

Study on Road Transportation and Their Status at Shadananda Municipality in Bhojpur

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Abstract

Road transport services assist in rising access with the rural-urban linkages. Road convenience can decrease remoteness, motivate collection, production and marketing activities, boost civic facilities and aid to technology transfer. Road construction has been seen to bring about distinguished enthusiasm and observable changes in rural life. Road structure is considered as “the infrastructure for infrastructure”. Though, in the absence of notable standards and coherent guidelines, road construction is carried out in opposing manner resulting in random use and wastage of scarce funds. Municipal Transport Master Plan is arranged for gauging and scheduling the existing road transport structures and accommodations inside the municipality and the surrounding rural municipalities. This study is focused on the interventions of road networks within the municipality.

Keywords: *Infrastructure, Development, Network, Service, Connectivity*

I. Introduction

Quick development has led formation of rural spaces to urban areas in short period. The existence of things, amenities and facilities draw people from countryside areas to live in municipal areas. Even though, in past, rules were made to encourage people to reside on their native area due to random urbanization, recent study from economics and market theories support dense population over urban areas based upon accumulation and measure of financial prudence [3].

Transport services assist in mounting contact with the rural-urban connections. Road availability can shrink isolation, increase crop production and selling activities, inspire public services and support technology transfer. Road structure has been seen to bring about distinguished enthusiasm and observable changes in rural life. Road infrastructure is considered as the back- bone of the development [4]

II. Objectives of the study

The overall objective of study is to find out the present situation of road transportation of Shadananda Municipality. The detailed objectives are:

- Identify the inventory of all road networks.
- Identify the major road networks linking the municipality.
- Identify the interventions based on accessibility.

III. Study Area

Shadananda Municipality is located in the Bhojpur district in Koshi zone, Province number 1 of Nepal. It is surrounded on the west by Dobhane and Timma Village

Development Committee (VDC). Kudak Kaule VDC and Nepaledanda VDC are the borders on the Northern part. On the south is bordered by Deurali, Sangpan, Boya and Helaucha VDC while on the east it shares boundary with Khadbari Municipality of Sankhuasava District [1]. It covers an area of 101.5 km². Road transport is major transport mode in Bhojpur district. An airport in district headquarter Bhojpur serves domestic passengers from different cities of the country. But the closest airport to the Municipality is Tumlingtar Airport in Khadbari Municipality. Shadananda is one of the slowly developing municipalities of Nepal [5]. A neighbouring city Khandbari is on East (16 km). It is a segregated part of the district having easy access to Khandbari compared to the district headquarter Bhojpur [2].

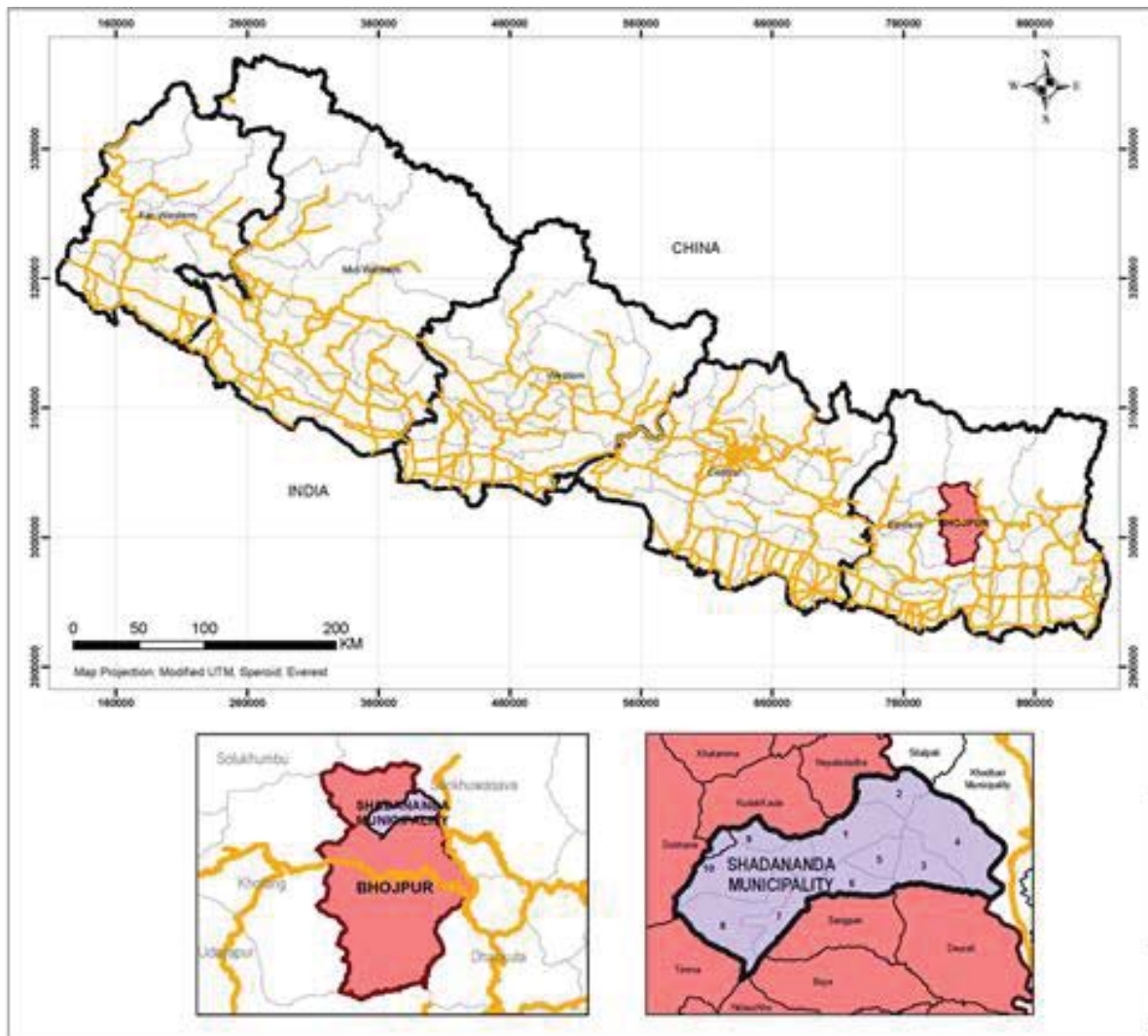


Fig1: Location map of Shadananda Municipality (Source: DDC, 2016)

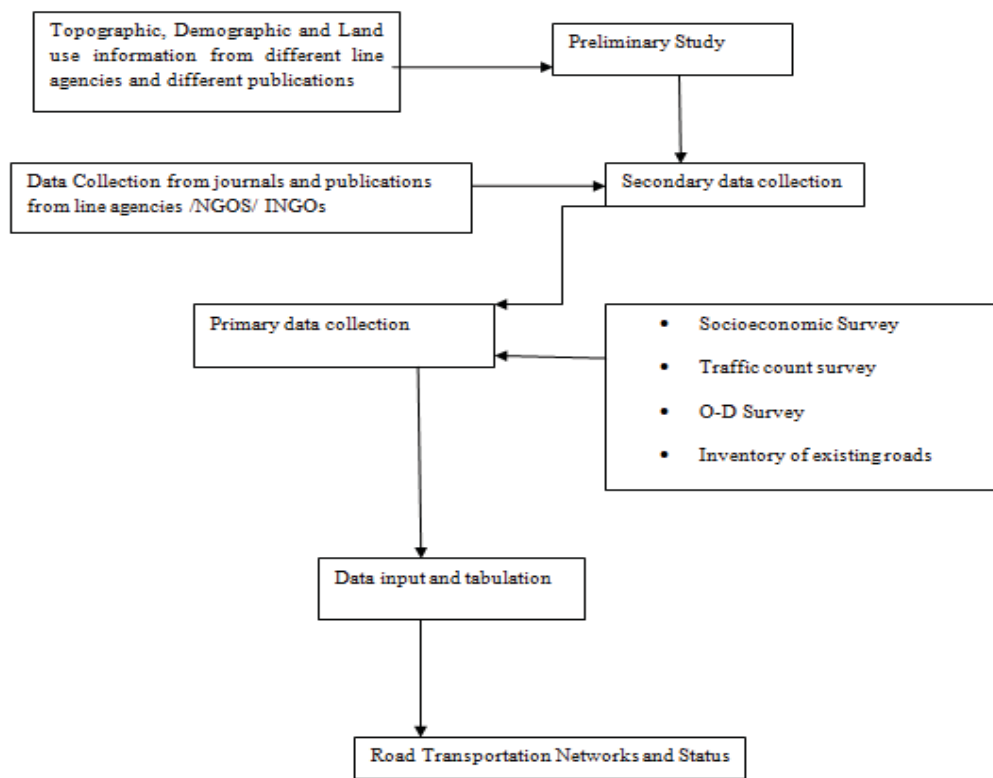
IV. Methodological Framework

The study started with initial planning or desk study where basic background of municipality is studied with help of secondary data including census data, GIS data. Various field surveys have been carried out with objective of collecting primary data on transportation network, trip characteristics and service facilities. Along with the primary data, demands for various transportation projects (construction/upgrading/maintenance) have been obtained from each ward. Then, the hierarchy of road has been proposed and perspective plan of various interventions has been proposed and has been analysed based on available fund and finally physical

and financial implementation plan of prioritized roads for MTMP period. The study has been come up with potential roads, that need immediate intervention and roads that need to be given consideration for effective future planning. All the above mentioned strategies adopted for data collection, processing and analysis are summarized in the following figure 2 [6].

Fig 2: Methodological Framework

V. Data and Analysis

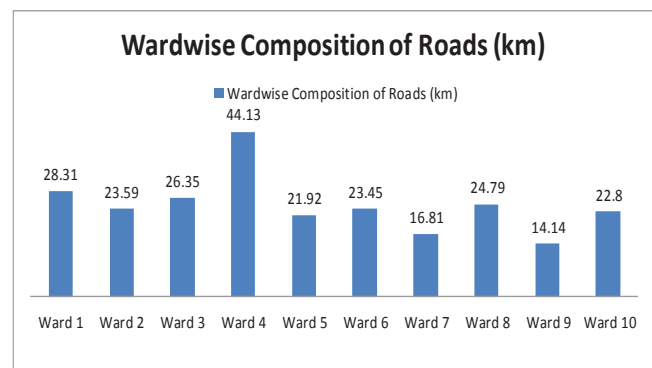


A. Road Inventory

Road inventory survey was done and details of all the roads and cross structures were collected. Total length of all the roads is 246.6 km of which nearly all 246.6 km is earthen.

Fig3: Inventory of roads ward-wise

(Source: Field Survey, 2016)



At present the road density is of about 2.44 km per square Km for the municipality. Similarly the road density per thousand populations is nearly 18.58km.

B. Traffic Vehicle Count

The traffic vehicle count was done at the following stations.

Table 1: Classified vehicle count stations

SN	Count station name	Location	Name of road Linkage
1	Dingla	Dingla	Dingla – Semeng Sadak
2	Udaypur	Udaypur	Dingla – Nepaledanda Sadak
3	Baidar Vanjyang	Baidar Vanjyang	Dingla – Bhojpur Sadak
4	Malbase	Malbase	Dingla – Khartamcha Sadak
5	Neupane Danda	Neupane Danda	Dingla – Lamsuwaghat Sadak

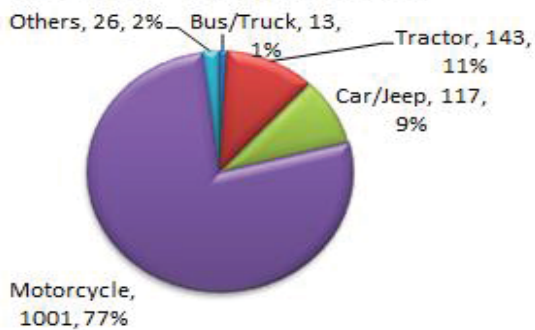
The composition of vehicle shows that the major vehicle that plies on the roads of Shadananda Municipality is motorcycle. Other than this, tractor has a share around 11%.

Fig 4: Vehicle Composition

(Source: Field Survey, 2016)

C. Accessibility and Mobility

Vehicle Composition

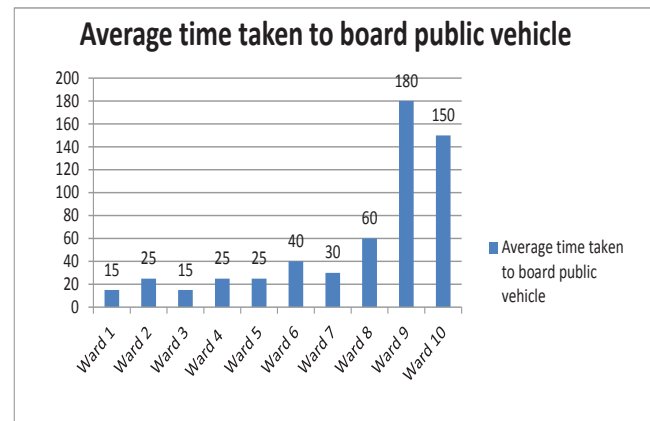


Ward 9 and 10 suffers the most in terms of accessibility to public vehicles i.e. 180 minutes. The population of ward 1, 2, 3, 4 and 5 have easier access to public transportation service. The access to public vehicle on those wards with more time to reach the bus stop needs a consideration. The mobility of more accessible wards for public vehicles needs consideration as well. Average travel time to destination

follows dissimilar trend when compared to time to bus park. Roughly people travel 30 minutes to get to their destination in other wards except ward 1 and 3 where people travel 15 minutes on average. The proportion of trips of specific length (in minutes) made by different means is shown in the figure 5.

Fig5: Accessibility time in minutes in ward-wise

(Source: Field Survey, 2016)



VI. Conclusion

Road transport is main transport mode for movement in Shadanda Municipality. Most of the rural roads are facilitated only through District Roads. Forest and bushes covered the 44.29%. Land used for residential and cultivation is 52.79%. There is high possibility for settlement development in the municipality. Entire roads are earthen with intermediate carriageway. The vehicle ownership shows that among the vehicles that ply along the roads, most are motorbikes with 25% share. All road inventories have been prepared for Shadananda Municipality having length 246.6km. The study has identified all the roads of the municipality, their status and interventions required. The study shows that majority of roads are narrow and needs maintenance and upgrading. The accessibility of roads has addressed most of the settlements but their mobility is very low. Access to services is hindered due to lack of reliable and safe transport facilities.

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