

Module A. The rationale for incorporating a bicycle component into a transport project: sustainable, affordable gender-inclusive transport

The case for bicycles

Transport systems in developing country cities are becoming increasingly biased towards motorized individual transport, thus favoring a minority of higher income people who can afford their own vehicles. Most urban dwellers depend on overcrowded, dilapidated public transport and paratransit services to satisfy their mobility needs. Meanwhile poor people in both urban and rural settings still primarily walk and headload. The importance of intermediate means of transport (IMTs) is now increasingly recognized in rural development strategies, but the overall potential of non-motorized transport largely remains untapped. Bicycles are non-polluting, low-technology vehicles that provide energy-efficient and flexible transportation at low prices. At prices often below \$100, bicycles cost a fraction of motorized vehicles. For example, Indian one-speed bicycles can sell for under \$40. However, high customs tariffs or luxury taxes on tires often raise the final retail price in African countries by 100-500%.

Bicycles are three times faster than walking, offering effective ranges of movement nine times that of walking, and carrying loads of up to 100kg. Cycling makes for improved human health and cleaner and safer environments. Additionally, bicycles can be introduced on a relatively small scale and can be targeted to particular groups such as students, traders or micro-entrepreneurs. The social, economic and environmental benefits of this efficient transport mode are thus numerous. More importantly, *not including non-motorized transport components in World Bank transport or infrastructure loans means ignoring the transport needs of the poor.*

Bicycles and Poverty Alleviation

The World Bank's Policy Review Paper *Sustainable Transport* finds that "one of the best ways to help the poor is to improve non-motorized transport" Recent research shows that households' vulnerability to poverty can be effectively reduced by helping them to build up assets. Bicycles are vital assets to many households who otherwise have to spend up to a third of their incomes on transit fares and other transport costs. Bicycles can also be directly used for income-generating purposes, so that even very poor families then have the capacity to repay loans. Some have done so in less than a year. Promoting bicycle ownership helps people get out of poverty.

Bicycles are also a cost-effective way to increase access to services such as health, water and education. They also facilitate job-seeking by increasing mobility. Bicycles are also very adaptable and can be used for different purposes by different household members.

Bicycles and Environmental Protection

Bicycles produce no emissions and almost no noise. Motorized transport is already responsible for 70-90% of total air pollutants in urban environments, and 750,000 people die prematurely every year due to transport-related emissions. Bicycles can help to successfully counteract this worrisome trend.

Bicycles and Private Sector Economic Development

The recent change in focus in transport policy toward a market-based approach places greater importance on governments, and in turn on the World Bank, as enablers of business and of competition. The World Bank is increasingly using loans to stimulate private sector development. World Bank transport loans have had important stimulating effects on infrastructure construction and on public transport and motor vehicle providers. Including bicycle components into larger transport loans can help do the same for the bicycle industry and its ancillary services. Currently, too many people never had an opportunity to buy a bicycle simply because there are no retailers in their settlement and credit for either the aspiring retailer or the potential customer is not available. There is not a single bicycle retailer in the 4 million people township of

Soweto in South Africa.

Because of the low-capital investment involved, even very small entrepreneurs are able to sell bicycles. The high economic benefits from bicycle ownership (reduced travel costs and increased income) have meant that women are often able to repay bicycles loans within a period of 6-9 months. The promotion and marketing of bicycles, and the organization of programs to overcome cultural resistance to women's use of bicycles can frequently be handled by NGOs and other local organizations.

Bicycles and Women's Empowerment

Bicycles can be especially beneficial to women, who perform triple roles as income earners, homekeepers and community managers. Rural women's responsibility for water and fuelwood collection is much more effectively carried out by bicycle. Urban women's essential trips are typically more dispersed in time and location than men's, and public transport is biased towards the peak hour commuting needs of men. Bicycles provide liberty from time schedules.

Examples of concrete transport problems a bicycle component can address:

1. ***Access to markets***

Especially in rural areas, people, in particular women, have difficulty accessing local markets. With a bicycle, both traders and buyers would be able to overcome these medium distances.

2. ***Access to employment***

Bicycles can be effective transportation for commuting. The first bike lane built under the Lima non-motorized pilot project was specifically targeted at providing access to employers in an industrial district in the North of the city.

3. ***Access to schools***

Providing bikes to school children and students can improve attendance and thus overall educational attainment, as some initiatives in South Asia have shown.

4. ***Passenger transport***

If sufficiently modified, cycles can be used as taxi services. In rural Uganda, simple bicycles are transformed into taxis by placing a padded seat over a sturdy back rack. Especially women use this service to access markets. In Dhaka, Bangladesh, one third of all women rely on rickshaw services as their primary form of passenger transport. In India, special cycle rickshaws carry as many as 10 children safely to school in one trip.

5. ***Feeder services / paratransit***

Especially in urban fringe areas or rural environments, public transport stations are often not in close walking distance from people's homes. Cycles are a very effective way of accessing these stations. In a user survey at suburban rail stations in Rio de Janeiro, 20% of all people interviewed said that they would use bicycles to come to the stations if safe parking facilities were provided and 93% of all interviewed supported the construction of such facilities.

6. ***Goods transport***

Bicycles can carry loads up to 100kg. For a rural woman responsible for water and fuelwood collection, access to a bicycle can cut her transport time in half. Adaptations may have to be made to the vehicle depending on the bulkiness of the load, however. Especially among poor users there is a tendency to

overload the vehicle and thus endanger both the rider and other road users.

- ***Bicycle ambulances***
It is relatively simple to add a side-car and convert a bicycle into an ambulance – with dramatic impacts of increased access to medical treatment and particularly reduced maternal mortality.

8. ***Delivery services and garbage collection***

Bicycles are very effective for mail delivery and neighborhood waste collection in urban areas. Many dense developing country settlements are inaccessible by vans or trucks, so service is either not provided at all or has to be done by hand. Workbikes are an efficient feeder garbage collection service, especially in informal settlements with limited road systems.

9. ***Urban gridlock***

In congested urban traffic conditions, bicycles offer superior flexibility at competitive travel speeds. In fact, in gridlocked cities bicycles are the fastest surface transportation available. Bicycles take up much less space per person than cars, and even buses if they are not at capacity. A 3.5-meter bikelane yields capacities of over 8,000 persons per hours, which is about the same as unsegregated bus lanes and over 4 times as much as a car lane of the same width.

10. ***Income-generation***

Cycles are frequently used by petty traders. There are many different forms of fashions of bi-and tricycles all over the world, selling everything from ice cream, sandwiches to knife-sharpening services. Helping someone acquire such a specialized cycle means helping them into a small business and out of poverty.

Important considerations for donors and governments regarding bike components

A growing number of development agencies are becoming involved in non-motorized pilot projects, yet experiences are rarely fully documented and shared. Some of the key considerations when incorporating bike components are listed below. Like all pilot projects, bicycle components are likely to be somewhat more staff intensive than the overall transport project that are be a part of. However, the prospective benefit of permanently making transportation in a city or village more affordable, efficient, ecological, in short: sustainable will make the additionally required time and effort well worthwhile, both from an idealistic viewpoint and a general cost-benefit perspective. All issues are discussed in further detail in the following package elements.

11. Typically the project will begin on a rather small scale and thus require creative ways of keeping it cost-effective within large bureaucratic structures. This is why partnering with experienced NGOs is often a preferable approach. Scaling up the successful project step by step will then ensure a growing and widening impact.
12. A bicycle component, especially if it contains bike procurement, training and infrastructure elements, will require cooperation with many different agencies, some of which may need to receive additional capacity building and training.
13. Close attention should be given to the initiation of microcredit programs related to bicycle promotion, since and effective running of such programs also requires special management skills.
14. Some of the non-economic issues related to bicycle components, most prominently gendered access to bicycles, require an understanding of local culture and may call for the parallel initiation of educational campaigns.
15. The high tariffs imposed on bicycles in many African countries may require that governments agree to reduce or provide exemption to these tariffs for pilot projects.