

Every province has decreased its average household size, and most of provinces have increased its average number of rooms per household, but several provinces have decreased the average number of rooms per household. From this table it is difficult to know whether the spatial condition of households has improved or not. For example, in Phnom Penh, size of household has decreased (from 5.67 persons to 5.01) and average number of rooms per household has increased (from 1.63 rooms to 1.86), so, we are able to say that the spatial condition of households in Phnom Penh has improved as a whole. On the other hand, Svay Rieng has decreased its household size (from 4.85 persons to 4.17) and also decreased its average number of rooms (from 1.59 rooms to 1.31). In this case, we cannot recognize whether the spatial condition of household has improved or not. In order to know it, the average number of persons per room was calculated from Table 2.4 and charted in Figure 2.3.

**Table 2.4 Average Household Size and Average Number of Rooms: Urban/Rural and Provinces, 1998 and 2008**

Regeon	1998*		2008	
	Average Household Size	Average Number of Rooms per Household**	Average Household Size	Average Number of Rooms per Household**
<b>Cambodia Total</b>	5.18	1.32	4.68	1.38
<b>Urban</b>	5.50	1.55	4.92	1.75
<b>Rural</b>	5.12	1.28	4.63	1.29
<b>Province</b>				
Bantey Meanchey	5.13	1.38	4.61	1.37
Battambang	5.27	1.29	4.82	1.31
Kampong Cham	5.12	1.14	4.52	1.26
Kampong Chhnang	5.02	1.31	4.64	1.29
Kampong Speu	5.13	1.44	4.76	1.32
Kampong Thom	5.29	1.36	4.67	1.31
Kampot	5.01	1.26	4.49	1.22
Kandal	5.18	1.17	4.86	1.40
Koh Kong	5.15	1.43	4.79	1.64
Kratie	5.31	1.25	4.83	1.40
Mondul Kiri	5.67	1.47	4.87	1.62
Phnom Penh	5.67	1.63	5.01	1.86
Preah Vihear	5.51	1.23	5.11	1.49
Prey Veng	4.85	1.29	4.16	1.28
Pursat	5.23	1.27	4.72	1.17
Ratanak Kiri	5.62	1.52	5.43	1.57
Siemreap	5.40	1.31	4.92	1.37
Preah Sihanouk	5.46	1.46	4.83	1.58
Stung Treng	5.65	1.72	5.20	1.61
Svay Rieng	4.85	1.59	4.17	1.31
Takeo	5.08	1.29	4.57	1.32
Oddar Meanchey	5.30	1.65	4.75	1.39
Kep	5.31	1.23	4.92	1.32
Pailin	5.19	1.56	4.74	1.54
Maximum	5.67	1.72	5.43	1.86
Median	5.25	1.34	4.78	1.37
Minimum	4.85	1.14	4.16	1.17

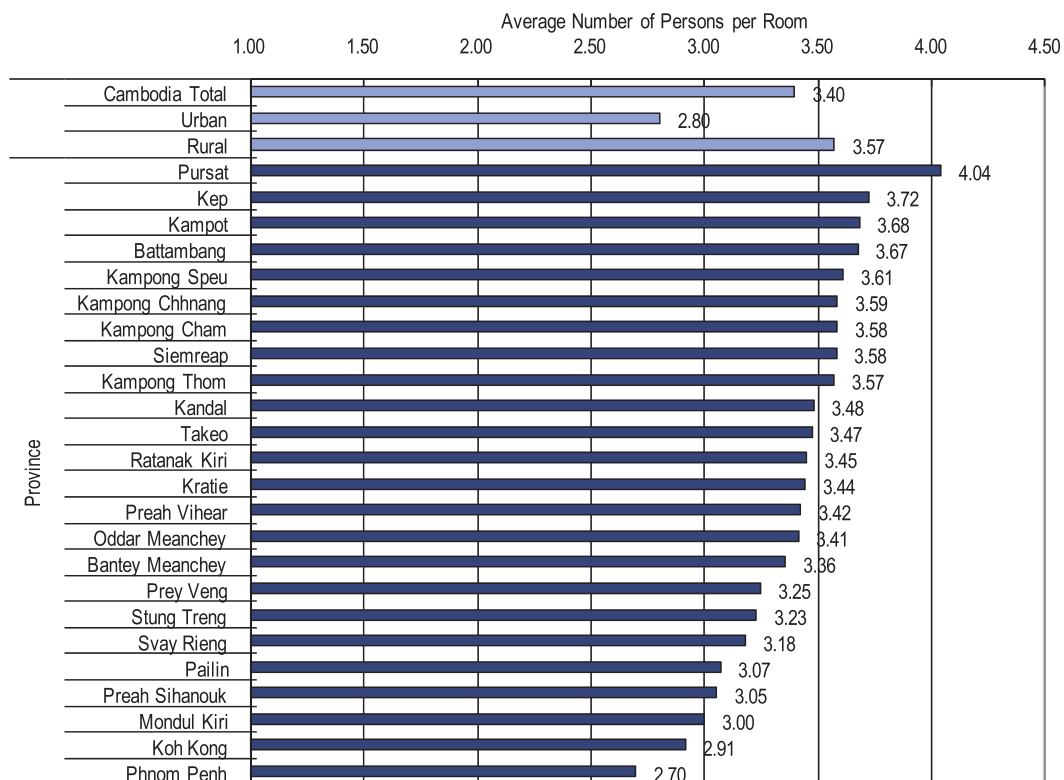
Note: Excludes Institutional Homeless Boat and Transient Households.

\* In 1998, 'Average Number of Rooms per Household' is calculated by excluding 'Not Reported' households.

\*\* Approximate figures; calculated by regarding '8 and More Rooms' as '9 rooms'

The average number of persons per room of Cambodia is 3.40 in 2008. There are a big gap between urban and rural areas (2.80 persons per room and 3.57 respectively) and bigger gaps between provinces (the greatest value of 4.04 in Pursat province and the least value of 2.70 in Phnom Penh).

Figure 2.3 Average Number of Persons per Room by Provinces: Urban/Rural, 2008



There is a target about a slum in MDGs of the United Nations and spatial condition of housing is one of the factors to identify that a household is a slum or not. If there are '3 or more persons per room', it is considered there is not a sufficient area to live in.

Cambodia does not mention the target about a slum in the CMDGs. But Cambodia in recent years is in a rapid change. From now on, much more people will live in urban areas. Indonesia has a guideline of spatial condition of housing; 8 square meters per person is required to healthy life. Some of the countries like Indonesia and Viet Nam collect the information on floor areas of houses when they conduct their Census. The spatial condition of housing will become more important in Cambodia in the future and the needs for the data of it will also become more important.

## 2.4 ENERGY SOURCES OF LIGHT AND COOKING

The use of Energy Sources of Light and Cooking shows the everyday life of the Cambodia Households.

## 2.4.1 Main Energy Sources of Light

Eight out of ten normal households were using kerosene for lighting in 1998. In 10 years, the proportion of households using kerosene has decreased to half. In 2008, kerosene stays the most common energy for lighting, but battery has come just behind it and three out of ten normal households are using battery in Cambodia (Table 2.5).

**Table 2.5 Distribution of Households by Main Source of Light used: Urban/Rural, 1998 and 2008**

Main Source of Light	Number of Households					
	1998			2008		
	Total	Urban	Rural	Total	Urban	Rural
<b>Total</b>	<b>2,162,086</b>	<b>364,581</b>	<b>1,797,505</b>	<b>2,817,637</b>	<b>506,579</b>	<b>2,311,058</b>
City power	271,456	207,402	64,054	633,151	418,067	215,084
Generator	21,512	7,600	13,912	48,502	9,410	39,092
Both city power and generator	33,756	14,089	19,667	61,869	13,436	48,433
Kerosene	1,726,670	122,023	1,604,647	1,088,127	37,509	1,050,618
Candle	4,033	2,338	1,695	11,445	1,909	9,536
Battery	76,898	10,759	66,139	959,643	25,490	934,153
Other Sources	27,761	370	27,391	14,900	758	14,142
Main Source of Light	Percentage					
	1998			2008		
	Total	Urban	Rural	Total	Urban	Rural
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0
City power	12.6	56.9	3.6	22.5	82.5	9.3
Generator	1.0	2.1	0.8	1.7	1.9	1.7
Both city power and generator	1.6	3.9	1.1	2.2	2.7	2.1
Kerosene	79.9	33.5	89.3	38.6	7.4	45.5
Candle	0.2	0.6	0.1	0.4	0.4	0.4
Battery	3.6	3.0	3.7	34.1	5.0	40.4
Other Sources	1.3	0.1	1.5	0.5	0.1	0.6

Note: Excludes Institutional Homeless Boat and Transient Households.

In urban areas, the city power had already exceeded kerosene in 1998 and the proportion of it has increased around 25 percentage points (from 56.9 percent to 82.5 percent), while the proportion of rural Cambodian households using the city power has increased only around 6 percentage points (from 3.6 percent to 9.3 percent). Kerosene and battery are used in urban areas only 7.4 and 5.0 percent respectively but they are popular in rural areas in 2008.

The 'Candle' and 'Other sources' for lighting seem less used at national level, it may be replaced by the battery. Figure 2.4 shows the data in Table 2.5 and the data from 2004 Inter-Censal Population Survey. From this graph, we can know the battery for lighting is a new phenomenon having come after 2004 ICPS.

Figure 2.4 Main Source of Light : Urban/Rural, 1998 and 2008

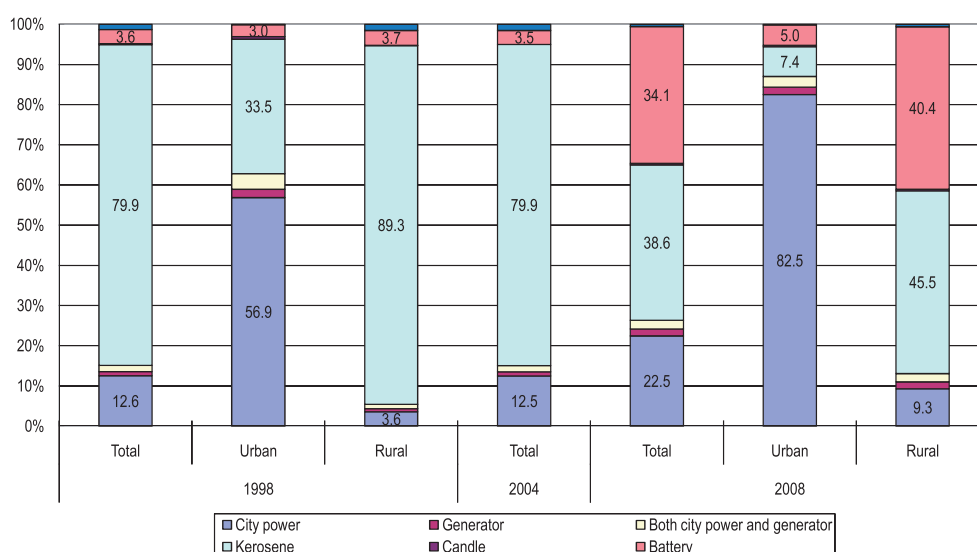


Table 2.6 shows the provincial data of the three leading energies for lighting which are City Power, Kerosene and Battery. Most of the provinces have decreased not only the number of households using kerosene for lighting but also the proportion of it. But Mondul Kiri, Preah Vihear and Ratanak Kiri have increased the number of households using kerosene and the proportion of it.

Table 2.6 Leading Energies for Lighting: Province, 1998 and 2008

	Percentage										
	1998				2008				Differential {(2008) - (1998)}		
	Total	City Power (inc. 'and generator')	Kerosene	Battery	Total	City Power (inc. 'and generator')	Kerosene	Battery	City Power (inc. 'and generator')	Kerosene	Battery
<b>Total</b>	2,162,086	14.1	79.9	3.6	2,817,637	24.7	38.6	34.1	10.6	-41.2	30.5
<b>Urban</b>	364,581	60.8	33.5	3.0	506,579	85.2	7.4	5.0	24.4	-26.1	2.1
<b>Rural</b>	1,797,505	4.7	89.3	3.7	2,311,058	11.4	45.5	40.4	6.7	-43.8	36.7
<b>Province</b>											
Bantey Meanchey	110,994	10.9	84.6	2.9	144,658	28.2	50.8	18.3	17.3	-33.8	15.4
Battambang	146,661	12.5	83.2	2.7	209,702	23.1	55.3	18.7	10.6	-27.9	16.1
Kampong Cham	311,151	10.7	82.7	5.3	368,114	16.3	34.5	47.2	5.5	-48.2	41.8
Kampong Chhnang	81,201	5.4	89.9	3.9	100,801	10.8	54.6	33.1	5.5	-35.3	29.2
Kampong Speu	114,959	3.2	94.9	1.0	149,270	10.0	40.4	48.2	6.8	-54.5	47.2
Kampong Thom	105,583	6.3	89.4	1.4	133,878	11.1	54.9	32.0	4.8	-34.5	30.6
Kampot	104,498	6.0	92.5	0.7	129,646	11.6	54.1	32.7	5.6	-38.3	32.0
Kandal	203,357	11.9	78.1	8.9	255,029	34.0	14.8	47.8	22.1	-63.3	38.9
Koh Kong	21,401	36.9	56.2	0.8	24,166	43.4	42.8	7.8	6.5	-13.4	7.0
Kratie	48,761	11.8	80.8	4.1	65,323	13.1	48.8	36.0	1.3	-32.0	31.9
Mondul Kiri	5,615	6.5	47.9	1.5	12,270	20.5	53.2	13.3	13.9	5.2	11.8
Phnom Penh	167,758	78.3	17.5	1.5	250,597	92.9	1.7	2.9	14.7	-15.8	1.4
Preah Vihear	21,007	2.4	45.8	0.4	33,115	9.5	55.3	14.4	7.1	9.5	14.1
Prey Veng	192,735	3.5	89.8	6.2	226,312	7.0	28.2	63.9	3.5	-61.6	57.7
Pursat	67,022	8.8	88.1	1.9	83,412	15.4	71.1	12.3	6.5	-17.1	10.4
Ratanak Kiri	16,646	14.0	42.1	0.3	27,485	17.1	55.9	12.9	3.0	13.8	12.5
Siemreap	125,387	8.7	88.8	1.6	179,754	21.5	57.9	18.4	12.8	-30.9	16.7
Preah Sihanouk	30,075	36.9	59.5	0.5	44,656	54.2	33.0	7.5	17.3	-26.5	7.0
Stung Treng	14,126	12.6	60.5	1.7	20,922	18.5	59.5	5.3	5.9	-1.0	3.6
Svay Rieng	97,796	4.2	91.4	3.8	114,758	11.1	32.7	54.9	6.8	-58.7	51.1
Takeo	153,863	4.0	92.7	2.7	183,742	10.9	34.5	53.4	6.8	-58.2	50.7
Oddar Meanchey	12,208	2.0	96.2	1.0	38,398	15.5	58.2	22.2	13.5	-38.0	21.2
Kep	5,282	7.3	89.7	1.1	7,193	16.6	64.1	16.1	9.4	-25.6	15.0
Pailin	4,000	15.0	69.8	2.4	14,436	39.8	38.0	14.5	24.9	-31.8	12.1

Note: Excludes Institutional Homeless Boat and Transient Households.

The provinces have great discrepancies in the penetration rates of City Power. In Prey Veng, 6.30 percent of households had access to City Power. It is the least percentage among 23 provinces and a municipality. This source of energy is available in abundant in the municipality of Phnom Penh, 89.8 percent of households had access to City Power derived from diesel generators, hydropower and foreign sources.

And also there are big discrepancies in the tendency of using Battery. The provinces showing low penetration rate of City Power present relatively high proportion of using Battery (Figure 2.5). This is observed especially in southeast parts of Cambodia surrounding Phnom Penh, for example, 63.9 percent of households in Prey Veng, 54.9 percent in Svay Rieng, 53.4 percent in Takeo, 48.2 percent in Kampong Speu, 47.8 percent in Kandal and 47.2 percent in Kampong Cham.

Figure 2.5 Proportion of Using Battery and City Power for Source of Light :  
Province, 2008

