Recent Population Development and Population Projections up to 2010 in Nepal[1]

MARIE REIJO

Research Associate
Academy of Finland
Helsinki, Finland

Abstract

This article describes the recent population development in Nepal and projects alternative population development trends to the year 2010 using the cohort component model. Projections are based on the assumptions of future fertility, mortality and migration which have been derived from assumed socioeconomic and environmental development and population policy development. The relatively rapid population growth will continue mostly because of high natural increase. Population growth can be delayed most efficiently by decreasing fertility to the replacement level and by decreasing mortality further.

Key words: population development, population projections, Nepal

Background

Nepal is one of the poorest and unurbanized countries in the world: for example, income per capita is 180 USD, agriculture covers 54.8 percent of the GDP and about 90 percent of the population is living in an agricultural area according to the World Bank estimates from 1993. During the last few decades Nepal has experienced rapid population growth and an increasing population redistribution. The population of Nepal has increased from 11.6 million in 1971 to 15 million in 1981 and further to 19.6 million in 1992. The annual growth rate has been 2.5 percent. The rapid increase of population growth is mainly due to high natural increase, because birth rates have been stable and high, but death rates have been declining. Also the net migration balance has been relatively positive since 1971–1981. Immigration from highly densely populated areas of bordering countries, especially from India, has been increasing. The population growth rate in different areas has varied mainly due to internal migration; areal differences in fertility rates have been slighter. The main migration flows have been directed from the highlands, Mountain and Hills, where population pressures have been

---

highest to the Terai lowlands, Inner Terai and Terai (e.g. Gurung 1989; Pant and Gub-haju 1989; World Bank 1993).

On one hand, rapid population increase and on the other hand specific environmental characteristics and low socioeconomic development are together creating extensive problems for quality of life of residents in Nepal. From the rapid population growth has followed rapid expansion of cultivable land within very limited agricultural recourses which in turn have related among others to poor and worsening living conditions and outmigration, and more generally, to deforestation of Nepal (Chand 1985).

This article describes the recent population development and forecasts population development up to 2010 in Nepal by using a cohort component model. The alternative projections calculated are based on a set of different future assumptions of population development components: fertility, mortality and migration. These assumptions in turn are connected to future socioeconomic, environmental and population policy prospects.

Recent trends in population projection

Mortality

Mortality estimates made by the United Nations (World Population Prospects 1992) indicate that *crude death rates* have declined steadily in Nepal, which has been mainly the result of health facility improvements (Guphaju, Streatfield and Majunder 1990). The crude death rate has decreased from 21 per thousand in 1970–75 to 15.1 per thousand persons in 1985–90. The incidence of deaths follows a typical U-shaped pattern: it is at its highest among children under one year, and declines after that up to the ages 10–14, where it attains a minimum level, and increases in the older age groups.

The infant mortality rate has declined from 153 per thousand in 1970–75 to 110 per thousand in 1985–90 according to the United Nations (World Population Prospects 1992) and further to 101 per thousand according to World Bank estimates from 1993. However, the mortality level is still relatively high compared to other Asian countries. In the whole of South Asia the infant mortality rate was 99 per thousand in 1985–90 (World Population Prospects 1992) and 92 per thousand according to the World Bank's estimates from 1993.

Life expectancy at birth has increased rapidly: in 1970–75 it was 44 years for males and 42.5 years for females, in 1985–90 it reached 51.5 years for males and 50.3 years for females. In South Asia life expectancy at birth was 57 years for males and 57.1 years for females in 1985–90 (World Population Prospects 1992). For both sexes combined the most recent estimate of life expectancy was 53 years in Nepal, whereas in South Asia it was 59 years (World Bank 1993).

The level of infant mortality has been associated usually with the socioeconomic development of a nation. Declining infant mortality is reflected as an increasing life expectancy at birth. According to the child survival research based on the NFFS survey (Fertility and Family Planning Survey Report 1986), demographic factors, i.e. previous birth interval and survival of preceding child followed by maternal age and birth order, were the most important determinants of infant mortality in Nepal, while socioeconomic and environmental factors were less influential than is often assumed. However, these purely demographic factors explained infant mortality in rural areas, but it was suggested that in urban areas also socioeconomic factors, especially environmental ones like sanitation and water supply, are significant (Gubhaju, Streatfield and Majunder 1990).

Fertility

According to the United Nations (World Population Prospects 1992) estimates the crude birth rate was 47 per thousand in 1970–75 and 42 per thousand in 1985–1990.

The total fertility rate has declined from 6.52 in 1970–75 to 5.95 children per woman in 1985–90 (World Population Prospects 1992) and further to 5.5 children per woman according to the World Bank's (1993) most recent estimates. The average number of children per woman in South Asian countries was lower: 4.7 in 1985–90 (World Population Prospects 1992) and 4.2 according to the World Bank's estimates, from 1993.

In the most recent NFFS survey (Fertility and Family Planning Survey Report 1986) *age-specific fertility rates* were estimated using an indirect method known as the P/F ratio, which was developed by W. Brass. Based on this method, age-specific fertility rates varied according to age:

Age	ASFR
15–19	0.0935
20–24	0.3260
25–29	0.2885
30–34	0.2155
35–39	0.1741
40–44	0.0867
45–49	0.0209

Since 1981 these fertility rates showed a slow increase among younger women aged 15–24 and a decrease among aged 25–49. Fertility decline has particularly occurred among women aged 25–39 and 45–49. It has been suggested that the increase in fertility among younger women is mostly a result of the fast decrease of childless women in these age groups.

The levels of fertility rates are caused by social, economic and cultural factors. Transition from high fertility to a low level has been explained, for example among others by the development of modern technology, industrialization and urbanization. Pant and Guphaju (1989) have classified fertility determinants in Nepal into three different groups: 1) demand for children, 2) supply of children and 3) fertility regulation through which social, economic and cultural factors have an effect on fertility.

The high demand for children has been a consequence of high labor intensity in the agricultural sector and the lack of public old age support. Furthermore, high infant and child mortality has increased motivation to sustain a high number of children. Direct economic costs of children, including education, food and clothing are still relatively low in rural areas, but they are increasing in urban areas. Indirect costs, employment opportunities, for example, are higher in urban than rural areas. A demand indicator, the number of children desired by the currently married, was 3.5 in 1986 (NNFS 1986), which is slightly lower than in 1976, when the number of desired children was 4.0. The desire to have more children declines once women have children of both sexes. The supply of children has been associated with the physiological capacity of women to reproduce children and has been caused by demand variables. These supply variables are, for example, the proportion of married women, the age at marriage and postpartum amenorrhea and infecundity.

Marriage is a universal phenomenon in Nepal: almost 100 percent of women of higher ages have been married. The age at marriage was low and there was no difference in the mean age at marriage between urban and rural areas in 1986. Instead, there were differences in the mean age at marriage according to geographical areas (Hills 17.3, Mountain 17.4, Terai 16.6) and cultural factors, for example by religion (Muslims 16.6, Hindus 16.9, Buddhists 18.3). Differences according to education were not

significant: mean age at marriage was slightly higher among women who had some formal education than among those who had no formal education at all.

Duration of postpartum amenorrhea has an effect on fertility, and it is probable that the poor health status of women in Nepal delayed the resumption of menstruation and exposure to pregnancy thus decreasing fertility. The duration of postpartum amenorrhea depended on the health status of the mother, infant mortality and the prevalence of breast-feeding. The knowledge and use of contraceptive methods was limited: 50 percent of the currently married women aged 15-49 knew at least one contraceptive method and 15.8 percent had used at least one method in 1986. Sterilization was still the most common contraceptive method. Abortion was illegal and it was permitted only on the basis of health grounds. Generally, urban women were more likely to use contraception than rural women, and also more likely, if they were educated (Fertility and Family Planning Survey Report 1986).

According to the Fertility and Family Planning Survey (1986) the most important factors which have sustained high fertility in Nepal are the low rate of contraceptive use, the high dropout rate of temporary methods, the relatively high age of acceptors and the practice of universal marriage at a relatively young age. Until now the relatively long period of breast-feeding has been almost the only factor which has decreased fertility.

Migration

The regional differences in population growth rates are also due to differences in internal migration: main flows are directed to the Terai region. No detailed information about immigration and emigration has been available until the Demographic Sample Survey was conducted in 1986-87. The survey covered 8,640 households. According to the survey the emigration rate was 12 (20/1,000 males and 4/1,000 females) per 1000 persons. Regional variation ranged from 6 for the Terai, 13 for the Hill and 33 for the Mountain zones. Emigrants from rural areas were mostly younger, usually 10-19 years old, than the emigrants from urban areas, who were usually 20-29 years old. The majority of emigrants have moved to India. The immigration rate was 28 immigrants (14/1,000 males and 41/1,000 females) per 1,000 persons and the main flows concentrated on the Terai and urban areas. As a result of the difference between emigration and immigration, the net migration rate was 16 immigrants per 1,000 population, but the net migration was positive only among women. Most of the net flows were directed from India to the Terai area (Gurung 1989).

Net migration has been positive in the Terai and urban areas in which new employment opportunities have been created for immigrants and in which the infrastructure has been developed the most. Population pressures in India with poor livelihood opportunities have been the main push factors for immigration to Nepal. The close economic and cultural ties between India and Nepal have reduced the possible costs of migration. Conversely the Mountain and Hill regions have experienced negative net migration; rapid population growth and limited land resources for agriculture have been the main factors causing outmigration. Besides poor living conditions, military service among males and marriage among females have been important reasons to emigrate (Gurung 1989.)

Data and methods for projections

The approximate sex and age composition estimates of Nepal's population in 1990 (United Nations 1993) form the base for the population projections. In addition to the data

from the previous census in 1981, the findings of the Demographic Sample Survey 1986-87 (8,640 households) and the Nepal Fertility and Family Planning Survey, NNFS in 1986 (4,000-5,000 households), were used.

The projection method that was used is a standard cohort component model (e.g. United Nations 1984). The Demographic Projection Model (DemProj 1990) created by The Futures Group was used to conduct the projections. Separate projections according to different population development assumptions were calculated for males and females at five-year intervals up to the year 2010. A similar kind of projection strategy has been used in the demographic scenarios of the Population Program at IIASA (International Institute for Applied Systems Analysis) (e.g. Lutz and Prinz 1991; Lutz et al. 1991; Lutz and Prinz 1992).

Factors affecting future population development

Recent trends in population development have been used to form a basis for estimating future population development in Nepal. In addition, population development is assumed to vary according to probable forthcoming changes in socioeconomic, environmental, historical, cultural and political factors. The qualitative assumptions of mortality and fertility changes again can be derived mainly from basic demographic theories, for example demographic transition theory. According to the original demographic transition theory, socioeconomic development, more specifically urbanization, industrialization and education, are assumed to cause fertility decline in particular through different intermediating fertility channels. At present, it is suggested that Nepal is located in the first phase of demographic transition when relatively high mortality is decreasing, but fertility still remains at a relatively high level.

Before formulating the assumptions about mortality, fertility and net migration, two sets of factors affecting the future development of the population are first discussed, namely, the socioeconomic and environmental factors and the population policy factors.

Socioeconomic and environmental aspects

Poverty and the degradation of natural resources in Nepal have been results of slow growth in agricultural production and uneven distribution of cultivated land. Increased population size has caused increased demand for agriculture and land for animals, resulting in increased deforestation. It is probable that this imbalance between natural resources and recent population development cannot sustain the continuing population growth and high fertility for a longer period of time. Improving technology would increase agricultural productivity, produce less labor demanding industries, and in turn, decrease labor demand, thus also the demand for children. In general, increasing urbanizaton and modernization have been connected with several fertility declining issues: the spread of education and literacy, involvement of women in work outside the home and the changes in cultural norms. As a result, for example, the use of contraception can be expected to become more common. Oppositely, the duration of breast-feeding can be expected to decrease unless present customs are maintained through direct educational and promotional programs.

Concerning mortality, it is more probable that infant and maternal mortality will more likely decline than increase. However, rapid urbanization may cause overcrowding, poor and unhealthy living environments, for example poor sanitation and limited access to safe water. On one hand the weakening of living conditions can sustain high infant mortality. On the other hand it can also be followed by infecundity owing to

malnutrition and disease. In summary, it could be concluded that a declining natural increase will be the most probable net result from socioeconomic development. (See Pant 1989; World Bank 1993; World Urbanization Prospects: The 1992 Revision.)

Population policy aspects

Nepal has experienced more than 30 years of economic planning through specific, usually five-year period, Government Plans. One of the aims of the Governments Basic Needs Program and its Seventh Plan (during the period 1985–90) was to create the basic infrastructure and administrative capability to improve economic and sociopolitical conditions, and thus to lower fertility indirectly. The interrelationships between population development, economic growth and preservation of natural resources are the central themes which must be taken more sufficiently into account in the new Eighth Plan for the period 1990–95 (Pant 1989).

The Government presented a comprehensive Population Strategy in 1983 for a longer period. The strategy covered population development components (fertility, mortality, migration), policy instruments (e.g. status of women, urbanization, maternal and child health), institutional arrangements and resource requirements.

Nepal has not engaged in direct control of fertility in it's population policy. Information, education and communicative systems concerning contraceptive use have been undeveloped. The Seventh Plan did not generate any visible and certain prospects to reduce fertility, although the target of reducing fertility to the replacement level (2.5 children per woman) by the end of this century was presented as a desirable goal in the National Population Strategy in 1983. Integration of population and development planning was accepted as one of the main strategies to achieve the lower fertility level. Sectors which were identified for integration included development programs: maternal and child health services which were aimed at reducing child and infant mortality, as well as programs relating to agricultural development, environment and forestry development. The seventh plan also included plans for immigration control (Pant 1989; Pant and Guphaju 1989).

The health promotion programs related to the eradication of malaria, smallpox and other communicable diseases in order to increase life expectancy have been successfully carried out in Nepal.

Assumptions concerning population development components

Mortality

The level of mortality was measured by life expectancy at birth. Because recent mortality data were not available, the United Nations (1993) estimates were used. The age and sex-specific mortality rates were obtained from the United Nation's South Asian model life table. It assumes very high mortality below age ten, low mortality between ages 10 and 40 and high mortality again after 40.

Three alternative assumptions were made. First, mortality remains at the 1985–90 level; life expectancy at birth is 51.5 years among men and 50.3 years among women. Second, in the slow mortality decline assumption, life expectancy is supposed to increase linearly to 61.5 years among both sexes in 2010. Third, in the rapid mortality decline assumption, life expectancy will increase linearly to 67 years among men and women in 2010. The assumption is realistic, in the context that countries in the next

higher income (GNP per capita) group have already achieved this mortality level (World Bank 1993).

Fertility

Total fertility rates and age-specific fertility rates were based on the Nepal Fertility and Family Planning Survey Report 1986 (1987). Estimates of total fertility rates are supposed to vary, but the age distribution of fertility has been kept constant (15–19: 7.8, 20–24: 27.1, 25–29: 24.0, 30–34: 17.9, 35–39: 14.5, 40–44: 7.2 and 45–49: 1.7). Three alternative total fertility rate assumptions were imposed. In the constant fertility assumption, the total fertility rate remains at the average level of 1985–90, i.e. 6.0 children per woman. In the slow decline and in the rapid decline assumptions, the total fertility rate declines linearly. According to the slow decline assumption total fertility rate would be 4.2 in 2010 which is between the present and the rapid decline fertility value. In the rapid fertility decline assumption, the total fertility rate is assumed to be 2.5 in 2010, which is below replacement level. The target level of the Seventh Plan, 2.5 children per woman by the year 2000, seems rather unrealistic.

Sex ratio at birth

Sex ratio at birth is assumed to be 105 males per 100 females, as was found in the Nepal Fertility and Family Planning Survey Report 1986 and in the United Nations estimates (1993). However, there were marked differences between regions: there were 113 males per 100 females among the newborn in the Hills and 74 males per 100 females in the Mountains. To some extent this may depend on underreporting of female births in the Hills and male births in the Mountains.

Migration

The Demographic Sample Survey 1986–87 gives the latest data on international migration: the findings of the total number of migrants and sex and age distribution of immigration and emigration rates of 1986 were applied to the projections in this article. International migration may vary very dramatically during relatively short time periods (for example, in 1986 net migration was especially positive among women, but negative among men) and is, in the last resort, regulated by migration policy. Therefore, the migration assumptions should be treated with most caution.

Only two assumptions were made: either 1) the net migration rate = 0 or 2) the absolute number of migrants according to sex and age is kept constant at the 1986–87 level and the net migration rate = 16/1,000 .

Summary of different assumptions

Table 1 summarizes the assumptions of fertility, mortality and net migration which entered the different projections for Nepal.

First the constant rate projection (Projection 1) assumes that fertility and mortality remain constant at their 1985–90 level. Concerning fertility, it is first assumed, that fertility declines slowly (Projection 2) and second that fertility declines below the replacement level (Projection 3), when mortality is kept constant. In the mortality projections, first, small improvements (Projection 4), and second, further improvements

Table 1. Assumptions of 10 population projections for Nepal

Projection 1. Constant fertility and mortality rates
Projection 2. Slow fertility decline and constant mortality rate
Projection 3. Rapid fertility decline and constant mortality rate
Projection 4. Constant fertility rate and slow mortality decline
Projection 5. Constant fertility rate and rapid mortality decline
Projection 6. Slow fertility and mortality decline
Projection 7. Rapid fertility and mortality decline
Projection 8. 1 + constant positive net migration
Projection 9. 6 + constant positive net migration
Projection 10. 7 + constant positive net migration

(Projection 5) in life expectancy at birth are expected. Projection 6 assumes a slow decline in fertility and mortality and projection 7 is based on a rapid decline in fertility and mortality. The rest of the projections also consider net migration, setting the yearly number of migrants at the 1986 level. Projection 8 assumes that all population components are at the constant level. Projection 9 assumes that both the fertility and the mortality decline are slow. Projection 10 assumes that the both fertility and the mortality decline is rapid.

Projected population trends under different alternatives

Population size

In 1990 the estimated population size of Nepal was 19.6 million (United Nations 1993). On the basis of the projections based on fertility and mortality assumptions, the population size will grow. According to the constant level assumption (Projection 1) the number of population will be 33.2 million in 2010. The size of the population would be smallest (26.4 million) in the rapid fertility decline projection (3) and largest (36.5 million) in the rapid mortality decline projection (5). Under the rapid fertility and mortality decline combination (Projection 7) the population size would be 28.6 million. As a result of the 1986 net migration level, population size would be much greater, 42.6–45.2 million according to the constant and the slowly declining fertility and mortality rate alternatives (Projections 8 and 9). This is partly due to the strongly positive net migration balance among women of child-bearing age.

Table 2. Population size (in millions) in 1990–2010 according to different projections

Year	1990	1995	2000	2005	2010
Projection 1	19.6	22.3	25.3	29.0	33.2
Projection 2	19.6	22.0	24.5	27.1	29.7
Projection 3	19.6	21.7	23.7	25.3	26.4
Projection 4	19.6	22.4	25.9	30.2	35.4
Projection 5	19.6	22.5	26.2	30.8	36.5
Projection 6	19.6	22.1	25.0	28.1	31.6
Projection 7	19.6	22.0	24.4	26.7	28.6
Projection 8	19.6	24.2	30.1	37.2	45.2
Projection 9	19.6	24.1	29.6	35.9	42.6
Projection 10	19.6	23.9	28.7	33.7	38.3

Because of sex differences in mortality, the female population will grow faster according to the projections which include mortality decline. This can be indicated for example by the male/female ratio which will be 105.9 in the slow mortality decline projection (4), 105.8 in the slow fertility and mortality decline projection (6) and 105.7 in the rapid fertility and mortality decline projection (7). Otherwise, the ratio would be 106.5. A continuing number of net immigrants would make the male/female ratio strongly advantageous for females.

Age distribution

Median age is an indicator that summarizes the age distribution of the population. In 1990 the median age was 18.3 years. According to the constant fertility and mortality assumption (Projection 1) the median age of population will be 19.2 years in 2010. Under the rapid fertility decline assumption (Projection 3) the median age is higher (24.9) compared to the mortality projections 4 and 5 (median age is 18.2–18.5).

The proportion of children (0–14) is smallest in the rapid fertility decline projection (3) and almost as small in the rapid fertility and mortality decline projection (7), whereas the proportions of working-age population (15–64) and the elderly population (65+) are largest in these projections in 2010. The dependency ratio is most advantageous in the rapid fertility and mortality decline projections and disadvantageous in mortality decline projections.

Including positive net migration into the projections does not change the age structure of the population much. The median age would be highest in the rapid mortality and fertility decline projection (Projection 10).

(For age distributions in 1990–2010 by different projections see Appendix Table.)

Summary and discussion

In this article the recent population development of Nepal has been described. The relatively rapid population growth has been mostly due to high natural increase. Besides, the net migration balance has been relatively positive during recent decades. On the basis of population development – more specifically fertility, mortality and migration – and in some extent cautious assumptions of the factors which will be related to future development of these population components, several population trend alternatives were calculated instead of only one deterministic trend. The calculated population projections are conditional forecasts which have attempted to suggest what the future population trends would be under certain assumptions of fertility, mortality and migration. These assumptions in turn were related to future trends both in socioeconomic and environmental development and population policy. In spite of several alternative population development trends, the projections of this article include several uncertainties: in addition to possible misspecifications of input parameters and qualitatively formed assumptions, especially concerning migration, projections do not include assumptions about wars, famines, new epidemics, etc. which could cause deviations from the projected trends already in a very short run. Further, the possibly important assumptions about regional differences in population development, migration in particular, were not set.

On the basis of projections it is not reasonable to evaluate which one is most probable. Instead, one asks which is the most realistic population development target and how it can be achieved. According to all projections the population will grow, and the age structure of the population will remain similar or grow older. If the slow popula-

tion increase is the most desirable target, it can be achieved both by rapid fertility decline (population size = 26.4 million) and by rapid fertility and mortality decline (population size = 28.6 million). It is also possible to conclude that a population size somewhere between these figures could be achieved by the projection which is based on the combination of a rapid fertility decline and a slow mortality decline. Under the two alternatives the age structure of the population would be younger, if both fertility and mortality decline rapidly, than with only a fertility decline, which is due to the effects of both high mortality among younger age groups and rapid mortality improvements in these age groups.

The previous population projection for Nepal (Population projection of Nepal 1986) was carried out for 1981–2000. It was based on four assumptions regarding fertility and two assumptions regarding mortality. The population figures of high variant, medium variant and plausible projections in 2001 were rather similar to the population figures based on fertility and mortality assumptions in this article. The United Nations (World Population Prospects 1992) has calculated four projection variants up to 2025 using given combinations of assumed fertility, mortality and migration. These different combinations have considered only fertility variation, including high, medium, low and constant variants. According to the United Nations' projections the population size in Nepal would vary between 30.5–35.5 million in 2010 which corresponds to this paper's more cautious calculations about fertility decline. The World Bank (World Population Projections 1992–93) has used only one variant (NRR=1 by the year 2025) in its projection, according to which the population of Nepal would be 29.4 million in 2010.

References

Chand, L.B. 1985. Nepal. In: Population Perspectives: Statement by World Leaders, pp. 114–115. Second edition. New York: United Nations Fund for Population Activities.

DemProj 1990. A Demographic Projection Model for Development Planning. Version 3. July 1990. Glastonbury, CT: Futures Group.

Fertility and Family Survey Report 1986. 1987. Nepal Family Planning and Maternal Child Health Project: Planning, Research and Evaluation Section. Katmandu, Nepal.

Gubhaju, Bhakta, Kim Streatfield and Abul Kashem Majunder. 1990. Socio-Economic, Demographic and Environmental Determinants of Infant Mortality in Nepal. Child Survival. International Population Dynamics Program. Canberra, Australia: Australian National University.

Gurung, Harka. 1989. Regional Patterns of Migration in Nepal. Papers of the East-West Population Institute, No. 113. Honolulu, HI: East-West Population Institute.

Lutz, Wolfgang and Christopher Prinz. 1991. Scenarios for the World Population in the Next Century: Excessive Growth or Extreme Aging IIASA Working Paper, No. WP-91–22, August. Laxenburg, Austria: IIASA.

Lutz, Wolfgang, Christopher Prinz, Anne B. Wils, Thomas Buttner and Gerhard Heilig. 1991. Alternative Demographic Scenarios for Europe and North America. In: Future Demographic Trends in Europe and North America: What Can We Assume today?, edited by Wolfgang Lutz, pp. 523–563. London: Academic Press.

Lutz, Wolfgang and Christopher Prinz. 1992. Long range population prospects of Finland in the European context. Yearbook of Population Research in Finland 30:68–80.

Migration Statistics from Demographic Sample Survey 1986/87. 1988. Central Bureau of Statistics. Katmandu.

National Studies: Nepal. 1991. Unesco Principal Regional Office For Asia And The Pacific. Bangkok.

Pant, R.D. 1989. Population, basic needs and the environment of Nepal. In: United Nations Frameworks for Population and Development Integration. Asian Population Studies, Series No. 93. Population and Development, pp. 15–31.

Pant, R.D. and B.B. Gubhaju. 1989. Population, basic needs and the environment of Nepal. In: United Nations Frameworks for Population and Development Integration. Asian Population Studies, Series No. 93. Population and Development, pp. 157–244.

128

Population Projection of Nepal 1981–2001. 1986. His Majesty's Government National Planning Commission Secretariat. Central Bureau of Statistics, Population Division. Kathmandu, Nepal.

United Nations. 1984. Population Projections: Methodology of United Nations. Population Studies, No. 83. New York: United Nations.

United Nations. 1993. The Sex and Age Distribution of the World Populations. The 1992 Revision. ST/ESA/SER.A/134. New York: United Nations, Department of Economic and Social Development.

World Bank. 1993. Social Indicators of Development 1993. Baltimore, MD: The Johns Hopkins University Press.

World Population Projections 1992–93. 1993. Baltimore, MD and London: The World Bank.

World Population Prospects: The 1992 Revision. 1993. ST/ESA/SER.A/135. New York: The United Nations.

World Urbanization Prospects: The 1992 Revision. 1993. Estimates and Projections of Urban and Rural Populations and of Urban Agglomerations. ST/ESA/SER.A/136. New York: The United Nations, Department of Economic and Social Information and Policy Analysis.

Appendix Table. Age distribution in 1990–2010 (%) according to different projections

		1990	1995	2000	2005	2010
Projection 1.	0–4	16.9	16.1	16.2	16.6	16.8
	5–14	26.6	26.9	25.2	24.6	24.9
	15–64	53.5	53.9	55.4	55.6	55.1
	65+	3.0	3.1	3.2	3.2	3.2
		100	100	100	100	100
	Total, millions	19.6	22.2	25.3	29.0	33.2
	Median age	18.3	18.5	18.8	19.2	19.2
Projection 2.	0–4	16.9	15.1	14.3	13.8	13.1
	5–14	26.6	27.2	25.0	23.3	22.6
	15–64	53.5	54.5	57.4	59.5	60.7
	65+	3.0	3.1	3.3	3.4	3.6
		100	100	100	100	100
	Total, millions	19.6	22.0	24.5	27.1	29.7
	Median age	18.3	18.8	19.5	20.9	22.1
Projection 3.	0–4	16.9	14.1	12.3	10.7	8.8
	5–14	26.6	27.6	24.9	21.9	19.7
	15–64	53.5	55.2	59.4	63.7	67.5
	65+	3.0	3.2	3.4	3.7	4.0
		100	100	100	100	100
	Total, millions	19.6	21.7	23.7	25.3	26.4
	Median age	18.3	19.1	20.3	22.4	24.9
Projection 4.	0–4	16.9	16.4	16.6	17.1	17.4
	5–14	26.6	26.9	25.4	25.2	25.7
	15–64	53.5	53.6	54.8	54.4	53.4
	65+	3.0	3.1	3.2	3.3	3.4
		100	100	100	100	100
	Total, millions	19.6	22.4	25.9	30.2	35.4
	Median age	18.3	18.4	18.6	18.8	18.5
Projection 5.	0–4	16.9	16.5	16.8	17.4	17.7
	5–14	26.6	26.9	25.5	25.4	26.0
	15–64	53.5	53.5	54.4	53.8	52.7
	65+	3.0	3.1	3.3	3.4	3.6
		100	100	100	100	100
	Total, millions	19.6	22.5	26.2	30.8	36.5
	Median age	18.3	18.4	18.5	18.6	18.2
Projection 6.	0–4	16.9	15.3	14.7	14.2	13.6
	5–14	26.6	27.2	25.3	23.9	23.4
	15–64	53.5	54.3	56.7	58.3	59.1
	65+	3.0	3.2	3.3	3.6	3.8
		100	100	100	100	100
	Total, millions	19.6	22.1	25.0	28.1	31.6
	Median age	18.3	19.0	20.0	22.0	24.3

Projection 7.	0–4	16.9	14.4	12.8	11.3	9.3
	5–14	26.6	27.5	25.2	22.7	20.8
	15–64	53.5	54.8	58.4	62.0	65.3
	65+	3.0	3.2	3.5	3.9	4.6
		100	100	100	100	100
	Total, millions	19.6	22.0	24.4	26.7	28.6
	Median age	18.3	18.7	19.4	20.5	21.5
Projection 8.	0–4	16.9	17.1	18.9	19.3	19.0
	5–14	26.6	24.8	23.1	24.7	26.5
	15–64	53.5	54.7	54.5	52.3	50.9
	65+	3.0	3.3	3.5	3.7	3.7
		100	100	100	100	100
	Total, millions	19.6	24.2	30.1	37.2	45.2
	Median age	18.3	19.4	19.3	18.7	17.7
Projection 9.	0–4	16.9	16.3	17.1	16.7	15.5
	5–14	26.6	25.1	23.2	24.0	25.0
	15–64	53.5	55.2	55.9	55.2	55.1
	65+	3.0	3.4	3.8	4.1	4.4
		100	100	100	100	100
	Total, millions	19.6	24.1	29.6	35.9	42.6
	Median age	18.3	20.0	21.1	22.6	24.6
Projection 10.	0–4	16.9	15.4	15.0	13.3	10.7
	5–14	26.6	25.4	23.3	23.0	22.5
	15–64	53.5	55.7	57.8	59.2	61.5
	65+	3.0	3.5	3.9	4.5	5.3
		100	100	100	100	100
	Total, millions	19.6	23.9	28.7	33.7	38.3
	Median age	19.6	23.9	28.7	33.7	38.3