Indonesian Cities</b> <i>Budhy Tjahjati S. Soegijoko and Sharif I. Horthy</i>	16
<b>Motorized and Nonmotorized Transport in Katmandu, Nepal: Where Do the Pedestrians Fit?</b> <i>V. Setty Pendakur and Marco Guarnaschelli</i>	26
<b>Urban Land Use and Nonmotorized Transport in Kanpur, India</b> <i>Scott Gibbons</i>	34
<b>Current Issues and Problems of Bicycle Transport in Japan</b> <i>Hirofaka Koike</i>	40
<b>Cycling in a Northern Country</b> <i>Mikko Ojajarvi</i>	47
<b>ABRIDGMENT</b> <b>Community Cycling Manual—Planning and Design Guide</b> <i>Daphne A. Hope</i>	50
<b>Analysis of Pedestrian Movements in Bangkok</b> <i>Yordphol Tanaboriboon and Jocelyn A. Guyano</i>	52
<b>Comparison of Central Business District Pedestrian Characteristics in Canada and Sri Lanka</b> <i>John F. Morrall, L. L. Ratnayake, and P. N. Senecaratne</i>	57



## Sustainable Transportation Strategies for Third-World Development

MICHAEL A. REPLOGLE

Current transportation policies in developing countries, forces shaping these policies, and the implications of current policies for low-income people, the environment, and economic development are discussed. Current policies favor rapid motorization of transport to the detriment of modal diversity and nonmotorized modes, such as bicycles, cycle-rickshaws, and pedestrians. Such policies, rather than fostering real development, accelerate global climate change, increase air pollution, and weaken petroleum-importing economies, while often increasing inequality, social conflict, and poverty. Economic efficiency is diminished by decreased diversity in urban transportation systems, forcing people to conform to the few higher-cost ways of traveling offered rather than allow these movements to be made by the most appropriate and affordable means. The concept of sustainable transportation calls for a more holistic approach to policy and investment planning to achieve a diverse and balanced mix of transport modes and a sensible arrangement of land use that enables conservative use of energy and capital to fulfill mobility needs. Sustainable transportation strategies are those that can meet the basic mobility needs of all and be sustained into the foreseeable future without destruction of the planetary resource base. An overview of some of the key issues related to sustainable transportation is provided.

---