

Chapter 5

Literacy and Education

5.1 General

Education is important for personal and national development. It is the birth right of every individual. It is required for the flourishing of many of the human capacities, to eliminate inequality in economic, socio-cultural, familial/interpersonal, legal, political and psychological fields. It is also the exit gate to access jobs and right in decision making. Education affects demographic behavior relating to marriage, fertility, mortality, migration as well as participation in the labour force. Many research studies have established a negative relationship between the educational level of women and their fertility. The age of females at marriage is influenced by the level of educational attainment. Infant mortality is yet another variable affected by the mother's educational status. In general educational attainment is indicative of the quality of the literate population and is very important in the implementation of the development programmes and population policies.

Educated population is a central priority in achieving the CMDGs. They are in a better position to create work for themselves and for others and also to obtain formal employment. Education is stated as crucial to development in Vision of National Strategy Development Plans, updated 2009-2013. To determine the level of education, CIPS 2013 asked questions about school attendance and highest level of education attained. This question was addressed to all persons six years and above. Questions on literacy and educational attainment form an important part of the questionnaire both in the 2008 Census and CIPS 2013.

In order to obtain more complete data on full time education of the population six questions were asked in the survey to collect information on literacy and full time education. The questions related to literacy in Khmer language, literacy in other languages, school attendance, currently attending grade, highest grade completed and main subject of study. All the questions except currently attending grade and major subject of study were asked in the 2008 Census also. The two new questions included in CIPS 2013 were intended to satisfy the requirements of the national educational system.

5.2 Literacy Rate

The definition of literacy is the ability to read and write with understanding in any language. A person is a literate when he/she can both read and write a simple message in any language or dialect. A person who cannot both read and write a simple message is considered illiterate. Also to be considered as illiterate is that person who is capable of reading only his/her own name or numbers, as well as persons who can read but not write, or vice versa. The literacy rate is one of the most general measures of educational output and is defined as the percentage of literate people in a given age out of the total population in that age group. In both the censuses of 2008 and CIPS 2013 all children of the age 6 years or less were treated as illiterate by definition even if any such child was going to a school or

might have picked up reading and writing a few odd words in a language. Results of CIPS 2013 presented in Table 5.1 show that the proportion of persons literate in any language among the population aged 7 and older is nearly eighty percent. In the past five years, percentage of females aged 7 years and over who are literate in any language has increased almost by two percentage points while the corresponding proportion among men has increased by little more than one percentage point. However, there is a big male-female gap in literacy rates (currently 85.1 percent for males and 74.8 percent for females). This gap is relatively higher in rural areas. In general, gender inequality in basic education is a major issue in Cambodia requiring immediate attention.

Literacy rates in urban areas are higher than in rural areas due to disparities in level of development between the two areas. Nevertheless, in recent years, because of policies for universal primary education and elimination of illiteracy, the gap in literacy rates between urban and rural areas is narrowing down. It was 13.2 percentage points (90.1 percent in urban areas and 76.9 percent in rural areas in 2013) as against the corresponding gap of 14.9 percentage points in 2008 (Table 5.1).

Table 5.1 Literate Persons and Literacy Rates in any Language and in Khmer Language only by Sex and Residence 2008-2013

Sex	Residence	Population age 7+	Literate Population		Percentage Literate 2013		Percentage Literate in any language in 2008
			Any Language	Khmer only	Any Language	Khmer only	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Both Sexes	Total	12,753,622	10,173,741	8,985,346	79.8	70.5	78.4
	Urban	2,792,319	2,517,009	1,794,078	90.1	64.3	90.2
	Rural	9,961,303	7,656,732	7,191,268	76.9	72.2	75.3
Males	Total	6,125,512	5,214,216	4,533,730	85.1	74.0	84.0
	Urban	1,348,602	1,260,678	846,967	93.5	62.8	93.5
	Rural	4,776,910	3,953,538	3,686,764	82.8	77.2	81.6
Females	Total	6,628,109	4,959,525	4,451,616	74.8	67.2	73.1
	Urban	1,443,717	1,256,331	947,111	87.0	65.6	87.2
	Rural	5,184,392	3,703,194	3,504,504	71.4	67.6	69.5

Table 5.2 gives the percent distributions of literate persons by language of literacy, sex and residence for Cambodia 2008-2013. Among the literate persons, however, barring almost one percent literate in a language other than Khmer, the persons who are literate in Khmer language only accounted about 88.3 percent, 8.0 percent in Khmer and English and almost 3 percent in Khmer and other languages except English (Table 5.2). In 2008 only 5 per cent were literate in Khmer and English and about 2 per cent in Khmer and other languages except English. A slight increase is thus noticed during the five years, 2008-2013 in a small section of Cambodians getting conversant with foreign languages, especially English. However, those who are literate in Khmer combined with other languages are predominant only in urban areas and among them males constitute about 58.1 percent.

Table 5.2 Distributions of Literate Persons by Language, Sex and Residence 2008-2013

Sex	Residence	Total Literate Population in any Language	Per cent Literate			
			Khmer Language Only	Khmer and English	Khmer and Other Languages except English	Any Language Other than Khmer
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2008						
Both Sexes	Total	8,959,383	92.0	4.9	2.2	1.0
	Urban	2,096,641	78.5	14.8	5.0	1.7
	Rural	6,862,742	96.1	1.8	1.3	0.7
Males	Total	4,629,702	91.0	5.7	2.4	0.9
	Urban	1,035,208	75.0	17.8	5.5	1.7
	Rural	3,594,494	95.6	2.2	1.5	0.6
Females	Total	4,329,681	93.1	4.0	1.9	1.1
	Urban	1,061,433	81.8	11.9	4.6	1.7
	Rural	3,268,248	96.7	1.4	1.0	0.9
2013						
Both Sexes	Total	10,173,741	88.3	8.0	2.9	0.8
	Urban	2,517,009	71.3	21.7	5.7	1.3
	Rural	7,656,732	93.9	3.5	2.0	0.6
Males	Total	5,214,216	86.9	9.3	3.1	0.7
	Urban	1,260,678	67.2	25.9	5.6	1.3
	Rural	3,953,538	93.3	3.9	2.3	0.5
Females	Total	4,959,525	89.8	6.7	2.7	0.9
	Urban	1,256,331	75.4	17.5	5.9	1.3
	Rural	3,703,194	94.6	3.0	1.6	0.7

According to CIPS 2013, 7.7 million persons (79.8 percent) of age 7 years and more are literate in any language. Figure 5.1 shows the literacy rates of the population 7 years and older by age group. These data indicate that literacy rates in Cambodia have improved substantially in the past few decades. The younger the age group, the higher the literacy rate, and the narrower the male-female gap. The two curves in the figure, referring to male and female literacy rates by age group in younger ages, are very close to each other initially, but become further apart in the age groups starting around 25 years and older, indicating that in the past women were more disadvantaged than men in schooling, but that this inequality has been reduced considerably in recent years.

5.3 Adult Literacy Rate

The adult literacy rate or the literacy rate of population aged 15 and more has shown an increasing trend at the national level during 2008-2013 (Figure 5.2). It has increased in the rural areas with females registering a higher percentage of increase than males (Table 5.3). There is no significant change in this regard in urban areas where the adult literacy rate is already more than 90 per cent.

Figure 5.1 Literacy Rates (any language) in Percent by Five year Age Group and Sex, Cambodia 2008 and 2013

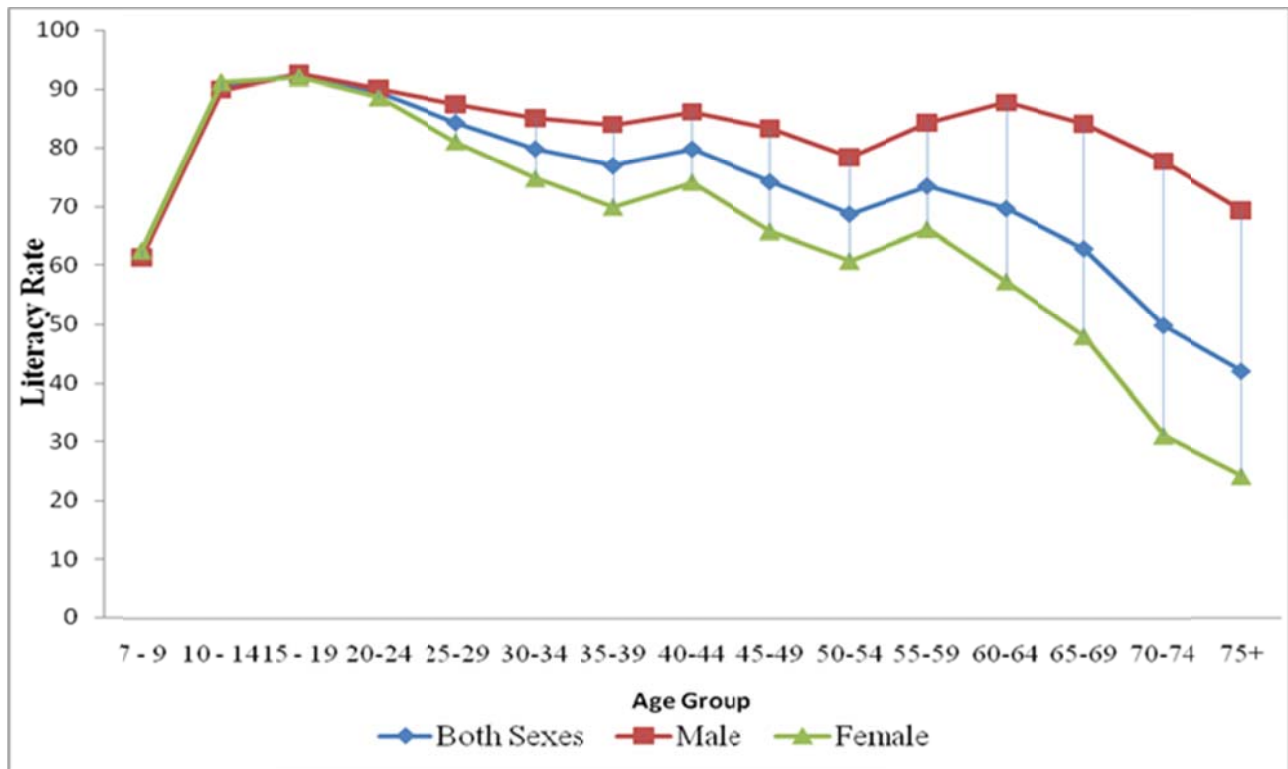


Figure 5.2 Adult Literate Population Aged 15 and over by Sex Cambodia 2008 and 2013

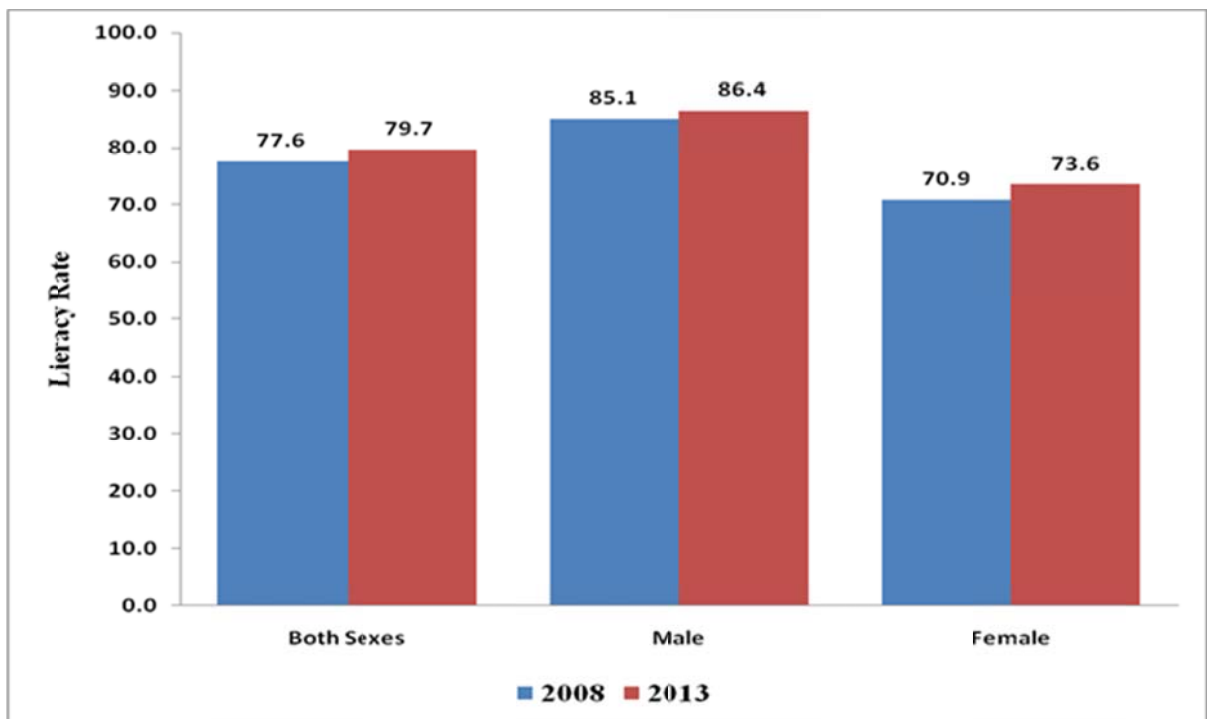


Table 5.3 Adult Literate Population Aged 15 and over by Sex Cambodia 2008 and 2013

Residence	2008			2013			Change between 2008-2013		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Total	77.6	85.1	70.9	79.7	86.4	73.6	2.1	1.3	2.7
Urban	90.4	94.5	86.8	90.3	94.2	86.8	-0.1	-0.3	0.0
Rural	74.0	82.5	66.3	76.5	84.1	69.7	2.5	1.6	3.4

5.4 School Attendance

The question on school attendance was addressed to both literate and illiterate persons. This included children aged 6 and below. The answer to this question was categorized as:

- (i) “Never attended”: for those who had never at any time received full-time education,
- (ii) “Now”: for those who were still receiving full-time education at the time of the survey and
- (iii) “Past”: for those who received full-time education in the past.

Based on the survey question of whether a person was currently attending school, 74.2 percent and 88.2 per cent of the 05-11 and 12-14 age groups responded positively. The corresponding proportions were less than this in each case in 2008 (Table 5.4). However, enrolment rates started to decline drastically from the age 15 when more and more students dropped out of school. Almost a quarter of the 25- year olds never attended a school or any educational institution. Enrolment rate in school of girls starts at a higher level than boys at ages 5-11, tends to be almost equal to that of boys at ages 12-14 and begins to be lower than that of boys with the progress of age. This may be due to the traditional attitude of encouraging boys rather than girls to study after a certain age. It is also observed from Table 5.5 that more children in urban areas than those in rural areas are currently attending school at all ages.

**Table 5.4 Distribution of population 5 years and older
by school attendance, sex and residence 2008-2013**

Region/Sex and Age Group (1)	Attended School Status in 2008			Attended School Status in 2013		
	Never (2)	Current (3)	Past (4)	Never (5)	Current (6)	Past (7)
Cambodia	23.1	28.5	48.4	20.1	25.9	54.0
05 - 11	32.3	67.2	0.5	25.2	74.2	0.7
12 - 14	7.3	86.7	6.0	5.0	88.2	6.8
15 - 17	9.1	62.3	28.6	6.9	61.4	31.7
18 - 24	14.5	21.3	64.2	10.0	21.5	68.5
25+	27.9	1.2	70.9	25.5	0.7	73.8
Male	17.9	31.4	50.8	15.3	28.3	56.4
05 - 11	32.6	66.8	0.5	26.2	73.2	0.7
12 - 14	7.5	87.0	5.5	5.1	88.2	6.7
15 - 17	8.8	65.6	25.6	7.2	64.1	28.7
18 - 24	11.9	26.2	61.9	9.4	25.4	65.2
25+	18.0	1.6	80.5	16.5	1.0	82.5
Female	28.0	25.8	46.2	24.6	23.7	51.7
05 - 11	32.0	67.5	0.5	24.1	75.2	0.7
12 - 14	7.1	86.3	6.6	4.9	88.2	6.9
15 - 17	9.4	58.8	31.8	6.6	58.7	34.7
18 - 24	17.1	16.5	66.4	10.5	17.6	71.9
25+	36.3	0.9	62.8	33.2	0.4	66.4
Urban	12.1	29.3	58.6	12.1	27.8	60.1
05 - 11	24.7	74.6	0.6	19.9	79.4	0.7
12 - 14	3.8	91.1	5.1	1.7	92.8	5.5
15 - 17	4.6	70.8	24.6	2.6	78.0	19.4
18 - 24	6.1	32.5	61.4	5.5	36.9	57.6
25+	13.9	2.8	83.3	14.4	2.0	83.6
Rural	25.8	28.3	45.9	22.3	25.4	52.3
05 - 11	33.6	65.9	0.5	26.3	73.0	0.7
12 - 14	7.9	85.9	6.2	5.8	87.1	7.1
15 - 17	10.2	60.3	29.5	7.9	57.6	34.5
18 - 24	17.5	17.3	65.2	11.2	17.2	71.6
25+	31.7	0.8	67.6	29.0	0.3	70.7

5.5 Educational Attainment

Educational attainment is an important indicator of population quality. In CIPS2013, the highest grade completed of those who ever attended a school or an educational institution, and currently attending grades of those currently attending school or educational institution were collected. The present analysis relates to those who have reported completed level of education. Apart from the category “not completed primary”, the completed grades are categorized as follows: (1) Primary, (2) Lower secondary, (3) Secondary/diploma and (6) Beyond Secondary.

At the national level, CIPS 2013 results show (Table 5.5) that more than 29 percent of those who ever attended school or educational institution had completed primary education, 21 percent of them had lower secondary education, almost 4 percent received the secondary/diploma and close to 2 percent

completed tertiary education (beyond secondary). About 41 percent did not complete primary school. Compared to 2008 Census, there is an improvement in educational attainment of the population. Those who did not complete primary education had decreased from about 48.9 to about 40.8 percent and the proportion of those who had completed primary has almost remained stable. Lower secondary education shows an increase from 17.0 to 21.0 percent while secondary/ diploma increased from 1.6 to 3.9 percent and completed tertiary education (beyond secondary) from 1.5 to 1.8 percent.

Table 5.5 Educational Attainment of Literate Persons (in any language) Aged 7 years and older by Age Group and Sex, Cambodia 2008-2013

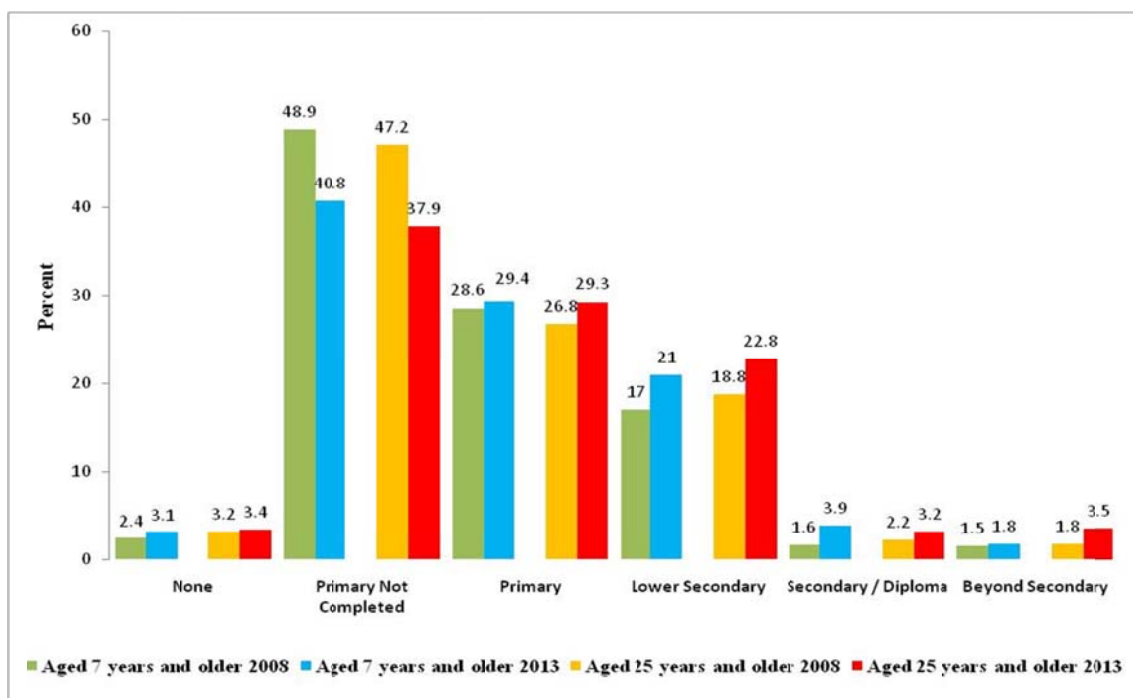
Sex and Age Group	Number	Percentage Distribution by Educational Level						
		Total	None	Primary Not Completed	Primary	Lower Secondary	Secondary / Diploma	Beyond Secondary
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2008								
Both Sexes	8,952,720	100	2.4	48.9	28.6	17.0	1.6	1.5
7 - 14	2,067,906	100	1.7	76.5	21.0	0.9	-	-
15 - 19	1,459,331	100	1.3	27.0	42.8	27.8	0.6	0.5
20 - 24	1,153,671	100	1.9	33.5	31.1	25.9	3.6	4.0
25+	4,271,812	100	3.2	47.2	26.8	18.8	2.2	1.8
Males	4,625,303	100	2.0	45.1	29.4	19.6	2.0	1.9
7 - 14	1,054,993	100	1.8	77.6	19.8	0.8	-	-
15 - 19	757,981	100	1.4	26.7	42.3	28.6	0.5	0.5
20 - 24	585,445	100	1.7	29.5	29.9	30.3	4.0	4.6
25+	2,226,884	100	2.4	40.0	29.4	22.7	2.9	2.6
Females	4,327,417	100	2.7	53.0	27.8	14.3	1.2	1.0
7 - 14	1,012,913	100	1.5	75.3	22.2	1.0	-	-
15 - 19	701,350	100	1.3	27.3	43.4	27.0	0.6	0.5
20 - 24	568,226	100	2.1	37.6	32.4	21.4	3.3	3.4
25+	2,044,928	100	4.1	55.1	23.9	14.5	1.4	1.0
2013								
Both Sexes	10,168,127	100	3.1	40.8	29.4	21.0	3.9	1.8
7 - 14	1,925,492	100	4.9	76.7	18.3	-	-	-
15 - 19	1,437,393	100	1.0	22.3	41.4	32.6	2.5	0.2
20 - 24	1,440,671	100	1.7	22.3	32.5	30.7	9.7	3.1
25+	5,364,571	100	3.4	37.9	29.3	22.8	3.2	3.5
Males	5,209,668	100	2.8	37.5	29.4	23.4	4.5	2.4
7 - 14	977,677	100	4.9	77.5	17.6	-	-	-
15 - 19	729,206	100	1.1	23.6	40.9	31.8	2.4	0.2
20 - 24	730,071	100	1.5	20.7	30.2	33.1	10.9	3.7
25+	2,772,713	100	2.9	31.5	30.4	26.8	3.9	4.5
Females	4,958,460	100	3.4	44.3	29.3	18.5	3.2	1.3
7 - 14	947,812	100	4.9	76.0	19.1	0.1	0.0	0.0
15 - 19	708,186	100	0.9	20.9	41.8	33.4	2.7	0.3
20 - 24	710,597	100	1.9	24.0	34.8	28.3	8.5	2.6
25+	2,591,867	100	4.0	44.7	28.1	18.4	2.4	2.4

Note: Excluding educational levels "other" and "Not reported"

Breaking down by age group, this table shows that almost 77 percent of population in age 7-14 has not completed primary school and more than 18 percent had completed primary level and above. It is observed that 22.3 percent of those in the age group age 15-19 has still not completed primary level, may be due to late admission, repeating or dropping out. In the same age group 15-19, there are 41.4 per cent and 32.6 percent persons who had completed primary level and lower secondary respectively. It is also noted that about 2.5 and 0.2 percent of population in this age group had level of education of secondary/diploma and tertiary education (beyond secondary).

Among population in the age group 20-24 the category not completed primary level forms 32.5 percent, had completed primary level 32.5 percent, lower secondary 30.7 percent and secondary/diploma and tertiary education (beyond secondary) 9.7 and 3.1 percent respectively. Considering the levels education of literate population aged 25 and more, it is observed that the proportion of primary not completed predominates. Compared to 2008, the education level of population shows much improvement with significant decrease in the levels of not completed primary school and completed primary school and increase beyond lower secondary level. Proportions of educational attainment were slightly higher for males than for females at the secondary and higher levels.

Figure 5.3 Educational Attainment of Literate Population (in any language) Aged 7 years and older and Aged 25 years and older, Cambodia 2008-2013



Though the proportions among literate population who are qualified with Secondary School/Diploma and Beyond Secondary, have shown improvements during the five years 2008-2013 (Figure 5.3), there is a long way to go as only a very small proportion of those aged 25 years and more have qualified beyond secondary level in 2013.

5.6 Main Subjects of Study

As already mentioned in Paragraph 5.1, a question on main subject of study was included in the section on full time education in the Household questionnaire of CIPS 2013 (Form B Part 2, Column 17d). The information was collected both from those who are currently studying and those who had completed levels of education above Technical/vocational/pre-secondary diploma/certificate course. The details of the courses may be seen in the foot note to the question 17d in Form B questionnaire at Appendix 2.

The main subject was recorded by the enumerator as returned. It was later coded at NIS according to a code structure developed in consultation with the Statistics and Information Office of the Ministry of Education. About 160 subjects were given codes. However, only 132 subjects were returned in the survey.

For the present report the main subjects returned by those who had completed the educational levels are analyzed. The subjects returned were further grouped into 24 broad groups and classified according to educational level. It is observed that the estimated number of persons (about 0.44 million) who had returned their main subjects of study exceeds the number of persons who had completed the following courses: Technical diploma (both pre and post-secondary)/certificate, Graduate degree, Master's Degree, Ph.D. degree and other. It is possible that those who had completed Upper Secondary Diploma/Certificate/Baccalaureate level would have also returned their subjects of study which the enumerators had recorded. The level of completed education has therefore been broadly classified as Below Bachelor's degree, Bachelor's degree, Master's degree/Ph.D. and Other for the purpose of studying the distribution of persons who had completed these levels, by their main subjects of study.

Tables 5.6, 5.7 and 5.8 present this distribution in percentage. It is observed from Table 5.6 that there are eight subjects each of which has qualified persons numbering 20,000 or more. They are: 1. Banking, Finance and Accounting, 2. Engineering and Technology, 3. Education, 4. Language Studies, 5. Development studies, 6. Computer Science/Information Technology, 7. Medical related subjects, and 8. Law. Persons who had studied these subjects account for about 72 per cent. In respect of subjects at 1, 2, 4, 5, 6, 7 and 8 mentioned above, more than thirty per cent each are degree holders. It has to be mentioned here that the subject grouping includes both junior and senior professionals and hence there can be persons who have completed below degree level even in engineering and medical related subjects. The number of women is less than that of men in all subjects except Banking, Finance and accounting (Tables 5.7 and 5.8) where the percentage of women is about 62 per cent. There are a few interesting results like the percentage of graduates being cent per cent in food and nutrition for males and social science for females. Further in-depth study may be necessary on main subjects of study which could be made in the analytical report on Education or as a special follow-up study.

**Table 5.6 Per Cent Distribution of Persons under each Main Subject of Study
by completed Level of Education, Cambodia 2013**

No.	Main Subject	Number of Persons	Total	Below Bachelor's Degree Course	Bachelor's Degree Course	Master's Degree/ PhD	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Both Sexes							
	Total	444,576	100	56.67	35.66	6.49	1.18
1	Banking, Finance and accounting	106,326	100	57.44	39.08	3.45	0.04
2	Communication	5,204	100	48.75	29.52	21.73	-
3	Agriculture and related subjects	18,655	100	60.42	35.43	4.15	-
4	Engineering and Technology	24,303	100	56.58	35.49	4.83	3.10
5	Archaeology	1,663	100	45.70	31.69	22.61	-
6	Architecture	2,023	100	55.96	44.04	-	-
7	Education	20,215	100	74.09	23.69	2.22	-
8	Science subjects	10,890	100	52.15		3.76	-
9	Religious studies	1,497	100	20.91	72.68	-	6.41
10	Business administration	10,963	100	50.12	31.65	18.22	-
11	Language studies	29,562	100	51.05	42.71	6.24	-
12	Health related subjects	6,923	100	67.30	28.92	0.22	3.57
13	Development studies	52,143	100	53.14	39.18	6.92	0.76
14	Computer science and IT	27,689	100	63.44	31.37	5.19	-
15	Medical related subjects	34,495	100	51.33	32.28	9.54	6.86
16	Management studies	18,686	100	52.11	31.29	14.37	2.23
17	Food and nutrition	239	100	50.21	49.79	-	-
18	Art subject	12,557	100	50.26	34.90	13.29	1.54
19	Hotel and tourism	6,919	100	63.51	19.51	10.19	6.79
20	Law	25,792	100	57.80	30.80	11.15	0.24
21	Marketing	19,014	100	58.85	40.57	0.58	-
22	Social science	1,813	100	12.74	73.75	13.51	-
23	Veterinary	1,025	100	46.15	53.85	0.00	0.00
24	Any other	5,980	100	81.17	8.98	6.20	3.65
Males							
	Total	273,404	100	53.70	36.80	8.10	1.40
1	Banking, Finance and accounting	40,005	100	49.85	44.20	5.94	-
2	Communication	2,963	100	53.43	31.29	15.29	-
3	Agriculture and related subjects	13,535	100	59.80	34.63	5.57	-
4	Engineering and Technology	19,781	100	53.15	38.60	5.94	2.31
5	Archaeology	978	100	51.12	12.68	36.20	-
6	Architecture	2,023	100	55.96	44.04	-	-
7	Education	13,907	100	74.06	22.83	3.11	-
8	Science subjects	7,315	100	52.54	41.86	5.60	-
9	Religious studies	1,112	100	16.91	74.46	-	8.63
10	Business administration	7,615	100	49.59	28.54	21.88	-
11	Language studies	18,219	100	46.18	46.53	7.29	-
12	Health related subjects	5,213	100	68.89	26.09	0.29	4.74
13	Development studies	37,714	100	52.80	40.31	5.84	1.05
14	Computer science and IT	22,847	100	61.84	31.98	6.18	-

No.	Main Subject	Number of Persons	Total	Below Bachelor's Degree Course	Bachelor's Degree Course	Master's Degree/ PhD	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
15	Medical related subjects	17,786	100	44.95	36.76	9.86	8.43
16	Management studies	12,827	100	45.01	30.93	20.82	3.25
17	Food and nutrition	119	100	-	100.00	-	-
18	Art subject	8,765	100	42.65	40.73	14.41	2.21
19	Hotel and tourism	4,100	100	80.05	7.59	6.61	5.76
20	Law	19,493	100	53.16	31.75	14.76	0.32
21	Marketing	12,178	100	55.48	43.62	0.90	-
22	Social science	1,112	100	20.77	57.19	22.03	-
23	Veterinary	174	100	100.00	0.00	0.00	0.00
24	Any other	3,623	100	71.32	12.42	10.24	6.02
Females							
	Total	171,181	100	61.41	33.84	3.91	0.84
1	Banking, Finance and accounting	66,326	100	62.02	35.98	1.94	0.06
2	Communication	2,241	100	42.57	27.18	30.25	-
3	Agriculture and related subjects	5,118	100	62.04	37.55	0.41	-
4	Engineering and Technology	4,523	100	71.55	21.87	-	6.59
5	Archaeology	684	100	38.01	58.77	3.22	-
6	Architecture	-	100	-	-	-	-
7	Education	6,311	100	74.17	25.59	0.24	-
8	Science subjects	3,575	100	51.38	48.62	-	-
9	Religious studies	384	100	32.55	67.45	-	-
10	Business administration	3,346	100	51.37	38.73	9.89	-
11	Language studies	11,344	100	58.87	36.59	4.54	-
12	Health related subjects	1,711	100	62.48	37.52	-	-
13	Development studies	14,428	100	54.02	36.26	9.72	-
14	Computer science and IT	4,844	100	71.00	28.49	0.52	-
15	Medical related subjects	16,709	100	58.11	27.51	9.20	5.18
16	Management studies	5,861	100	67.67	32.08	0.26	-
17	Food and nutrition	120	100	100.00	-	-	-
18	Art subject	3,791	100	67.84	21.45	10.71	-
19	Hotel and tourism	2,821	100	39.49	36.83	15.38	8.29
20	Law	6,298	100	72.17	27.83	-	-
21	Marketing	6,837	100	64.85	35.15	-	-
22	Social science	701	100	-	100.00	-	-
23	Veterinary	851	100	35.14	64.86	0.00	0.00
24	Any other	2,357	100	96.31	3.69	-	-

Chapter 6

Labour and Employment

6.1 General

Analysis of economic activities of population from censuses and surveys enables formation of the basis for economic policy and development plans. This is mainly due to the fact that such programmes relate to issues like the improvement of qualities of manpower, increasing productivity and minimizing unemployment and under employment.

The CIPS 2013 has collected information on activity status in respect of each inmate of a household through the following columns in Form B Household Questionnaire Part 2: Col.19 Main Activity, Col.20 Employment Period, Col.21 Occupation, Col.22 Employment Status, Col.23 Industry, Trade or Service, Col.24 Sector of Employment and Col.25 Secondary economic activity (for all persons employed, unemployed and economically inactive).

The main objective of the survey questions was to classify the population into two categories, namely: economically active (those that belong to the labour force) and economically inactive (those who are outside the labour force). Further questions were asked to allow the breakdown of the employed population by major groups of occupation, industry, sector and status in employment.

The reference period for the survey was the one year preceding the survey date of March 3, 2013. In the survey, a person was regarded as having worked, if he/she had worked at least 6 months (183 days) or more during reference period. Economically active or labour force refers to the persons who are either employed or unemployed.

Employed persons included: (1) persons who were in paid employment in public or private organization (2) persons who did some work for wages, salary, profit or family gains in cash or kind during the reference period (3) persons who did not do any work for pay or profit during the reference period although they had a job to which they could return e.g. off season workers like farmers or fishermen, those on sick leave or leave without pay, those who could not work due to strike or lockout in the organization they were working and (4) persons who were self-employed e.g. running a shop by himself or herself, selling eatables, practicing as doctors, lawyers. Unemployed persons were classified into: those who were employed any time before and those who were never employed any time before.

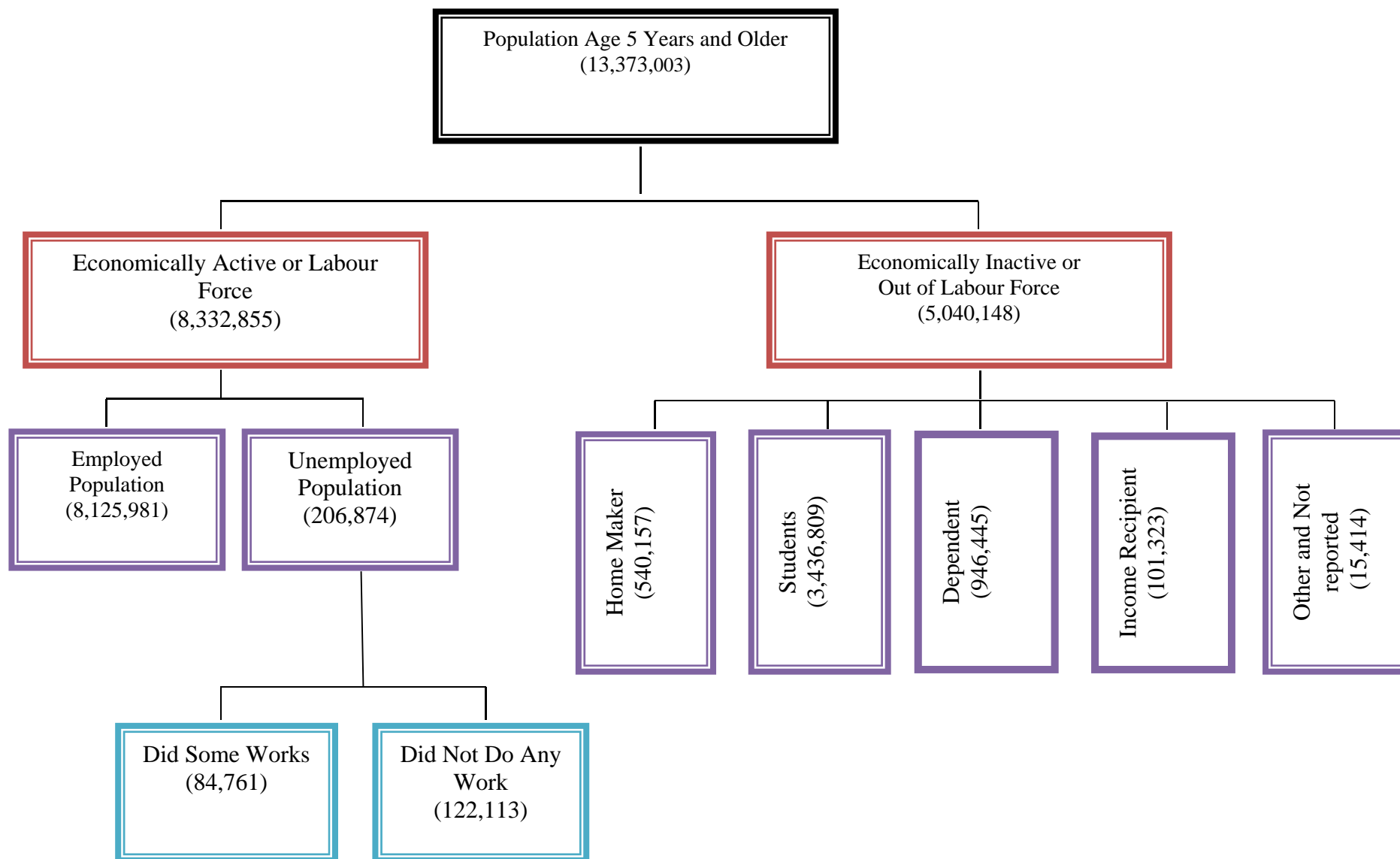
Persons who were economically inactive were grouped into five categories: (1) home maker referring to person who was mostly engaged during the reference period in household duties in his or her home (2) student who is a person mostly attending school/ educational institution (3) dependent, referring to infants and children not attending school, persons permanently disabled and hence cannot do any work and persons who cannot work because of illness or old age. Also included is a person who cannot be categorized in any of the inactive category and is dependent on others. However if such a person was

seeking or available for work he or she is categorized as unemployed and not as dependent (4) rent-receiver, retired or other income recipients is a person who had retired from service and for most of the time was doing no other work [i.e. mostly not employed again in some work or not engaged in some other work such as cultivation, business, trade etc. or a person who was for most of the time a rent-receiver or a person living on agricultural or non-agricultural royalty, rent or dividend who was neither employed nor unemployed, or any other person of independent means for securing which he/she did not have to work would come under this category] and (5) Other (specify) category includes all persons not economically active for most of the time and who may not come under any of the above four categories. This chapter focuses mainly on the persons aged 15 years and above in order to conform with the international standards set by the International Labour Organization (ILO).

6.2 Economically Active population or Labour Force

The labour force participation rate is the number of persons in the labour force (Employed and Unemployed) at a given age and sex and/or place of residence, divided by the corresponding total population with the same characteristics, multiplied by 100.

Figure 6.1 Population Aged 5 Years and Older by Usual Activity Status, Cambodia 2013



As may be seen from Table 6.1 the overall economic activity rate at the national level has increased by about four percentage points during 2008-2013. In the case of males the percentage of increase (4.5) is higher than that for females (2.8).

Table 6.1 Labour Force Participation Rates (Percent) by Sex and Residence for the Population aged 5 and Older, Cambodia 2008 and 2013

Activity Status	2008			2013		
	Both Sexes	Males	Females	Both Sexes	Males	Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Total						
Labour Force Participation Rates	58.7	59.3	58.1	62.3	63.8	60.9
Employed	57.7	58.4	57.0	60.8	62.4	59.3
Unemployed	1.0	0.9	1.1	1.5	1.4	1.7
Not Economically Active	41.3	40.7	41.9	37.7	36.2	39.1
Urban						
Labour Force Participation Rates	68.3	87.4	53.6	57.8	62.3	53.6
Employed	66.7	86.1	51.8	55.2	60.0	50.6
Unemployed	1.6	1.3	1.8	2.6	2.3	3.0
Not Economically Active	31.7	12.6	46.4	42.2	37.7	46.4
Rural						
Labour Force Participation Rates	59.9	59.4	60.4	63.5	64.2	62.9
Employed	59.3	58.8	59.8	62.3	63.0	61.6
Unemployed	0.6	0.6	0.6	1.2	1.2	1.3
Not Economically Active	40.1	40.6	39.6	36.5	35.8	37.1

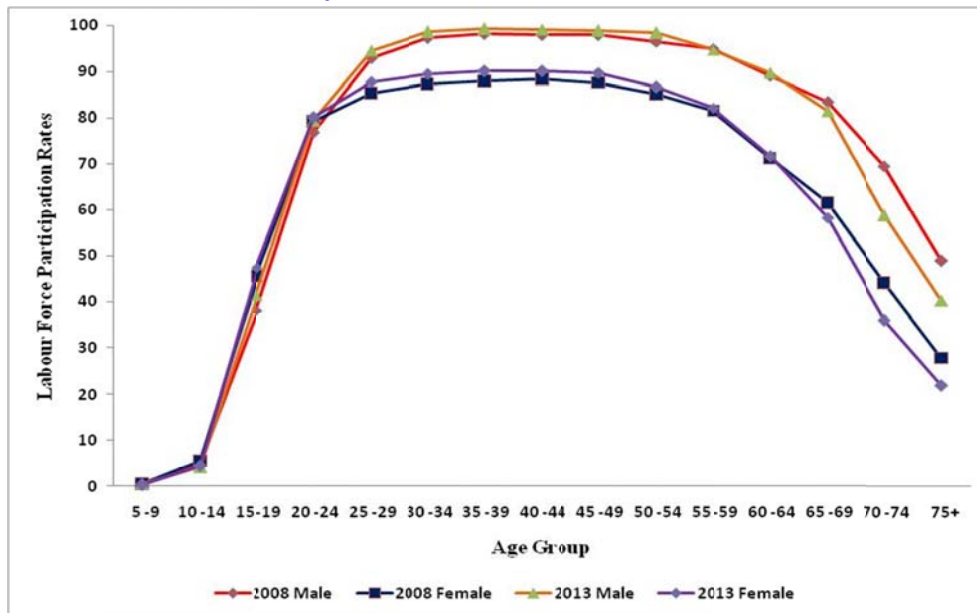
Table 6.2 Age-Specific Labour Force Participation Rates (Percent) by Sex and Broad Age Group, 2008 and 2013

Age group	Economic Activity Rates								
	Total			Urban			Rural		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2008									
Age 5 +	58.7	59.3	58.1	53.6	58.8	49.0	59.9	59.4	60.4
Above 15	78.3	80.8	76.0	65.8	73.4	59.1	81.8	82.9	80.8
Under 15	3.1	3.0	3.2	1.8	1.5	2.1	3.3	3.3	3.4
15 - 24	60.1	57.1	63.2	50.3	46.4	53.8	63.2	60.1	66.4
25 - 64	91.1	96.5	86.4	78.4	91.8	66.2	94.5	97.8	91.8
15 - 64	79.9	81.6	78.5	67.6	74.6	61.4	83.5	83.6	83.4
65 +	54.5	68.4	45.2	29.4	44.4	20.1	59.4	72.8	50.2
2013									
Age 5 +	62.3	63.8	60.9	57.8	62.3	53.6	63.5	64.2	62.9
Above 15	79.8	83.1	76.7	70.9	77.9	64.5	82.4	84.7	80.3
Under 15	2.4	2.4	2.4	1.6	1.1	2.1	2.6	2.7	2.4
15 - 24	62.4	60.7	64.1	47.7	46.6	48.8	66.3	64.5	68.2
25 - 64	91.9	97.1	87.2	84.1	94.5	74.9	94.3	98.0	91.1
15 - 64	82.2	84.5	80.0	73.2	79.5	67.4	84.8	86.0	83.7
65 +	48.1	61.3	39.3	34.9	48.6	25.8	51.3	64.3	42.6

Table 6.2 shows that women continue to enter and exit the labour force at an earlier age than men. The male economic activity rate remains higher than that for females in all ages from age 25. The economic activity rates have always been higher in the rural areas than in the urban areas both in respect of males and females presumably due to higher participation of persons in agriculture in rural areas and higher school enrolment of both boys and girls in urban areas. Both in the urban and rural areas of the country, the economic activity rates for males are higher than that for females though the gap between the male-female participation rates is much less in rural areas than in the urban areas.

The economic activity rate or the labour force participation rate (LPR) among children under 15 has decreased from 3.1 in 2008 to 2.4 in 2013 which may be regarded as a development. The working ages 15-64 have shown an all-round improvement in 2013 compared to 2008. The participation rates of 82.2 for sexes, 84.5 for males and 80.0 for females in Cambodia are much higher compared to the neighbouring countries. For example the LPR of males and females are 79.5 and 71.3 respectively in Viet Nam and 78.1 and 75.6 respectively in Lao PDR.

Figure 6.2 Age-Specific Labour Force Participation Rates by Sex Cambodia 2008-2013



6.3 Employment and Unemployment

Employment is an important indicator for assessing socio-economic development. Analysis of the changing dynamics of employment allows us to assess the impact of socio-economic transition and propose employment policies appropriate with socio-economic conditions of the nation. Cambodia’s economy has undergone important changes in the past few decades. These important changes combined with improvements in education of the labour force in recent years have changed the structure and distribution of employed labour.

A majority of the labour force has employment; the number unemployed accounts for only a small share. Therefore, analysis of the basic characteristics of the employed labour force such as age, sex,

marital status, sector of employment, status in employment and the like may throw light on the general status of the labour force in the country.

The employment rate which is defined as the percentage of employed to the total number of persons in the labour force works out as 98.3 per cent and 97.6 per cent for Cambodia in 2008 and 2013 respectively. Correspondingly the unemployment rates are 1.7 per cent and 2, 4 per cent respectively. There is therefore an increase the unemployment rate in the country during the half decade. In 2013 the unemployment rates among men and women are 2.2 per cent and 2.8 per cent respectively.

Figure 6.3 Age-Specific Employment Rates by Sex, Cambodia 2008-2013

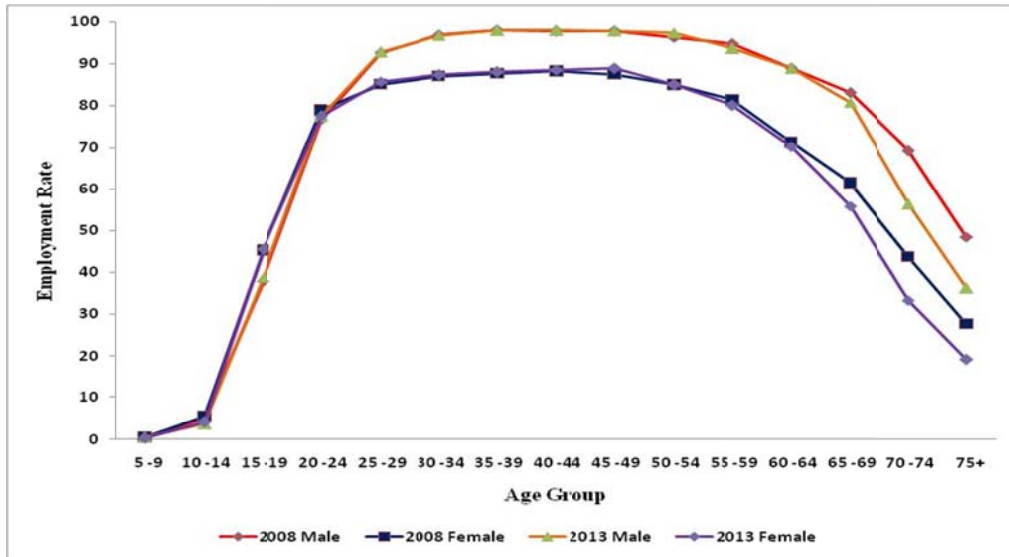
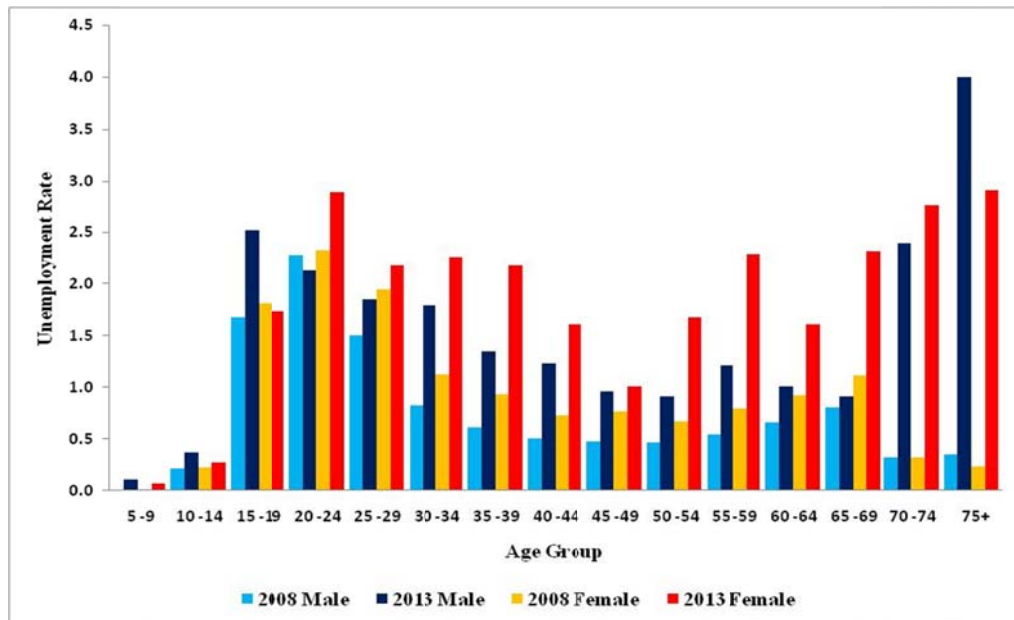


Figure 6.4 Age-Specific Unemployment Rates by Sex Cambodia 2008-2013



6.4 Employment Status

An analysis of the status in employment reveals that unpaid family workers and own account workers together constitute about 78 percent of the employed population in Cambodia in 2013 (Table 6.3). The corresponding proportion in 2008 was about 83 per cent. The fall in the proportion during the five years is more due to fall in the proportion of unpaid family workers especially among rural women. With paid employment constituting only about 22 per cent, most of the workers in Cambodia are in the informal sector. The proportion of women in the informal sector is higher than that of males. Half the number of male employed persons are own account workers. In the case of females the highest proportion is that of unpaid family workers (53.3 per cent). The proportion of own account workers has also declined and the proportion of paid employees has increased considerably. In 2013 as well as in 2008 the proportion of paid employees among males is higher than that of females.

In 2013, in the urban areas, paid employees among the total employed population constitute the highest proportion (47 percent) followed by own account workers (37.8 percent). In the case of urban employed males proportion of paid employees is much higher than that of own account workers in 2013. In the case of their female counterparts, however, the two proportions are almost the same. In the rural areas proportion of own account workers among males is more than the proportion of unpaid family workers whereas the opposite trend is noticed in respect of females.

**Table 6.3 Distribution of Employed Persons*by Status in Employment,
Sex and Residence, Cambodia 2008 and 2013**

Year	Number	Status in Employment					
		Total Employed Persons	Employer	Paid Employee	Own Account Worker	Unpaid family Worker	Other
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Cambodia-Total							
Bother Sexes							
2008	6,934,759	100	0.2	17.2	39.1	43.5	0.1
2013	8,124,243	100	0.3	22.0	39.5	38.2	0.1
Males							
2008	3,392,344	100	0.2	20.6	53.9	25.3	0.1
2013	4,020,697	100	0.4	26.1	50.6	22.8	0.1
Females							
2008	3,542,415	100	0.1	14.0	25.0	60.9	0.0
2013	4,103,546	100	0.3	17.9	28.5	53.3	0.1
Cambodia-Urban							
Bother Sexes							
2008	1,232,963	100	0.3	51.8	33.3	14.5	0.1
2013	1,605,238	100	0.5	47.0	37.8	14.5	0.1
Males							
2008	651,190	100	0.37	55.8	35.5	8.3	0.1
2013	847,159	100	0.66	55.0	36.8	7.3	0.2
Females							
2008	5,701,796	100	0.1	9.7	40.4	49.7	0.0
2013	6,519,006	100	0.3	15.8	39.9	44.0	0.1
Cambodia-Rural							
Bother Sexes							
2008	2,741,154	100	0.1	12.2	58.3	29.3	0.1
2013	3,173,538	100	0.3	18.4	54.4	26.9	0.1
Males							
2008	2,741,154	100	0.1	12.2	58.3	29.3	0.1
2013	3,173,538	100	0.3	18.4	54.4	26.9	0.1
Females							
2008	2,960,642	100	0.1	7.4	23.8	68.6	0.0
2013	3,345,468	100	0.2	13.3	26.2	60.2	0.1

*Excluding Not Reported Status

6.5 Sectors of Employment

The employed population is distributed in percentage terms into eight sectors of employment in Table 6.4. Sector of employment refers to sectors like Government, private, foreign-owned etc. to which the institution or establishment of the employed person belongs. In 2013 most of the population at the national level is employed in local private enterprises (87.2 per cent). Government jobs and jobs in foreign enterprises like foreign banks etc. account for 11.8 per cent percent of the employed. This leaves hardly one percent for all the other five sectors. The urban scenario is somewhat different with higher proportions in government and foreign enterprise sectors than in the rural parts.

**Table 6.4 Distribution of Employed Persons* by,
Sex and Sector of Employment, Cambodia 2008 and 2013**

Year	Number of Employed Persons	Total	Sector of Employment							
			Government	State Owned Enterprise	Cambodia Private Enterprise	Foreign Enterprise	Non-Profit Institution	Household Sector	Embassy International Institution	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Cambodia- Total										
Both Sexes										
2008	6,935,017	100	4.4	0.3	90.3	4.4	0.1	0.3	0.2	0.0
2013	8,125,238	100	5.2	0.3	87.2	6.6	0.1	0.5	0.1	0.0
Males										
2008	3,392,545	100	6.9	0.4	89.5	2.6	0.1	0.3	0.3	0.0
2013	4,021,539	100	7.7	0.5	86.3	4.9	0.1	0.4	0.1	0.0
Females										
2008	3,542,472	100	2.0	0.1	91.1	6.1	0.0	0.4	0.2	0.0
2013	4,103,698	100	2.7	0.2	88.1	8.3	0.1	0.6	0.1	0.0
Cambodia- Urban										
Both Sexes										
2008	1,233,080	100	12.1	0.7	70.3	14.6	0.2	1.0	1.0	0.0
2013	1,605,271	100	13.8	0.7	73.6	10.7	0.3	0.8	0.2	0.0
Males										
2008	651,268	100	17.0	1.1	71.7	8.2	0.2	0.6	1.2	0.1
2013	847,192	100	18.7	1.0	70.5	8.7	0.4	0.5	0.2	0.0
Females										
2008	81,812	100	6.6	0.4	68.7	21.9	0.2	1.5	0.8	0.0
2013	758,079	100	8.3	0.2	77.0	12.9	0.2	1.2	0.2	0.1
Cambodia- Rural										
Both Sexes										
2008	5,701,937	100	2.7	0.2	94.7	2.2	0.0	0.2	0.1	0.0
2013	6,519,968	100	3.0	0.2	90.6	5.6	0.1	0.4	0.0	0.0
Males										
2008	2,741,277	100	4.5	0.2	93.7	1.2	0.1	0.2	0.1	0.0
2013	3,174,347	100	4.8	0.3	90.5	3.9	0.1	0.4	0.0	0.1
Females										
2008	2,960,660	100	1.1	0.1	95.5	3.0	0.0	0.2	0.1	0.0
2013	3,345,620	100	1.4	0.1	90.6	7.3	0.0	0.4	0.0	0.0

*Excluding Not Reported Sector

6.6 Employment by Industrial and Occupational Classifications

The nature of industry and service as well as the occupation returned in the CIPS 2013 by employed persons and unemployed persons (employed before) were coded in the office adopting the latest International Standard Industrial Classification and the International Standard Classification of Occupations. Tables 6.5 and 6.6 present the distribution of employed persons by Occupational and Industrial classifications and by sex. It is observed that agriculture is predominant in terms of occupation and industry.

Based on Table 6.6, the proportions of the employed population in the three industrial sectors of employment, namely Primary (or Agriculture), Secondary (or Industry) and Tertiary (Services) are shown in Table 6.7.

Table 6.5 Distribution of Employed Population by Occupational Composition and Sex Cambodia 2008-2013

Group of Occupation		Major Percentage of Employed Persons					
		2008			2013		
Major Group	Description	Both Sexes	Males	Females	Both Sexes	Males	Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Total	100	100	100	100	100	100
1	Managers	0.6	0.9	0.2	0.6	1.0	0.2
2	Professionals	1.7	2.2	1.3	3.0	3.5	2.5
3	Technicians and associate Professionals	2.3	3.4	1.2	1.3	1.7	1.0
4	Clerical Support Workers	1.5	2.0	1.0	2.3	3.1	1.6
5	Services and Sales Workers	9.0	7.0	10.8	11.9	8.7	15.0
6	Skilled Agricultural, Forestry and Fishing	71.3	68.7	73.8	62.9	61.2	64.5
7	Craft and Related Workers	7.2	6.2	8.2	10.1	9.2	11.0
8	Plant and Machine Operators and Assemblers	1.8	3.4	0.2	1.9	3.7	0.2
9	Elementary Occupations	4.7	6.2	3.3	6.0	7.9	4.1

Note: Excluding not reported.

**Table 6.6 Distribution of Employed Population by Industrial Composition
and Sex Cambodia 2008-2013**

Industrial Section		Percentage of Employed Persons					
		2008			2013		
Section	Description	Both Sexes	Males	Females	Both Sexes	Males	Females
	Total	100	100	100	100	100	100
A	Agriculture, Forestry and Fishing	72.3	69.4	75.1	64.3	62.3	66.3
B	Mining and Quarrying	0.1	0.1	0.1	0.0	0.1	0.0
C	Manufacturing	6.2	4.1	8.2	8.1	5.8	10.3
D	Electricity, Gas, Stream and Air-Con Supply	0.1	0.2	0.0	0.1	0.2	0.0
E	Water Supply, Sewerage, Waste Management and Remediation Activities	0.1	0.1	0.1	0.1	0.1	0.1
F	Construction	2.0	3.5	0.6	3.2	5.4	1.0
G	Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles	7.8	5.8	9.6	10.1	7.4	12.7
H	Transportation and Storage	2.2	4.2	0.4	2.4	4.5	0.3
I	Accommodation and Food Services Activities	0.9	0.7	1.1	2.0	1.6	2.5
J	Information and Communication	0.1	0.1	0.1	0.1	0.2	0.1
K	Finance and Insurance Activities	0.2	0.3	0.2	0.2	0.2	0.2
L	Real Estate	0.0	0.0	0.0	0.0	0.0	0.0
M	Professional, Scientific and Technical Activities	0.2	0.3	0.1	0.4	0.4	0.4
N	Administrative and Support Service Activities	0.8	1.0	0.6	1.1	1.5	0.8
O	Public Administration and Defense, Social Security	2.7	4.8	0.7	3.3	5.6	1.0
P	Education	1.6	2.1	1.2	1.7	2.1	1.4
Q	Human Health and Social Work Activities	0.5	0.5	0.4	0.6	0.6	0.6
R	Art, Entertainment and Recreation	0.3	0.3	0.3	0.3	0.5	0.2
S	Other Service Activities	1.6	2.1	1.1	1.5	1.2	1.7
T	Use Activities of Household as Employers	0.0	0.0	0.0	0.0	0.0	0.0
U	Activities of Extraterritorial Organization and Bodies	0.2	0.3	0.2	0.4	0.5	0.3

Note: Excluding not reported.

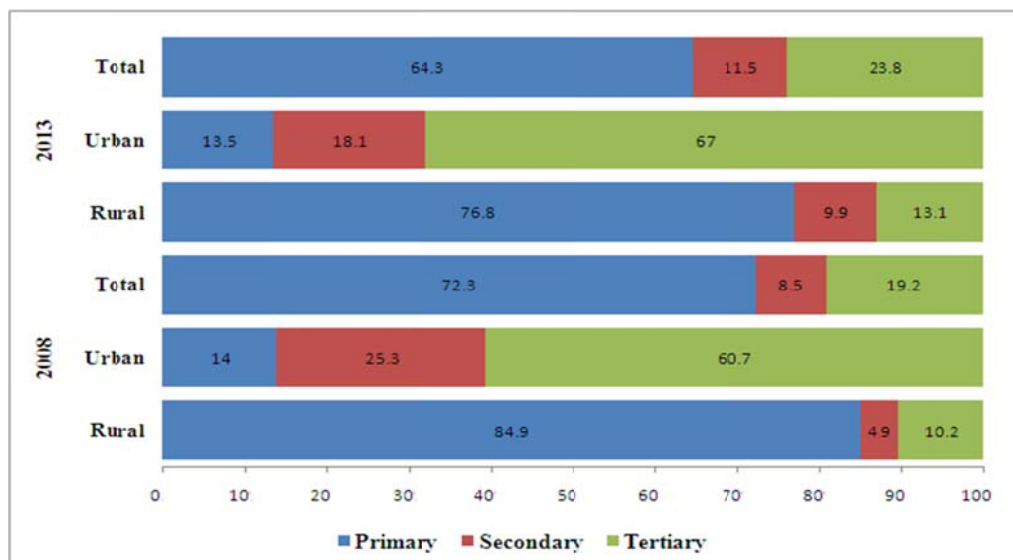
**Table 6.7 Distribution of Employed Population by Industrial Sectors,
Sex and Residence 2008-2013**

Industry Sectors	Total			Urban			Rural		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2008									
Total	100	100	100	100	100	100	100	100	100
Primary	72.3	69.4	75.1	14.0	13.6	14.6	84.9	82.6	87.0
Secondary	8.5	8.1	9.0	25.3	22.1	28.9	4.9	4.7	5.1
Tertiary	19.2	22.6	15.9	60.7	64.3	56.6	10.2	12.7	7.9
2013									
Total	100	100	100	100	100	100	100	100	100
Primary	64.3	62.3	66.3	13.5	12.7	14.3	76.8	75.5	78.1
Secondary	11.5	11.6	11.5	18.1	18.8	17.3	9.9	9.7	10.1
Tertiary	23.8	25.6	21.9	67.0	66.8	67.1	13.1	14.7	11.7

Note: Excluding not reported. The Primary Sector relates to Industrial Section A (see Table 6.6). The Secondary sector includes B to F Industrial Sections and the Tertiary Sector covers the Industrial Sectors G to U.

The proportion of population in the primary sector has continued to decline during the five years 2008-2013. The decline is sharper in the case of women than men. The proportions in the Secondary and Tertiary sectors have increased. This confirms that concentration of workers in the agricultural sector is gradually declining and the employment is becoming diversified. However as of 2013, it is the tertiary sector which absorbs more than two-thirds of the work force in the urban areas whereas in rural areas more than three-fourths of the population is in the primary sector.

**Figure 6.5 Distribution of Employed Population by
Industrial Sectors and Residence 2008-2013**



6.7 Secondary Economic Activity

The objective of the question on secondary economic activity in CIPS 2013 is, as in the case of 2008 census, to ascertain whether each person had a second job or a secondary economic activity during the one year preceding the survey which gave him/her additional income or some income in cash or kind. The secondary economic activity referred to secondary or additional job in the case of those who were mainly employed in the reference period of one year. In respect of those who were mainly economically inactive (e.g. homemaker, student etc.) or unemployed in the reference period, it referred to their marginal economic activity in the one year period.

The pattern of employed persons participating in secondary economic activity is more or less the same both in 2008 and 2013 though there are differences in numbers. According to Table 6.8, in 2013, about 42 percent of the total employed population in Cambodia is having a secondary activity besides their main activity. The most favored secondary occupation is unpaid livestock farming (16.7 percent) followed by unpaid crop farming (7.6 percent). In other words about 57 percent of the employed population who have a secondary economic activity is engaged only in unpaid family enterprises. The distribution by secondary activity is more or less similar in respect of both males and females for Cambodia as a whole with the following notable exceptions: In fishing and construction, males have a higher proportion than females. In unpaid live-stock farming and trade, females have a higher proportion.

In the rural areas the percentage of employed persons with secondary economic activity is higher (49.7 percent) and in urban areas it is lower (12.2 percent) than the country average (Tables 6.8). Both in the urban and rural parts, unpaid live-stock farming and unpaid crop farming account for most of the employed persons albeit at different proportions. As derived from the CIPS 2013 priority Table C6 (not given here), only about 14 per cent of the not economically active population in Cambodia has a secondary activity in 2013. Mostly the secondary economic activity of students and home makers is unpaid family enterprise.

Table 6.8 Percent Distribution of Employed Persons* with Secondary Economic Activity by Categories, Sex and Residence, Cambodia 2008 and 2013

Year	Total	Persons with No Secondary Activity	Persons with Secondary Activity										
			Total	Unpaid Crop Farming	Paid Crop Farming	Unpaid Live-stock Farming	Paid Live-stock Farming	Fishing	Household Production/Service	Construction	Trade	Transport	Other Paid Employment
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Cambodia-Total													
Both Sexes													
2008	100	47.7	52.3	15.7	3.2	26.4	0.3	1.6	1.7	0.9	1.8	0.3	0.6
2013	100	57.7	42.3	7.6	4.9	16.7	1.2	2.4	2.4	2.8	2.3	0.7	1.3
Males													
2008	100	48.5	51.5	15.7	3.4	24.0	0.3	2.3	1.8	1.6	1.2	0.6	0.7
2013	100	55.7	44.3	8.1	5.0	14.3	1.2	3.8	2.6	4.9	1.7	1.3	1.5
Females													
2008	100	46.9	53.1	15.6	3.0	28.7	0.2	0.8	1.7	0.2	2.3	0.1	0.5
2013	100	59.6	40.4	7.1	4.8	19.1	1.2	1.1	2.3	0.7	2.9	0.1	1.1
Cambodia-Urban													
Both Sexes													
2008	100	86.9	13.1	3.7	1.0	4.2	0.2	0.4	0.6	0.5	1.4	0.3	0.8
2013	100	87.8	12.2	4.2	0.7	1.9	0.2	0.5	0.7	1.0	1.5	0.7	1.0
Males													
2008	100	86.7	13.3	3.7	1.0	3.9	0.2	0.5	0.6	0.8	1.1	0.5	0.9
2013	100	86.7	13.3	4.4	0.7	1.5	0.1	0.8	0.9	1.7	0.9	1.2	1.2
Females													
2008	100	87.1	12.9	3.8	0.9	4.5	0.2	0.2	0.6	0.2	1.8	0.1	0.7
2013	100	89.0	11.0	3.9	0.6	2.3	0.2	0.2	0.6	0.2	2.2	0.1	0.7
Cambodia-Rural													
Both Sexes													
2008	100	39.2	60.8	18.3	3.6	31.2	0.3	1.8	2.0	1.0	1.8	0.3	0.5
2013	100	50.3	49.7	8.4	5.9	20.4	1.5	2.9	2.9	3.3	2.5	0.7	1.4
Males													
2008	100	39.4	60.6	18.6	3.9	28.8	0.3	2.7	2.0	1.8	1.3	0.6	0.6
2013	100	47.5	52.6	9.1	6.1	17.8	1.5	4.6	3.0	5.8	1.9	1.3	1.6
Females													
2008	100	39.0	61.0	18.0	3.4	33.5	0.3	0.9	1.9	0.3	2.3	0.1	0.5
2013	100	52.9	47.1	7.8	5.8	22.9	1.5	1.3	2.7	0.9	3.1	0.1	1.1

*Excludes Not Stated Secondary work

6.8 Educational Levels of Workers

Table 6.9 shows that in 2013, little over two-thirds of the employed literate persons in Cambodia have the educational level of either primary not completed or primary. Those who have qualifications of Lower Secondary and more, account for about 30 per cent in 2013 as against about 21 percent in 2008. This shows that there is a general improvement in the educational level of the labour force during the five-year period. About 3 percent of the employed persons have no educational qualification at all both in 2008 and 2013. They may be labourers mostly found in elementary occupations. The level of education of employed males is higher than that of females in general.

6.9 School Attendance by young workers

It may be of interest to know whether the employed population in the age group 5 to 24 are attending school now (i.e. at the time of the survey), attended in the past or never attended at all. Table 6.10 provides the information. The proportion of employed children and youth in the ages 5 to 24 who have never attended any educational institution has declined during 2008-2013 showing improvement in schooling of the workers in this age group. If employed children in the ages up to 14 are considered, most of them have either never attended school or attended in the past. This shows that most of them had either never enrolled or had dropped out before they completed even the primary level. In the ages 15 to 24 most of the employed persons have attended school in the past. The pattern of school attendance among the employed population in the age group 5 to 24 is more or less the same for both males and females. Both in 2008 and 2013 the proportion never attended school is much higher in rural areas compared to urban areas in the ages 5 to 24.

Table 6.9 Distribution of Employed Literate Population (any language) by Level of Education, Sex and Residence, Cambodia 2008-2013

Sex and Residence	Percentage Distribution by Educational Level						
	Total	None	Primary Not Completed	Primary	Lower Secondary	Secondary / Diploma	Beyond Secondary
2008							
Total							
Both Sexes	100	2.7	45.9	30.2	17.9	2.1	1.2
Males	100	2.3	40.2	31.7	21.4	2.7	1.7
Females	100	3.1	52.4	28.5	13.7	1.5	0.7
Urban							
Both Sexes	100	2.9	27.0	29.3	30.1	5.8	4.9
Males	100	2.7	21.8	27.5	34.5	7.0	6.6
Females	100	3.2	33.2	31.4	24.8	4.4	3.0
Rural							
Both Sexes	100	2.6	51.0	30.5	14.5	1.1	0.2
Males	100	2.2	45.3	32.9	17.8	1.5	0.4
Females	100	3.1	57.5	27.7	10.8	0.7	0.1
2013							
Total							
Both Sexes	100	2.7	35.6	32.4	23.3	5.5	0.5
Males	100	2.5	31.2	32.5	26.6	6.6	0.7
Females	100	2.9	40.7	32.4	19.6	4.2	0.3
Urban							
Both Sexes	100	2.7	19.3	26.0	34.1	16.0	1.9
Males	100	2.5	15.3	24.3	36.7	18.7	2.5
Females	100	3.0	24.0	27.9	31.0	12.9	1.1
Rural							
Both Sexes	100	2.7	40.5	34.4	20.1	2.3	0.1
Males	100	2.5	36.0	35.0	23.5	2.9	0.2
Females	100	2.9	45.5	33.7	16.2	1.7	0.0

Note: Excluding not reported.

Table 6.10 Distribution of Employed Population by Broad Age Group, School Attendance, Sex and Residence Cambodia 2008- 2013

Age Group and Residence	2008			2013		
	Never Attended	Current Attending	Past Attended	Never Attended	Current Attending	Past Attended
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cambodia	19.0	2.6	78.4	13.3	1.6	85.1
05 - 11	57.8	13.2	29.0	68.1	10.7	21.2
12 - 14	33.9	7.2	58.9	25.1	6.1	68.8
15 - 17	19.9	3.9	76.2	16.1	1.6	82.3
18 - 24	17.6	1.9	80.5	12.0	1.4	86.5
Male	17.4	3.0	79.6	13.7	1.7	84.7
05 - 11	57.3	13.2	29.5	73.5	6.9	19.7
12 - 14	34.8	8.0	57.1	25.2	5.8	69.0
15 - 17	20.5	4.5	75.0	18.0	1.2	80.8
18 - 24	15.2	2.3	82.5	12.1	1.6	86.3
Female	20.6	2.2	77.3	12.9	1.6	85.5
05 - 11	58.3	13.3	28.5	59.8	16.6	23.6
12 - 14	33.0	6.3	60.7	24.9	6.4	68.7
15 - 17	19.3	3.3	77.4	14.4	2.1	83.5
18 - 24	19.8	1.6	78.6	12.0	1.3	86.7
Urban	8.1	2.6	89.2	8.0	3.5	88.5
05 - 11	30.0	11.9	58.1	27.9	0.0	72.1
12 - 14	19.8	6.6	73.6	0.9	4.3	94.8
15 - 17	11.2	2.8	86.0	8.4	2.7	88.9
18 - 24	7.4	2.5	90.1	8.1	3.6	88.4
Male	8.0	3.4	88.6	9.8	3.9	86.3
05 - 11	31.2	12.5	56.4	45.8	0.0	54.2
12 - 14	21.4	8.2	70.4	1.8	11.5	86.7
15 - 17	12.4	3.7	84.0	10.3	4.2	85.5
18 - 24	7.2	3.2	89.6	9.8	3.7	86.5
Female	8.2	2.1	89.7	6.3	3.1	90.5
05 - 11	28.7	11.4	59.9	20.1	0.0	79.9
12 - 14	18.7	5.6	75.8	0.5	1.0	98.5
15 - 17	10.5	2.3	87.3	7.0	1.7	91.3
18 - 24	7.6	1.9	90.5	6.3	3.4	90.2
Rural	21.5	2.6	75.9	14.2	1.3	84.5
05 - 11	59.7	13.3	27.0	73.5	12.1	14.4
12 - 14	35.1	7.2	57.7	28.0	6.3	65.7
15 - 17	21.1	4.0	74.8	16.9	1.5	81.5
18 - 24	20.2	1.8	78.0	12.8	1.0	86.2
Male	19.2	3.0	77.8	14.3	1.3	84.4
05 - 11	59.1	13.2	27.7	75.2	7.3	17.5
12 - 14	35.8	8.0	56.2	27.0	5.4	67.6
15 - 17	21.5	4.6	74.0	18.8	0.9	80.3
18 - 24	17.0	2.1	80.9	12.5	1.2	86.3
Female	23.7	2.2	74.1	14.1	1.3	84.6
05 - 11	60.5	13.4	26.1	70.2	21.0	8.8
12 - 14	34.4	6.4	59.1	29.0	7.3	63.7
15 - 17	20.8	3.5	75.7	15.3	2.1	82.6
18 - 24	23.2	1.5	75.3	13.1	0.8	86.0

Chapter 7

Fertility and Mortality

7.1 Introduction

Demographic and health surveys are being conducted with regular frequency in Cambodia ever since the first modern population census of the country was completed in 1998. The various demographic enquiries consist of the Cambodia Demographic and Health Survey (CDHS) 2000, Cambodia Inter-censal Population Survey (CIPS) 2004, CDHS 2005, Population Census 2008, CDHS 2010 and CIPS 2013.

Although the basic aim of these enquiries is to collect demographic and related data and produce estimates based on them, they differ in terms of coverage, length of data collection and the amount of training given to enumerators depending on the focus of the survey. For example, while the censuses and Inter-censal surveys are designed to capture a snap-shot of the population and related characteristics and do not produce much in-depth information, the demographic and health surveys collect more detailed information on the fertility, health and mortality conditions focusing on women of reproductive ages. As such, estimates of even the basic measures of fertility and mortality derived from these various enquiries should be taken with the above-mentioned facts in view, particularly when comparing the estimates based on them.

Registration of births and deaths in Cambodia is generally considered to be incomplete. Therefore, censuses and surveys have become the main sources of demographic estimates in Cambodia as in other countries with deficient vital registration systems. Because the questions about fertility and mortality, especially infant and child mortality are very sensitive questions to be asked of the respondents in any survey, it requires tact and a great deal of experience to obtain correct answers from the respondents. A census or an Inter-censal survey is a large operation conducted to collect information on a wide variety of topics. Therefore, in a census or a survey it is not possible to give the enumerators much detailed training, nor is it possible to devote a long period of time to data collection activities. Therefore, information related to fertility and child mortality collected in a census or a survey is liable to be incomplete.

This is true also of the 2013 Cambodia Inter-censal Population Survey (CIPS 2013). Therefore, different demographic techniques have to be applied for estimating fertility and early age mortality from data collected at CIPS 2013. Some of the data collected require the application of the so called indirect techniques to estimate measures of fertility and early age mortality while some other data collected at CIPS 2013 can, in theory at least provide directly calculated measures of fertility and early age mortality. However, the data for direct measurements are generally regarded as incomplete. The indirect techniques of estimating fertility and early age mortality were first developed by the late William Brass during the 1970s while studying the demography of sub-Saharan Africa (United Nations 1983). The method of estimating fertility basically utilises information collected at a census or survey on the number of children ever born to women classified by age of women and reported number of child births during a fixed period prior to the census or survey, also classified by age of women. The method originally developed by Brass relied on the

assumption that fertility had remained constant in the period leading up to the census or the survey. This assumption does not hold true, because most developing countries of the world have been experiencing fertility decline. Therefore, Brass's original method has been modified by several demographers to take declining fertility into account. These modified methods include the Arriaga one-census method, Arriaga two-census method and the Relational-Geompertz model.

The information on children ever born, together with information on children surviving (or children dead) classified by age of women is used for estimating early age mortality (under the age of five years) by the Child-Survivorship method developed by Brass, which like the method on fertility estimation has also undergone some modification, notably by Trusell and by Polloni.

There are a few other indirect methods of estimating fertility. One such method, developed by Rele (1967) converts information on child-woman ratio obtained from tabulations of population age-distribution, to total fertility rates.

7.2 Source and quality of data

The main source of data for this analytical report is the 2013 Cambodia Inter-censal Population Survey (CIPS 2013). Where appropriate other sources such as the 2008 Population census, the Cambodian Demographic and Health Surveys of 2000, 2005 and 2010 and the 2004 Inter-censal Population Survey have also been used.

No post enumeration survey (PES) was conducted after the CIPS 2013. Therefore, there is no way of knowing the extent of enumeration in the survey. The quality of overall age-sex reporting has been found to be good as indicated by the calculated values of Whipple's index (107 for males and 112 for females on a scale of 100 to 500), indicating almost no preference or digits 0 and 5), Myer's index (9.6 for males and 12.1 for females on a scale of 0 to 180, indicating almost no digit preference) and the UN-age-sex accuracy index (31.6, indicating reasonable accuracy). Thus it can be assumed that the quality of data on age and sex collected at CIPS 2013 is good in general. However, large scale under-reporting of births and deaths when direct questions were asked about the occurrence of these events in the households in the past 12 months, cannot be ruled out.

7.2.1. Age-patterns of the average number of children ever born and surviving.

The average number of children ever born (CEB) by age-group of women shows the expected increasing pattern with women's age. The sex-ratios of CEB by age-group of women in the reproductive ages 15-49 (Table 7.1) reveal that, except for the youngest age-groups 15-19 and 20-24, the sex-ratios are in the acceptable range of 105 to 107 male children for every 100 female children. The sex-ratio of CEB for the age-group 15-19 is unusually low at 83 male for 100 female children, while the sex-ratio for the age-group 20-24 is also low at 99 male children for 100 female children. Sex-ratios at birth in the age-group 15-49 should be well over 100 (Mathews and Brady 2005). If the sex-ratios of CEB in the age-groups 15-19 and 20-24 are assumed to be equal to 105, then the male children ever born may be considered to have been under-reported by mothers of these two age-groups by 26% and 6.4% respectively¹. Taken together, the adjustments in these two

¹ The male CEB for the age-group would be equal to 1.05 times 18,326 (equal to 18,747) and the male CEB in the age-group 20-24 would be equal to 1.05 times 198,121 (i.e., 204,328).

age-groups would amount to an overall under-reporting of children ever born (and children surviving) by about 9 percent².

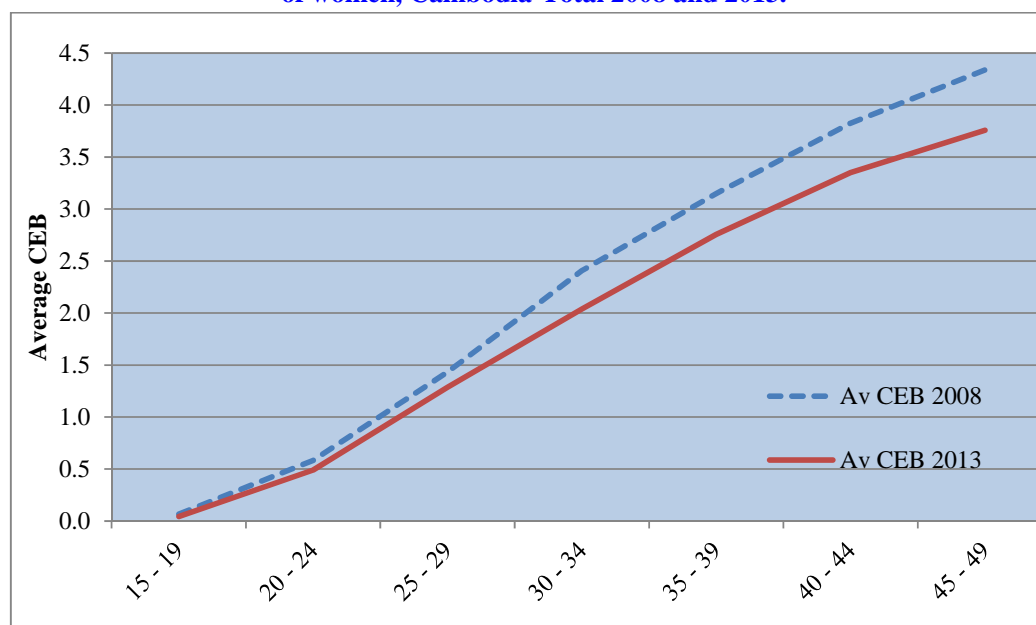
Table 7.1 Number of children ever born by age-group of women, Cambodia-Total 2013

Age-group	Number of women	Number of children ever born (CEB)			Sex ratio of CEB (Males per 100 Females)	Average number of CEB per woman
		Both sexes	Males	Females		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
15-19	769,818	33,567	15,242	18,326	83.2	0.044
20-24	802,710	393,656	195,535	198,121	98.7	0.490
25-29	676,517	870,424	450,244	420,180	107.2	1.287
30-34	629,941	1,283,541	662,869	620,672	106.8	2.038
35-39	373,794	1,030,264	529,753	500,511	105.8	2.756
40-44	455,941	1,527,464	788,347	739,116	106.7	3.350
45-49	406,380	1,527,195	790,079	737,116	107.2	3.758
Total	4,115,101	12,888,096	6,607,124	6,280,972	105.2	3.132

Source: Population Census of Cambodia, 2013. Priority Table F3. Females aged 15 and over by Parity, Total Children Ever Born, 5-year Age Group and Educational level.

The average number of children ever born (CEB) by age-group of women shows the expected increasing pattern with age of women at both the 2008 Census and 2013 CIPS. A comparison of the CEB between 2008 and 2013 confirms a general decline in fertility in the last five years since the 2008 Census (Figure 1).

Figure 7.1 Average number of children ever born (CEB) by age-group of women, Cambodia-Total 2008 and 2013.

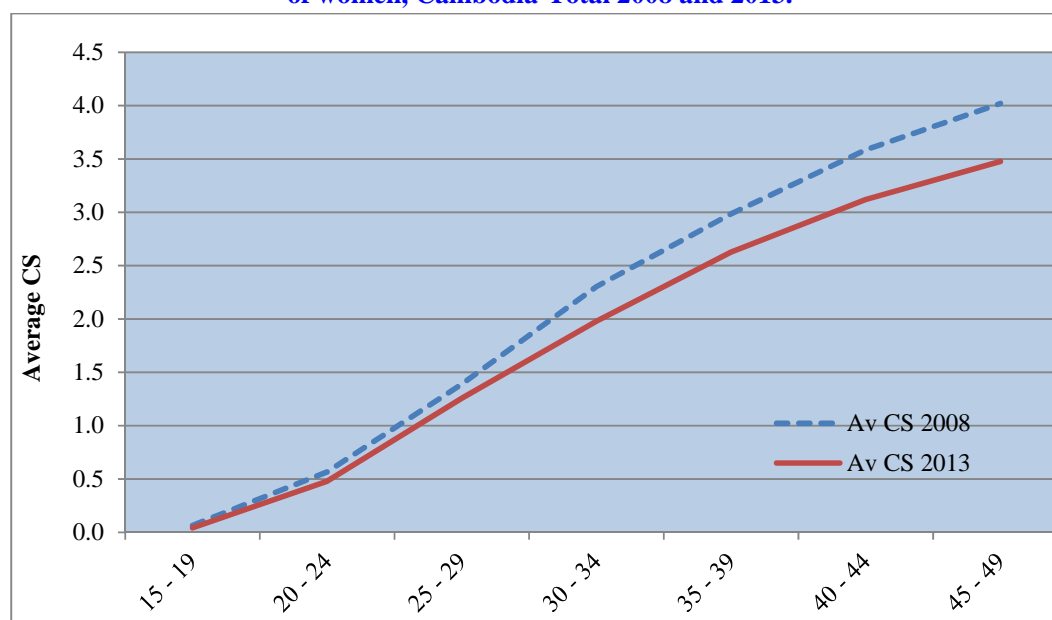


Source: Drawn from and Priority Table F5, 2008 Census, and Priority Table F, 2013 CIPS

² This can be worked out by taking the difference between the “adjusted” CEB in the age-groups 15-19 and 20-24 (i.e., 18,747+204,328) and the enumerated CEB in these two age-groups (15,242+195,535).

Similarly, the pattern of the average number of children surviving by age-group of women show the expected increasing pattern with women's age (Figure 7.2). However, in both the graphs, the rising shape of the curves of children ever born and children surviving indicates the continuation of fertility till very late in the reproductive span.

Figure 7.2 Average number of children surviving (CS) by age-group of women, Cambodia-Total 2008 and 2013.



Source: Drawn from and Priority Table F5, 2008 Census, and Priority Table F, 2013 CIPS

7.2.2 Childlessness

Childlessness or, the proportions of women having had no live birth decreases with age from age 15-19. Almost all of the women still childless at age 45-49 are childless due to their incapability to produce a live birth. In other words, the proportion of women childless at age 45-49 indicates primary sterility.

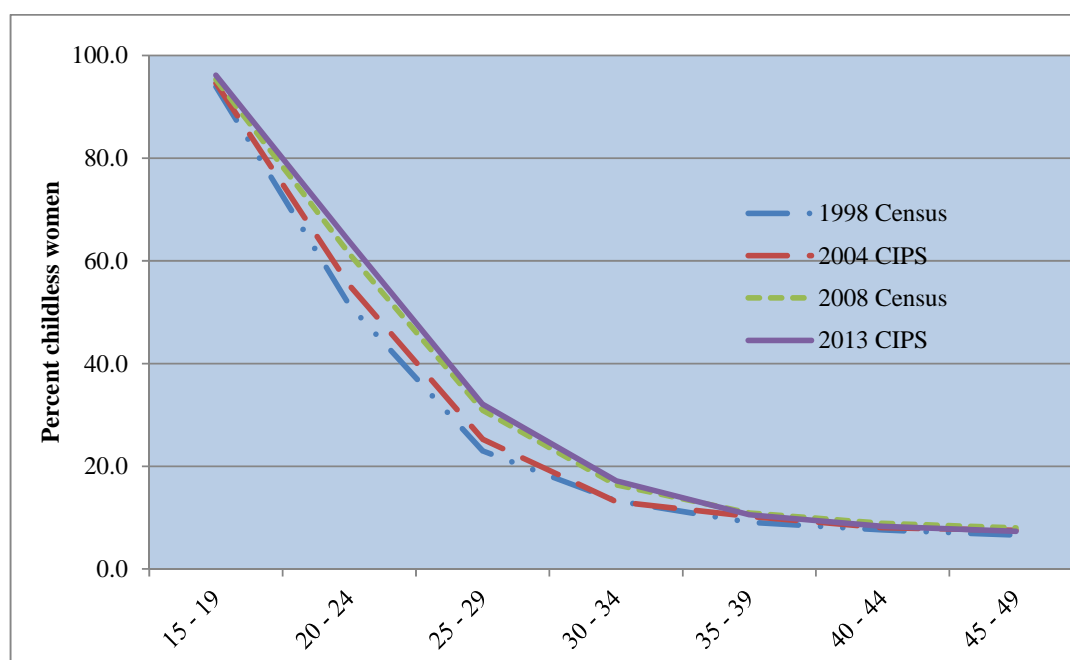
Table 7.2 Percent of all women with zero children ever born (“childless women”) by age-group. Cambodia Total 1998-2013

Age-group	1998 Census	CDHS 2000	2004 CIPS	CDHS 2005	2008 Census	CDHS 2010	2013 CIPS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)
15-19	93.9	94.4	94.6	94.8	95.3	94.7	96.1
20-24	51.4	56.2	55.3	51.5	61.4	53.8	63.8
25-29	23.0	20.4	25.3	23.3	30.9	22.2	32.1
30-34	13.3	12.1	13.1	11.0	16.4	11.6	17.2
35-39	9.1	8.1	10.2	9.3	10.9	8.5	10.6
40-44	7.6	7.6	8.0	8.7	8.9	7.7	8.3
45-49	6.6	8.2	7.5	7.2	8.0	8.3	7.3
Total	37.6	36.9	39.6	36.9	42.2	35.9	42.9

Sources: Drawn from priority Table D3 1998 census, CDHS 2000, 2004 CIPS, CDHS 2005, Priority Table F3 2008 Census, CDHS 2010 and Priority Table F, 2013 CIPS

The proportions childless have remained fairly stable between the 1998 Census and the 2005 CDHS in most of the age-groups, but show considerable increases in 2008 and 2013, particularly in the age-groups 20-24 and above (Table 7.2). This could reflect a genuine tendency for a larger percentage of women to not have children, but this could also indicate under-reporting of children ever born, especially if those children are not living. Such under-reporting would have an impact on both the fertility and mortality estimates. It may be noted that the CDHS 2010 data present a picture more in line with the previous CDHS figures; in fact all the CDHS figures show on average lower levels of childlessness compared to either the Census or the inter-censal surveys. Without much more information at hand, these differences could be attributed to differences in sampling methods for the CDHS on the one hand and the census or inter-censal surveys on the other.

Figure 7.3 Percent childless women by age. Cambodia, Total, 1998 – 2013



Sources: Drawn from Priority Table D3 1998 census, 2004 CIPS, Priority Table F3 2008 Census and Priority Table F CIPS 2013.

Childlessness percentages at the census and inter-censal surveys from 1998 to 2013, which follow similar sampling and data collection methods in terms of the duration of fieldwork, are shown in Figure 7.3. An interesting pattern to be noted is that the percentage of childlessness by age is very close between the 1998 Census and the 2004 CIPS, and between the 2008 Census and the 2013 CIPS. The comparison of childlessness percentages in the period 1998-2013 indicates that the major divergence in the percentage of childlessness appears between the prime reproductive ages of 20 and 35 years, which is another indication of fertility decline in Cambodia.

7.3 Estimates of fertility

At the 2013 Cambodia Inter-censal Population Survey (CIPS 2013), as in previous censuses and CIPS, two types of data were collected that were specifically related to fertility, namely:

- Number of children ever born to women. When tabulated by five year age-group of women this information can provide indirect estimates of fertility, and
- Births occurring to women in during the 12 months immediately preceding the census. When tabulated by five year age-group of women, this information can provide direct measures of fertility.

As mentioned earlier, there are several indirect techniques which can be applied to data on children ever born for estimating age specific and total fertility rates. Again, as already mentioned, some of the indirect techniques require certain assumptions regarding the past course of fertility. For example, the Brass P/F Ratio method requires fertility to have remained unchanged. If this method is applied to data when fertility has been declining, as is currently the case in Cambodia, it overestimates current fertility. This was also the case with the estimate of total fertility rate based on the 1998 Population census data. Data on the number of births during the last 12 months provide direct measures of age-specific and total fertility rates but, as commonly observed in most developing country, these data tend to under-report the number of children born in the past 12 months and therefore, underestimate fertility.

In addition, the following fertility related information can be derived from data collected at CIPS 2013:

Child-woman ratio (CWR): Rele (1967) found a linear relationship between CWR and gross reproduction rate (GRR) for given levels of life expectancy at birth between 20 and 70 years. The GRR, which is the total fertility rate for female birth only, can be converted to total fertility rate (TFR) for both sexes combined by assuming a suitable sex ratio at birth. Two types of CWR can be used for estimating TFR: (i) CWR as a ratio of the number of children (both sexes) aged 0-4 years to the number of women aged 15 to 49 years, and (ii) the ratio of children (both sexes) aged 5-9 years to the number of women aged 20 to 54 years. In the present analysis, the CWR used is the ratio of the number of children aged 0-4 to the number of women aged 15-49. The reference period of fertility estimates based on the CWR is five years preceding the census or survey. However, the TFR based on the Rele method is liable to be underestimated because the population aged 0-4 is generally under-enumerated (NIS, 2005).

7.3.1 Estimates of fertility at the national level-Overall fertility

Table 7.3 gives the estimates of Cambodian fertility based on the 2013 for Cambodia Total. The tables also provide estimates of Cambodian fertility for other periods from other sources for comparative purposes. Table 7.3 shows that the estimates of TFR for Cambodia Total, based on Arriaga Brass P/F Ratio, Arriaga-Arretx (Children Ever Born), the Rele and the Relational-Geompertz methods are 2.17, 2.34, 2.25 and 2.71 respectively. The average of these is 2.37. Based on reported births in the last 12 months the TFR works out to be 2.05, which is an underestimate. The other indirect estimates are also considered somewhat underestimates because of the reasons mentioned above.

One of the impacts of fertility decline in a population is the shrinking of the base of the age pyramid (the 0-4 age-group). The age pyramids of the population of Cambodia in 1998 and 2008 show that the proportion of the population aged 0-4 has declined from 12.8 percent in 1998 to 10.3 percent in

2008 and to 8.9 percent in 2013, indicating a continuation of fertility decline which has started before 1998. This is true notwithstanding possible under enumerations of the population aged 0-4 years. An approximate idea of the extent of decline in fertility during 2008-2013 may be obtained from the quinquennial percentage decline in the proportion of the population age 0-4 years between 2008 and 2013, which works out to be about 13.3 percent. The 2010 CDHS gave a TFR of 3.0 for Cambodia Total, which is centered on mid-2008. A 13.3 percent decline over five years would imply a TFR of 2.6 centered on mid – 2013.

Therefore, taking into account the above arguments and the declining trend in fertility in Cambodia since 2000, it may be concluded that the total fertility rate in Cambodia during 2008-2013 falls within the range 2.6 to 3.0, or an average of the two, namely 2.8. The directly calculated total fertility rate based on births in the household in the last 12 months is 2.05. This means that the estimated total fertility rate is 1.37 times higher than the directly calculated total fertility rate (2.8 divided by 2.05 or 1.37).

Assuming that the pattern of fertility by age of women is correctly reflected in the reported number of births in the last 12 months (this assumption is the basis of the indirect techniques of fertility estimation based on Brass type methods or their modifications), the directly calculated age-specific fertility rates (ASFRs) are inflated by the factor of 1.37 and shown below in Table 7.3a.

Table 7.3 Estimates of fertility based on the Cambodia Intercensal Population Survey 2013 (CIPS 2013): Cambodia Total

Method	Estimated Total Fertility Rate (TFR) per woman	Estimated crude birth rate per 1,000 population	Reference Period	Reference Point
Based on 2013 CIPS				
Arriaga Brass P/F Ratio	2.17	N.A.	March 2012-March 2013	Sept 2012
Arriaga-Arretx (Children Ever Born)	2.34	N.A.	March 2012-March 2013	Sept 2012
Rele (CWR 0-4,15-49); (e ₀ =66.4)	2.25	N.A.	March 2008-March 2013	Sept 2010
Relational Geompertz Model (3+3 point, average of age 20 to 35)	2.71	N.A.	March 2012-March 2013	Sept 2012
Direct estimate (based on reported births in the past 12 months)	2.05	18.45	March 2007-March 2008	Sept 2007
Other estimates				
2010 CDHS	3.0	24.2	2007-2010	June 2008
2005 CDHS	3.4	N.A.	2002-2005	June 2004

Source: Based on computations of direct and indirect estimates of fertility from data obtained from Priority Tables (Total)

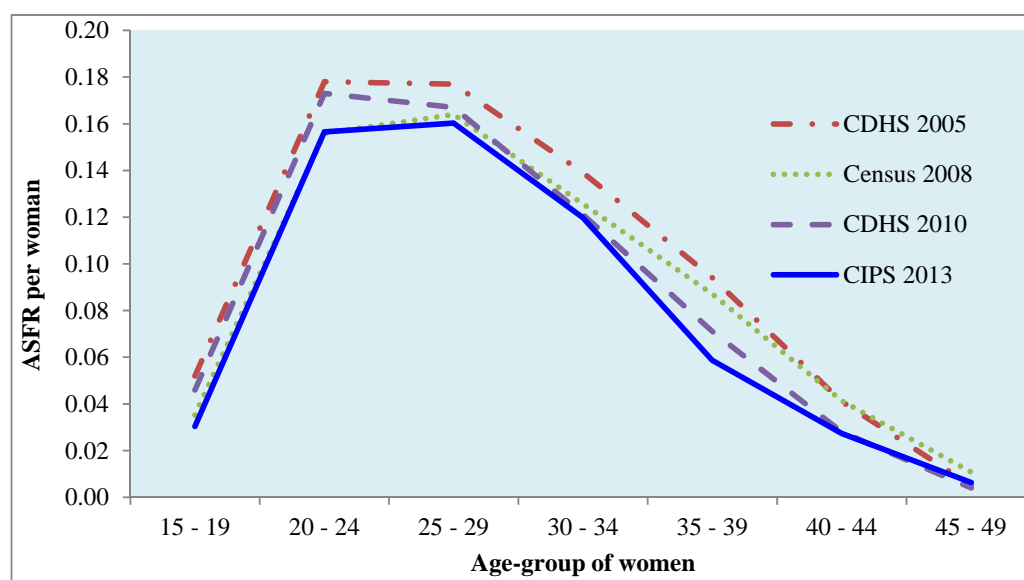
Table 7.3a Directly calculated and adjusted age-specific fertility rates (ASFRs), Cambodia 2013. Total, Urban and Rural

Age-group of women	Age-specific fertility rate					
	Before adjustment			After adjustment		
	Total	Urban	Rural	Total	Urban	Rural
(1)	(2)	(3)	(4)	(5)	(6)	(7)
15-19	0.022	0.01	0.03	0.030	0.01	0.03
20-24	0.115	0.07	0.14	0.157	0.10	0.17
25-29	0.117	0.07	0.15	0.160	0.11	0.18
30-34	0.088	0.09	0.11	0.120	0.13	0.13
35-39	0.043	0.04	0.05	0.059	0.06	0.06
40-44	0.020	0.01	0.03	0.027	0.01	0.03
45-49	0.005	0.01	0.01	0.006	0.01	0.01
Total fertility rate	2.05	1.45	2.52	2.80	2.15	3.05

Source: Calculated from priority Table F1, 2013 CIPS.

Figure 7.4 shows a comparison of the age-specific fertility rates for Cambodia (Total) based on data from the Cambodia Demographic and Health Surveys of 2005 and 2010, the Cambodian Population Census of 2008 and the Cambodia Inter-censal Population Survey 2013 (CIPS 2013). While the levels of the curves indicate a decline in fertility in Cambodia over time, it may also be noted that the CDHS 2010 and CIPS 2013 data suggest a peaking of women's childbearing at ages 25-29 years, indicating a tendency among Cambodian women to start to postpone their child birth, particularly in the recent past.

Figure 7.4 Age specific fertility rates (ASFR) Cambodia-Total



Tables 7.3 and 7.4 present the estimates of fertility for Cambodia Urban and Cambodia Rural respectively according to the same indirect techniques that have been used for Cambodia Total. Following similar arguments as those for Cambodia Total, the directly calculated TFRs for Cambodia Urban and Cambodia Rural (Tables 7.4 and 7.5) are adjusted upwards by multiplying them with the factor 1.37. These estimates are shown in Table 7.3a above.

Table 7.4 Estimates of fertility based on the Cambodia Inter-censal Population Survey 2013 (CIPS 2013) Cambodia-Urban

Method	Estimated Total Fertility Rate (TFR) per woman	Estimated crude birth rate per 1,000 population	Reference Period	Reference Point
Based on 2008 census				
Arriaga Brass P/F Ratio	2.06	N.A.	March 2012-March 2013	Sept 2012
Arriaga-Arretx (Children Ever Born)	2.53	N.A.	March 2012-March 2013	Sept 2012
Rele (CWR 0-4,15-49); (e ₀ =66.4)	1.77	N.A.	March 2008-March 2013	Sept 2010
Relational Geompertz Model (3+3 point, average of age 20 to 35)	2.71	N.A.	March 2012-March 2013	Sept 2012
Direct estimate (based on reported births in the past 12 months)	1.45	14.3	March 2012-March 2013	Sept 2012
Other estimates				
2010 CDHS	2.2	N.A.	2007-2010	June 2008
2005 CDHS	2.8	N.A.	2002-2005	June 2004

Source: Based on computations of direct and indirect estimates of fertility from data obtained from Priority Tables F (Urban)

Table 7.5 Estimates of fertility based on the Cambodia Inter-censal Population Survey 2013 (CIPS 2013) Cambodia-Rural

Method	Estimated Total Fertility Rate (TFR) per woman	Estimated crude birth rate per 1,000 population	Reference Period	Reference Point
Based on 2008 census				
Arriaga Brass P/F Ratio	2.28	N.A.	March 2012-March 2013	Sept 2012
Arriaga-Arretx (Children Ever Born)	2.34	N.A.	March 2007-March 2008	Sept 2007
Rele (CWR 0-4,15-49); (e ₀ =63.94)	2.39	N.A.	March 2008-March 2013	Sept 2010
Relational Geompertz Model (3+3 point, average of age 20 to 35)	2.99	N.A.	March 2012-March 2013	Sept 2012
Direct estimate (based on reported births in the past 12 months)	2.52	19.6	March 2012-March 2013	Sept 2012
Other estimates				
2010 CDHS	3.3	N.A.	2007-2010	June 2008
2005 CDHS	3.5	N.A.	2002-2005	Sept 2007

Source: Based on computations of direct and indirect estimates of fertility from data obtained from Priority Tables F1 to F4. (Rural)

7.4 Estimates of early age mortality-Total, Urban and Rural

The following mortality related data are available from the 2013 Inter-censal Population Survey (CIPS 2013):

- Number of children ever born and surviving to women of reproductive ages 15 and above, classified by 5 year age-group of women. This can provide indirect estimates of early age mortality.
- Deaths occurring in the household during the 12 months immediately preceding the survey, classified by age of the deceased. This type of data can provide direct estimates of early age and adult mortality. These data also included information on deaths of women of reproductive ages due to maternal causes, i.e., deaths related to pregnancy and child birth, and their sequelae for up to 42 days after delivery. This type of data can provide direct estimate of maternal mortality.

In the present analysis, estimates of early age mortality, comprising infant and child mortality (for both sexes combined and by sex), and maternal mortality will be presented.

The method of indirectly estimating infant and child mortality from information on children ever born and children surviving, classified by age-group of women consists of calculating the proportions of children dead (as a complement of the proportions of children surviving) and converting them to measures of probability of dying under various ages under 5 with use of multipliers developed by Brass (see United Nations, 1983: for a description of the method). The software QFIVE of MORTPAK 4.3, developed by the United Nations has been used for estimating early age mortality in Cambodia.

The estimates of infant mortality for both sexes combined, derived by the Trussell (Model West) variant and the Polloni-Heligman (UN General Model) variant of the Brass method from information on children ever born and children surviving for Cambodia Total, Urban and Rural are of the order of 22-23, 7-8 and 25-26 per 1,000 live births respectively (Tables 7.6, 7.7 and 7.8). The approximate measure of infant mortality obtained by taking the ratio of the deaths under the age of one year to the number of live births in past 12 months shows a figure of 25,7 and 29 infant deaths per 1,000 live births for Cambodia Total, urban and rural respectively (Table 7.6). These estimates are rather low, as are the estimates of child and under-five mortality, particularly in the context of the immediately past declines in early age mortality indicated by the 2000, 2005 and 2010 Cambodian Demographic and Health Survey, and the estimates of early age mortality derived from the 2008 Population Census.

**Table 7.6 Estimates of early age mortality and crude death rate based
on the Cambodia Inter-censal Population Survey 2013 (CIPS 2013) Cambodia-Total**

Method	Infant mortality rate (${}_1q_0$)	Child mortality rate (${}_4q_1$)	Under five mortality (${}_5q_0$)	Crude death rate per 1,000 population	Reference Period	Reference Point
Based on CIPS 2013: Children Ever Born and Children Surviving (Brass type methods)						
(i) Palloni-Heligman: UN General Model	0.022	0.005	0.027	N.A	N.A	Feb 2011
(ii) Trussell: Coale-Demeny West Model	0.023	0.007	0.027	N.A	N.A	March 2011
Direct estimate (based on reported births in the past 12 months)						
Direct estimate	0.025	N.A	0.040	3.95	March 2012-March 2013	Sept 2012
Other estimates						
2010 CDHS	0.045	0.009	0.054		Mar 2006-Mar 2010	March 2008
Based on 2008 Census:						
First estimates based on Children Ever Born and Children Surviving (Brass type methods)						
(i) Palloni-Heligman: UN General Model	0.026	0.006	0.027	N.A	N.A	Jan 2006
(ii) Trussell: Coale-Demeny West Model	0.026	0.007	0.044	N.A	N.A	Feb 2006
Final estimates based on 2008 Census						
Final estimate	60	NA	NA	NA	Mar 2007-Sep 2008	Sep 2007
2005 CDHS	0.066	0.019	0.083		1995-2005	June 2000

Source: Based on computations of direct and indirect estimates of infant mortality from data obtained from Priority Mortality Table F1, 2013 CIPS (Total) and other relevant publications.

Table 7.7 Estimates of early age mortality, and crude death rate based on the Cambodia Inter-censal Population Survey 2013 Cambodia Urban

Method	Infant mortality rate (${}_1q_0$)	Child mortality rate (${}_4q_1$)	Under five mortality (${}_5q_0$)	Crude death rate per 1,000 population	Reference Period	Reference Point
Based on CIPS 2013: Children Ever Born and Children Surviving (Brass type methods)						
(i) Palloni-Heligman: UN General Model	0.007	0.002	0.009	N.A	N.A	Feb 2011
(ii) Trussell: Coale-Demeny West Model	0.008	0.001	0.009	N.A	N.A	March 2011
Direct estimate (based on reported births in the past 12 months)						
Direct estimate	0.007	N.A	0.011549.A	2.48	March 2012-March 2013	Sep 2012
Other estimates						
2010 CDHS	0.022	0.007	0.029	N.A	2000-2010	March 2005
Based on 2008 Census:						
First estimates based on Children Ever Born and Children Surviving (Brass type methods)						
(i) Palloni-Heligman: UN General Model	Less than 0.024	0.005	0.021	N.A	N.A	Jan 2006
(ii) Trussell: Coale-Demeny West Model	0.017	0.002	0.022	N.A	N.A	Feb 2006
Final estimates based on 2008 Census						
Final estimates	35	NA	NA	NA	Mar 2007-Mar 2008	Sep 2007
2005 CDHS	0.065	0.012	0.076	N.A	1995-2005	June 2000

Source: Based on computations of direct and indirect estimates of infant mortality from data obtained from Priority Mortality Table F1, 2013 CIPS (Urban) and other relevant publications

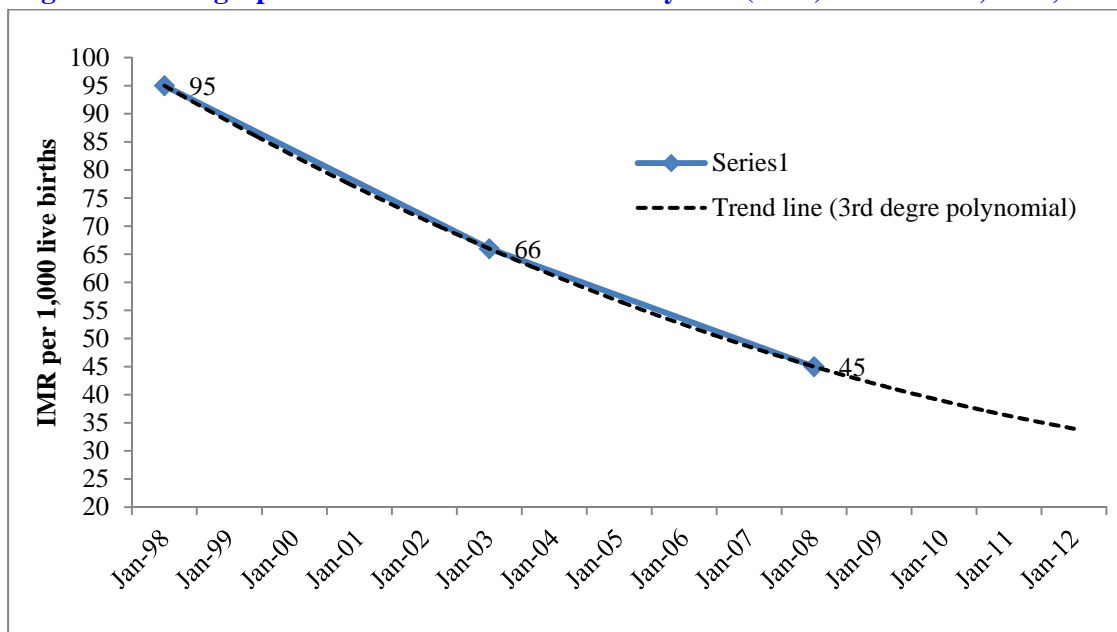
Table 7.8 Estimates of early age mortality, and crude death rate based on the Cambodia Inter-censal Population Survey 2013: Cambodia Rural

Method	Infant mortality rate (_{1q0})	Child mortality rate (_{4q1})	Under five mortality (_{5q0})	Crude death rate per 1,000 population	Reference Period	Reference Point
Based on CIPS 2013: Children Ever Born and Children Surviving (Brass type methods)						
(i) Palloni-Heligman: UN General Model	0.025	0.006	0.031	N.A.	N.A	Feb 2011
(ii) Trussell: Coale-Demeny West Model	0.026	0.004	0.030	N.A	N.A	March 2011
Direct estimate (based on reported births in the past 12 months)						
Direct estimate	0.029	N.A	N.A	3.64	N.A	N.A
Other estimates						
2010 CDHS	0.064	0.012	0.075	N.A	2000-2010	March 2005
Based on 2008 Census:						
First estimates based on Children Ever Born and Children Surviving (Brass type methods)						
(i) Palloni-Heligman: UN General Model	0.027	0.006	0.031	N.A	N.A	Feb 2006
(ii) Trussell: Coale-Demeny West Model	0.026	0.004	0.030	N.A	N.A	March 2006
Final estimates based on 2008 Census						
Final estimates	62	NA	NA	NA	Mar 2007-Mar 2008	Sep 2007
2005 CDHS	0.092	0.021	0.111	N.A	1995-2005	June 2000

Source: Based on computations of direct and indirect estimates of infant mortality from data obtained from Priority Mortality Table F1, 2013 CIPS (Rural) and other relevant publications

The trends in infant mortality according to the CDHS 2000, 2005 and 2010 are shown in Figure 7.5. This figure also shows the fitted trend line and the forecast for the period corresponding to CIPS 2013. The trend line is third degree polynomial, which provides a perfect fit as indicated by the R^2 value of 1. The forecast based on this trend line gives an expected IMR of about 34 per 1,000 live births for the period corresponding to CIPS 2013.

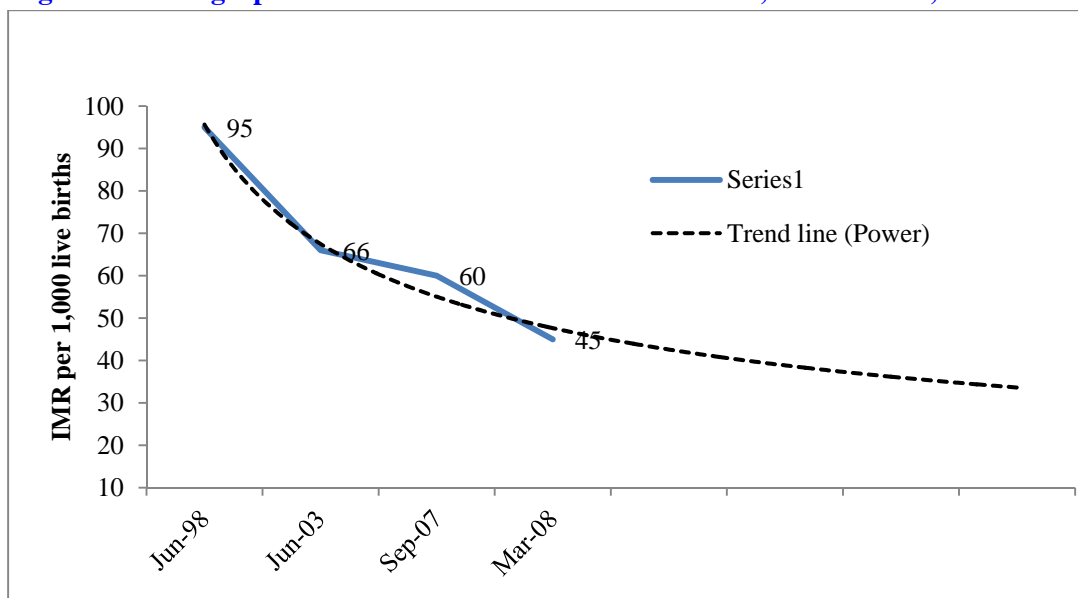
Figure 7.5 Line graph and trend line infant mortality rate (IMR) CDHS 2000, 2005, 2010



Source: Drawn from data obtained from the various surveys mentioned above.

Figure 7.6 shows the trends in infant mortality in Cambodia according to the CDHS 2000, CDHS 2005, Census 2008 and CDHS 2010, and a fitted Power trend line. The forecast based on this power trend line gives an expected IMR of about 32 per 1,000 live births for the period corresponding to CIPS 2013.

Figure 7.6 Line graph and trend line IMR CDHS 2000-2005, Census 2008, CDHS 2010



Source: Drawn from data obtained from the various surveys mentioned above.

The average of these two expected values of IMR (i.e., 34 and 32) is 33.0, which may be taken as the infant mortality rate for Cambodia Total as of CIPS 2013. The reference period for this rate is March 2012-March 2013 and the reference point is September 2012. The ratio of this value (33) to the directly estimated IMR of 25 is 1.32, which may be used as the correction factor for the directly calculated IMR for urban and rural areas and the directly calculated under five mortality rates (U5MR) for total, urban and rural areas (see Table 7.6).

Thus the plausible estimates of infant mortality for both sexes combined for Cambodia 2013, Total, Urban and Rural areas can be stated as follows:

Table 7.9 Adjusted infant mortality rates and under five mortality rates per 1,000 live birth, Cambodia 2013 (Both sexes combined) (Reference period: March 2012-March 2013)

(Adjustment factor = 1.32)		
Infant Mortality Rate		
	Before adjustment	After adjustment
Total	25	33
Urban	7	9
Rural	29	38
Under Five Mortality Rate		
	Before adjustment	After adjustment
Total	40	53
Urban	12	15
Rural	46	60

Source: Calculated from Tables 10, 11 and 12 based on adjustment factor discussed above

The estimate of under-five mortality (U5MR) from CDHS 2010 for Cambodia (Total, both sexes combined) is 54 per 1,000 live births for the period 2005-2010. The estimates of U5MR for Urban and Rural areas from CDHD 2010 are 29 and 75 per 1,000 live births for the period 2000-2010. Therefore, the adjusted estimated of U5MR from CIPS 2013 appear to be consistent with the trend implied by the CDHS 2010 estimates. However, even though the urban and rural U5MR appear to have recorded declines from 29 and 75 to 15 and 60 respectively, the Total U5MR seems to have declined from 54 to only 53. This is being further investigated.

7.5 Conclusion

The best source of information on fertility and mortality is a complete and accurate vital registration system. Until such time as a vital registration system is fully operational in Cambodia, data collected at censuses and surveys have to be depended upon for estimating fertility and mortality. In surveys such as the Demographic and Health Survey, sufficient resources and time can be devoted to training the enumerators and to data collection which helps in the collection of good quality data. However, this simply cannot be done in a census, or an inter-censal survey. As such, estimates of fertility and mortality based on the CIPS 2013 data should be interpreted as providing indications of trends in these demographic parameters and of the range in which the values of parameters could lie.

Considering all the factors mentioned above and taking into account the trends in demographic parameters from other sources and various estimates derived in this chapter, it may be concluded that the total fertility rate in Cambodia derived from the CIPS 2013 data is around 2.80, 2.15 and 3.05 for Total, Urban and Rural areas respectively (with a reference period of March 2012-March 2013), the infant mortality rate is around 33, 9 and 38 per 1,000 live births for the Total, Urban and Rural areas respectively (reference period March 2012-March 2013), the under-five mortality rate (U5MR) is around 53, 15 and 60 per 1,000 live births for Total, Urban and Rural areas respectively

Figure 7.7 Trend in total fertility rate, Cambodia-Total. CDHS 2000 - CIPS 2013

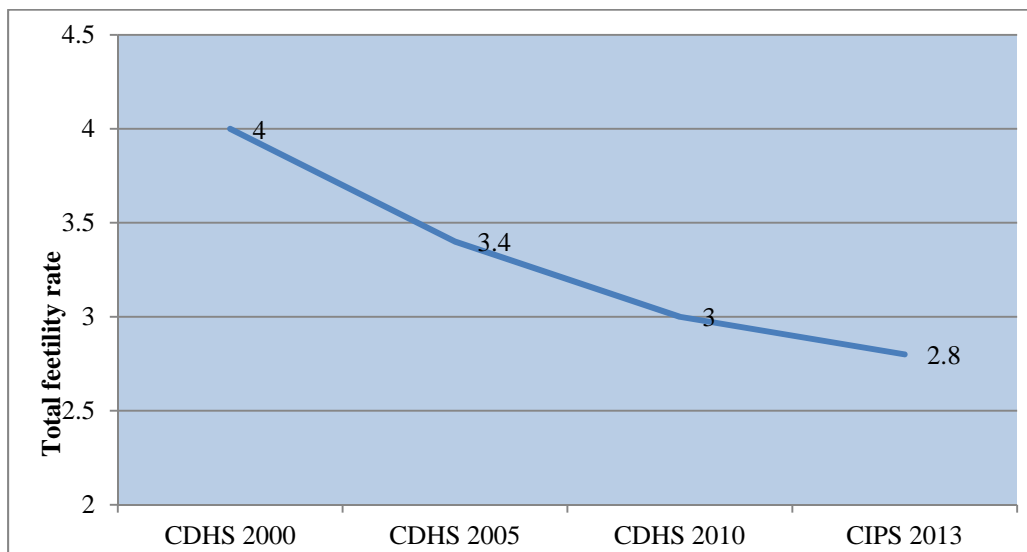


Figure 7.8 Trend in infant mortality rate, Cambodia-Total. CDHS 2000 - CIPS 2013

