

# THE GEO-DEMOGRAPHIC CONTEXT OF POPULATION AGEING IN NEPAL

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## **Introduction**

Population ageing normally refers to an increase in the proportion of population aged 60 (or 65) years. Although ageing is defined in terms of specific age, the underlying concern is the functional status of senior individuals rather than their chronological age. The issue is rather concerned with the old-age disabilities and that one's condition as aged depends on personal health, sex, employment, and socio-economic status. Thus, it is important to recognize that studies of elderly or aged population are concerned with the status of ageing and not the specific age. The specific age cut-offs commonly used in the literature to assess the state of elderly are for statistical convenience (Mason, 1992).

Population ageing is becoming a worldwide phenomenon and contrary to the popular belief ageing is not limited to countries such as Europe, North America, former USSR, Japan, Australia and New Zealand which are classified as 'developed' by standard classification. The proportion of population aged 65 and above in Uruguay, Argentina, Cuba, Grenada, and Macau clearly shows this. In fact, in the 1980s, the growth rate of aged population was 2.4 percent per annum in the world and is much higher than the overall growth rate of population i.e., 1.7 percent (Torrey, Kinsella, and Tacuber, 1987). The customary basis of population to be considered 'getting younger' or 'older' is its proportion in the respective age groups. The proportion and the pace of change are the important aspects for considering a population as 'ageing', but more important for policy perspective is the overall context within which the population is 'ageing.' Therefore, it is important to assess the proportion in the demographic and socioeconomic context of the country.

Ageing is an emerging issue in Nepal. Its tempo is expected to be unexpectedly fast as mortality continues to decline and life expectancy continues to increase (Subedi, 1996). A small increase in the size of aged (disables) brings an added hardship to the already troubled economy at the macro-level let alone the subsequent quality of life of the aged. It is because the economic growth here has been awfully discouraging (Banskota, 1992; see also, Blaikie et al, 1981). There is an absolute dearth of literature that deals with the elderly population in Nepal so far. Sharma (1982) based on the situation of 1970s made some preliminary observations of old age population in the first place but the context and magnitude of elderly has changed significantly since then. Goldstein, Schuler and Ross (1983) studied the intergenerational relations in extended families showing the miserable situation of elderly. Karki (1994) also touched on the rudiments of ageing as an issue.

Most recently, Subedi (1996) analyzed the geographical pattern of population ageing in Nepal and argued that the sheer size and changes therein meant that ageing is an eminent problem in the country. The details, however, are yet to be analyzed. In this context, this paper attempts to analyze the state of elderly population with some relevant context within which the population is ageing in Nepal. The discussion of manifold contexts of population ageing is beyond the scope of this paper. As a result, this paper is limited to, mainly the demographic and partially socioeconomic context of population ageing in Nepal.

The paper is divided into four sections. The first section introduces the issue and reviews the related studies. The second section deals with the state and growth of aged population along with their distribution by gender and place of residence. The third section discusses the demographic and socio-economic context of population ageing in Nepal using available data from recent censuses. The last section concludes the paper with some indications of policy implications.

### **Ageing of Nepali Population**

For the purpose of this paper individuals aged 60 and over are considered aged or elderly. This cut-off, instead of 65 years and above, is based on four main considerations: a) the retirement age used in Nepali civil service (58 years), b) the expectation of life at birth (54 years), c) a large proportion of population below 60 years reporting economically not active because of old age in Population Census 1991 and, d) the upper age limit normally used in calculating economically active population (59 years). The implicit assumption behind this is that individuals grow physically weaker and/or

older earlier in countries where nutritional level is low plus access and affordability to medical and other health facilities are limited than in most developed countries. In addition, the age cut-off for elderly population varies across the countries and over time. While most international agencies use population aged 65 and over as elderly population there are countries and small scale studies where population aged 50 and over are considered elderly (see, Martin, 1990).

### Growth of Aged Population

The most important indicator of the state of population ageing in Nepal is its volume and trend of growth. Other indicators such as index of ageing proportion are dependent on the proportion of youths and the level of fertility and thus may camouflage the extent of the problem of aged population. The size of aged population has been growing in Nepal. It grew from a total of 409,761 in 1952/54 to 1,071,234 in 1991. Within the last forty years i.e. between 1952/54 and 1991, the volume of aged population increased by 161 percent (Table 1). The decennial increase has been consistently over 25 percent. The increase is more significant over the last two decades and that an elderly population of 1.1 million is a significant volume in the socio-economic setting of Nepal.

**Table 1: Growth of Aged Population (1952/54-1991)**

Census Year	Total	Proportion (%)	Growth rate of aged	Growth rate of total population
1952/54	409,761	5.0	—	—
1961	489,346	5.2	1.79	1.4
1971	621,597	5.4	2.42	2.07
1981	857,061	5.7	3.26	2.67
1991	1,071,234	5.8	2.26	2.1

*Source: Population Census, Nepal: 1952/54, 1961, 1971, 1981, 1991.*

The proportion is consistently over five percent in all the five censuses. The proportional increase appeared rather gradual i.e. from 5.0 percent in 1952/54 to 5.8 percent in 1991 (Table 1). However, this increase is significant in the context of usual expectation of either stagnant or declining proportion of aged population when the total population in the country is characterized by 'young age structure' and is considered 'getting younger' over the years.

A comparison of growth of elderly population with the national population growth rate suggests that both population have been growing consistently over the last four decades. The rate of growth of elderly population is much faster than the average growth rate of total population of the kingdom (Table 1). With improvement in the modern health facilities and increase in life expectancy over the years the rate of growth of aged population can be higher than normally shown by the current trend. More importantly, recent decades primarily the 1970 and onwards have witnessed the high rate of growth of elderly in Nepal. One implication of this high growth rate is that the number of elderly will double in less than 27 years. More specifically, if the growth rate continues at the rate manifested by 1981 census, the total elderly population will double in less than 22 years. Similarly, if the growth rate between 1981-1991 is adjusted for the estimated under-enumeration (approx. 4 percent) this only suggests the continued rapid growth of aged population in Nepal.

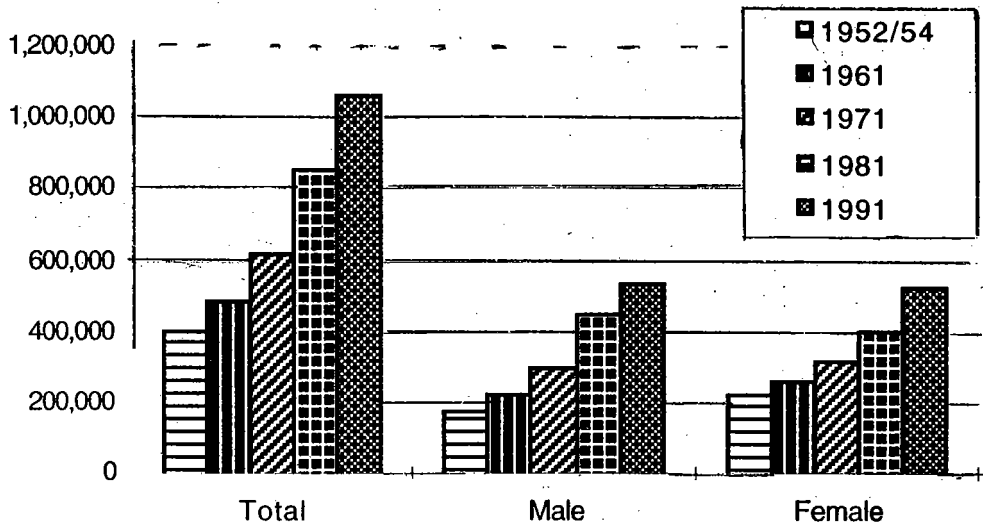
The gender composition of aged population has changed over the last four decades. Females outnumbered males in three earlier censuses including 1952/54, 1961, and 1971. The 1981 census recorded a turn around with males outnumbering females. This trend continued in 1991 census. Thus, in the 1990s there are more elderly males than females. This has happened despite females outnumbering males in the total population of the country.

From 1950s to 1990s there has been a steady growth in the proportion of both male and female elderly in Nepal. In 1952/54 elderly male comprised 2.2 percent of total population, by 1991 this percent reached 2.9 percent (Table 2). Similarly, female elderly constituted 2.8 percent of the total population in 1952/54 and 2.9 percent in 1991. This may provide an impression that there is almost no growth of female elderly in Nepal. This is not true. That proportion of elderly is reflection of change in total population which has grown over 2.0 percent per annum during the last four decades clearly shows that the population of elderly has grown.

**Table 2: Growth of Aged Population by Gender (1952/54-1991)**

Year	Total		Male		Female	
	Number	Percent	Number	Percent	Number	Percent
1952/54	409,761	5.0	182,394	2.2	227,367	2.8
1961	489,346	5.2	222,422	2.4	266,924	2.8
1971	621,597	5.4	297,763	2.6	323,834	2.8
1981	857,061	5.7	450,998	3.0	406,073	2.7
1991	1,071,234	5.8	542,738	2.9	528,496	2.9

*Source: Population Census, Nepal: 1952/54, 1961, 1971, 1981, 1991.*

**Fig.1: Growth of Aged Population in Nepal**

The growth of elderly reflected by their proportion in the total population of the nation reveals little about the magnitude of change by gender and subsequent reformations. Between 1952/54 and 1991 there has been a three-fold increase in the population of elderly male whereas the corresponding increase of female elderly is 2.3 times only (Table 2). The absolute growth in number of elderly is more apparent for males than females. However, unlike ups and downs in the growth of male elderly, the growth of female elderly reflected in percent change over the census periods has been consistently rising.

The sharp increase and decline in percent change of elderly male during 1981 and 1991 are possibly a reflection of the political arithmetic of over/under enumeration in the respective censuses. Otherwise this phenomenon cannot be explained when no specific events and/or epidemic affecting either sexes severely have been recorded during these periods. A further justification is that this sharp turn over for males during 1981 and 1991 has occurred without corresponding influence in the rise or decline of female elderly.

### **Ageing by Rural Urban Residence**

An overwhelming majority of aged population live in rural areas. This is because of the low level of urbanization (9.2 % in 1991) in the country as a whole. While rural areas comprise 92.1 percent of total elderly, the share of urban area is less than eight percent for 1991. The proportion of elderly living in urban areas was even lower in 1981. Of the total aged only 5.7 percent were from urban areas whereas 94.3 percent lived in rural areas (Table 3).

There are several interesting observations. Firstly, compared with the distribution of total population by rural urban residence, the distribution of aged population was disproportionate in both the population censuses of 1981 and 1991. According to 1991 census while 9.2 percent of total population were living in the urban areas, only 7.9 percent of elderly were from there. Likewise, in 1981, while 6.4 percent of the nation's total population were living in urban areas, the percentage of elderly living there was only 5.7 percent. Age selective migration to urban areas together with improved health facilities are partially responsible for the apparent gap.

Secondly, there was a turn around in the gender composition in urban areas. Contrary to the national and regional trend of male domination in 1991 which is also the trend in 1981, urban elderly in 1991 comprised of more females than males, a trend similar to that of developed countries. Thirdly, the absolute increase in size of urban elderly between 1981 and 1991 was unexpectedly very high i.e., from a size of 49,002 in 1981 to 84,701 in 1991 (an increase by 73 percent). This meant the aged population in urban areas grew at the rate of 5.6 percent per annum.

**Table 3: Aged Population by Rural Urban Residence**

Categories		Total		Male		Female	
		Number	Percent	Number	Percent	Number	Percent
Rural	1991	986,533	91.1	501,116	46.8	485,417	45.3
	1981	808,059	94.3	424,042	49.5	384,017	44.8
Urban	1991	84,701	7.9	41,622	3.9	43,079	4.0
	1981	49,002	5.7	26,946	3.1	22,056	2.6
Nepal	1991	1,071,234	100.0	542,738	50.7	528,496	49.3
	1981	857,061	100.0	450,988	52.6	406,073	47.4

*Source: Population Census 1981 and 1991.*

Females outnumbering males in the urban areas is mainly a reflection of decreasing maternal mortality rate, awareness of public health and sanitation, increased literacy, together with the concentration of health institutions and facilities in the urban areas. An increase in the life expectancy of urban residents has further relevance to the high rate of survival of urban women. The disadvantaged status of rural areas in all of these indicators collectively result into lower rate of survival of female population in general.

### Ageing in Demographic and Socio-economic Perspective

Whether population ageing is something to be concerned can only be understood when the state and trend of growth of aged population is analyzed in the context of demographic and socio-economic landscape. The volume and proportion per se if compared with developed countries, may not warrant attention for many, the socio-economic landscape primarily the demographic context and changes therein makes it an eminent problem warranting a timely attention before aged people face serious humanitarian problems. As a result, the following section discusses the demographic context of ageing in Nepal.

### Ageing and Vital Rates

The trend of population ageing is directly related to levels and trends of fertility and mortality and thereby to the stages of demographic transition. The level and trend of fertility and mortality based on crude birth and death rates, suggest that changes in fertility levels have been very slow whereas changes in mortality have been rapid. Mortality has clearly declined from a crude death rate of 36.7 per thousand in the 1950s to 13.3 per thousand in the 1990s (Table 4). Fertility has declined very little: from 45 per thousand crude birth rate in the 1950s to only 42.3 per thousand in the early 1990s. This gap clearly shows a demographic transition with birth rate remaining high (although towards decline) and death rate declining sharply. The net result has been rapid growth in the total population in the country (Figure 2).

**Table 4: Measures of Fertility, Mortality and Ageing**

Year	Crude birth rate (per thousand)	Crude death rate (per thousand)	Proportion of aged
1952/54	45.0	36.7	5.0
1961	48.0	27	5.2
1971	46.8 (1976)	19.5 (1974/75)	5.4
1981	44.0	13.5 (1971/81)	5.7
1991	42.3	13.3	5.8
1996	39.5	12.6	5.5*

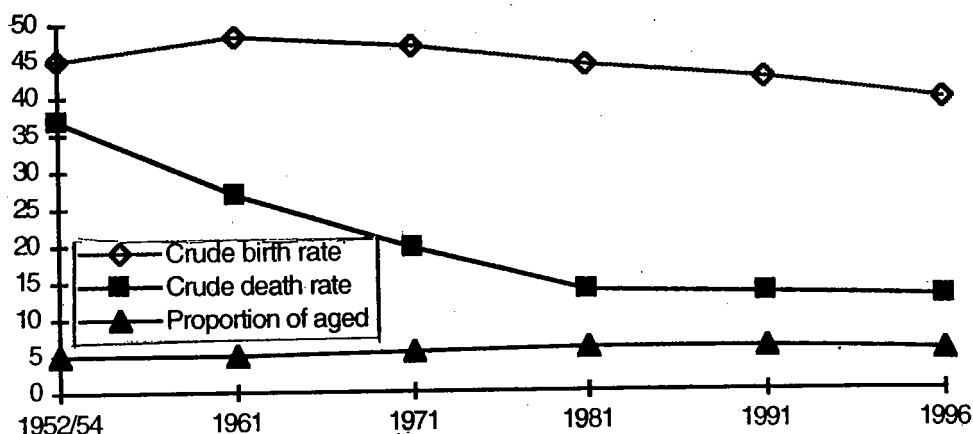
**Notes:**

The figures in parenthesis indicate year for which the specific vital rate is estimated.

The proportion of aged for 1996 is calculated on population projection made by the Central Bureau of Statistics, 1995.

Source: Central Bureau of Statistics 1991, National Planning Commission, 1994

**Fig.2: Changing Birth and Death Rates and the Proportion of Aged**



While both the birth and death rates are declining the proportion of aged population has been increasing (Figure 2). The proportional increase in the aged population is significant. This is because disproportionate decline in birth and death rates resulting into an addition of a large population of young population and not the aged. When the proportion of aged increases in this context that must be considered important. More importantly, when fertility falls rapidly, i.e. fewer addition in the young age groups, the subsequent increase in the proportion of aged becomes very distinct. For 1996, the estimated crude birth rate (CBR) is 39.5 per thousand which is lower by 2.8 percentage point compared with 1991. The CBR estimates of 1981(44.0), 1991(42.3) and 1996 (39.5) also suggest that the decline in fertility is also taking momentum. In the context of ageing if these trends of vital rates in the country and the experiences of developed countries (see Albert and Cattell, 1994) are any indications, the pace of increase in the proportion of aged will be much faster in the years to come.

### Ageing and Changing Age Structure

The trifactor graph (Fig. 3) showing three interdependent dimensions, suggests that age structure changes in Nepal are taking place fast. The proportion of both the young and the aged has been increasing, the proportion of economically active population is shrinking. The expanding and shrinking of respective age groups has taken place consistently over that last four decades. The population of youths has gone up from 38.4 percent



in 1952/54 to 42.4 percent in 1991. On the contrary, during the same period the percentage share of mature population has gone down from 56.6 percent to 51.8 percent (Table 5). In these two extremes of ups and downs which is already an indicative of increasing burden to the mature cohorts i.e., economically active age groups, the percentage of the aged population has been on the rise. The trifactor graph clearly demonstrates this for the last four decades.

**Table 5: Age Structure by Broad Categories (1952/54-1991)**

Census Year	Percentage of Population with Ages		
	0-14	15-59	60 and Over
1952/54	38.4	56.6	5.0
1961	39.9	54.9	5.2
1971	42.1	52.5	5.4
1981	41.4	52.9	5.7
1991	42.4	51.8	5.8

*Source: Population Census, Nepal: 1952/54, 1961, 1971, 1981, 1991.*

### **Ageing, Dependency Ratio and Median Age**

The total dependency ratio of the country in 1952/54 was 76.7 which itself is a very high sum. While this value is unfavorable itself, it has increased rapidly and reached 93.0 within the last four decades. This makes the situation worse than ever before. Likewise, the aged dependency has been consistently increasing. In 1952/54, this ratio was only 8.8 but it reached 11.2 percent in 1991 (Table 6). This meant a continual increase in the dependency load to the economically active group while this proportion itself has been shrinking.

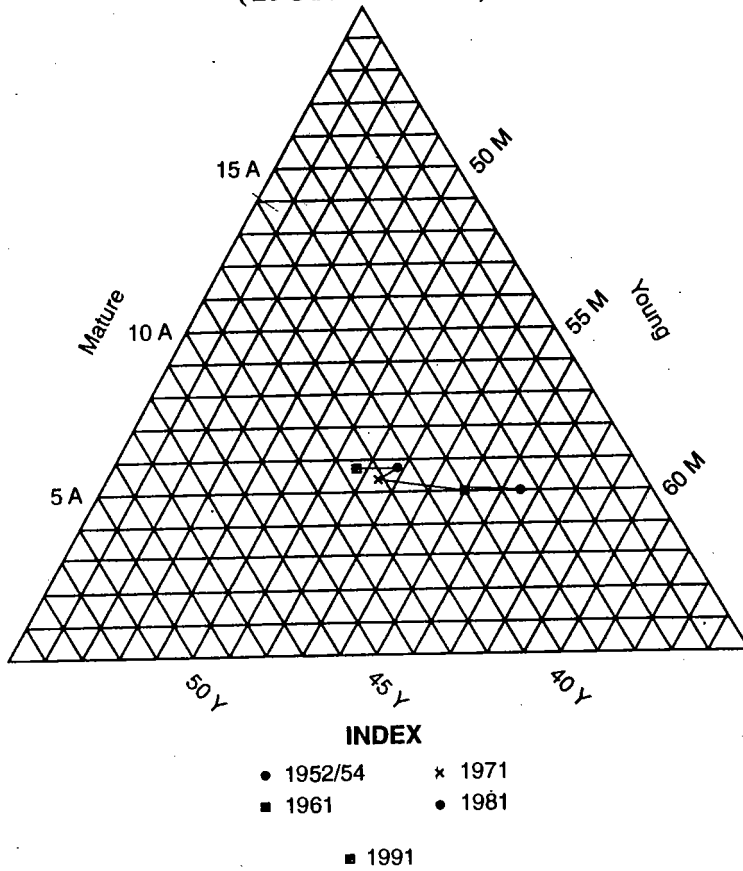
**Table 6: Aged Dependency Ratio and Median Age**

Census Year	Aged Dependency Ratio	Median age
1952/54	8.8	21.1
1961	9.5	20.9
1971	10.2	20.3
1981	10.8	19.9
1991	11.2	18.9

**Note:** Aged Dependency Ratio has been calculated as:

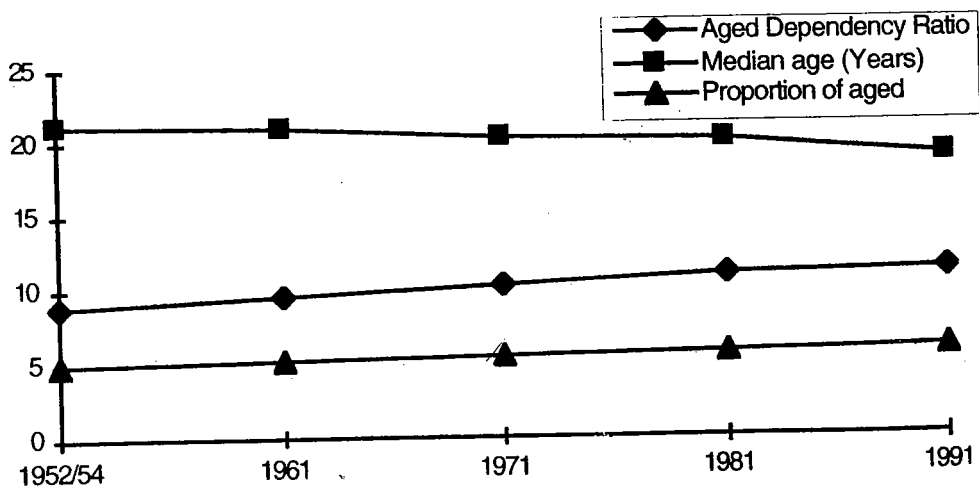
$\{(\text{Population aged 60 and above}) / \text{Population aged 15-59 years}\} * 100$ .

### Changing Age Structure of Population in Nepal (1952/54-1991)



Source: Population Census, Nepal: 1952/54, 1961, 1971, 1981, 1991.

Fig.4: Aged Dependency Ratio, Median Age and Ageing



During the reference period the median age has gone down from 21.1 years to 18.9 years, a decline by 2.2 years (Figure 4). The median age is lower in the rural areas (18.7 years) where 92 percent of the nation's aged population live in the 1990s. Change in median has much to do with fertility levels. When fertility levels are high median age goes down. In normal circumstances, proportion of aged increases when the median age increases. An increase in the proportion of aged when median age is decreasing, is not a usual situation. This suggests that Nepal is facing a very critical age structure transition where on the one hand, the population is ageing, on the other hand, the proportion of young age group is as bad as it could be.

Dependency ratio and changes therein are important considerations in analyzing the economic and social support arrangement of the aged population. The same proportion of the aged may be a critical problem for one area and not for others. In general, lower value of dependency ratio is indicative of higher affordability of the society. In a situation of increasing proportion of economically active population the country is expected to be able to afford more dependent population no matter whether it is young or old. But the situation is reverse in the case of Nepal.

### **Ageing, Household Size and the Headship**

Unlike western countries, majority of elderly in Nepal share residence with their children and other relatives. Shared residence is very important for family support especially among aged whose health conditions are poor. The co-resident family members assume caregiver role. This coresident living arrangement of elderly is indicative of family member's concern for elderly and attention paid to them. However, in a country dominated by Hindu ideals whether all coresident living arrangement of aged with their children and relatives in fact translates into proper attention and concern for elderly and how much of it is willingly and how much of it is by social pressure or else is beyond the scope of this paper.

A change in household size may provide a rough indication of living arrangement of elderly thereby concern. The average household size in the country was 5.8 persons in 1981. It has declined to 5.6 persons in 1991. The decrease in the size of household is indicative of family nucleation. Rapid decline in household size in a situation of continued high fertility however, may lead to an increase in the number of aged population living alone and/or with spouse only. This can deprive many ageds from the extremely needed caregivers from within the household.

**Table 7: Changing Distribution of Household Size**

Year	Households by Size of Population						
	<4	4	5	6	7	8	>8
1981	21.6	14.2	15.8	14.5	11.2	7.7	15.0
1991	22.6	15.2	17.0	15.1	11.5	6.8	11.8

Source: Population Census 1981, 1991.

The distribution of households by size of population suggests that changes have taken place in the household sizes between 1981 and 1991. Those with three or less member households have increased. Likewise, the percentage of households with 8 or more members has declined. A sharp decline is evident in the percentage of households with more than 8 members i.e., from 15 percent to 11.8 percent (Table 7). On the other hand, households with their sizes of 4, 5, 6, and 7 have shown an increase. All of these indicate that house size in Nepal in general is on the decline. This decline has important implication in the family support provision of elderly.

Headship in the household is generally considered as "position" and a command of authority. Data from Population Census 1991 suggests that aged (senior by age) does not necessarily translate into headship of the household. Among total ageds only 51.1 percent are head of the household (546,986 out of 1,071,234). As usual, females suffer most. Only 22.1 percent of the total aged females are head of the household whereas the corresponding figure for males is 82.4 percent.

Of the total households only 16.4 percent are headed by aged individuals in 1991. Among households headed by aged, 81.8 percent are male headed and 18.2 percent female headed. When total households are taken into consideration, 86.8 percent are headed by males and only 13.2 percent by females. This change in the female headship (from 13.2 to 18.2) however, should not be considered an improvement in the "position" of females when most of the aged female-heads are widows and are only *de jure* heads. Traditionally, the elderly primarily the males have continued to control over household resources and that land is the primary resource. This control over the resources has served as the old-age security mechanism. The rapid changes currently taking place in the society may jeopardize this insurance against risk. Because of the age and disabilities that incurs with ageing, their ability to exercise authority decreases. For second generations and rural-urban migrants, occupational change i.e., from farming to off-farm sector, may also result into weakening of land based ties. In this situation,

while elderly become increasingly incapable to manage their lands, their off-springs will be less attracted to their rural land. This may result into mismanagement and lack of innovation in the lands left behind by the selective migrants which in turn puts elderly in the most precarious condition. Moreover, for the off-springs who are faced with increased hardship and competition, supporting their own children will be a big problem and their customary obligation to support parents (Sharma, 1982) will be pushed to the periphery.

### **Ageing and Life-expectancy**

The association between life expectancy and the proportion of aged is strong. Studies elsewhere based on data from 145 countries suggests that the correlation between life expectancy and proportion of aged is 0.69 (Albert and Cattell, 1994). In Nepal, estimates have shown significant increase in life expectancy between 1950s and 1990s. Male life expectancy at birth has increased from 27.1 in the mid 1950s to 55.0 years in the early 1990s. Likewise, corresponding increase for female has been from 28.5 to 53.5 years. Increase in life-expectancy brings corresponding increase in the proportion of aged. The life-expectancy estimates for 1996 is 57 years for male and 56 years for female and it is expected to reach 62 and 62.5 years for males and females respectively by 2011 (CBS, 1994). This will obviously bring corresponding increase in the proportion of aged in the years to come.

### **Ageing and Migration**

The total volume of migration within the country has increased significantly between 1981 and 1991. A similar increase is also evident in the case of rural-urban migration. Of the total urban residents 16.3 percent was rural-urban migrants in 1981. This proportion has increased to 17.2 percent in 1991 (see Subedi, 1996). Studies conducted in the 1980s have already reported a significant increase in size of internal migrants both rural to rural and rural to urban in the past three decades (see, Sharma, 1989). The trend demonstrated by these studies together with the deteriorating rural economy and lack of off-farm employment opportunities in rural areas is symptomatic that the volume of migration in general and rural-urban in particular, will continue to increase for some years to come. There are several implications of increased volume of migration whether it is internal or international. Because migration is selective and that many of them are headed to urban areas, the remaining in the rural areas are the aged, children and women. The aged, thus are left unattended by the economically active

population. This is to be noted that an analysis of age structure of internal migrants for 1981 suggests that approximately 70 percent belong to the age group of 15 to 59 years (K.C. 1994). Migration has left a bulk of aged population in a place (in the Hills) which is already in a disadvantaged position.

Although data on the affect of migration on land management and cropping intensity including productivity are not available for Nepal, one can argue that in the absence of able-bodied manpower the progressive improvement in land management primarily in the Hills may be thwarted. This has direct impact on the household income and elderly's control over the resources which in turn impedes the provision of support for ageds from the family.

### **Conclusion**

Population ageing is a worldwide and a long-term trend. As the country passes through later stages of demographic transition, the pace of increase in the number and proportion of elderly becomes unexpectedly high. In Nepal, both the size and proportion of aged have constantly increased over the last four decades of which data are available. The proportion, however, may still be lower compared with many developed countries but even this small proportion is to be concerned especially when the size has increased by more than 2.6 times between 1952/54 and 1991 and the level of economic development in the country is poor.

Demographic indicators such as apparent decline in mortality, increase in life-expectancy, signs of decline in fertility, age structure transitions suggest that the proportion and number of ageing population will increase in the years to come. On the other hand socio-economic indicators such as change in household size, distribution of households by size of population, level of urbanization, and rural-urban migration suggest that the provision of family support to elderly, their position, control over resources may have been deteriorating. Indications are that the increasing number of ageds may find themselves in a socially and psychologically disadvantaged position in the years to come and as Goldstein, Schuler, and Ross (1983) report nor they have any savings in their old age. Analysis based on the proportion only camouflages the extent and context of growing elderly in Nepal. The increase in ageing population in Nepal will take place in a situation where the country is entirely ill-equipped to provide health care system stressing chronic diseases and curative health, has no social security system, has underdeveloped pension system (even if a negligible proportion is eligible), and is characterized by stagnant economy. The existing provision such as

pension which is limited to the retired civil servants, police and army officials who constitute insignificant portion of elderly in Nepal and NRs. 100.00 (one hundred) per month for those aged 75 or more leaves majority of aged (those between 60-74 years) without any support. More importantly, the care-giving generation, in the face of economic hardship and competition, are faced with difficult choices of providing basic needs and services for themselves, their children and/or their aged parents. The mere emotional support this generation could provide will be grossly insufficient when ageds are in the extreme need of both economic security and emotional support.

As much ageing is a global trend so is the trend of modernization. Modernization may be an welcome trend for most, but not necessarily for the aged in Nepal, if what gerontological theories suggest is true. Theories in gerontology suggest that the status of elderly declines with modernization and monetization (Cogwill, 1986; Cogwill and Holmes 1972). The continuing modernization and subsequent impoverishment of rural sector apparent in our society casts doubt on elderly's "position" and their ability to command economic and emotional support from their off-springs. A study by expatriates in Nepal has reported that "the economic situation of elderly adults differs from what one might infer from Hindu ideals (norms/values) and actual household composition (Goldstein, Schuler, and Ross, 1983: 722-23). This is an important issue and the effect of modernization to the family formation and thereby the status of elderly needs further investigation.

Our understanding of ageing issues in Nepal is very limited. The consequences ageing population and their social and economic implications are far reaching. For policy perspective, it is high time to investigate wide range of ageing issues such as living arrangements, economic, social, and health aspects of the elderly including the inter- generational competition for jobs, situation of widows/widower, elderly supporting mechanism if any, impact of eroding traditional beliefs and obligations on their livelihood and many others.

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