

## Chapter 1

### GROWTH AND DISTRIBUTION OF THE POPULATION

#### A. Population growth

##### 1. *Population in ancient times*

In the absence of any reliable records, it is not possible to estimate the size of Nepal's population in ancient time. A census was probably unheard of and the necessity for it not felt. Nevertheless, counting of house appears to have been practiced prior to the Lichchivi Period (250 A.D), but the enumeration did not cover the entire country.

Before the conquest of Kathmandu Valley by King Prithivi Naryan Shah in 1768, the number of houses in the town of Kathmandu, Lalitpur, Bhaktapur were estimated to be 22,000, 24,000 and 12,000 respectively.<sup>1</sup> The Kingdom of Gorkha at that time was known as "Barhazar Ghare" or 12,000 houses.<sup>2</sup> Similarly, there were many names of places of particular importance, the origine of which was closely associated with the settlement pattern of the people in the past. For example, the emergence of "Terah-Bees Thum" as a separate village in Tanah district did indicate the cluster of 600 households standing on a particular hillock. Likewise, the "1,800 khola" of Nuwakot district indicate a total population of 1,800 people residing on the riverside. For obvious reasons, it is not possible to arrive at any reliable estimates of the country's total

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<sup>1</sup> Guiseppe, "An account of the Kingdom of Nepal", *Asiatic Researches*, vol. II, chap. XVIII (Calcutta, 1970), pp. 307-322.

<sup>2</sup> Thirbahadur Rayamajhi, "Precedence of population census in Nepal", in *Population Census of Nepal 1952/54*, part II (chapter 1) (Kathmandu, Department of Statistics, 1957), p.6. (In Nepali).

population on the basis of such scanty information.

After the Anglo-Nepalese peace treaty of 1816 and the subsequent demarcation of Nepal's boundry with India, the government seems to have maintained records relating to the numbers of houses in the different district; unfortunately these records are not available today. On the basis of the information provided by the officer of the government official, Fraser<sup>3</sup> estimated the population of Nepal around the year 1820 to be about 3,661,000.

During the latter half of nineteenth century, several attempts were made to estimate the population of Nepal by the British to whom such estimate were important for assessing both the potential market for their manufactured goods and the availability of illegible hill men for recruitment to the British army. However, there appear to have been differences between the population data provided by the Nepalese Government and the estimates prepared by the British. For instance to be 2million by the Nepalese Government and such as 5million by the Nepalese Government.<sup>4</sup> Oldfield estimated the population at 4 million and considered the Nepal Government's estimate of 5 million an intentional exaggeration.<sup>5</sup> At the beginning of this century, the estimates by Vansittart were nearer Oldfield's estimates while the Nepalese estimates was 5.2 to

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<sup>3</sup> James Baillie Fraser, *Journal of Tour* (London, Rodwell and Martin, 1820), appendix, p. 515.

<sup>4</sup> Asad Hussain, *British India: Relations with the Kingdom of Nepal* (London, George Allen and Unwin, 1970), p. 120.

<sup>5</sup> Henry Ambrose Oldfield, *Sketches from Nepal*, vol. 1 (London, Allen, 1880), p. 3.

5.6 million persons.<sup>6</sup> The population of 5.6 million recorded at the 1911 census seems to indicate that the estimates of the Nepalese Government were nearer the actual total.

## 2. *Population in the modern era*

### (a) *Introduction*

The main source of information regarding the size and composition of the population of Nepal in recent times is the population census. The first recorded census-like enumeration of the Nepalese population was carried out in 1911 and these operations were repeated every subsequent decade up to 1942.<sup>7</sup> Though these census counts provide benchmark data for a study of the country's population growth, not much importance has been attached to the results of these enumerations for various reasons.<sup>8</sup> First, very little is known about the concepts and definitions used in these enumerations. Secondly, the task was entrusted to the agents of landlords who adopted their own methods of enumeration. The apparent weakness of the system and the lack of supervision would have resulted in inaccurate and incomplete enumerations. Thirdly, in the absence of any published reports and details

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<sup>6</sup> Eden Vansittart, *The Gurkhas* (Calcutta, Office of the Superintendent, 1906), p.5.

<sup>7</sup> This census is often erroneously referred to as the 1941 census owing to a rough and inadequate translation from the Nepalese calendar (Bikram Sambat) into the Roman calendar. The census day was Falgun 15, 1998 which corresponds to 1 March 1942. See, Vidya Bir Singh Kansakar, "Population censuses of Nepal and the problems of data analysis" Kathmandu, Centre for Economic Development and Administration, Tribhuvan University, August 1977, p. 8 (mimeo).

<sup>8</sup> In fact, more serious doubts have been entertained about the earlier censuses, "including their very existence through there are very persistent rumours that they were carried out with considerable consistency every ten years or so since the middle of the previous century". See Karol J. Krotki and Harsha N. Thakur, "Estimates of population of size and growth from the 1952-54 censuses of the Kingdom of Nepal", a paper presented at the annual meeting of the Population Association of America, Boston, Mass., April 1968 (mimeo).

about the sex, age, spatial and other characteristics, the data from these counts do not lend themselves to any meaningful demographic analyses.<sup>9</sup>

The first census on a scientific and systematic basis was taken in 1952/54. This was also "the first modern and complete census of Nepal, using internationally accepted concepts and comparable to censuses of other countries".<sup>10</sup> This census was carried out in two parts as the men and materials required for the operation were inadequate. The census of the eastern part of the country except Mohatari was completed in May 1952, and the census of the central and western parts including Mohatari was completed in May 1954.

"In spite of the difficulties concerning the lack of any kind, transportation and the acute circumstances the census encountered, this work is, impartially, an outstanding landmark which denoted only a stubborn devotion for acquiring population data".<sup>11</sup>

Since 1952/54, two more population censuses on improved lines were conducted in 1961 and 1971. It has to be noted, however, that no complete population count has ever been made in Nepal and all population estimates must be taken as subject to an unknown degree of error.<sup>12</sup> Though

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<sup>9</sup> Krotki and Thakur also observed: "One wanders about the purposes of census taking when no reports are being made available. There are occasional suggestions that the more war-minded rulers of the past were merely interested in the military potential against the Tibet neighbour. Alternatively, the impression arises that autocratic heads of Government issued edicts to have a census carried out for prestige-tinted reasons, but did not follow through to obtain the prestige value arising out of available reporters", (*Loc.Cit.*, footnote 2.)

<sup>10</sup> Department of Statistics, "Census of population, Nepal 1952/54 A.D.", Kathmandu, 1958, p.1 (mimeo)

<sup>11</sup> Government of Nepal *The Analysis of the Population Statistics of Nepal* (Kathmandu, Central Bureau of Statistics, 1977) p.23

<sup>12</sup> It is suspected that there was underenumeration in the 1961 and 1971 census as well "since lack of transportation and of a communication infrastructure plus inability to control data accuracy almost certainly resulted for both

there has been under enumeration in all the census, the degree of under enumeration varied between census and between reason.

The population recorded at the various census from 1911 to 1971, the inter censal increase, the percentage increase and the average annual growth rates are shown in table 3. However, for reasons mentioned in the preceding paragraph, the analysis relating to population growth in Nepal is discussed separately for the period 1911 to 1952/54 and the period 1952/54 to 1971.

*(b) Population growth 1911 to 1952/54*

It will be seen from table 3 that there was a decline in the absolute number of person between 1911 and 1920, and again between 1920 and 1930, while a sharp increase in population appears to have taken place between 1941 and 1952/54.

The decline in population from 5,638,749 in 1911 to 5,573,788 in 1920 has generally been attributed to three factors, namely, heavy casualty of the Gurkha troops in the First World War, high incidence of mortality due to the influenza epidemic of 1917, and underenumeration in the 1920 census. It has been estimated that not less than 200,000 Nepalese hill men, representing about 20 percent of the eligible male population of Nepal, served with the British army during the First World War.

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census in missing not only people but also complete villages". See Daniel Taylor and Rita Thapa, "Nepal", a country profiles series of the Population Council, New York, April 1972, p.2

Table 3. Population growth, 1911 – 1971

Census Year	Total recorded population	Intercensal increase	Percentage increase	Average annual growth rate
1911	5638749	-	-	-
1920	5573788	-64961	-1.2	-0.1
1930	5532574	-41214	-0.7	-0.1
1942	6283649	751075	13.6	1.1
1952/54	8256625 <sup>a</sup>	1972976	31.4	2.5
1961	9412996 <sup>a</sup>	1156371	14	1.7
1971	11555983 <sup>a</sup>	2142987	22.8	2.1

Source: Central Bureau of Statistics.

<sup>a</sup> Excluding Nepalese residing abroad

and nearly 20,000 of them died in the war.<sup>13</sup> Besides, many of the Gurkhas were loath to get back to their hard life in the mountains after serving in the army and preferred to work in India either as watchman or in the police under the Government or in any other suitable position available to them.<sup>14</sup> Thus the absence of able bodied males as well as the death of a large number of them might have affected the fertility and growth of the population in the hills.<sup>15</sup> This is further confirmed by the analysis of the regional in the hills.<sup>15</sup> This is further confirmed by the analysis of the regional variation in population growth between 1911 and 1920 given in table 4. It will be seen that there was a marked decrease only in the population of the hill region, which was the main source of recruitment of the Gurkha soldiers, while the Terai and the Kathmandu valley recorded increase in population during the period.

The influenza epidemic of 1917 was the worst of its kind ever recorded in the history of Nepal. The eye-witness version is that there was no one to

look after the sick since everybody was bedridden; when the epidemic subsided there were some survivors as well as decomposed bodies of the dead. The death toll in the epidemic must have been very high. In addition:

“it is also equally probable that there might have been considerable underenumeration in 1920, for, even if the population was growing on an average by one percent every year between 1911 and 1920, there should have been an addition of more than five lakhs of persons. It is doubtful whether the casualties suffered during the two events had more than offset the natural increase in population”.<sup>16</sup>

It is also argued that the enumeration in the 1920 census may not have been complete as it was primarily concerned with ascertaining the number of slaves in the country.<sup>17</sup>

<sup>13</sup> R.N.W. Bishop, *Unknown Nepal* (London, Luzac and Company, 1952), p.83.

<sup>14</sup> C.G. Bruce *Himalayan Wanderer* (London, Maclehorse, 1934), p.217.

<sup>15</sup> Vidya Bir Singh Kansakar, “Population change in Nepal: a study of mobility during 1911-1981”, unpublished ph.D.thesis, Department of Geography, Patna University, 1974, p.91.

<sup>16</sup> B.P.Shrestha, *The Economy of Nepal- A Study in problems of Industrialization* (Bombay, Vova and Co., Publishers PVT Ltd., ), p. 35.

<sup>17</sup> In view of this objectives, the census schedule incorporated many items particularly relating to slaves. The results of this census helped in many ways to frame suitable policies for the abolition of slavery. In fact, slavery was abolished in Nepal in August 1926 and the emancipated slaves, numbering 51,972, were rehabilitated in Bichhkhori which was later named Amblekhgenj or town of emancipation.

The decrease in the population between 1920 and 1930 by 41,214 persons is also attributed to considerable underenumeration in the 1930 census. The threat of war between Nepal and Tibet led people to believe that the 1930 census was being taken with a view to enlisting males in the army. In fact, the then Prime Minister had issued an order to mobilize men and materials and it seemed that war was inevitable. Hence it is suspected that there was willful under-enumeration at this census to avoid conscription. Other reasons for underenumeration appear to have been the lack of appreciation of the value of a census by the mass of the people, and the reluctance of the people to participate actively in the census operation on account of the harassment meted out by the enumerators in the previous census.

The first increase in the Nepalese population, 13.6 per cent, was recorded for the intercensal period 1930-1942. It may be noted that this intercensal period was marked by the great earthquake of 1934, which resulted in the death of 8,591 persons in the country, and the second World War which necessitated the large-scale recruitment of Nepalese soldiers. Hence the increase in population recorded during this period appears to be somewhat surprising, but has largely to be explained in terms of gross underenumeration in the 1930 census.<sup>18</sup>

The population increased by about 2 million or 31.4 per cent during the intercensal period 1942 to 1952/54. This increase

“appears to be rather unusual, particularly compared to the increases experienced after 1954. Nor could this increase be supported by contemporary development in the socio-economic field. The phenomenal increase during the 1942-1952/54 period could partially be explained by the return of discharged military personnel after the second world war. However, the relatively more thorough and systematic enumeration

<sup>18</sup> For further discussions on this subject, see section D below on regional patterns of growth.

techniques adopted in the 1952/54 census ensured a more adequate enumeration of the country's population”.<sup>19</sup>

### (c) *Population growth 1952/54 to 1971*

As noted earlier, the most reliable and comparable data on the population of Nepal became available with the census of 1952/54 which is regarded as the benchmark of modern scientific census of the country. It will be seen from table 3 that over the period of 19 years from 1952 to 1971, the population of Nepal increased by almost 3.3 million, or by about 1.2 million in the first 9 years and 2.1 million in the next 10 years. The annual rate of growth of the population, which averaged 1.7 per cent during the period 1952/54 to 1961, increased to 2.1 per cent during the intercensal period 1961-1971.<sup>20</sup>

The high rate of population growth experienced in recent decades is largely attributed to a substantial decline in mortality, which followed improvement in medical facilities, while fertility continued to remain at high levels.<sup>21</sup> In the past, endemic diseases, epidemics, malnutrition,

<sup>19</sup> S. Selvaratnam, “The population of Nepal”, a note prepared for use by the ARTEP mission to Nepal (Bangkok, International Labour Organisation, 1973), pp. 3-4 (mimeo).

<sup>20</sup> On the basis of the result of the 1965-1966 National Health Survey conducted by the Department of Health, in collaboration with the University of Hawaii and the Dooley Foundation, it was estimated that the population of Nepal in 1971 was 12.2 million and the annual rate of population growth between 1961 and 1971 2.7 per cent. The demographic survey conducted by the central Bureau of Statistics indicated an annual population growth rate of 2.5 per cent in 1974-1975 and 2.4 per cent in 1975-1976.

<sup>21</sup> Very little is known about the birth and death rates and hence an estimated range has to be given for these rates. The 1965-1966 national Health Survey concluded that the crude birth rate was between 50 and 54 per 1,000, and that the death rate was in the neighborhood of 27 per 1,000. Extrapolating from the 1961 census and the 1963 survey of population, the Central Bureau of Statistics concluded that the 1971 crude birth rate was 40 per 1,000 and the death rate in the neighbourhood of 27 per 1,000. The demographic sample survey of Nepal conducted in 1974-1975 reported an adjusted crude birth rate of 44.7 and a crude death rate of 19.5.

famines and natural calamities were largely responsible for the countries high mortality .In recent years, the control of malaria and other epidemics<sup>22</sup> and the expansion of medical and public health facilities and services have significantly reduced morbidity and mortality in the Terai and also to some extent in the hills and mountains the maternal and child health programme has also helped to reduce infant mortality .Thus the high fertility combined with declining mortality has resulted in high rates of population growth.

As with fertility and mortality ,date on migration are extremely limited in Nepal and only very general estimates of population movements are available . for e.g., the 1961 census reported that 328,480 Nepalese were absent from Nepal for at least 6 month of the year and that over 96 percent of this number were located in India. The census also reported that there was an immigration of 337,620 foreign percent into the country during the same period resulting in a net immigration of 9,140 persons. The 1971 census recorded 337, 446 foreign-born persons residing in the country but did not collect any information on persons who had left Nepal. It is can be assumed *ceteris paribus* that the number of out-migrants in 1971 was roughly similar to the number in 1961, then the rate of net migration in Nepal would be negligible. According to the 1974- 1975 demographic sample survey , the number of out-migrants was 43, 000 and the number of immigrants 34,000 resulting in a net annual loss of 9,000 persons . The number of emigrants in 1976 in estimated at 73,000 persons and the number of immigrants 44,000, the net loss being 29,000 persons . Over the past decade, at least 80, 000 Nepalese have emigrated to India each year

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<sup>22</sup> Malaria, which for a long time had been the chief cause of morbidity and mortality affecting nearly one half of the population and 45 per cent of the land area up to on altitude of 4,000 ft, had been completely eradicated by the end of the 1960s. smallpox was controlled by a nationwide smallpox eradication programme. Cholera no longer assumes epidemic proportions.

and at least 60,000 have returned annually after a one to five year absence.

These estimates indicated that migration is an important demographic phenomenon in Nepal. Emigration has generally been temporary and in the past involved a large number of people especially of the depressed communities, who migrate seasonally to India in search of jobs and for trade to supplement the family income from agriculture ,handicrafts, live-stocks and hard-raising. By the beginning of this century, many were seeking service in the then British army and later British and Indians armies, and the importance of income from these sources increased in many hill districts. Today emigration involves primarily the Gurkha Soldiers who leave to join the British and Indian armies and those who migrate to India to work as porters, labourers and watchman.

In recent years, immigration has been of three types. With the eradication of malaria and the development of the Terai, Indians have been moving in from more densely populated neighbouring provinces to seek employment as well as set up shops in the towns and open up tenant farms on leveled jungle areas.<sup>23</sup> The developments projects in the Terai appear to be a stimulus for the immigration of Indian labour on a large scale. The second major immigration has been of Nepalese who served as soldiers in Burma during the second World War. Following the war they settled in Burma but in recent years, because of political problems, they have been returning to Nepal. The third immigrant group constituted the refugees who moved in from Tibet in the 1950s.

In summery, it may be stated that high fertility and declining mortality have largely contributed to the high rates of population growth experienced in recent years.

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<sup>23</sup> The density of population in the adjoining districts of India is up to five times higher then in the Nepal Terai and this , among other things, induces to migrate into the region .

*(d) Regional patterns of population growth, 1911 to 1971*

For purpose of analyzing population growth, the country may be divided into three broad regions<sup>24</sup>. (i) The hill and the mountains regions, (ii) the Terai (including the inner terai), and (iii) The Kathmandu valley. The first two regions reflect the unsuitability of land and the variation in climate, while the Kathmandu valley is treated as a separate region because of its distinct regional characteristics such as urbanization, intensive land use, historical and cultural background. The population enumerated at the various censuses from 1911 to 1971, the intercensal increase, as well as the average annual rate of growth for the three regions are given in table 4.

As was noted earlier, during the intercensal period 1911-1920, while the Terai and Kathmandu valley recorded slight increases in population, there was a marked reduction in absolute terms in the population of the hill region. This decline coincided with the large-scale recruitment of Gurkha soldiers from the hill region to serve in the British army during the First World War.

Between 1920 and 1930, there was a decline in the population of the hills and the Kathmandu valley, while the population of the Terai recorded a slight increase. As noted earlier, the 1930 census was taken at a time when a war between Nepal and Tibet was imminent and the fear of conscription appears to have resulted in gross underenumeration in the census, particularly in the Kathmandu valley where the population recorded a decline from 306,909 persons in 1920 to 262,233 in 1930.

The 1930-1942 intercensal period which witnessed the first recorded increase in Nepalese population was also characterized by an increase

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<sup>24</sup> There are marked differences in the rates of population growth between subdivisions of each of these major regions but since comparable data are not available on a time series basis, the present analysis is restricted to the three broad regions.

Table 4. Regional pattern of population growth, 1911 – 1971

	Hill	Terai	Kathmandu valley	Nepal
<b>Enumerated population</b>				
1911	3292911	2054959	290879	5638749
1920	3144843	2122036	306909	5573788
1930	3139854	2130487	262233	5532574
1942	3819931	2138579	325139	6283649
1952/54	4979713	2865917	410995	8256625
1961	5531307	3421699	459990	1412996
1971	6167309	4769763	618911	11555983
<b>Inter censal increase</b>				
1911-1920	-148068	67077	16030	-64961
1920-1930	-4989	8451	-44676	-41214
1930-1942	680077	8092	62906	7510758
1942-1952/54	1159782	727338	85856	1972976
1952/54-1961	551594	555782	48995	1156371
1961-1971	636002	1348064	158921	2142987
<b>Average annual growth rate</b>				
1911-1920	-0.51	0.36	0.6	-0.13
1920-1930	-0.02	0.04	-1.56	-0.07
1930-1942	1.65	0.03	1.81	1.08
1942-1952/54	2.44	2.7	2.15	2.51
1952/54-1961	1.32	2.24	1.42	1.65
1961-1971	1.09	3.38	3.01	2.07

in the population of all three regions of the country . particularly in the hills, the annual rate of population growth averaged about 1.7 per cent , compared to only 0.03 per cent in the Terai. This appears to be somewhat surprising since , on the basis of developments during this period , one would expect a low growth rate to have occurred in the hills and a higher rate in the Terai. During this intercensal period, the Second World War was taking place and thousands of Nepalese were being recruited and sent to war fronts outside the country. On the other hand , the Terai witnessed a large scale immigration of Indian traders after the Anglo-Nepalese Treaty of 1923. Moreover, the development of the Terai region had already started to relieve the heavy pressure of population in the hills . thus it is difficult to explain the very high rate of population growth in the hills and the low rate of growth in the Terai . it may be that the

1942 census was marked by over-enumeration in the hills and underenumeration in the Terai.

The rate of growth of the country's population between 1942 and 1952/54 was 2.5 per cent per annum , the highest rate ever recorded since 1911 . analysis of population growth by region indicates that the highest rate, 2.7 per cent , was recorded for the Terai while the second highest , 2.4 per cent, was recorded in the hill region. These rates clearly show that there had been large -scale underenumeration in the census of 1942 . the intercensal period 1942-1952/54 also witnessed the return of a large number of people of Nepalese origin from Burma when the Japanese troops overran Burma in 1942, the return of the Gurkha troops after the Second World War , and the return of the Nepalese political exiles from India after the overthrow of



the Ranas. These developments , together with a more thorough enumeration in 1952/54 and gross underenumeration in 1942, account largely for the substantial increase in the population of all three regions between 1942 and 1952/54.

Between 1952/54 and 1961, the Terai regions experienced an average annual rate of population growth of 2.24 per cent , which was higher than the average national rate of 1.65, while the rates for the hills (1.32per cent) and the Kathmandu valley (1.42) were lower than the national average. Migration appears to have played a dominant role in the regional variation of population growth rates in Nepal during this period.

As was noted earlier, in the past , malaria was endemic in the Terai region . In particular, the central inner Terai was a hyperendemic belt of malaria and covered with dense subtropical forests. Under a tripartite agreement concluded between the government of Nepal, the World Health Organization and the United States Operation Mission, a malaria eradication programme was launched for the first time in the Chitawan (Rapti) valley of the central inner Terai in 1956. In eradication of malaria and subsequent reclamation of forests for cultivation and resettlement resulted in large-scale in-migration of the hill people into the Chitawan valley.<sup>25</sup>

In addition to the influx of migrants from the hill regions , there were also immigrants from India pouring into the Terai. In 1961, nearly 92 per cent of the total foreign-born population and 95 per cent of the India-born population were located in the Terai. On the other hand, the hill regions were characterized by large -scale out-migration . it has been estimated that in 1952/54 nearly 205,000 persons representing 4 per cent of the total hill population out-migrated , and this

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<sup>25</sup> Between 1952/54 and 1961, the central inner Terai experienced the highest rate of population growth (3.62per cent) of all regions while the rate of growth of Chitawan valley (6.84 per cent) was the highest of all districts.

number increased to about 345,000, or about 6 per cent of the total hill population, in 1961.

Between 1961 and 1971, the average annual rate of population growth between the geographic regions was remarkably different . the rates in the Terai and Kathmandu valley were higher, and that of the hill region lower , than the national average . the very high rate (3.38per cent) observed in the terai was largely due to the malaria eradication programme which covered the entire country up to an altitude of 4,000 ft in the 1960s. besides, the construction of the East-West Highway and north -south roads, implementation of irrigation projects and agricultural development programmes, establishment of a few large and medium-sized industries and numerous small-scale industries also contributed to the rapid growth of the Terai's population through internal migration and immigration from abroad .<sup>26</sup>

The rate of population growth in the Kathmandu valley which was below the national average between 1952/54 and 1961 recorded a rate above the national average between 1961 and 1971. however , the rate for the hills recorded a decline between the two intercensal periods and this decline should be attributed to large-scale out-

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<sup>26</sup> It has been observed that in the past “ the highlanders did not consider Terai to be a suitable place for settlement in view of malaria, predominance of swamps and deep forests, inhospitable climate , a very unfamiliar topography and an alien type of socio-cultural environment” . but today, the “ Terai , with two-thirds of the cultivated land and about 500 thousand hectare of reclaimable forest, is no longer a preserve of aboriginals and old settlers. With the increasing pace of agricultural and industrial growth, Terai is increasingly attracting the very poor Nepalese of the hills and the mountains . foreign nationals , including those of Nepalese origin living for long in India, have also been increasingly migrating to Terai”. See Govind Prasad Lohani , “Designing a population policy for Nepal”, in *Workshop -Conference on population, Family Planning and Development in Nepal*, jointly sponsored by the Government of Nepal, Family Planning /Maternal and Child Health Project, and Nepal-University of California Family Planning /Maternal and Child Health Project, Berkeley, California, 24-29 August 1975.

migration from the hill regions. The main reasons for such steady migration are : (i) increasing pressure on agricultural land intensified by low productivity and soil erosion; (ii) decline of traditional trade with Tibet ; (iii) the opening of new fertile lowlands in the Terai regions ; and (iv) the lack of alternative employment sources.<sup>27</sup>

## **B. Population distribution**

### *1. Distribution by geographic region*

The distribution of the population of Nepal by geographic region for the census years 1952/54, 1961 and 1971 is shown in table 5. It will be seen that the mountain and hill region, which covers above 71 percent of the total land area , contained about 53 percent of the total population of the country in this region, however, recorded or steady decline from 60.3 percent in 1952/54 to 58.7 and 53.4 percent in 1961 and 1971 respectively. The Kathmandu valley, which actually is part of the mountain and hill region, has in all census year contained about 5 percent of the total land area.

The inner Terai covers about 10 percent of the total land area, but in 1971 sustained only 7.3 percent of the total population, compared to 5.8 percent in 1952/54. The Terai region consists of only 18.3 percent of the total land area. But the population of the region as a proportion of the total national population has recorded steady increase from 28.9 percent in 1952/54 to 30.7 percent in 1961 and 33.9 percent in 1971.

As Nepal is a mountainous country , relief plays a dominant role in the distribution of population as it has direct influence on climate, soil and water. Because of the uneven nature of the topography interspersed with intervening valleys and ridges,

the country's population distribution is characterized by densely polluted valleys and sparsely polluted ridges. The aspect of slope is also important in the distribution of population in the hills. As Nepal lies in the North temperate zone, settlements in the hills are concentrated along the south –facing slopes which are exposed to sunshine. Further, in the past ,population distribution was severely conditioned by the prevalence of malaria with varying endemicity up to an attitude of 4000 ft. People usually avoided settling in the densely forested area of the terai the inner terai and the low lying valleys of the hills. The eradication of malaria, however, has now rendered these regions suitable for habitation.

Population density, which in 1971 reached about 211 persons per .sqr.mile Nationally, is rather unevenly distributed through the various geographic regions. The Kathmandu valley had the highest density at 2,098 persons per.sqr.mile followed by the Terai at 391 person per .sqr. mile. The density of the mountain and hill region as well as the inner terai were almost equal with about 158 persons per .sqr.mile, though at the previous two censuses the density in the mountain and hill region was substantially higher than that of the inner Terai.

There were also significant differences in population density between the sub regions constituting the major geographic regions. Though the average density of the mountain and hill region was about 158 persons per.sqr.mile in 1971, the eastern mountain and hill region had a higher density of about 205 persons per sqr mile compared with 177 in central and 113 in the western mountain and hill regions. In the terai, the density of population was highest in the east with 525 persons per sqr mile. The density in the eastern Terai was also over 3 times the density of the mountain and the hill region. Compared with the eastern and central Terai, the western Terai, which is densely covered with forests, is sparsely polluted and its density is lower than the density

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<sup>27</sup> Mohan N.Shrestha, “ Spatial distribution and change of population in Nepal”, in *Workshop-Conference on Population Family Planning and Development in Nepal* , op.cit. ,pp.67-68.

of the mountains and hills as a whole. In the inner Terai, however, the density increases towards the west, but the difference in population density from east to west is not as significant as in the Terai or the mountain and hill regions.

The interregional differences in population distribution and density are interesting and indicate a pattern which is generally associated with the rainfall pattern and consequently with the fertility of the soil. The wetter eastern region with an average annual rainfall of 1778 mm has an advantage over the relatively drier western region where the average rainfall is 762 mm.

Thus density declines westward with the decreasing strength of the monsoon.

Besides the geographic regions, the tempo scales of development activities also determine the pattern of population distribution. In the past, development activities were concentrated mostly in the central and eastern terai, not in the western terai and the mountains and hills (except the Kathmandu valley). Further, as was noted earlier, the eradication of malaria in the Terai has led to the massive internal migration of the hill people for settlement in this region. In addition,

Table 5. Population distribution and density by geographic region, 1952/54 to 1971

Region	Area in square miles	Percent of total area	census1952/54			census1961			census1971		
			Population	Percent	Density	Population	Percent	Density	Population	Percent	Density
<i>A. Mountain and hill</i>	39147	71.4	4979713	60.3	127.2	5531307	58.7	141.3	6167309	53.4	157.5
1.Western	16198	29.5	1516774	18.4	93.6	1698083	18.0	104.8	1834128	15.9	113.2
2.Central	12999	23.7	1754123	21.2	134.9	1946502	20.7	149.7	2296941	19.9	176.7
3.Eastern	9950	18.1	1708816	20.7	171.7	1886722	20.0	189.6	2036240	17.6	204.6
<i>B. Kathmandu valley</i>	295	0.5	410995	5.0	1393.2	459990	4.9	1559.3	618911	5.4	2098.0
<i>C. Inner Terai</i>	5381	9.8	476500	5.8	88.6	536509	5.7	99.7	848535	7.3	157.7
1.Western	861	1.6	89315	1.4	103.7	98607	1.0	1145.0	167820	1.5	194.9
2.Central	2568	4.7	197957	2.4	77.1	244236	2.6	95.1	420684	3.6	163.8
3.Eastern	1952	5.3	189228	2.3	96.9	193666	2.1	99.2	260031	2.2	133.2
<i>D. Terai</i>	10042	18.3	2389417	28.9	237.9	2885190	30.7	287.3	3921228	33.9	390.5
1.Western	3078	5.6	235189	2.8	76.4	271551	2.9	88.2	425242	3.7	138.2
2.Central	1300	2.4	348179	4.2	267.8	400357	4.3	308.0	521836	4.5	401.4
3.Eastern	5664	10.3	806049	21.9	318.9	2213282	23.5	390.8	2974150	25.7	525.1
Nepal	54865	100.0	8256625	100.0	150.5	9412996	100.0	171.6	1555983	100.0	210.6

Source: Center Bureau of Statistics, Reports of the census for 1952/54,1961 and 1971.

influx of foreign nationals into the terai has also increased in the wake of growing economic activities in the central and eastern terai towns and the hinterlands.

Population density, expressed as the number of persons per sqr mile, is of course a very crude measure of the pressure of population on land. Since uninhabitable and unusable areas are also included in reckoning the total land area, a true picture of the pressure of population on land is not given by this measure. In Nepal where agriculture is the main source of livelihood, the population density is more meaningful when calculated on the basis of cultivable land rather than the gross area. This is particularly useful in identifying the disparity between different areas of the country in terms of the population pressures on agriculture.

The density of population on cultivated land by various development regions is shown in table 1. While about 14 percent of the land area of Nepal is under cultivation, the proportion for the three geographic areas are markedly different. In the Terai about 40 percent of the land area is cultivable but the corresponding proportions for the hill is 10 percent and the mountains only two percent.<sup>28</sup> The magnitude of these differences is highlighted by the differences in density between the area. The mountains with a density of about 3,222 persons have over 3 and a half times as many people per square mile of cultivable land as

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<sup>28</sup> Recently the department of forests carried out a survey covering 36, 876 square miles, or about 67 per cent of the total area of the country. The northern mountains and some areas within the hills and plains were not covered by this survey owing to the lack of large-scale maps and aerial photographs. According to the Department of forests statistics, 20.6 per cent of the total land is cultivated, and the average density for the country as a whole is 1,022 persons per cultivated square mile. This density in the hills is 1,049 persons, where as in the plains it is 989 persons per cultivated square mile. Though these figures do not show a significant difference in agricultural density between the hills and the plains, the pressure on lands in the hills should be considered much higher because of the relief and low productivity.

the Terai (883 persons) , while the hills with a density of 2,727 have over three times the number of the Terai. In terms of cultivable land, the mountain and hill region seem to be facing an acute problem of population pressure.<sup>29</sup>

It is thus clear that those areas, which have the lowest proportions of cultivable land, that is those least able to support their population, have the greatest population pressure on agriculture. The consequences of this disparity for population distribution and resettlement are quite evident. It would be expected that out migration from those areas would continue to areas where the agricultural base was more favorable for the production of food and support of its population.<sup>30</sup> However, the opportunities for resettlement in the Terai are quite limited with only about 325,000 hectares of land remaining that is suitable for cultivation. Prospect of this outlet of population movement closing within the next few years, alternative outlets must be found, or the problems associated with the resettlement and assimilation of the moving population will reach enormous proportions; that is, the densities in the Terai would increase to levels which could

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<sup>29</sup> Even in the Terai area, the population density per square kilometers of cultivable land (336persons) is higher than the corresponding densities in Burma (148persons) and Pakistan (224persons) and is very close to that of India (350persons).

<sup>30</sup> Traditionally, there have been several outlets which have enabled families in the hill areas to avoid the threshold between population and the resources base, and in effect avoid impinging on their standard of living. These outlets have included seasonal migration to India for part time employment in the generation of cash income, and the recruitment to the Indian and British armies . The most important and most recent outlet, of course, has been the movement of hill people for permanent settlement in the Terai. This has particularly accelerated during the last two decades as malaria control has become more effective and as pressure in certain hill areas has reached the point where alternatives in the Terai are clearly more attractive than an expected decline in the standard of living in the hill communities. See John Beyer, "the economic parameters of a population policy in Nepal", in *workshop-conference on Population, Family Planning and Development in Nepal* , *op.cit.*

not be supported by the existing agriculture and the same problems in the mountain and hills would continue.

## 2. Urban-rural distribution

In Nepal, the classification of settlements into urban and rural seems to be arbitrary and not based on any clear definitions. The criteria used in classifying settlements into urban centers (nagar panchayat) or rural settlements (village panchayat) are based on a combination of certain characteristics such as the importance of the place as a trading, administrative or educational center, population size does not appear to be an important determining factor.<sup>31</sup> However, for purposes of our analysis, the urban population is defined as population residing in towns with 5,000 or more persons.

The distribution of the population of Nepal by rural-urban residence in the last three census years is shown in table 6. It will be seen that the proportion of urban population to the total population has increased from 2.9 per cent in 1952/54 to 3.6 per cent in 1961 and to 4.0 per cent in 1971. The problems of urbanization in Nepal are not so serious as in most other developing countries. The level of urbanization in Nepal is very low because, being a predominantly agricultural economy, the country lacks the basic resources, infrastructure and technology needed for industrialization and consequent urbanization. Besides, the one-way pattern of internal migration from the mountains and hills to the Terai has always been in search of amenable land in the Terai rather than employment in the urban areas.

“Urban settlements which obviously reflect differences in ways of life, standard of living and higher educational attainment are not too

<sup>31</sup> For instance, Shiva gang with a population of 17,891 persons was considered a village panchayat while Tansen with a population of 6,344 persons who was considered a town panchayat.

far ahead of rural areas in many other aspects. The rural sector being highly illiterate has no surplus of educated or skilled labour to dispatch to the city, where certain technical qualifications are usually needed. The great variety of jobs in the cities, better prospects for economic advancement, the desire for social and economic independence, are strong inducement for young educated or trained persons to leave the countryside especially if land is short or fragmented and the population pressure is increasing rapidly. But in fact, these are increasing and attracting only a negligible proportion of the population to migrate to the city. It attracts only those who have acquired certain standard of education or technical abilities. Finally, expansion in the secondary and tertiary sectors was comparatively too small to act as stimuli for a discernible rural to urban migration.”<sup>32</sup>

Table 6. Distribution of the population by rural-urban residence in 1952/54, 1961 and 1971

Census year	Sector	Number of localities <sup>a</sup>	Population	percent
1952/54	Rural	28760	8018630	97.1
	Urban	10	237995	2.9
	Total	28770	8256625	100
1961	Rural	28446	9076774	96.4
	Urban	16	336222	3.6
	Total	28462	9412996	100
1971	Rural	3915	11094045	96
	Urban	16	461938	4
	Total	3931	11555983	100

Source: Central Bureau of statistics.

<sup>a</sup> In the 1952/54 and 1961 census, the village was the enumeration area. In 1971, the Panchayat, which is a grouping of adjacent village and hamlets, was the unit of enumeration. Hence the fall in the number of rural localities between 1961 and 1971.

The urban population of Nepal is rather unevenly distributed. The three towns of Kathmandu

<sup>32</sup> Government of Nepal The Analysis of the Population Statistics of Nepal, op. cit., pp. 35-36.

valley together accounted for 54 per cent of the total urban population in 1971, while the 9 towns in the Terai contained 37 per cent of the country's urban population. The other four hill towns accounted for the remaining 9 per cent. It may also be noted that in 1954/54, the Kathmandu valley accounted for 75 per cent of the then total urban population of Nepal. However, with the growth of urban centers in the Terai and the inner Terai, the share of the Kathmandu valley total urban population has considerably declined. In 1952/54 no urban center existed in the hills but in 1961 this region accounted for 4.8 per cent of the total urban population and this proportion has increased to 9 per cent in 1971.

In Nepal, the evolution of urban centers is closely associated with the development of transport and communication facilities and concurrent development of industry and trade. This is clearly indicated by the growth of the towns in the Terai and inner Terai regions. Lack of transport and communication facilities has hindered the growth of towns in the mountains and hills. The towns in mountains and hills, Pokhara, Tansen, and Tiam are located in those areas where there are communication linkages with the Terai. In the Terai and inner Terai, the further development of transport and communication facilities is resulting more in the evolution of new urban centers than in the expansion of existing ones.