

ACCESSIBILITY PATTERN

Route Network

Throughout history, the route network in the Bagmati Zone subregion has been influenced by the strategic location of the valley's cities. The traditional network consists of main trails of varying quality, connecting points within the valley, and major trails or foot/animal roads connecting the valley with other areas. Both east-west and north-south traditional highways converge within the valley. For centuries the innumerable foot trails have been the only means of communication and transport for the vast majority of the people. At converging points within the valley, old market centres, i.e., Sundarijal, Dharmasthali, Sanga, and Thankot are located. The major trails connecting the valley's cities with other areas are dotted with small market centres, and the spatial pattern of these centres depends on the relative importance of the traditional trade route. North-south trade routes and associated market centres were important in the past when the valley's cities functioned as entrepôts between Tibet in the north and India in the south. Important traditional highways used for this international trade included those that connected the valley with the Kuti and Rasuwa passes via different chains of market centres including 1) Sankhu and Nawalpur; 2) Bhaktapur, Nagarkot, Bhotsipa, Chautara, and Jalbire; 3) Bhaktapur, Sanga, Banepa, Hukse, old Dolalghat, and Barahbise; and 4) Sundarijal or Dharmasthali, Nuwakot, and Betrawati to the Rasuwa pass. The east-west routes gained importance with the growth of interregional trade. Such routes also converge both from the east and west on the Kathmandu Valley. Two important, traditional east-west trade routes converge on the valley, i.e., one from the east via Mangaltar, Dapcha, Khadpu, Dhulikhel, and Banepa and the other from the west via Arughat, Kalinge (Dhading), and Nuwakot. Two other noticeable routes from the south are 1) via Khopasi and Panauti and 2) via Chapagaun in Lalitpur.

The route network has been transformed considerably after the construction of new highways. Generally, the orientation of motorable roads has followed the traditional routes. This is noticeable in the cases of the Arniko Rajmarga, Prithivi Rajmarga, and Kathmandu-Trishuli Road. All the trade traffic of the old routes has been diverted along the newly opened highways. New market centres have emerged along the roads. Old ones, either bypassed by the roads or at a locational disadvantage, have declined while the old centres along the roads have acquired new significance.

At present, the route network in the Bagmati Zone is dominated by modern highways and roads. The route network consists of highways, a few feeder roads, innumerable trails connecting highways and roads, and a larger number of local roads in the Kathmandu Valley. Despite the development of a relatively dense network of routes in the Bagmati Zone, there are extensive tracts in remote areas which are not linked to the existing modern road network.

Trail Network

Trails play an important role in linking rural settlements to market centres. They are no longer important in terms of providing linkages between market centres. Only nine market centres (Mangaltar, Gothikhel, Chaughada, Kharanitar, Todke, Rigne, Khahare, and Majhgaon) out of a total of 77 in the region do not have road linkages and depend solely on trails for the movement of people and goods.

In the past, the main trails followed the north-south trade routes. The east-west trails became important with the growth of interregional long distance trade. With the decline of the entrepot function of the valley's cities and the construction of east-west oriented highways with feeder north-south roads, the importance of the north-south trail lessened. At the break of bulk point where the north-south trail meets the east-west highway, new market centres emerged. Adamghat, Bairani, and Benighat are some of the points where market centres developed.

The traditional importance of trails for long-distance trade has declined considerably. Trails located at a distance from new highways have lost their functional importance, while those that converge on new highways have become important routes connecting people in rural areas to market centres. The growth of a large number of catering centres at such converging points is indicative of the importance of these trails. These trails are important as connecting routes, but they would not promote the growth of important market centres mainly because, in areas away from the roads, the prices of trading commodities increased.

Road Network

Out of 77 market centres, only 15 do not have all-weather road connections. Out of 15 market centres, seven have fair weather road links (Jalbire, Dapcha, Khopasi, Lele, Kuntabesi, Sipaghat, and Melamchi) and nine have only trail connections (Mangaltar, Gothikhel, Chaughada, Samundratar, Kharanitar, Majhgaon, Dhahre, Rigne, and Todke). The Bagmati subregion still has market centres that are not physically linked with the other centres by road and this is indicative of inadequate integration in the region.

The Bagmati subregion has highways extending throughout its east-west length. The Lamosangu-Jiri road, the Arniko Rajmarg, roads in the valley, and the Prithivi Rajmarg combine to form a continuous axis throughout the length of the region from east to west. All the other roads are feeder roads linked to this axis. The Kathmandu-Trishuli-Dhunge road, the Tatopani-Lamosangu section of the Arniko Rajmarg, the Dhading Besi-Malekhu road, Chautara Dolalghat road, and Jalbire-Balephi road are all tributaries of the axis. One significant feature is that all roads lead to the Kathmandu Valley. Both east-west and north-south linkages are possible only through the valley.

There are a number of equally valid ways of estimating the density of road network. The most simple one is the statement of actual road length. The total road length (including all categories) in the Bagmati Zone is 1,314 kilometres out of which 724 kilometres lie in the Kathmandu Valley and 590 kilometres outside the valley. The longest length is observed to be in the Kathmandu district (441km), and the shortest length in the Kavre district (94km). The road network density can be expressed in a more meaningful way by relating road length to area and population. The road density in the Bagmati Zone is 13.93 kilometres per 100 square kilometres. This is far above the national average of 4.89 kilometres. Kathmandu district has the highest density (111.64km), while Sindhupalchowk and Dhading (Table 3.1) have the lowest density. It is clear from Table 3.1 that all the districts outside the valley fall below the zonal average, while those in the valley are above the zonal average.

The road density per 10,000 people in the Bagmati Zone is 5.84 kilometres, and this is well above the national average of 3.96. The highest density is found in Rasuwa with a relatively low

population size. Four districts, including Kathmandu, Lalitpur, Bhaktapur, and Sindhupalchowk are above the zonal average, while Dhading, Nuwakot, and Kavrepalanchowk fall below the zonal average (Table 3.1). Kavre has the lowest density.

Table 3.1: Road Density

| Units | Road | Road Density | |
|-----------------|-------------------------------|-----------------|-----------------------|
| | Length of all categories (km) | per 100 sq. km. | per 10,000 population |
| Nepal | 7,330 | 14.89 | 3.96 |
| Bagmati Zone | 1,314 | 13.93 | 5.84 |
| Kathmandu | 441 | 111.64 | 6.59 |
| Lalitpur | 164 | 42.59 | 6.36 |
| Bhaktapur | 119 | 100.00 | 6.89 |
| Kavrepalanchowk | 94 | 6.73 | 2.89 |
| Sindhupalchowk | 161 | 6.33 | 6.17 |
| Dhading | 122 | 6.33 | 4.39 |
| Nuwakot | 106 | 9.45 | 4.30 |
| Rasuwa | 107 | 6.93 | 28.91 |

Source: Calculated from data based on Road Statistics 1990 and the Preliminary Census Report of 1991

Public Bus Service Frequency

The public bus service frequency is shown in Figure 2. Out of 77 market centres, 19 do not have access to public bus services, nine do not have road connections at all, and 10, although they have fair-road connections, do not have access to public bus services.

The frequency of bus services is highest westwards from Kathmandu. The second highest frequency is between Kathmandu and Banepa (eastwards). The east-west corridor westwards from Kathmandu probably has the highest frequency of buses plying in the whole of Nepal. However, it is of interest to note that none of the market centres along the corridor (Prithivi Rajmarga) are origin or destination points for any of the bus services. Although the market centres located here appear to have better access in terms of public bus services, the situation is different as these services are not frequently available for commuting to and from the local market centres. It should also be noted that Dapcha and Jalbire have access to occasional mini-bus services (not shown in Figure 2). Public mini-bus services plying the road to Melamchi are frequently unavailable during the rainy season.

Zones of Transport Accessibility

The zones of transport accessibility are shown in Figure 3. The most accessible zone extends east-west along the Prithivi Rajmarga, Arniko Rajmarga, and within the Kathmandu Valley.

FIGURE 2

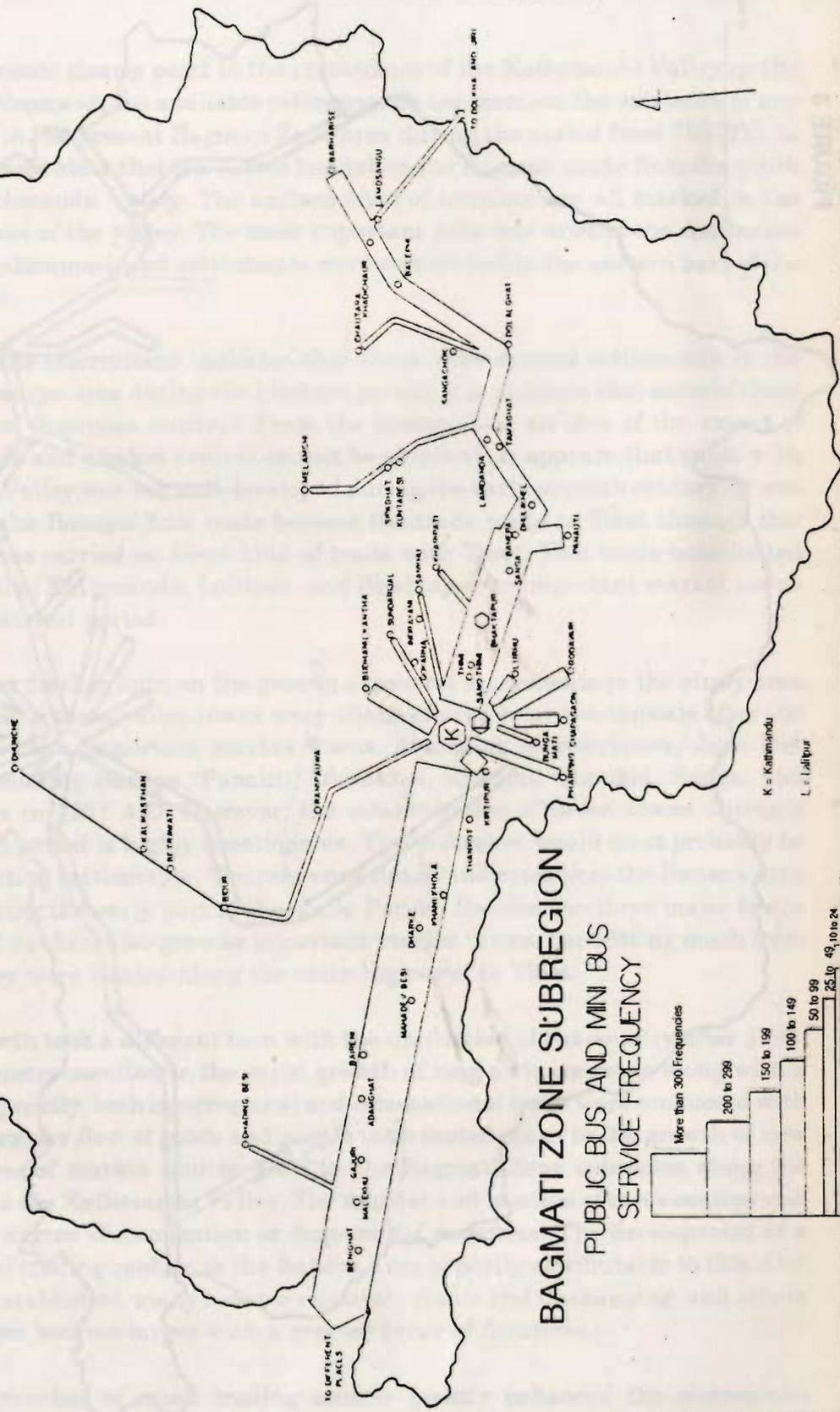
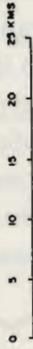


FIGURE 3



BAGMATI ZONE SUBREGION
ZONE OF TRANSPORT ACCESSIBILITY

- INDEX
- MOST ACCESSIBLE
 - ACCESSIBLE
 - FAIRLY ACCESSIBLE
 - - - - - LESS ACCESSIBLE
 - MARKET CENTRE