Cycling in Kathmandu Valley

Pedal Power for Equity and Sustainability

INTRODUCTION

Rapid increase in motorization, particularly in developing countries, has huge economic, environmental, social and health cost from increasing traffic congestion, road fatalities, air pollution and carbon emissions. In this context, cycling offers an efficient, eco-friendly and inexpensive mobility option for cities. Providing proper infrastructures and services for cycling will encourage more people to cycle. It can also play a vital role in increasing public transit ridership by providing efficient first and last mile connectivity. Its wider benefits have led to a renewed interest in cycling in cities all over the world. Moreover, city governments are investing resources in bicycle-sharing projects, and developing policies and infrastructures to improve cycling safety and convenience.

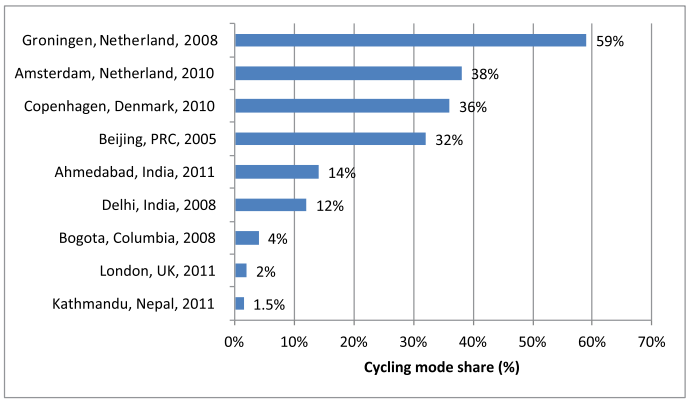
BENEFITS OF CYCLING

Personal Benefits

- Improved access and mobility
- Exercise and health
- Cost savings

Societal Benefits

- Less emissions
- Better use of public space
- Improved social equity
- Safer roads
- Complement public transport
- Local economic development



(Source: LTA, 2012; MoPTI/JICA, 2012; Wikipedia)

Fig. 1 Cycling Mode Share (%) in Cities around the World

"A city is more civilised not when it has more highways but when a child on a tricycle is able to move about everywhere with ease and safety"

- Enrique Penalosa, Former Mayor of Bogota

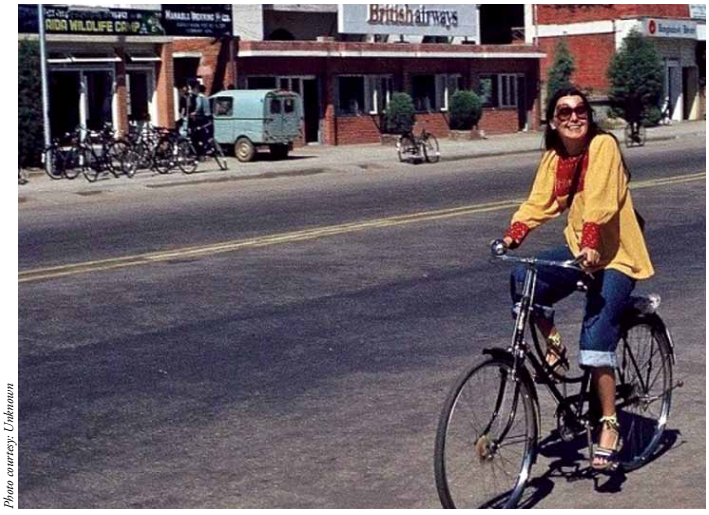


Photo courtesy: Unknown

Fig. 2 Bicycles in Durbar Marg (1975)

Photo courtesy: Prashanta Khanal

Fig. 3 Bicycles struggle to find space in Durbar Marg (2013)

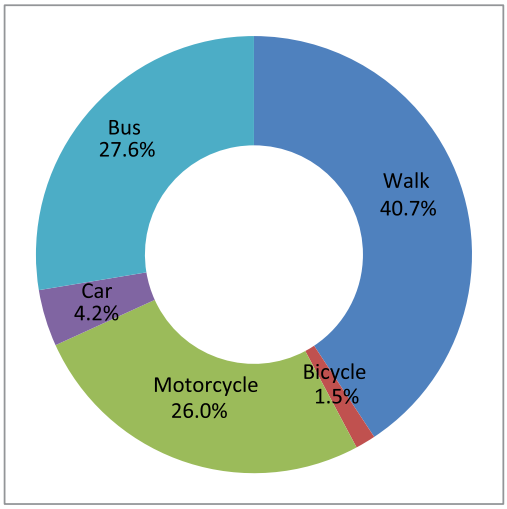
CYCLING IN KATHMANDU VALLEY

Cycling was introduced in Kathmandu as early as 1903 and the first bicycle shop was set up in 1938 (Manandhar, 2013). Cycling gained popularity as a means of transport for the short travel distances. However, in recent years, the portion of trips covered on bicycle has been steadily decreasing. A study conducted by MoPIT/JICA in 2011 shows that the travel mode share of cycling has decreased from 6.6% in 1991 to 1.5% in 2011. During the same period, the modal share of motorcycles increased by almost three times.

According to the 2011 census, 29.9% of all urban residents in Nepal have bicycles while 23.6% have motorcycles and only 4% have cars. In Kathmandu Valley however, more households (30%) have motorcycles while only 11.4% have bicycles and only 5.2% have cars.

Most of the distances in Kathmandu Valley can be easily reached on foot or by bicycle. The MoPIT/JICA study shows that the average travel distance of private vehicles is 5 km, and 90% of the trip by walking and bicycle finishes within 30 minutes. This suggest that the daily travel distances in the Kathmandu Valley are walkable and cyclable. The study also shows that the total daily trips made in Kathmandu Valley are 3.5 million, out of which 52.5 thousand trips are made on bicycle. A survey conducted by Clean Energy Nepal and Cycle City Network Nepal in 2012 recorded average number of cycle users per hour per direction around Tundhikel road stretch was 270 during peak hour (9am-11am) and 194 during non peak hour.

According to the Metropolitan Traffic Police Division, non-motorized transport users (pedestrians and cycle users) are one of the largest group to be killed in road accidents. In fiscal year 2011/12, 180 cycle users were reported caught in the accidents, and seven were killed. Similarly in 2012/13, eight cycle users were killed. The roads in Kathmandu Valley are very unsafe for people to walk or cycle. The safety concerns and societal perceptions towards cycling as a poor man's mobility are the major reasons for people to move away from riding cycle as a daily mode of travel.



(Source: MoPIT/JICA, 2012)

Fig. 4 Travel Mode Share of Kathmandu Valley in 2011

"Nothing compares to the simple pleasure of a bike ride

– Jonh F. Kennedy, former President of the United States"

Photo courtesy: Bhushan Tuladhar

Fig. 5 Bicycle/tricycle users as seen in Ring Road where conservationist and cycle user Dr. Prahlad Yonzon was killed in a road accident in 2011

CYCLE RICKSHAWS AND CARGO BIKES

Besides general bicycles, non-motorized vehicles (NMVs) such as passenger rickshaws, cargo rickshaws, push carts etc. are widely used in Kathmandu Valley and other cities of Nepal. They provide basic services to city dwellers from mobility of people to transportation of vegetables, goods, waste etc. NMVs provide efficient, low-cost and environment-friendly mobility and contribute to economy of the city. They often play as complementary mode of public transportation providing first and last mile connectivity. Thousands of people's livelihoods especially urban poor depend upon these NMVs.

However in the recent years, NMVs have come under an increasing threat that has led to significant decline in their numbers and usage. They are slowly replaced by motorized vehicles, and in many cases they are restricted to operate in certain road stretch or area of the city. Along with increasing motorization, their existence is further threatened by societal perceptions towards NMVs, loss of safer space and urban sprawl.

According to the Rickshaw Puller's Association (Rickshaw Majdur Sangh), there are nearly 500 passenger rickshaws and 1900 cargo cycle rickshaws operating in Kathmandu Valley. Passenger rickshaws are operated in touristic hub of Thamel contributing to tourism industry. The door to door waste collecting rickshaws play major role in collection of household waste. According to Solid Waste Management Association and NGO Federation for Environmental Conservation, there are around 700 such waste collecting rickshaws. There are estimated 10,000-15,000 vendors using bicycles for selling fruits and vegetables. A study by Center for Integrated Urban Development estimated that there are around 4,000 recyclable materials or scrap collectors in Kathmandu valley. They go around the city on bicycles to collect the recyclable materials from the households.

NMVs can play appropriate and low cost strategies for poverty alleviation, climate change mitigation, air quality management and solving the urban transport problems, however there is lack of policies and strategies to promote of NMVs. A reform on existing operation and management of the rickshaw service is required To make it more reliable, efficient, profitable and customer-frilly.

Fig. 6 Different types of NMVs operating in Kathmandu Valley

1-4 Photo courtesy: Prashanta Khanal

"I feel that I am entitled to my share of lightheartedness and there is nothing wrong with enjoying one's self simply, like a boy."

- Leo Tolstoy In response to criticism for learning to ride a bicycle at age 67"

ECOCABS IN INDIA

The concept of ecocab was first introduced in a small town Fazilka in Panjab, India in 2008. An 'Ecocab' is a dial-a- rickshaw service using improved rickshaws developed on similar lines as a dial-a-cab service. The main idea is to bridge the gap between demand and supply through equal distribution of fleet and automation using latest IT tools and real time technologies. After successful implementation of ecocabs in Fazilka, the concept now is successfully operating in 21 other cities in Punjab.

Ecocabs were conceptualized and introduced so as to strengthen the existing unorganized network of cycle rickshaws and to promote it as an affordable means of sustainable urban transport especially for shorter distances. One can dial a rickshaw simply by using phone or network of call centers. It also includes smart phone and web application. This has helped in improving the overall efficiency of the system. The income of rickshaw operators has been increased by 25-30%. The Punjab ecocabs provide service to over 6 million people daily and saves approximately 0.9 million liters of fuel.

Photo courtesy: www.ecocabs.org

INTERNATIONAL BEST PRACTICES IN CYCLING

Dutch and Danish cities are exemplary in promoting cycling culture. Cities like Groningen, Amsterdam and Copenhagen which have pro-bicycle policies and invested in bicycle-friendly infrastructures have very high share of cycling compared to other cities. In Amsterdam 36% of all the trips in greater city area and 60% in inner city area are made by bicycle. Similarly, in Groningen, the bicycle modal share is over 59%.

Photo courtesy: LucyH

Fig. 8 People cycling in Copenhagen, Denmark

Both countries adopted pro-cycling policies after 1970s integrated with transport, health, safety and other policies. Cycling was prioritized over cars in transport development. Experiences from these countries highlight large pay-offs from investments in a bicycle-friendly infrastructure. The calculated cost that society saves in Denmark for each kilometer cycled is USD 0.5. Copenhagen city government has set an ambitious goal to increase cycling share to 50 percent by 2015. The key lesson from both Dutch and Danish cities is that a large part of their success is down to the infrastructure planning policies adopted, considering the needs of cycle users.

Experience from cities like Bogota shows that the share of cycling will be increased if provided the proper and safer infrastructures. After the construction of 300 km of cycle track, the cycling share in Bogota has increased from 2% in 2000 to 4% in 2007. The cycle injuries were reduced by 8.8% from 2001 to 2004, despite the increase in cycle usage by 38%.

New York City Department of Transport (NYCDOT) has completed the city's ambitious goal of building 320 km of strategic cycle-lanes network in less than three years. The city doubled bicycle commuting between 2007 and 2011, and aims to triple it by 2017. According to study by NYCDOT, the retail sales increased up to 49% in those areas with protected bike lanes. The road injuries to all users decreased up to 58%. The city recently launched a new bike-sharing system 'Citi Bike' in May 2013 to encourage more people to opt sustainable mode of mobility.

Bike sharing schemes, where bicycles are made available for use by individuals for travel between different points in the city, are becoming increasingly popular. In May 2011 there were around 375 schemes comprising 236,000 bikes, but by the end of 2013, 686 cities had bike sharing schemes with over 700,000 bikes and more than 200 cities are in the process of establishing them. The cities of Wuhan and Hangzhou in China have the largest schemes with over 90,000 and 66,000 bikes respectively. Several cities in India are also in the process of setting up bike sharing programmes.

"When we say that we want Copenhagen to become the Eco-metropolis of the world by 2015 - showcasing the world's best urban environment - this includes becoming the best cycling city in the world."

- City of Copenhagen

(Source: NYCDOT, 2012)

Fig. 9 Benefit of first protected bicycle lane in the ycling in the New York

CYCLE-TRACK DESIGN GUIDELINES

A cycle track is an exclusive bicycle facility that has an element of physically segregated path from carriageway and sidewalks. Cycle track provides greater comfort and sense of safety than cycle lanes (which is traffic lane marked on existing carriageway).

A good and efficient cycle track should be Safe, Convenient, Continuous, Unobstructed, Attractive and Direct. These characteristics should guide the overall design of cycle track.

- Minimum width of 2 m for one-way and 3 m for two-way movement (continuous and unobstructed)
- Minimum of 2.5 m for one-way to accommodate cycle rickshaws
- Continuous shade through tree cover
- A smooth surface material—asphalt or concrete. Paver blocks are to be avoided.
- Elevation above the carriageway (e.g. +150 mm) that allows for storm water runoff
- A buffer of 0.5 m between the cycle track and the carriageway or on-street parking areas
- At property access points, the cycle track remains at the same level and vehicle access is provided by a ramp in the buffer
- Manhole covers should be avoided and, if unavoidable, should be level with the surrounding surface
- Vertical edges of segregation should not obstruct the movement of pedals (they should preferably be approximately 0.05 to 0.075m high from the level of cycle track)
- Traffic calming option for left turn vehicles
- Provide cycle prioritized signalized and colored intersections, and crossings

(Source: ITDP/EPC, 2011)

> *"A cycle lane is a symbol that shows that a citizen on a $30 bicycle is equally important as a citizen in a $30,000 car*
>
> *– Enrique Penalosa, Former Mayor of Bogota"*

Photo courtesy: Bram van Ooijen, itdp.org.cn

Fig. 10 Colored cycle lane in conflict areas with motorized vehicles to prioritize cycle users- Copenhagen

Photo courtesy: Prashanta Khanal

Fig. 11 Wrong paving materials used in newly constructed cycle track in Tinkune-Maitighar (Paver blocks and stone pavement should be avoided; smooth surface materials-asphalt or concrete preferred)

GOVERNMENT POLICIES AND PLANS TO PROMOTE CYCLING

Although the Government of Nepal has not formulated specific plans and policies related to cycling, the National Transport Policy mentions that in urban areas, "cycle lanes will be managed separately." It also recommends restricting motorized vehicles in prescribed core areas. The recently revised Nepal Road Standards mentions that, "in all roads with ADT (Average Daily Traffic) of more than 4000 PCU (passenger car unit) and movement of bicycles more than 1000 numbers per day bicycle tracks should be constructed".

Kathmandu Metropolitan City designed cycle lanes as part of the Kathmandu Valley Mapping Programme in 2001, but it failed to get implemented. In 2005 a decision to construct a 44 km long bicycle track in the city was made after Kathmandu signed the Velo Mondial Charter and Action Plan for Bicycle Friendly Communities in 2005. However, the decision was not implemented. This charter provided a blueprint, commitment and a set of directives to promote bicycle as an efficient, environmentally friendly alternative to motorised transport. The Department of Road has also designed cross-section of urban roads in 2012, inclusive of cycle track in the roads that are 14m or wider.

"The bicycle has done more for the emancipation of women than anything else in the world. It gives women a feeling of freedom and self-reliance. I stand and rejoice every time I see a woman ride by on a wheel...the picture of free, untrammelled womanhood."

- Susan B. Anthony American civil rights leader and feminist. 1896

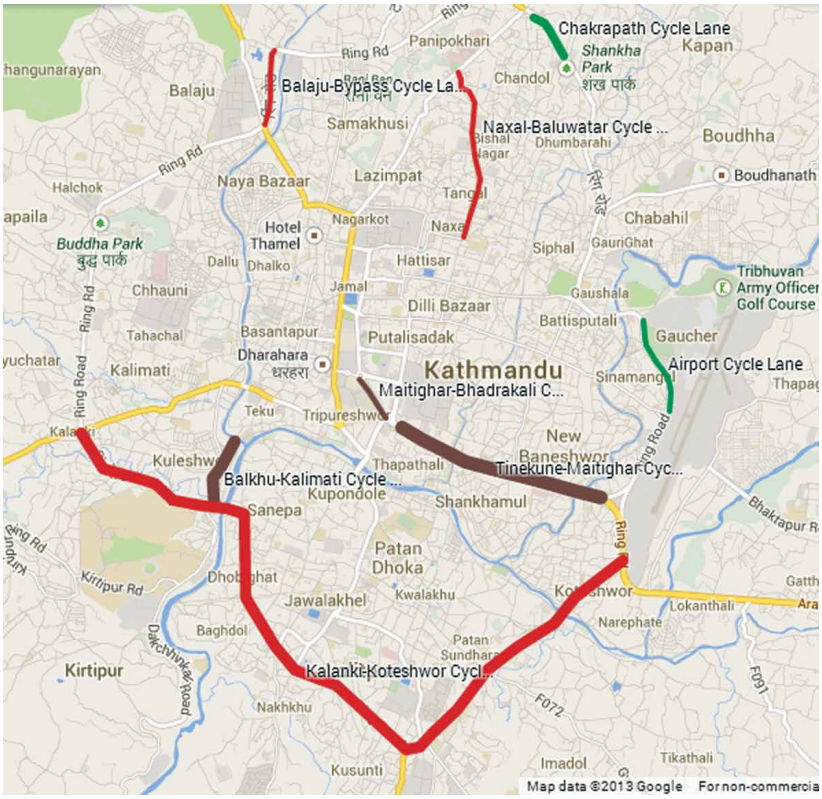


Fig. 12 Google maps of cycle lane in Kathmandu Valley (Red- under construction; Green- Existing; Brown- Planned)

Photo courtesy: elyak.com

Fig. 13 Cycle track along Tinkune-Maitighar road stretch (under construction)

KATHMANDU CYCLE CITY 2020 CAMPAIGN

With a vision to establish Kathmandu as a cycle city by 2020, an informal group of youth started a campaign in 2009, which was later formalized as Cycle City Network Nepal (CCNN). It has been continuously advocating policy makers and urban planners on the benefits and importance of cycling in urban mobility through various campaigns and policy dialogues. It is working with other, youth groups and civil societies to aware general public about the health, environmental and social benefits of cycling, and road safety. The major events/activities of the campaigns include mega cycle rally for cycle lane, weekly radio programs, bike to school campaign, cycle safety campaign, and monthly critical mass ride among others. It has successful pushed concerned authorities to build cycle track in Tinkune-Maitighar , which was in fact planned 10 years ago, and plan for other 18 km of cycle track in Kathmandu Valley.

For more information: www.cyclecity.org.np

Photo courtesy: Rajan Kathet

Fig. 14 Prime Minister receiving bicycle and helmet during World Environment Day 2012

> *When I see an adult on a bicycle, I do not despair for the future of the human race.*
>
> *- H.G. Wells*

BIKE TO SCHOOL CAMPAIGN

Clean Energy Nepal and Cycle City Network Nepal as a part of MaYA- Manav-kendrit Yatayat Abhiyan (A Campaign for People-centric Transport System) have initiated 'Bike to School' Campaign to aware school/college students on importance and benefits of cycling culture, road safety and encourage them to bike to school. The campaign includes presentation on benefits and importance of cycling, documentary show, empowering children to cycle, and installation of bicycle parking facilities in the school premise.

Photo courtesy: Rasu Manandhar

A survey conducted in 10 schools of Kathmandu Valley (with over 500 students) showed that around 77% of students know how to ride bicycle however only 5% of surveyed students ride their bicycle daily. And only very few ride their bicycle to school. Over 77% of students were found to travel to school on foot, while 19% use either school bus or public transportation. 41% of the students perceived safety as major concern for cycling to school.

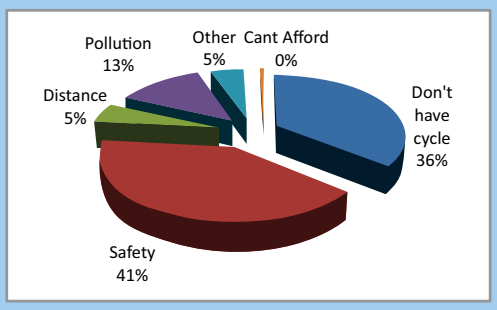


Figure 15 Challenges perceived by school students for cycling to school

Avoid extra spacing was found that most of the school children ride bicycle during Nepal Bandh as they could ride freely with ease and without disturbance from the vehicles. Around 26% of students ride their bicycles few times a week. If provided safer cycle routes to school, there will be more students to ride their bicycle to schools/colleges.

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WAYS AHEAD

Specific policies with plans and targets are required to promote cycling in Kathmandu Valley and other cities of Nepal. Cycling should be integrated and prioritized in overall mobility plans.

Supporting a vision to establish Kathmandu as a cycle city by 2020, Ministry of Science, Technology and Environment in collaboration with Cycle City Network Nepal and Clean Energy Nepal organized a program on cycling, on the occasion of World Environment Day 2013, which came up with a Kathmandu Declaration 2013.

KATHMANDU DECLARATION 2013 ON ESTABLISHING KATHMANDU AS A CYCLE CITY BY 2020

REALIZING the importance of cycling in promoting sustainable mobility, environmental improvement, and a people-friendly city,

APPRECIATING the efforts of the Government of Nepal and other organizations in promoting sustainable mobility,

We the participants of the "Workshop on Cycling in Nepal: Challenges and Opportunities" commit ourselves to and urge all stakeholders on Kathmandu's urban development to:

1. Develop and implement a strategy for promoting cycling in Kathmandu and making Kathmandu a cycle-friendly city by 2020.
2. Immediately include the provision of cycle lanes and related infrastructure in the roads that are being expanded and interlink cycle lanes to create a network of cycle tracks in a planned manner
3. Engage local people and stakeholders in promoting people-centric mobility such as cycling in a participatory manner
4. Implement vehicle-free zone in the core area of Kathmandu as soon as possible
5. Introduce car-free Saturdays in Kathmandu or certain areas in Kathmandu
6. Establish parking facilities for bicycles at various locations particularly at business centres and office areas
7. Launch campaigns to encourage more youth involvement in cycling and develop a cycling culture so that all people can ride with pride
8. Promote economic instruments and mobilize financial resources from pollution tax and other sources for promoting non polluting transport means like cycles
9. Effectively implement Decade for Action on Road Safety 2011-2020 so as to improve road safety for cyclists and reduce overall road fatalities by 40% by 2020.
10. Encourage key government officials and opinion makers to ride cycles on a regular basis

June 2, 2013
Kathmandu, Nepal

"Investment in infrastructure for non-motorized transport or affordable (and acceptable) public transport systems is more equitable (and sustainable) use of scarce funds"

-Dr. Joan Clos, Executive Director, UN-Habitat

REFERENCES:

BRITISH CYCLING, 2013 : International Best Practice in Cycle Safety (http://www.britishcycling.org.uk)

C40 CITIES, 2013 : City Case Studies- Bogota, Columbia (http://www.c40.org)

ITDP/EPC, 2011 : Better Streets, Better Cities- A guide to street design in Urban India

MoPIT/JICA, 2012 : Final Report: Data Collection Survey on Traffic Improvement in Kathmandu Valley

NYCDOT, 2012 : Measuring the Street: New Metrics for 21st Century Streets

MANANDHAR, 2013 : Kathmandu Then and Now

This Factsheet was produced in December 2013 as part of MaYA (Manav-kendrit Yatayat Abhiyan) – A campaign for people-centric transportation system being implemented by Clean Energy Nepal, with support from UN-Habitat. For more information on the campaign, please contact:

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