

Urban Transport and the Millennium Development Goals

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In 2000, at the UN Millennium Summit, governments committed themselves to cutting the number of people in poverty in half by 2015. This is to be achieved through eight Millennium Development Goals (MDGs) with specific, measurable targets, all of them indirectly focused on poverty alleviation. The MDGs are an opportunity to focus government and donor agency attention on these critical issues, quantify the resources needed to address the problems, and hold them accountable for their progress. These MDGs are increasingly reflected in national development strategies, and many donor agencies and governments are prioritizing these same goals. However, the influence of the MDGs on donor assistance also carries with it certain risks.

The Millennium Development Goals (MDGs) do not include any specific goals or targets related to transport, though transport sector interventions are critical to meeting many of the goals. The lack of transport specific goals is due not to their unimportance, but rather to the fact that groups with interest in the transport sector did not participate in the Millennium Summit, as they were focused instead on the Commission for Sustainable Development #9 meeting the following year, which focused on transport and energy. Other sectors were no doubt similarly excluded from prioritization for similar reasons.

The lack of inclusion of concrete targets for transport in the Millennium Development Goals carries with it two risks: 1) that critical transport sector interventions will get left off the development agenda entirely, and 2) that the lack of specific targets will give wide latitude to donor agencies and governments to intervene in the sector without any clear guidance from the MDGs, leading to mis-specified interventions that do little to reduce poverty or even make it worse.

The initial recommendations for transport that came out of the Millennium Project, an effort to clarify the implementation goals for the MDGs, were written by people unfamiliar with the transport sector. They were heavily focused on increasing governmental spending on new road construction, and included targets for miles of new roads to be constructed. Experts from the World Bank and NGOs lobbied only partially successfully to change this approach, with the result that the final recommendations of the Millennium Project also make little mention of transport. While glad that a misdirected approach has been avoided, no clearer, better targeted program has yet emerged. This article is an effort to set clearer targets and goals for transport interventions that will help meet the Millennium Development Goals. It is focused on urban transport interventions, but similar goals should also be set for rural transport.

Urban Transport and Poverty Alleviation

The time and money that the poor must spend meeting their basic mobility needs represents a significant constraint on the ability of low income families to accumulate the assets that would allow them to lift themselves out of poverty. Transport service and transport-related construction are also frequently critical sources of employment for the urban poor. Goods and services are also sometimes more expensive in low income areas due to poor transport infrastructure and services.

The urban poor in developing countries tend to make fewer trips (because they are often not regularly employed), but tend to spend more time and a greater share of their disposable income on transport. For the working poor, commuting to jobs sometimes represents a huge time and cost burden. While the settlement patterns of the urban poor and their accessibility to concentrations of employment vary widely, (Barter, 2001) it is frequently the case that the poor, lacking the capital to invest in housing with an accessible location, will live in locations in the distant periphery. Lacking the capital to invest in a motor vehicle, and facing road conditions too unsafe to make walking or cycling feasible, they spend a significant share of their household income on bus or minibuses fares.

In Sao Paulo, for instance, the average daily travel time for the poorest quintile is 4 hours and 25 minutes, compared to 3 hours and fifty minutes for the middle quintile. [Vasconcellos, 1997.a. p. 251]. Workers are returning to their homes quite exhausted from the arduous travel alone. In Harare, Zimbabwe, the poor spend on average 70 minutes per day traveling, and the wealthy only 55 minutes. [Bryceson, et.al., 2003]. It is also fairly typical for the poor to spend between 25% to 35% of their disposable income on transport. These averages mask the fact that many of the urban poor are elderly, children, women taking care of children, disabled, or otherwise do not work regularly, and therefore spend no time on long distance commuting, so the average tends to under-represent the size of the travel burden on the working poor.

It is fairly typical that the non-working poor spend less than 15% of their disposable income on transport, but they spend considerable time meeting basic mobility needs, as they are reduced to walking long distances, [Kwakye, Fouracre, and Ofosu-Dorte, 1997], [Hathway, 1996] bringing children to school, collecting water, heating and cooking fuel, solid waste disposal, collecting building materials, and engaging in petty commerce. These shortages of basic urban infrastructure manifest themselves as mobility costs because of the lack of piped water and gas, solid waste removal services, school bus services, and other basic urban services. Lacking the capital to buy housing in neighborhoods with paved roads, piped water, sewage, solid waste disposal, heating, and other basic necessities, the poor are forced to meet these basic needs in mobility-intensive ways that impose a huge travel time burden on them.

The poor, almost by definition, cannot afford a motor vehicle in most of the developing world. Vehicle ownership rates in Africa and parts of Asia are as low as 3 motor vehicles per thousand population, and nowhere in sub-Saharan Africa except South Africa are the

vehicle ownership figures higher than 100 vehicles per 1000 population. Vehicle owners are thus among the wealthiest 10% of the population by definition. Most of the poor walk for most of their trips, and take collective forms of transport for longer trips. In some places they may be able to afford a bicycle, animal cart, or occasionally a used motorcycle. The poor would use bicycles more if there were a more consistent supply of good quality affordable bicycles, and if urban roads were designed for safe cycling, but this is rarely the case.

Because the poor are unlikely to own the motorized vehicles for which most urban roads are designed, they are underrepresented among the beneficiaries of road investments. At the same time, they are over-represented among the victims of the adverse impacts that these road investments frequently cause.

Roads are not generally designed for safe travel by non-motorized means, but rather to increase vehicle speeds. Around 1.2 million people die each year in road traffic accidents, and another 50 million are seriously injured. Once injured, a low income person is likely to be disabled, and trapped in poverty. In developing countries, road accidents tend to be ranked second to sixth among leading causes of death for people ages 15 – 60. (WHO, 2004.). The majority of the victims of traffic accidents tend to be low and moderate income pedestrians.

The poor are also much more likely to be involuntarily resettled as a result of new road projects. Just as in the 1950s and 1960s in the US, low income neighborhoods were more frequently the target for urban highway projects, today this process is repeating itself in many developing countries. In China, for example, from 1988 to 1993, over 120,000 people were involuntarily resettled due just to road projects financed by the World Bank. The Jabotabec (greater Jakarta metro region) Urban Development Project of the World Bank led to the involuntary resettlement of roughly 50,000 people. Five new roads in Mumbai led to the forcible relocation of 6000 families. In each case, the majority of those forcibly relocated were low income slum dwellers, because the land occupied by the poor tends to be either state land or lower in cost. (Cernea, 1993; World Bank, 1995; Murphy, 1995; Barter, 2001).

The fact that major roads tend to blight the neighborhoods around them also means that poor families tend to live in these neighborhoods. In dense urban areas, this means that low income people tend to be exposed to higher concentrations of urban air pollution. The poor are also over-represented among the estimated 1.2 million annual premature deaths caused by exposure to unhealthy levels of mobile-source air emissions.

Transport Interventions for Poverty Alleviation

Urban transport interventions aimed at alleviating poverty should start with at least avoiding severe adverse impacts on the poor, and from there move to proactive policies that might actually help the poor.

Traditionally, it was believed that building roads was the only legitimate or necessary public sector or donor community intervention into the transport sector needed to alleviate poverty. Problems of vehicle availability, vehicle cost, and all other problems would all be taken care of by market mechanisms. In practice, however, market failures are rife in the transport sector, not only in the provision of roads but also in the provision of vehicles, in vehicle and road maintenance, in the allocation of roads as a scarce public good, in the provision of urban transit services, and in the location of economic activity. New road investments are only one, and not necessarily the most effective, intervention into the transport sector for alleviating poverty.

One study in the Makete District in Tanzania compared the costs and benefits of different transport sector interventions. This analysis showed that investments in water pipes saved households 235 hours per year, while an investment in a feeder road saved them only 120 hours per year. An investment into a bicycle saved the family 200 hours per year, but cost a fraction of what the road cost, per capita. Investing in a grinding mill saved the family 110 hours per year. [Sieber, 1997, p. 17 – 18]. This analysis clearly shows that the solution to the transportation problem may not lie in road investments alone.

In the 1960s and 1970s, there was great confidence that new road construction would lift Africa out of poverty. By the 1990s, however, Africa faced crushing debt burdens, and an enormous backlog of unmet road maintenance needs. The economic rate of return on maintenance and reconstruction was generally much higher than for new road construction. Countries began borrowing money just to maintain the roads they had built decades earlier. In some cases, the loans were still being repaid but the roads had vanished. The development banks were not purely benign actors in this process. Frequently the technical specifications for road construction imposed on the country by the development banks ensured the use of expensive imported materials like asphalt, and specialized, capital-intensive road building equipment. More labor-intensive methods and the use of locally available materials like concrete could have yielded lower long run maintenance costs and larger multiplier effects through the local economy, but were blocked by the technical specifications. [Flores, L. M., 1998].

While the development banks and the donor community was encouraging full cost recovery for water services, upon which the poor directly rely, no similar pressure was imposed on road users who by and large represent a much higher income group. Even if the economic benefits of a road investment are positive, unless the government is able to recover the benefits of new roads in the form of higher tax or road user revenues, there is a significant risk that the road investments will only worsen government debt. While urban services investments were frequently subjected to a financial as well as economic appraisal, roads were never subjected to such a financial appraisal unless they were toll roads. As a result, the extensive road borrowing not only did not lift Africa out of poverty, it actually helped create Africa's debt trap.

Despite this history, the 'road investment = transport improvement = economic development' paradigm remains the predominant mindset among most politicians and

macro-economists, and this paradigm permeated early drafts of the Millennium Project's white papers. While these have been revised, physical infrastructure provision continues to dominate development thinking mainly because this is what governments and international development agencies have traditionally done.

Certainly, there are conditions where new road construction is justifiable and likely to have positive poverty alleviation and growth impacts, but these conditions are highly specific. In rural areas, traditional cost benefit analysis is reasonably able to capture these conditions, and if complimented with a financial analysis of the impact of the project on government finances, should provide a reasonable framework for decision making. In practice, traffic on African roads is frequently too low to justify even the existing roads using standard cost benefit analysis. In urban areas, it is even more important that the full cost of the road is eventually paid by the road's beneficiaries, in the form of fuel taxes or other road user fees, since any other option is de facto a public subsidy for the rich and for unsustainable modes of travel. Furthermore, the extensive social costs of deteriorating safety, exposure to air pollution, and of involuntary resettlement, all need to be factored into a cost benefit analysis, and interventions should survive an alternatives analysis which considers other means of achieving the same mobility objective. Finally, if a road concentrates emissions to the extent that households face unhealthy levels of exposure, the project should be stopped on public health grounds unless the ambient air impact can be brought into conformity with healthy air standards.

The most certain way of ensuring a positive poverty impact of road construction is to use labor-based methods of construction. Furthermore, to directly help the poor, new transport facilities must improve conditions for the modes of transport that are actually used by the poor. Since the poor walk, take public transit, and sometimes bicycle, the design of new urban roads as 'complete streets' with dedicated transit lanes, bike lanes and proper pedestrian facilities will significantly increase the chances that the road will benefit the poor.

Good walking and cycling facilities make it possible for people to make short trips safely basically for free. Without such facilities, poor people are forced to take more expensive motorized modes, driving up their costs of living and also the cost of labor. Some surprising studies from Surabaya, Indonesia, indicated that for short trips under 3km, which represent roughly half of total trips, over 60% of the trips were made by motorized modes, even among low income groups, whereas in comparable cities in Germany over 60% of trips of the same distance were made by non-motorized modes. In other words, Indonesia is more motorized than Germany at 1/30 of the per capita income. This is due simply to the fact that 60% of the roads have no sidewalks or the sidewalks are unusable, and none have cycle paths. If poor Indonesians were able to make the same number of short trips using non-motorized modes as are made by Germans, they would save roughly \$0.30 per day, which is about 20% of their income [Hook, 2000].

A road that does not have an exclusive bus lane on it can move perhaps only 2000 passengers per lane per direction, or perhaps 3000 or 4000 if a lot of the vehicles are buses. If it becomes congested, travel speeds and travel costs for low income transit passengers, many of them low income, will increase. An exclusive bus lane, in very specific operating

conditions, can move up to 20,000 passengers per direction per peak hour and maintain speeds of up to 27kph. Hence, *the introduction of exclusive bus facilities on an existing right of way can significantly improve the targeting of that road asset to the benefit of the poor.*

Geographic targeting is also important. Road improvements, bus lanes and bikeways are not going to do the poor much good if they serve only upper income neighborhoods.

Urban Mass Transit

For the urban poor in developing countries, urban mass transit means buses, minibuses, and various forms of shared taxis. In Latin America, large buses predominate, but minibuses have a growing share of the market. In African cities, normal buses represent a marginal share of the public transport market, and minibuses or *combi* taxis heavily dominate. In Senegal, for example, some 58% of total passenger trips are currently made by 10 to 15-seater paratransit vehicles called Car Rapides or Ndiaga Ndiayes, and large buses account for only 2.7% of the total motorized trips.

While in theory public investments into urban mass transit could reduce the cash and time cost of transit for low income uses, as with road investments, the conditions whereby these benefits can be captured by the poor are highly specific. In practice, stimulating sustained investment into mass transit in a developing country context is even more complex for the urban transit sector than for the road sector.

Unlike in the developed world, with a few exceptions, such as in China and parts of India, these paratransit services are invariably owned and operated by the private sector, with varying degrees of governmental regulation. The difficulty, of course, is to determine how, when, and under what conditions *public* investment into collective transport can directly reduce the travel burden of the poor, and how the public sector can create an investment climate that also stimulates *private* investment into the sector that also helps the poor.

A growing body of evidence indicates that public investment in the transit sector in developing countries should be focused on infrastructure that allows for the profitable private operation of bus-based mass transit systems, rather than on bus procurement by public agencies. Such investments are increasingly called “Bus Rapid Transit” or BRT. BRT systems are spreading rapidly through the larger cities of developing countries, primarily because they can provide transit capacity and speeds equivalent to metro systems but with 1/20 to 1/50 of the capital cost. Capital costs of \$1 - \$5 million per kilometer are typical. BRT systems can generally yield an operating profit if properly designed. By contrast, metros and elevated light rail systems are extremely expensive to construct, maintain, and operate. The Hong Kong metro is the only system in the world which fully recovers its operating costs. Rail-based transit systems tend to cost more than \$50 million per kilometer, and in some specific situations may cost as much as \$1 billion per kilometer.

Metro and light rail systems tend to divert enormous amounts of both private and public resources away from cash-starved bus systems upon which the majority of the public rely. As a standard procedure, any corridor being considered for a mass transit investment should be subjected to a thorough alternatives analysis where BRT is considered along with other mass transit options, and the relative costs and benefits of each system compared. On all but the highest volume corridors, BRT is likely to be a cost competitive alternative.

For existing or potential public transit volumes up to 45,000 ppdph, it has now been proven that busway systems or Bus Rapid Transit (BRT) systems can satisfy this level of demand at commercial speeds competitive with rail-based systems (25 – 30kph) if two lanes are provided in each direction at station stops. This level of service and capacity has been achieved on Bogota's TransMilenio system, which is currently the world's state-of-the art BRT system.

BRT systems are profitable because they are able to use far fewer buses to provide the same number of passengers with bus service, as each bus is traveling at a much higher speed. Higher bus speeds are achieved by several critical measures:

- a. physical separation, keeping buses out of traffic congestion
- b. priority at intersections, usually achieved by turning restrictions on mixed traffic
- c. platform level boarding and off-bus fare collection, greatly reducing the boarding and alighting time.
- d. Routing changes to trunk and feeder services, increasing the load factor per bus on trunk routes.
- e. Introduction of express services

Because of these critical changes, most *of the BRT systems in Latin America fully cover their operating expenses and the cost of bus procurement entirely from passenger revenues*. Ticketing systems can also be financed by private investors. In all of the systems, however, the *public sector paid for the reconstruction of the road infrastructure, the construction of the bus stations and bus terminals, and for system planning*.

Whether a specific BRT system will improve the lives of slum dwellers or not depends entirely on how the system is designed. Certainly it *could* deliver huge benefits, but a positive poverty alleviation outcome should not be taken for granted. Detailed data from TransMilenio and TransJakarta demonstrates.

Colombia divides its population into 6 income groups. Category 1 and 2 are considered 'poor' under Colombian law. Of all TransMilenio passengers, 37% are from these two lowest income categories, 47% are from category 3, (which represents 66% of the total population), 13% are from category 4, and 3% are from categories 5 – 6. On average, TransMilenio passengers save roughly \$134 per year and 325 hours per year over their previous travel time and travel cost [Unpublished data from TransMilenio, 2003].

Data from a 350 person JICA study on TransJakarta passengers indicated that roughly 40% of passengers were defined as 'low income' based on some proxy indicators. Despite design flaws, some 87% of respondents said their travel time was slightly shorter, and only 2% said it was longer. In terms of travel cost, 47% said their travel cost was slightly lower, 29% said it was the same, and 21% said their travel cost was higher than before [unpublished survey data, JICA, 2004].

The specific situation will depend on: a) the level of poor people using the bus system, b) the level of congestion in that corridor; c) the degree to which the new BRT system has increased or reduced the number of fully-paid transfers that the passenger needs to make; e) the fare price before and after the system was introduced; and f) travel time before and after the system was introduced.

Often, when a corridor is being reconstructed to build a BRT system, pedestrian and cycling facilities in the corridor are included simultaneously. Such measures will also help to ensure a BRT project benefits the poor.

Traffic Demand Management

As the poor are the least likely to benefit from roads and the most likely to suffer negative externalities resulting from the road's construction, congestion charging, increasing parking fees for on-street parking, and other demand management measures are a potentially progressive forms of taxation that could be used to finance measures that directly benefit the poor. While demand management has been little utilized in a developing country context, this is likely to change in the near future.

The recent success of the London congestion-charging scheme has proved that a politician can impose a fee on private vehicles entering a downtown area and still get re-elected. The London congestion charging scheme today has an approval rating of roughly 75%, and largely on the strength of its success, Mayor Ken Livingstone won re-election in 2004 by a wide margin. The scheme imposes a £5 fee for a vehicle to enter the central business district. The fee has to be paid in advance via a number of payment mechanisms, and is enforced by cameras that identify the vehicle license plate, both in a cordon ring around the CBD and also at strategic points within the CBD.

The system has cut traffic levels by 15%, delays by 20%, and importantly, increased bus speeds by 20%. (Transport for London, unpublished data) Most low income people in London are bus passengers, who are key beneficiaries of the plan. The London system did require some £280 million in up front capital investment, largely for the payment system and the cameras for the enforcement system, but it was paid entirely by private

investors. These costs are dropping rapidly due to the decreasing prices of electronics and telecommunications. All of the costs of the system were paid back within two years from the revenue, but the costs have been amortized over 5 years, and began yielding a £80 million profit from the first year. This money is 80% earmarked to public transit improvements and 20% to road maintenance, freeing up municipal funds that can now be used for alternative needs, such as low income housing and infrastructure. The progressive nature of such a system would be even more pronounced in a developing country where motorists are more clearly from the highest income groups.

Finally, given the disproportionate negative impact that traffic accidents have on the poor, more must be done to design streets for save travel by non-motorized means. Most developing country urban areas lack a clearly defined road hierarchy. Increasingly, the road hierarchy should be defined, and those streets serving primarily residential and access functions should be traffic calmed: low-cost, self-enforcing and easy to implement measures to slow vehicular speeds. Such measures protect the road's most vulnerable, and usually the poorest, users — children, cyclists and pedestrians.

Overcoming Obstacles in the Vehicle Supply Sector

The problem of basic mobility among both the rural and urban poor, particularly in Africa, is as much a problem of the vehicle supply sector as of the road sector. Because private motor vehicle ownership is likely to be out of reach for most of the poorest in Africa and Asia, the vehicles most suited to enhancing the personal movement of the poor must be, by definition, of comparatively low capital value.

Vehicles are an important asset that families use to lift themselves out of poverty. Ownership of a bicycle can reduce daily commuting costs by saving bus fare, by reducing travel time otherwise spent walking, by allowing the owner to run a small informal business, and allowing vendors to by-pass middlemen. Some bicycle and motorbike owners become bicycle taxi operators in parts of Uganda and Kenya. In Indonesia, the owner of a used motorcycle can become an *ojek* (motorcycle taxi) driver. In India, Bangladesh and Indonesia, a cycle rickshaw or pedicab is often the first job that recent immigrants to urban areas take, and owning the vehicle itself an important first step out of penury. Thus, bicycles and other low cost vehicles are assets the poor can afford to own that can permanently reduce their daily transport costs. Even the poorest families, once given access to a bike, can usually cover the costs of its maintenance.

A significant difference between African and Asian urban transport systems is that vehicle costs tend to be lower in Asia, and Asia has a greater diversity of both motorized and non-motorized vehicle types. These vehicles also tend to be manufactured domestically in Asia, though increasingly in joint venture with globalized corporations. These vehicles would include not only cars and trucks but also dozens of paratransit vehicle types, motorcycles, a diversity of three wheelers with motorcycle engines, as well as a diversity of non-motorized two and three wheelers, etc. In Africa, virtually all vehicles are imported, and there are fewer vehicle options, with land rovers, cars, a few paratransit vehicle types, maybe a few bicycles, maybe animal traction, and nothing else.

Where motorcycles have been introduced, like in Northern Kenya and Uganda, and in Burkina Faso, they have taken off rapidly. This paucity of vehicle types and their high cost is partly because Africa has virtually no vehicle manufacturing, motorized or non-motorized, partly because governments tend to raise revenue from tariffs for lack of other effective mechanisms, and partly because of ubiquitous monopolies in the vehicle supply sector.

A strong case can be made for reducing the tariffs on vehicles like bicycles and paratransit vehicles used predominantly by the poor. In the 1970s taxation on imported bicycles varied from 40% to 400% in Africa, which went a long way to explain why bicycles were far more expensive in Africa than in Asia. In many countries the bicycle was regarded as a “luxury good”, and tariffs were often even higher than on motor vehicles. Bicycle sales doubled in one year when Kenya removed the tariff on bicycle imports.

At the same time, efforts must be made to gradually increase the value added from African vehicle assembly and eventually manufacturing. Donor agencies, generally more concerned about propping up their own deteriorating vehicle industries, have not in the past been supportive of this endeavor. However, intelligent joint ventures between global vehicle producers and local African partners could gradually increase the value added content of locally sold vehicles, which eventually would reduce vehicle prices.

While directly subsidizing bike ownership for the poor is generally not necessary, just to keep matter in perspective, it costs \$10 million to construct a single highway flyover. The beneficiaries of this flyover will be quite mixed, but concentrated among wealthy motorists. This same \$10 million could buy 150,000 good quality bicycles, or cut the price in half for 300,000 bicycles. It would also buy 100,000 modernized cycle



Price comparison: \$10 million will buy one flyover, 150,000 bicycles or 100,000 cycle rickshaws

rickshaws, creating 100,000 jobs. Put another way, you could give every man, woman, and child in Senegal a bike for \$500,000,000, roughly the cost of 10 kilometers of metro, or one major highway. Certainly, donor agencies focused on poverty alleviation would be well advised to focus on bikes and not on highways.

This is not, however, the best approach to resolving the vehicle supply problem in Africa. Most important is to introduce competition and attract private sector investment into the

African vehicle sector, both motorized and non-motorized. Joint ventures can be developed that first demonstrate the existence of a robust vehicle market and then gradually induce private suppliers to shift a greater share of the value added from the production process to Africa. Greater market involvement in the sector would help to break down local vehicle import monopolies and engender competition among suppliers.

ITDP has been developing interventions in the non-motorized vehicle supply sector in Africa, where the vehicle costs are most affordable to the poor. The California Bicycle Project, initiated by ITDP in cooperation with the Trek Bicycle Corporation, developed a bicycle specifically designed for urban Africa, and branded it the “California Bike”. By consolidating orders from small independent bicycle dealers, donor agencies, governments and large employers, we were able to reach sufficient scale to ship container-loads, reducing freight costs and unit costs. The scale of the orders allowed us to negotiate orders directly with factories, bypassing middlemen. In the first order 1920 bikes were procured. All were sold, and a 16% rate of return was realized. There are now 35 independent bicycle dealers acting as distributors. A second order of six containers arrived in Africa in the summer of 2005. In this way, the California Bike Coalition has been able to introduce a good quality affordable bicycle into Ghana, South Africa, Tanzania, and Senegal at prices between 25% and 50% below the cost of any bike of equivalent quality.

By working to overcome market failures in the vehicle sector, rather than simply donating vehicles, donor agencies in partnership with global vehicle industries would play a more constructive role in establishing sustainable commercially viable domestic vehicle production.

Conclusions

Transport is critical to achieving the MDGs. However, simply building more roads is not going to alleviate poverty, and may make poverty worse. In order to maximize the impact on poverty alleviation, some general guidelines can be specified:

- a) Improve travel for the modes most commonly used by the poor, specifically walking, cycling and transit. In urban areas, this can best be done by investing in BRT, cycleways, and improved pedestrian facilities.
- b) Focus on reducing the cost of vehicles by facilitating foreign direct investment into the vehicle sector, particularly non-motorized vehicles, trucks, and transit vehicles. Help overcome local vehicle monopolies, and reduce tariffs on vehicles used primarily by the poor, such as bicycles.
- c) Cover domestic spending on roads with fuel tax or other road user charges.
- d) Don't use foreign aid to finance the construction of more roads than the beneficiary country can afford to maintain with their own resources.
- e) Apply the fix-it-first rule, meaning that expenditures should be first targeted to bringing the existing road network into a state of good repair and paving unpaved roads.

- f) Avoid the construction of roads that blight low income neighborhoods, dislocate low income families, or concentrate air emissions in already polluted population centers. When unavoidable, fully compensate the victims.
- g) Design streets for safe non-motorized travel.

In order to develop more appropriate indicators that capture the degree to which transport sector investments will help meet the MDGs, the following indicators are suggested:

- o Reduce the kilometers of roads needing significant maintenance and rehabilitation
- o Increase the kilometers of bus priority lanes, bike lanes, and sidewalks
- o Increase the percentage of total road system expenditures recovered from road user fees, parking charges, congestion charging fees, and fuel taxation to at least 100%.
- o Increase the number of bicycles, trucks, and transit vehicles per 1000 population.
- o Reduce traffic fatalities per 10,000 population and per 10,000 vehicles to as close to zero as possible.
- o Reduce the numbers of population exposed to toxic air emissions above WHO-recommended standards to as near to zero as possible.

The MDGs are a good opportunity to hold the donor community and governments accountable for meeting the needs of the poor. Achieving progress on the items above would be a great step in focusing much needed transport sector interventions on the right priorities.

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