

PROMOTION OF NON-MOTORIZED TRANSPORT.

Non-motorized transport (NMT) is often a key element of successfully encouraging clean urban transport. It can be a very attractive mode of transport for relatively short distances, which make up the largest share of trips in cities.

Non-motorised Transportation (also known as active transportation and human powered transportation) includes walking and bicycling, and variants such as small-wheeled transport (cycle rickshaws, skates, skateboards, push scooters and hand carts) and wheelchair travel. These modes provide both recreation and transportation, and are especially important for short trips up to 7 kms, which take up the largest share of trips in urban areas. NMT can be stimulated by a policy package consisting of investments in facilities, awareness campaigns, smart urban planning, improved public transport and disincentives for the use of motorised private vehicles.

Specific ways to improve non-motorised transportation are, inter alia

- Improve sidewalks, crosswalks, paths, bicycle lanes and networks.
- Public bicycle systems (automated bicycle rental systems designed to provide efficient mobility for short, utilitarian urban trips).
- Develop pedestrian oriented land use and building design.
- Increase road and path connectivity, with special non motorised shortcuts
- Traffic calming, streetscape improvements, traffic speed reductions, vehicle restrictions and road space reallocation.
- Safety education, law enforcement and encouragement programs.
- Bicycle parking.
- Bicycle integration in transit systems (e.g. racks in metro or on bus)
- Address security concerns of pedestrians and cyclists.
- Congestion pricing
- Vehicle parking policies
- Fuel taxes

FEASIBILITY OF TECHNOLOGY AND OPERATIONAL NECESSITIES

Increasing the modal share of NMT is possible in any country; however the successfulness depends on many country-specific factors, including climate, geography, culture, political commitment, public

awareness, policy effort and consistency, long-term vision and the attractiveness of the alternatives. Several of these are interdependent, and as shown by the example of Bogotá, strong NMT policies, awareness campaigns and political commitment can bring about a shift in public attitudes towards NMT and a 4-fold increase in cycle trips.

The main barriers towards implementing a successful NMT policy are (based on ICE (2000):

- Private-vehicle-oriented transport and spatial planning, which is business-as-usual in most countries, particularly developing.
- Public perception and status: walking, cycling (and public transport) is perceived as the transportation mode for the poor. The richer part of the population often has a disproportionate decision power, which makes NMT-focused policy risky. Often in developing countries there is a gender bias towards male cyclists.
- Safety: pedestrians and particularly cyclist are vulnerable, and therefore need separate road space, or at least be respected and taken note of by vehicle users. Lack of social safety, especially for females can also be a barrier. NMT users have a higher risk of being involved in accidents than car users, particularly in developing countries (IPCC, 2007).
- Lack of convenient public transport, which is required to make NMT a good option for multi-modal trip (i.e. the combination of cycling and rapid bus or rail systems).
- Chicken-and-egg problem: people don't start cycling if there are few cycle lanes, and planners don't build these when there is no interest in cycling.
- Lack of overall long-term, integrated vision and planning.
- High costs for bicycles, including taxes.

How the technology could contribute to socio-economic development and environmental protection

Good walking and cycling opportunities are a key part of any sustainable transport and planning strategy, and provide an overall improvement of the quality of life. More specifically, sustainable development benefits of NMT are:

Environmental

- Air quality improvement
- GHG emission reduction

Non-motorized transport does not emit greenhouse gas emissions, nor local air pollutants. Every increase in NMT therefore leads to a direct decrease in emissions.

Social

- Congestion reduction
- Health benefits due to exercise. For example, cycling for 30 minutes a day reduces the chance of cardiovascular diseases and diabetes by 50% (Witting et al., 2006).
- Gender benefits: cycling can be particularly suitable for the many short trips women in developing countries take
- Social equality and poverty reduction: cheap, fast and reliable transport opportunities, and public space development directed towards all segments of society (ICE, 2000)
- Safety: increase in bicycle use is often accompanied by a reduction in cycling accidents and an increase in safety in public areas
- Noise reduction

Economic

- NMT, particularly cycling, is easy, flexible, cheap and fast
- More attractive cities for tourists and residents, particularly if car-free zones are included
- Reduced travel times due to improved traffic flow
- Energy security due to lower vehicle energy use