The Modern Cycle Rickshaw – a Sustainable Solution

Alongside the search for sustainable modes of transport that will reduce the global dependency on fossil fuels, is a rising trend among Asian governments for eliminating the use of cycle rickshaws in a false endeavour to create a more 'developed' way of life.

Despite a massive modal share in Delhi with 300,000 cycle rickshaws making on average 1.5 million trips per day and directly or indirectly supporting around 2 million people, government agencies are banning cycle rickshaws from more and more streets. One can imagine the disaster that could ensue were all these trips to shift to polluting motorised modes.

Part of the reason why cycle rickshaws are not favoured by local authorities is due to their antiquated, unsafe and uncomfortable image. Cycle rickshaw design has remained unchanged in 50 years and the lack of infrastructure for non-motorised vehicles exacerbates their reduced patronage. In 1999 the Institute for Transportation and Development Policy (ITDP) in association with some Indian organisations, undertook to develop and promote a modern cycle rickshaw that could demonstrate the possibility of growth of this traditional mode of transportation as a counter to the growing menace of motor vehicle pollution. Grants were provided by the United States Agency for International Development and other donors.

Three years of work involving non-motorised vehicle designers and the local community, produced the modern Indian cycle rickshaw. It involved the participation of all people involved with the rickshaws – rickshaw drivers, passengers, manufacturers and assemblers, and others such as tourists. Participation by local small scale industry played an important role in its success. The design process kept in mind how the new design could be incorporated with ease into the structure of the existing rickshaw industry.

The weight reduction of over 30% by means of an integral ergonomic tubular frame and an optional multi-gear system, results in less stress and exertion for the rickshaw driver. Independent surveys show that they can work for one third longer and increase their earnings by up to 50%. The comfortable passenger seating, easy step-in, luggage space, and jerk-free ride entice more and more passengers to opt for the new rickshaws as their preferred mode of transport.

The modernised rickshaw sells for around US$100–110 which is on a par with the prices of the traditional rickshaw but with the advantage of a much longer life (expected to be three times more durable) with lower maintenance and repair costs. The new design retains most of the basic features of the traditional vehicles. This assists not only with commercialisation and acceptability but means that components in good condition from the old vehicles can be refitted on the new structure reducing the cost of upgrading.

The new vehicles have restored a sense of pride to the cycle rickshaw profession. Rickshaw drivers enjoy a new economic status with improved earnings. Driving a rickshaw gives a moderately better income than day-labour jobs available to generally unskilled workers. The working conditions are healthier than alternatives such as working in unsafe, dark factories with exposure to health and safety hazards.

There were more than 25,000 of these modern vehicles on the road within 2 years of their commercial introduction, and the local industry is constantly evolving the design to suit local conditions and socio-cultural requirements.

Our survey in Agra city where the modern rickshaws were first introduced showed that 40% of the trips (up to 48% in the Taj Mahal area) were attracted away from motorised modes, making the project's greenhouse gas emission reduction impact quantifiable. Cycle rickshaw technology in India has already proven to be a more cost effective way of reducing emissions than projects promoting electric and other alternative fuel vehicles. The project cost $300,000 as against a projected subsidy of $2.240 million for electric buses needed for tourists to the Taj Mahal. There is no operating pollution from rickshaws compared to pollution (thermal power production) from battery buses.

It is possible to quantify the emissions reduction benefits of this type of project, and it is possible to convince open-minded funding agencies that modernising human powered vehicle technologies is a more cost effective method of reducing greenhouse gas and other emissions than electronic and alternative fuel vehicle promotion projects.

The beneficiaries of these projects are among the lowest income populations in the world, contrasting markedly with the beneficiaries of alternative fuel vehicle promotion projects, where the beneficiaries in the long run are likely to be multi-national corporations. Governments and municipal authorities prioritise expensive projects over more cost effective solutions such as busways and non-motorised transport improvements. For this reason it is critical that such projects find political support among the increasingly vocal environmental and bicycle advocacy community.

With inadequate public transport services and the daily commuting needs of millions of people, rickshaws offer affordable and clean mobility. They provide an extremely smooth sub system in the web of transportation in small and large cities, hundreds of towns and thousands of villages. Cycle Rickshaws are here to stay for a greener tomorrow.

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Continued from page 1

and cheaper alternatives to road construction. The article on page 3 makes a comparison of the energy efficiency of water and road transport.

There is a need for the transport sector to examine environmentally sustainable transport from a rural perspective; to promote the development of improved NMT design, to transfer lessons learnt in urban areas and to lobby for the same standards in emission control that are increasingly demanded in cities. It is important that we demonstrate that prevention is as important as the cure.

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See 'About Us' box on page 4

Yogyakarta to host BAQ 2006

The 5th Better Air Quality (BAQ) workshop will be held in the third week of September in Yogyakarta in Central Java, Indonesia. The Indonesian Forum for Rural Transport and Development, an affiliated network of the IFRTD, is part of the organisational team for the event. The theme is "Celebration of Efforts" to highlight the success stories that Asian countries, cities and communities have achieved over the last years in addressing air pollution while at the same time highlighting the efforts that are still ahead in improving air quality in Asia.

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