CHAPTER 4

AGE STRUCTURE

4.1 Nature of Age Data

According to the definition laid down by the United Nations, age of a person recorded in a census is "the interval of time between the date of birth and date of the census, expressed in completed solar years". It is also recommended that age information may be obtained by obtaining the date (year, month and day) of birth or by asking directly for age at the respondent's last birth day.

These recommendations were followed in respect of collection of age data in the 1998 and 2008 Censuses of Cambodia. Information on age in completed years as on last birthday was obtained from the respondents. Though it is easy enough to ask questions on age, it is somewhat difficult to obtain correct information about age when people are not literate or when they are very old. Suitable steps were taken to collect information on age as accurately as possible from every respondent. Khmer calendar was used by the enumerators in a number of cases to elicit completed age from the respondents who were not able to tell their age. The enumerators were also given a list of events of national and local importance to be used in assisting the respondents to recall their age.
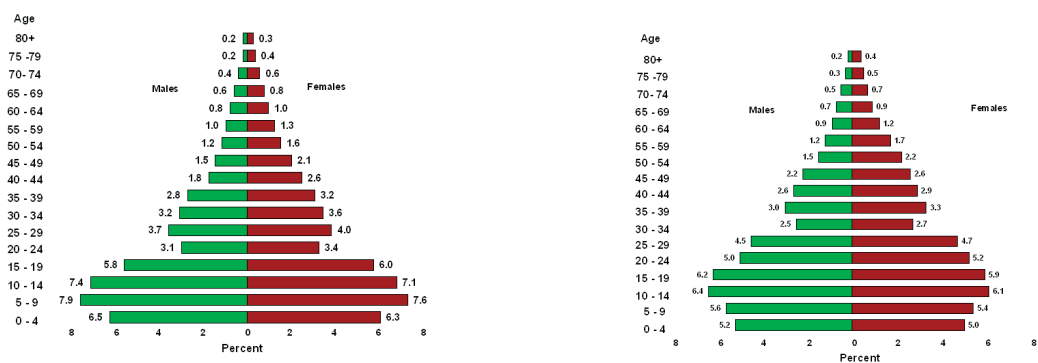
4.2 Evaluation of Age Data

As the age data may not be hundred per cent correct due to several reasons in spite of all care taken in the field, it is necessary to evaluate them before use. According to the PES results, the aggregate index of inconsistency was very low in respect of age data of the 2008 Census. The age returns were also tested for digit preference and age heaping in terminal digits. The Whipple's and Myers' indices were calculated for this purpose. Whipple's index is a measure of preference for ages ending in 0 and 5. Its range is from 100, indicating no preference for 0 and 5 up to 500 indicating that only 0 and 5 were reported. Whipple's index for Cambodia worked out to 109.87 showing there was almost no preference for "0" or "5" in the census and that the collected information on age is fairly accurate.

Myer's index is a measure of heaping on individual ages or terminal digits. The tendency to record or report certain ages in lieu of others is referred to as age heaping, age preference or digit preference (like ages ending in 0 or 5). The theoretical range of Myer's index extends from the minimum of "0" when there is neither preference nor avoidance of any particular digit at all to the maximum of 90 when all ages are reported in a single terminal digit. Myer's index of Cambodia is calculated as 3.90 for the 2008 Census. This shows that age heaping was within reasonable limits at this census. For the 1998 Census of Cambodia the Myer's index was calculated as 9.7. Hence incidence of age heaping was to a lesser extent in 2008.

The United Nations has proposed an age-sex accuracy index in which the mean of the differences from age to age in reported sex ratios, without regard to sign, is taken as a measure of the accuracy of the observed sex ratios, on the assumption that these age to age changes should approximate to zero. The UN age-sex accuracy index combines the sum of (i) the mean deviation of the age ratio for males from 100 (ii) the mean deviation of the age ratios for females from 100 and (iii) three times the mean of the age to sex differences in reported sex ratios. For this purpose age ratio is defined as the ratio of the population in a given age group to one half of the sum of the populations in the preceding and the following age groups. Adopting this procedure the UN age-sex accuracy index for Cambodia was arrived at as 30.37. An index of 20 or less is considered as indicative of accurate age-sex data. It is to be pointed out that this method does not take into account decline in the sex ratio with increasing age and real irregularities in age distribution due to migration, war etc as well as normal fluctuations in births. Since all these factors affect the age-sex data of Cambodia the index seems to exceed 20. On

the whole age returns of the 2008 Census may be considered fairly reliable despite some irregularities.

Figure 4.1 Population Pyramid of Cambodia 1998   **Figure 4.2 Population Pyramid of Cambodia 2008**

4.3 Analysis of the Age Structure

The age structure of a population is determined by the same three factors which affect the growth rate of any population, namely fertility, mortality and migration. To study the age structure of the population we make use of the percent distribution of the population in different age groups and the graphical presentation called age pyramid which roughly summarizes the demographic history of population. Table 4.1 gives the percentage distribution of population of Cambodia for both sexes and each sex by five-year age group. Priority Table A1 on Population by Single Years of Age and Sex is attached as Annex 6 to this report as it will serve as a useful reference material. Figures 4.1 and 4.2 depict the age-sex composition of the Cambodian population in 1998 and 2008. The irregularities in the number of persons in the particular age categories reflect the factors influencing those categories like fertility, mortality or migration.

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Table 4.1. Percent Distribution of Population by Five-Year Age Group, Sex and Residence, Cambodia 2008

Age Group	Total			Urban			Rural		
	Both Sexes	Males	Females	Both Sexes	Males	Females	Both Sexes	Males	Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number	13,395,682	6,516,054	6,879,628	2,614,027	1,255,570	1,358,457	10,781,655	5,260,484	5,521,171
Total	100	100	100	100	100	100	100	100	100
0 – 4	10.25	10.79	9.73	7.90	8.44	7.41	10.82	11.35	10.30
5 – 9	10.98	11.55	10.44	7.98	8.50	7.49	11.71	12.27	11.17
10 – 14	12.47	13.19	11.79	9.54	10.12	8.99	13.18	13.92	12.48
15 – 19	12.09	12.81	11.41	13.10	12.85	13.33	11.84	12.80	10.94
20 – 24	10.22	10.27	10.17	14.18	13.84	14.49	9.26	9.42	9.11
25 – 29	9.21	9.30	9.12	12.05	12.15	11.95	8.52	8.61	8.43
30 – 34	5.18	5.14	5.21	5.60	5.73	5.48	5.07	5.00	5.14
35 – 39	6.31	6.27	6.35	6.67	6.89	6.46	6.22	6.12	6.32
40 – 44	5.51	5.28	5.72	5.57	5.75	5.40	5.49	5.17	5.79
45 – 49	4.88	4.59	5.16	4.96	4.93	4.99	4.86	4.51	5.20
50 – 54	3.66	3.01	4.29	3.97	3.54	4.37	3.59	2.88	4.26
55 – 59	2.92	2.49	3.33	2.98	2.69	3.25	2.91	2.44	3.35
60 – 64	2.07	1.79	2.34	1.96	1.73	2.17	2.10	1.81	2.38
65 – 69	1.62	1.39	1.84	1.37	1.16	1.55	1.68	1.44	1.91
70 – 74	1.19	0.98	1.38	0.98	0.78	1.16	1.24	1.03	1.44
75 – 79	0.81	0.66	0.95	0.64	0.49	0.78	0.85	0.70	0.99
80 +	0.65	0.51	0.79	0.57	0.40	0.73	0.67	0.53	0.81

It is not difficult to make firm generalizations about the effects of fertility and mortality on the age structure of a population since it is possible to identify the age groups which are affected by the changes in these factors. No such general rules can be laid down with regard to the effects of net migration on age structure. The age distribution of the net migrants and the volume of net migration have to be taken into account for determining these effects. In respect of Cambodia the population structure is not affected by international migration which is very small. However internal migration affects the age structure of provincial populations. This is discussed later in this chapter.

The proportion of children in the age group 0-4 is less than that in the age group 5-9. This could have been due to recent decline in fertility, under-reporting of infants and young children or an exaggeration of their ages, or what might not be probable, an increase in infant and child mortality. The age group 10-14 represents the largest cohort (12.5 percent) reported at the 2008 census (Figure 4.2). This is closely followed by the cohort of ages 15-19 indicating comparatively high fertility level in the early 1990s following a baby boom reported in the early 1980s.

Above the age group of 10-14 the 2008 pyramid shows the usual pattern of gradually decreasing numbers with increasing age. There is, however, a conspicuous exception in the age group 30-34 which has shown a steep decline. This may be attributed to the combined effect of low fertility, and high mortality of those born in and around the Khmer Rouge period (1976-79). The early 1970s saw escalating civil war and in the late 70s during the Khmer Rouge period, a large number of killings took place. The sex and age structure beyond age 35 as revealed by the age pyramid reflects the high levels of mortality especially among men during these years of turmoil and internal strife.

A comparison of the age pyramids for 1998 and 2008 (Figures 4.1 and 4.2) shows a fairly consistent pattern in the age distribution. A lower proportion of children in the age group 0-4 than that in the age group 5-9 are a characteristic feature of the age distribution in many of the developing countries in Asia, and Cambodia seems to be no exception. The age group 5-9 in 1998 and the age group 10-14 in 2008 are the largest cohorts. As expected the decline in the proportion of the population in the age group 20-24 in 1998 is reflected in the decline in the proportion of the population in the age group 30-34 in 2008 (10 years later).

It is also important to look at the percent change at each age group over time. Table 4.2 shows the percent change for each of the five year age groups between 1998 and 2008. The numbers of children in the age groups 0-4 and 5-9 have decreased during the decade at the rates shown in this Table. The number in the age group 10-14 has only marginally increased. The age groups from 15-19 onwards have shown increases except the age group 30-34. The highest increase is recorded by the age group 20-24

Table 4.2.Population of Cambodia and Percent Change by Age, 1998- 2008

Age	Population		Change
	1998	2008	(Percent)
(1)	(2)	(3)	(4)
TOTAL	11,437,656	13,395,682	17.12
0 – 4	1,466,792	1,372,615	-6.42
5 – 9	1,772,820	1,470,672	-17.04
10 – 14	1,658,196	1,670,505	0.74
15 – 19	1,344,258	1,619,290	20.46
20 – 24	745,687	1,369,202	83.62
25 – 29	888,540	1,233,361	38.81
30 – 34	782,682	693,235	-11.43
35 – 39	695,868	844,948	21.42
40 – 44	497,067	737,451	48.36
45 – 49	415,931	653,650	57.15
50 – 54	312,463	490,726	57.05
55 – 59	256,930	391,116	52.23
60 – 64	204,994	277,611	35.42
65 – 69	166,928	216,839	29.90
70 – 74	112,213	158,945	41.65
75+	116,287	195,516	68.13

The percentage distributions of population by five- year age group according to the 2008 Census for the 23 provinces and Phnom Penh Municipality are given in Table AT02 of Annex 2.

4.3.1 Differential Age Structure by Residence

The age structure of the urban population is not the same as that of the rural population (see Figures 4.3 and 4.4). The proportions of children in the age groups 0-4, 5-9 and 10-14 in the rural areas are much higher than their corresponding proportions in the urban areas. This is expected as the fertility level in the rural areas (TFR of 3.3) is higher than that in the urban areas (TFR of 2.1). Among migrants in the urban areas who constitute a sizeable portion of the urban population, the proportion of children is small. Moreover out-migration of population in the working age groups is also responsible for a higher share of children in the rural population.

In each of the age groups 15-19, 20-24 and 25-29 the proportions of the population are much higher in the urban areas than in the rural areas. The persons in these working age groups in the urban areas include migrants from the rural areas. This is true of both males and females. From the age group 30-34 up to 55-59 which are also working age groups of middle aged persons the proportions are higher in the urban areas but the differences between the urban and the rural proportions are smaller. Persons of these age groups do not seem to be attracted much by urban prospects unlike the younger adults. In the age groups 40-44 onwards the rural proportions are higher barring the age group 50-54. From the age group 60-64 onwards the rural proportion is higher in every age group.

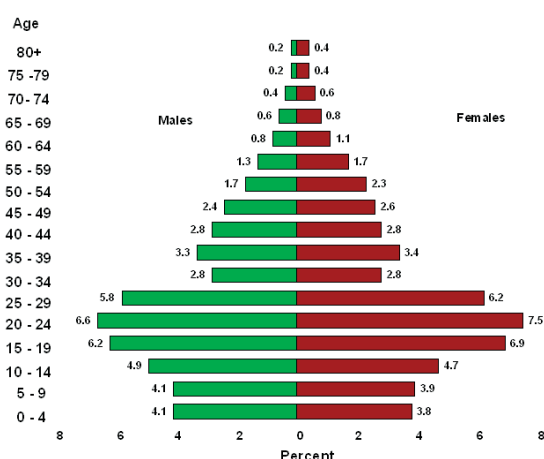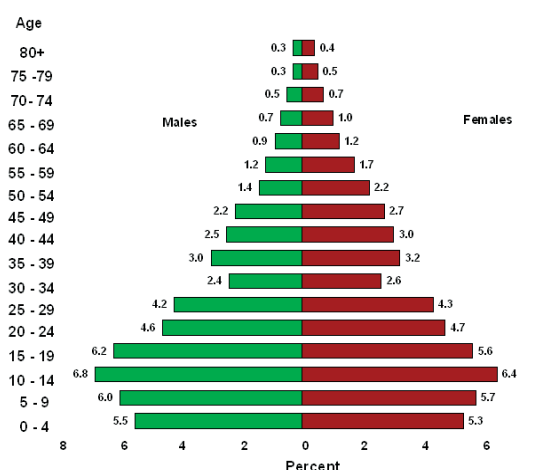**Figure 4.3.Population Pyramid of Cambodia Urban, 2008** **Figure 4.4.Population Pyramid of Cambodia Rural, 2008**

4.3.2 Population Distribution by Broad Age Group

Table 4.3 Percentage Distribution of Population of Cambodia by Broad Age Group according to different Sources

Age Group	Percentage Distribution according to				
	1998 Census	2000 CDHS	2004 CIPS	2005 CDHS	2008 Census
(1)	(2)	(3)	(4)	(5)	(6)
Total	100	100	100	100	100
0 – 14	42.8	42.7	38.6	38.9	33.7
15 – 49	46.9	46.3	49.5	47.9	53.4
50 – 64	6.8	7.4	8.0	8.6	8.6
65 +	3.5	3.6	3.9	4.6	4.3

The proportions of population in the four broad age groups drawn from different sources and shown in Table 4.3 indicate the general declining trend of percentage of children (0-14) in the population and the rising trend of the working age population (15-64). There has been only a marginal increase in the proportion of the elderly population (65+) during the decade 1998-2008.

As may be seen from Figure 4.5 the proportion of children in the population is lower in Vietnam and Thailand than that in Cambodia, whereas Lao PDR has a higher proportion. From this it can be inferred that the fertility levels of Vietnam and Thailand are lower than Cambodia's fertility level in that order. Lao PDR seems to have the highest fertility level among the four countries.

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Figures 4.6, 4.7 and 4.8 portray the distribution of population (percentage) as in 2008 of the total, urban and rural areas respectively of Cambodia in four broad age groups. In the charts, the age group 15-64 is sub-divided into 15-59 and 60-64 keeping age 60 as the cut-off point for old age as some would like to have it that way. Table 4.5 provides such a distribution of population for each of the provinces by sex and residence. However in the present analysis, persons of age 65 and more only are considered as the elderly population.

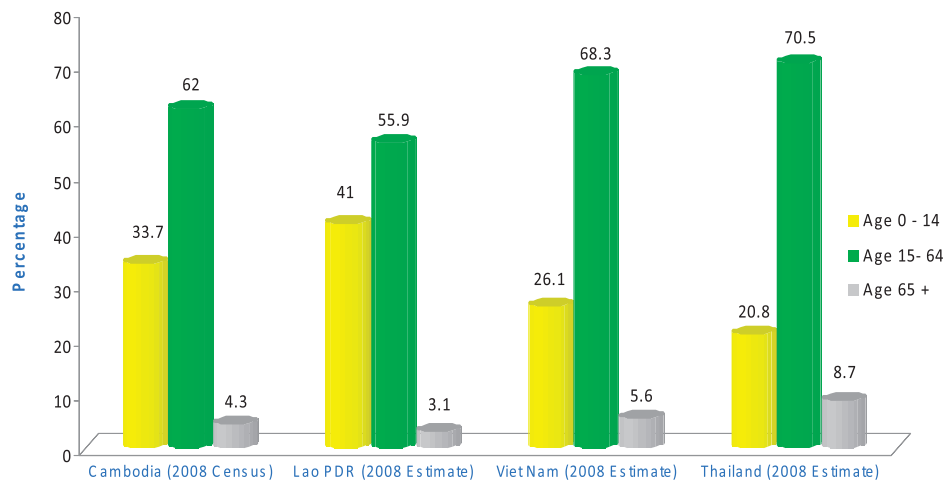**Figure 4.5 Distribution of Population (Percentage) by Age, Cambodia and Neighbouring Countries**

Figure 4.6.Distribution of Population (Percentage) by Age Group, Cambodia (Total), 2008
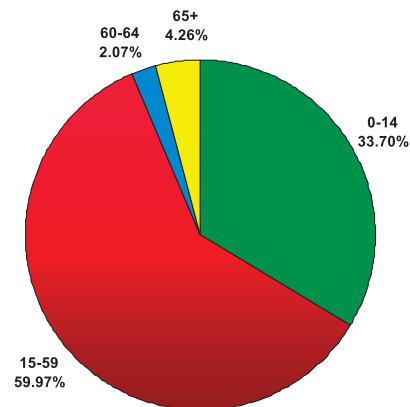

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Figure 4.7.Distribution of Population (Percentage) by Age Group, Cambodia (Urban), 2008
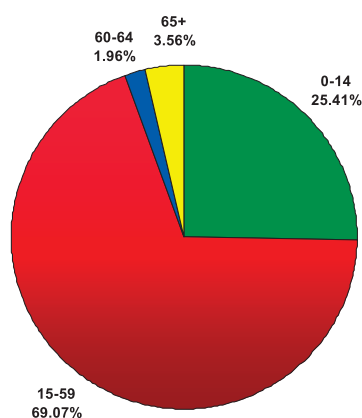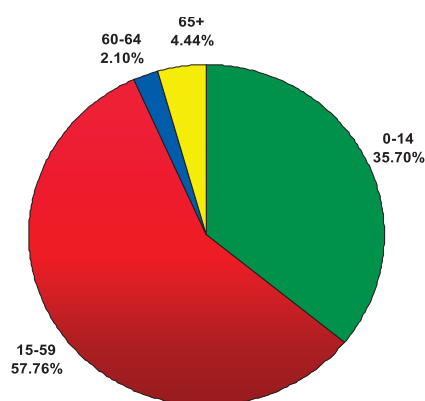

Figure 4.8.Distribution of Population (Percentage) by Age Group, Cambodia (Rural), 2008

Figures 4.10, 4.11 and 4.12 depict the percentage distributions of the 2008 population by the three broad age groups 0-14, 15-64 and 65+ at province level, for total, urban and rural areas respectively.

4.3.3 The Median Age

The median age which corresponds to 50-percentile mark in the age distribution divides the population into two equal size groups, one which is younger and the other which is older than the median age. The median age of the Cambodian population works out to 22.06 in 2008 which is about four years more than what it was in 1998 (Table 4.4). Among the countries of the world the median age varies from 15 in Uganda to 44.2 in Japan and 45.7 in Monaco. In most of the European countries it is above 40. Within the South East Asian region it is 31.3 in Thailand and 27.4 in Vietnam. The median age for males in Cambodia is 20.81 in 2008 as against 16.91 in 1998. In respect of females it is 23.26 in 2008 as against 19.17 in 1998. According to computations, the median age is higher in the urban areas of Cambodia (24.05) than in the rural areas (21.32).