

URBAN GROWTH AND SANITATION CONDITION OF DAMAK MUNICIPALITY.

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INTRODUCTION

Nepal is one of the developing countries of the world. It has low level of urbanization in terms of urban population and the number of the urban centres. The level of urbanization of Nepal is low in comparison with the south and south east Asian Countries. About 9.2 percent of total population of the nation live in the 36 municipalities of Nepal and rest 90.8 percent in the rural areas (CBS 1991) while, the level of urbanization of India is 26 percent, Bangladesh 18 percent, Pakistan 33 percent, Sri Lanka 22 percent, Myanmar 25 percent and Indonesia 32 percent (World Bank 1994). But, the increasing trend of the urbanization in Nepal is visible since 1952-54.

In 1982, Damak was declared a town Panchayat. Twenty five years ago, Damak was a small village mainly dominated by the Dhimal ethnic group. Before the construction of Mahendra highway, Damak was covered by a dense forest. After the construction of Mahendra highway in 1972, Damak changed into a trading and transportation centre. Moreover, after the malaria eradication programme of 1960s, hill to terai migration rapidly increased.

Fig 1 shows the location and boundary of the Municipality.

POPULATION GROWTH

The population of Damak has been increasing at a faster rate in recent years. After the completion of Mahendra highway and malaria eradication programme, the population of Damak has been increasing rapidly. Moreover, after the formation of town panchayat, population of Damak has been growing still more rapidly.

Table 1
Population growth of Damak (1971-1994)

Years	Population	Population Increase	Percent
1971 #	13,993	—	—
1981 #	23,319	9,327	66.64
1991 #	41,421	18,102	77.63
1994 ##	47,997	6,576	15.87

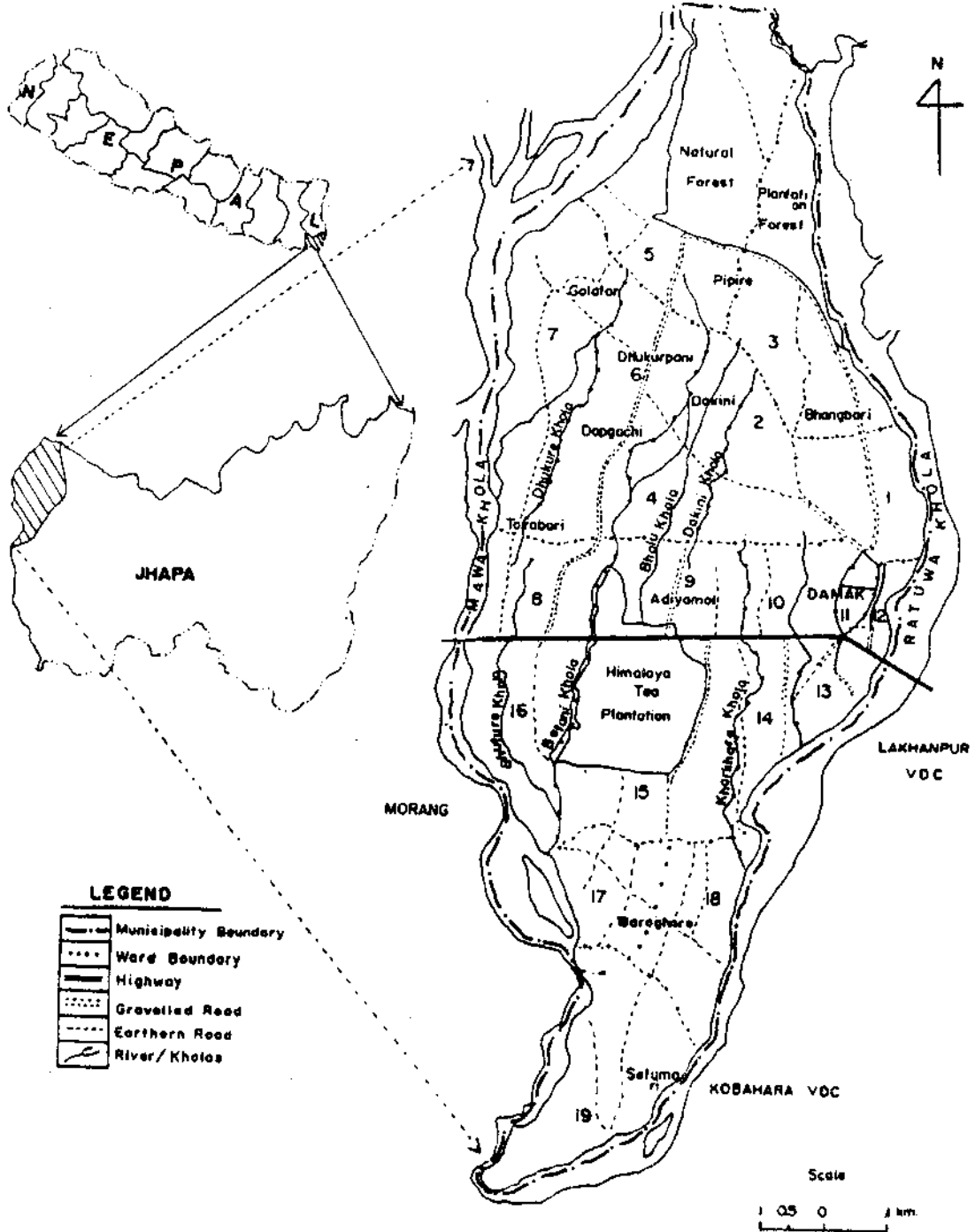
Sources : # CBS : Population census 1971, 1981 & 1991.

Damak Municipality office 1994.

The population of Damak was 13,993 in 1971 and 41,421 in 1991. The total population of Damak increased by 106 percent between the year 1971 and 1991. During the period between 1971 and 1981, population increased by 66.64 percent, and in between 1981 and 1991, the average of population increased by 77.63 percent (Table 1). Rapid population growth of Damak is due to the high population growth rate and high migration rate in view of Damak's favourable location for commerce and trade and as well as farming. The annual population growth rate of Damak is about 5.91 percent in 1991, while, the annual population growth rate of the urban areas is about 5.89 percent (Bastola

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DAMAK MUNICIPALITY LOCATION MAP



SOURCE: Actionplan Of Damak, HMG/UDLE 1994

2050/51).

The total number of households in Damak is also increasing every year (Table, 2).

Table 2
Household Number

Years	Number of HH	Net Increase	Percent
1981 #	3,558	—	—
1988 ##	5,181	1,623	45.61
1991 #	7,644	2,463	47.54

Source : # CBS 1981, 1991

Damak Municipality Office 1988.

GROWTH OF THE COMMERCIAL ESTABLISHMENTS

Damak is the third largest town in the country in terms of area. It covers 7513 hectare of land. Improvement in transportation facilities has brought a great change in the trading activities of Damak and it has become an important trading centre since 1972. Before 1972 it was a small market serving its local areas. In 1959 Damak was a just periodic market centre (Rijal 1981).

The commercial function of Damak has been increasing rapidly. In 1963, there were only about five shops in Damak; while, the number of commercial establishments in 1994 increased to about 1350, and there were only 336 commercial establishments in 1980 (Table 3)

Table 3
Number of shop units

Years	Number of Shop	Net Increase	Increase Percent
1963 #	5	—	—
1973 #	151	146	29.20
1980 #	336	185	122.5
1988 ##	781	445	132.4
1994 ###	1350	569	72.85

Source :

Damak and Madhumalla as trading centres, U. C. Rijal, 1981

Structure plan of Damak, 1988,

Field survey 1994.

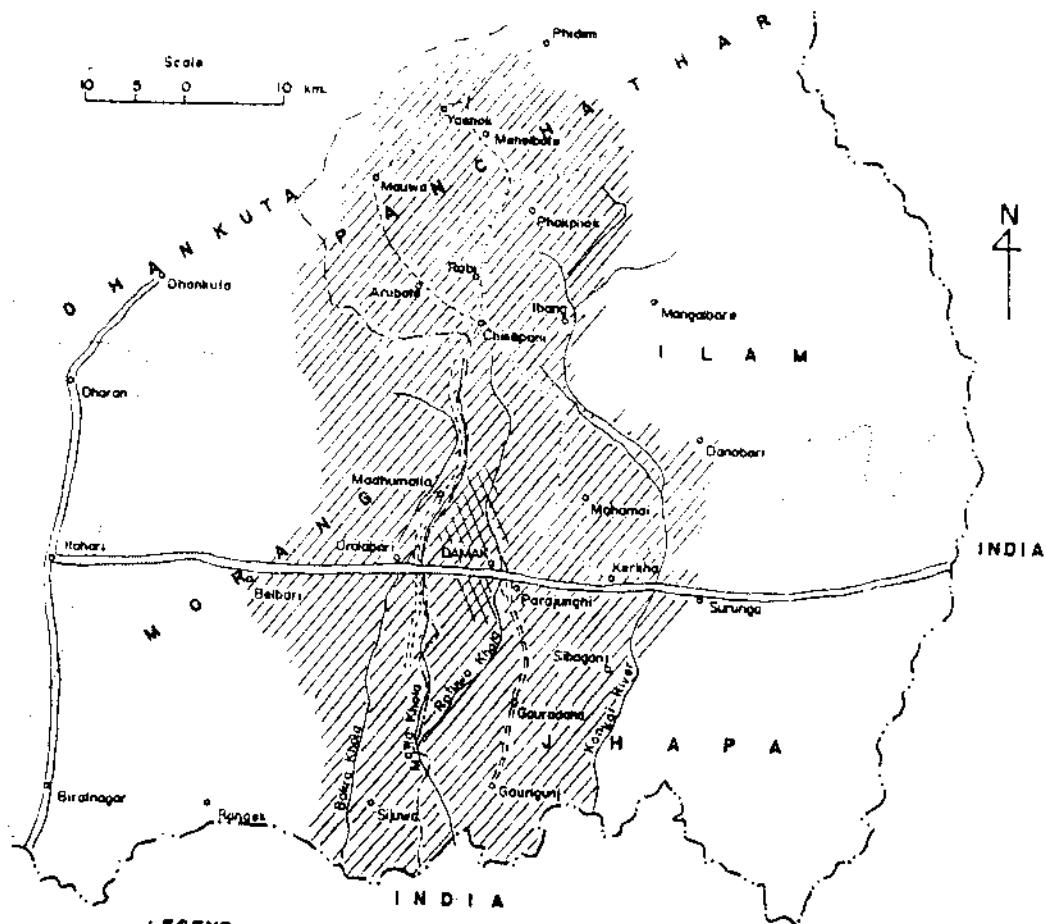
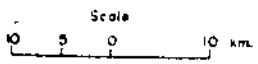
During the period between 1963 and 1973, the number of shop units increased by 2920 percent. Improvement in transportation facilities has brought a great change in the trading activities of Damak. The completion of Mahendra highway in 1973 led a steady growth of shop units in Damak. During the period between 1973 and 1980, the commercial establishments increased by 122.5 percent. In between the year 1980 and 1988 the shop units increased by 132 percent.

Sphere of influence of Damak.

Damak, after 1973, has been developing as a trading and commercial centre of Mechi zone. Moreover, after the malaria eradication programme of 1960s, the migration of people from hill to terai had increased due to the Damak's favourable location for both trading

DAMAK

SPHERES OF INFLUENCE



LEGEND

- International Boundary
- Zonal Boundary
- District Boundary
- River
- Trail
- Gravelled Road
- Block Topped Road
- Damak's Sphere of influence Before 1973
- Damak's Sphere of influence After 1973

and cultivation. In 1982, Damak was declared a town Panchayat, which was a supporting factor for the further growth of Damak. It also helped the expansion of tributary areas of Damak town.

Damak is, at present, developing as a major trading centre of Mechi Zone. In the hierarchical order, it occupies 14th position in terms of population (Sharma 1989-92). The present sphere of influence of this town is very large covering more area of the surrounding region Panchathar to the north, Itahari at the west, Surunga to the east, and the national border to the south. (Fig. 2)

People from these areas are frequently moving towards the Damak bazar for commercial and other economic and social purposes.

The rapid urbanization process of Damak led to the expansion of its tributary areas. Weekly cattle market of Damak is one of the major causes of the expansion of the sphere of influence. Damak cattle market is the largest cattle market of the Eastern Development Region of Nepal.

GROWTH OF THE BUILT-UP AREA

The growth of built-up area of any town is related to the growth of urbanization of the town. High degree of urbanization leads to the high growth of built-up area. The high rate of urbanization of Damak has led to the steady growth of built-up area of Damak. Built-up area is the nodal point for a functioning of community which covers the surrounding space (Ranjitkar, 1986). It includes all the non agricultural land including the residential building, private or public building, commercial establishment, industries and barren land of the core area (Dahal, 1995).

The proportion of the built-up area in the urban area of Nepal is significantly low. Only three urban areas, Kathmandu, Lalitpur and Dharan are with a built-up area of over 50 percent (Sharma 1993); while, the built-up area of Damak is about 10 percent of the total municipality area (Table 4).

Table 4
Growth of built-up area 1959-1992

Years	Total built-up area (in hectare)	Net Increase Ment (he)	Percent
1959	124	—	—
1978/79	253	129	104.00
1992	751	498	196.83

Source : Toposheet 1958/59
Aerial Photo 1978/79 and 1992.

In 1978/79 there were 129 ha. land converted into the built-up area, which was 104 percent more than the built-up area in 1958/59. (Table 4). In between 1978/79 and 1992, the built-up area increased by 197 percent, and now, the total built-up area occupies about 751 hectares of land which is about 10 percent of the total municipality area.

B. SANITATION CONDITION OF DAMAK

Sanitation is a strong attribute of any urban centre. Damak's favourable location activated the surrounding inhabitants for trade, commerce and services. Due to the development of major trading and commercial centre, and the establishment of the weekly cattle market, Damak is getting dirty and polluted, Inadequate sewerage and drainage facilities, have threatened the healthy environment of Damak.

Waste collection and Disposal

The waste collection and disposal system of Damak is unsatisfactory. Urban dwellers throw their waste in the open field and road. In the rainy season, the waste is washed away. About 41 percent of urban dwellers throw their solid waste in their own land, and about 49 percent by the road side, while, more than 95 percent in their cultivated land (UDLE/GTZ 1994). Residential areas, market area, vegetable market, *haats*, government and semi-government offices, bus park areas are the major waste generation areas. The solid waste production in these areas has been calculated to be 60 M³/day. But the actual solid waste that has to be handled by municipality is estimated to be only 30 M³/day, nearly 50 percent of the total (UDLE, 1994b).

It is noted that, there is no suitable location for the waste disposal. The eastern side of Damak Chowk of Ward no. 13 is a major disposal area, but it needs to be removed for better health of the town, and search another new location far from the bazar and Chowk areas, for the disposal.

Sewerage collection and disposal

The condition of latrines in the municipality area is also unsatisfactory. About one third of dwellers have toilets inside their houses, and about 49 percent have their toilets outside their houses in the case of urban Damak. But in the case of non economical parts of Damak, many dwellers have been using local type of toilets outside their houses. Moreover, about 43 percent of the dwellers have no fixed toilet, they use the open cultivated land and river bank for toilet. Yet it has been noted that cure area dwellers have been using modern type of toilet whether it is inside or outside the house and other dwellers have been using local type of toilet outside the houses.

Table 5 :
Toilet condition in Damak

Types of Toilet		Percentage	
		Urban	Rural #
Permanent	Inside the house	29.41	-
	Outside the house	48.54	-
Temporary	Outside the house	19.11	56.09
	Agricultural land & river bank	2.94	43.91
Total		100.00	100.00

'rural' indicates 'non commercial' and 'urban' indicates 'cure area'.

Source: UDLE 1994a

Because of the lack of adequate toilets in the market areas, the environmental quality of residential area, public places, chowk areas are polluted. There are only two public toilets provided by municipality in the bus stop area. Based on the field survey, Table 6 however, shows that about 43 percent of the dwellers have been using the modern type of toilet in the whole municipality and only about 47 percent of the dwellers are using temporary type of toilet (*Kachhi* toilet) outside the house. Almost every household of urban Damak has private septic tank.

Table 6
Types of Toilet

Type of toilet	Percentage
1. Modern type of toilet inside or outside the house	42.91
2. Local type of toilet outside the house	46.96
3. Open field, river bank	10.13
Total	100

Source: Field Survey 1994

Among the sampled households about 10 percent are still practising the traditional way of latrine in the open field and river bank, this is mainly in the rural areas of the municipality.

Hospital facilities:

There is a healthpost in Damak, which provides the basic medical facilities for the malaria eradication, family planning, nutritional support, leprosy, etc. Besides this, Nepal Red Cross, Save the Children (UK), and UNHCR are also providing the medical facilities for some local dwellers of municipality but it is not sufficient due to the large population size and increasing incidence of diseases. Some people of the municipality go to Biratnagar, and Siliguri (India) for better treatment. Association of Medical Doctors for Asia (AMDA) was established with the help of B.P. Memorial health Foundation to provide the health facilities to the Bhutanese refugees, but, the local people are not satisfied due to the lack of proper treatment. However, the basic medical facilities are available there.

The health post of Damak is located at the bazar area of Damak. People from the far south and far north west parts walk about an hour to reach the health post. Table 7 shows the walking time to the health post.

Table 7:
Walking time distance to the health post.

Time Distance (in minute)	Percentage
0-5	6.08
5-10	8.78
10-15	8.78
15-20	9.80
20-25	10.47
25-30	15.54
30- Above	40.54
Total	100

Source: Field Survey 1994.

Only 6.08 percent of the municipality dwellers have to walk for less than 5 minutes. Mainly urban Damak dwellers have been taking advantage of the health post due to its nearness. About 9 percent dwellers have to walk 5- 10 minutes, and about 10 percent have to walk 15 - 20 minutes. More than 40 percent of the dwellers have to walk more than 30 minutes to reach health post. The people who live far from the bazar like those in ward no. 3, 4, 5, 6, 7, 8, 15, 16, 17, 18 and 19 have to walk more than 30 minutes.

Drinking Water

Clear drinking water is one to the determinants of social and economic progress. Many of the underdeveloped countries have faced the problem of clear drinking water.

The present drinking water sources in Damak are mainly deep tubewells and shallow wells. More than 70 percent of the total population depend upon their individual handpumps and others depend upon shallow wells. More than 91 percent of urban dwellers have been using tubewell as the source of drinking water in Ward no. 11, and about 73 percent rural dwellers have been using tubewell as the major source of drinking water. About 9 percent of dwellers of ward no. 11 have been using shallow wells, whereas, about 17 percent of rural dwellers have been using shallow wells, and about 5 percent of rural dwellers use the river for the source of drinking water (UDLE 1994a). But the tap water in Damak is limited in some parts of bazar area of ward no. 1, 10, 11, 12, and 13.

Table 8:
Source of Drinking water (in percentage)

Sources	Ward no. 11	Ward no. 17
Tubewell	91.18	73.19
Shallow well	8.82	17.07
River/Khola	-	4.87
Others	-	4.87
Total	100	100

Source: UDLE, 1994.

N.B. Ward No. 11 represent urban Damak and Ward No. 17, rural.

CONCLUSION:-

Damak is a newly growing urban centre of the eastern Nepal. The annual population growth rate of the town is about 5.9 percent, and in the hierarchical order, it occupies the 14th position in terms of population. Due to the high immigration and high natural increase, population size of the town is rapidly growing.

Damak is developing as a trading centre. The commercial establishments are increasing in response to the increasing population. More and more people are moving into Damak as a result of many kinds of facilities provided by town. As a result the built-up area is increasing towards the periphery areas of Damak, by converting the agriculture land into the residential and commercial ones.

The rate of urbanization of Damak has increased after its declaration as a town panchayat, as a result the sphere of influence of the town expanding towards the neighbouring district.

The municipality does not have any type of waste disposal system yet. Many urban dwellers throw their solid waste in front of the road as well as in their own land. There is also a lack of proper and adequate sewerage and drainage system. Still 10 percent of the dwellers of the municipality are using the cultivated land and river, as their toilet. Only 6.08 percent of dwellers are close to hospital facilities by walking for not more than 5 minutes, whereas, more than 40 percent dwellers have to walk more than 30 minutes. In case of drinking water, still, many dwellers depend upon private tubewell and shallow well and river and kholas.

The sanitation condition of Damak has not improved in proportion to the rate of urban growth. It has let the town have had environment for a long time, without good sanitation condition. The town does not provide the basic needs and facilities for the

dwellers. Thus sanitation and urbanization should be improved at the same rate as the population growth. The good sanitation condition of Damak attracts many traders too and it will be developed as a central place of the region.

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