

# Cambodia: Atlas of Health Indicators

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# I. Introduction

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The 2000 Demographic and Health Survey (DHS) in Cambodia collected social, behavioral, and health data on Cambodian households and women aged 15-49. The household questionnaire was administered to approximately 12,200 households, and collected information on housing conditions, socio-economic status, prevalence of illness and impairment, and household members' utilization of health services and amount of health expenditures. The women's questionnaire collected information from approximately 15,300 women on their employment and educational background, their spouse's background, and data related to fertility and reproduction; pregnancy and associated care; knowledge of HIV/AIDS; and child feeding practices, health, and mortality. Anthropometry data were also collected from women and children in a subsample of 50% of households, and anemia tests were conducted in 25% of households.

This atlas presents maps of a selection of indicators from the 2000 Cambodia DHS survey, including household characteristics (household water source, availability of toilet facilities; household assets); background characteristics of women (education, literacy, employment, and media exposure); pregnancy and delivery care; and indicators of child health, including early childhood mortality and vaccination rates.

## Geographic Information

For sampling and mapping purposes, Cambodia has been divided into 17 regions, including 12 individual provinces (Banteay Mean Chey; Kampong Chaam; Kampong Chhnang; Kampong Speu; Kampong Thum; Kandaal; Kaoh Kong; Phnom Penh; Prey Veang; Pousaat; Svaay Rieng; Taakaev), and 5 groups of 2-3 provinces each (Baat Dambang and Krong Pailin in western Cambodia; Kampot, Krong Kaeb, and Krong Preah Sihanouk in southwestern Cambodia; Kracheh, Preah Vihear, and Stung Traeng in northern Cambodia; Mondol Kiri and Rotanak Kiri in eastern Cambodia, and Siem Reap and Otdar Mean Chey in northwestern Cambodia.) (See figure I-1.)

Additional tabulations or figures showing indicators by region for urban and rural populations are also included for selected indicators. For reference purposes, figure I-2 shows the distribution of urban population in Cambodia's regions. The Phnom Penh region is the most highly urbanized, followed by Kampot/Krong Kaeb/Krong Preah Sihanouk in southern Cambodia. South-central Cambodia is less urbanized.

## Figures

- ◆ Figure I-1. Provinces and DHS Regions
- ◆ Figure I-2. Regional Distribution of Urban Population

Distribution of household members by urban-rural area of residence (all household members; n=66,285)

**Figure I-1. Provinces and DHS Regions, Cambodia DHS, 2000**



**Figure I-2. Regional Distribution of Urban Population, Cambodia DHS, 2000**





## II. Characteristics of Households

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The DHS household questionnaire collected information on housing conditions and presence of specific durable goods in the household. Maps illustrating selected indicators, including water source, toilet availability, electrification, and durable goods, are presented below.

### Water Source and Toilet Availability

The Cambodia DHS questionnaire collected information on household water source during both the rainy and the dry seasons. Figures II-1 and 2 illustrate the geographic distribution of the use of water from unprotected sources, specifically open wells, rivers, streams, and other surface sources, in households. Generally, regions in west-central Cambodia are more likely to use unprotected water than regions in eastern Cambodia. Seasonally, there is a slight decrease in use of unprotected water during the rainy season. This can be attributed to households' increased use of rainwater. However, the safety of rainwater as a water source depends on how it is stored, and these estimates of water quality are certainly inexact.

There were striking urban-rural differences in use of unprotected water, with rural areas in most provinces using more unprotected water than urban areas. Figure II-3 illustrates this discrepancy in the dry season, but similar urban-rural differences exist in water source during the rainy season (data not shown.)

Figure II-4 shows the geographic distribution of households who have neither no access to a toilet facility, whether in-unit or shared with other households. Phnom Penh is the only region where less than 15% of households lack access to a toilet facility; in most of central Cambodia, the percentage is higher than 80%. In most regions, urban residents are more likely to have access to toilet facilities than rural residents (see figure II-5).

### Household Electricity and Durable Goods

Household electricity varies greatly by region: while 93% of Phnom Penh households have access to electricity, only 3% of households are electrified in Prey Venang, a province in South-Central Cambodia. Urban-rural differences are stark, particularly outside Phnom Penh: only 9% of rural households nationwide have electricity, compared with 61% of urban households. Figure II-7 disaggregates urban-rural electricity differences by region.

Figure II-8 presents four maps of households possessing selected durable goods: a bicycle, a car or truck, a television, or a phone. Televisions are the most common of these four durable goods, while phones and cars are less common. These assets are far more common in the capital, Phnom Penh, than they are in other areas. For example, 85% of households in Phnom Penh possess television sets; the next highest rate is in Kandal, where 46% of households own televisions. Similarly, 15% of Phnom Penh households own cars, compared to 4% in the region with the second-highest rate (Bat Dambang/Krong Parilin), and 31% have telephones, compared with 3% in Kamptot/Krong Kaeb/Krong Preah Sihanouk.

## Figures and Tables

- ◆ Figure II-1. Households Using Water From Unprotected Sources, Dry Season

Unprotected water sources include open wells and surface sources such as rivers and springs. (All households; n=12,236)

- ◆ Figure II-2. Households Using Water From Unprotected Sources, Rainy Season

(All households; n=12,236)

- ◆ Figure II-3. Households Using Unprotected Water by Urban-Rural Status

While this graph presents differences in use of unprotected water during the rainy season, urban-rural differences are similar during rainy season (data not shown). (All households; n=12,236)

- ◆ Figure II-4. Households With No Toilet Facility

Household respondents could specify a flush or traditional toilet or no facility, and whether or not the facility is connected to a sewer or septic system. (All households; n=12,236)

- ◆ Figure II-5. Urban-Rural Differences in Toilet Facilities

(All households; n=12,236)

- ◆ Figure II-6. Households with Electricity

(All households; n=12,236)

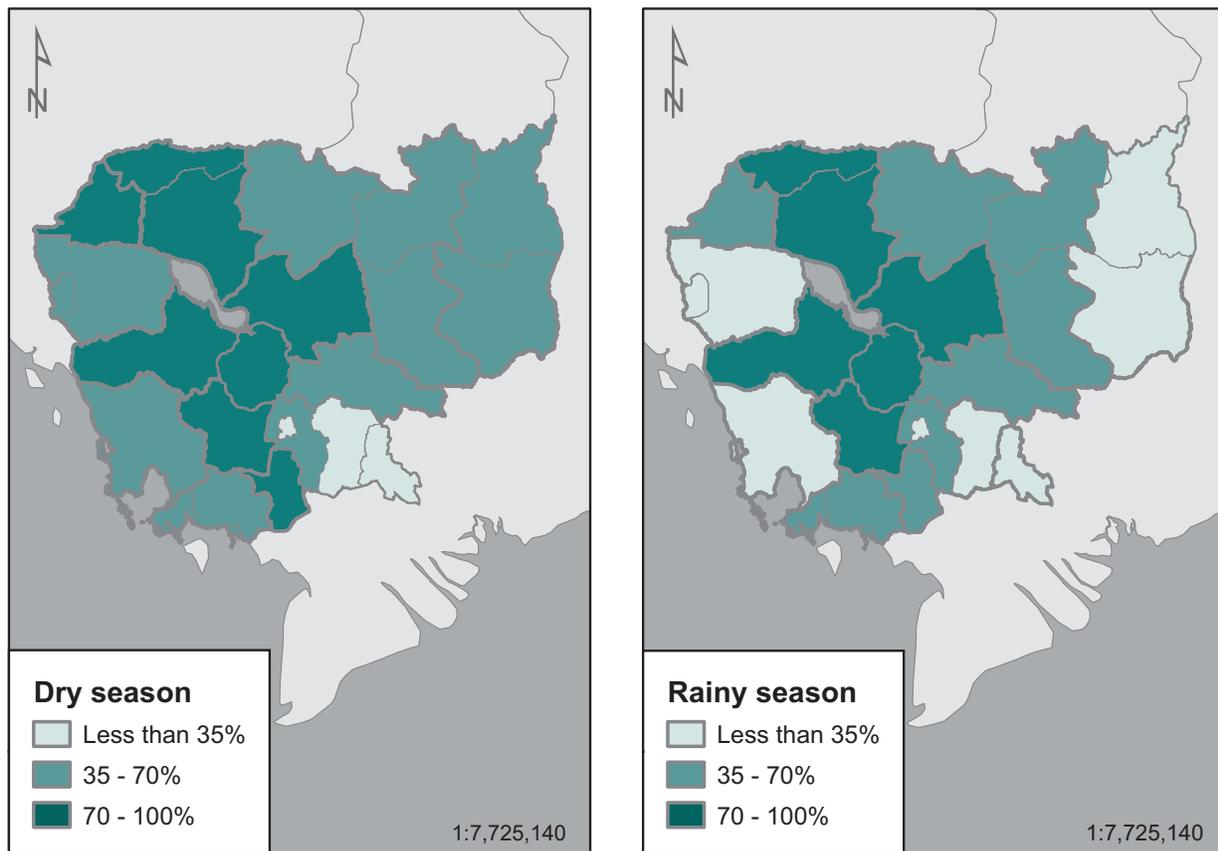
- ◆ Figure II-7. Households with Electricity by Region and Urban-Rural Residency

(All households; n=12,236)

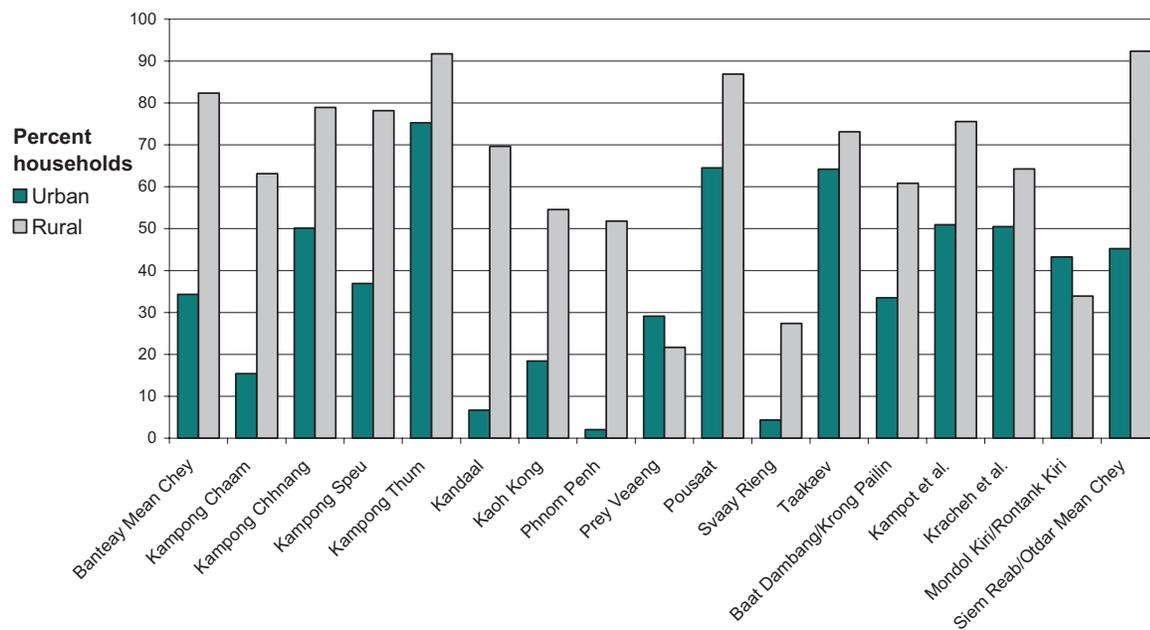
- ◆ Figure II-8. Ownership of Selected Household Assets

Households were asked if they possessed the following durable goods: television, telephone, private car or truck, bicycle, wardrobe, sewing machine or loom, radio or tape recorder, refrigerator, mobile phone, motorcycle or scooter, boat without motor, boat with motor, and oxcart. Data on first four in the list are mapped in figure II-8. (All households; n=12,236)

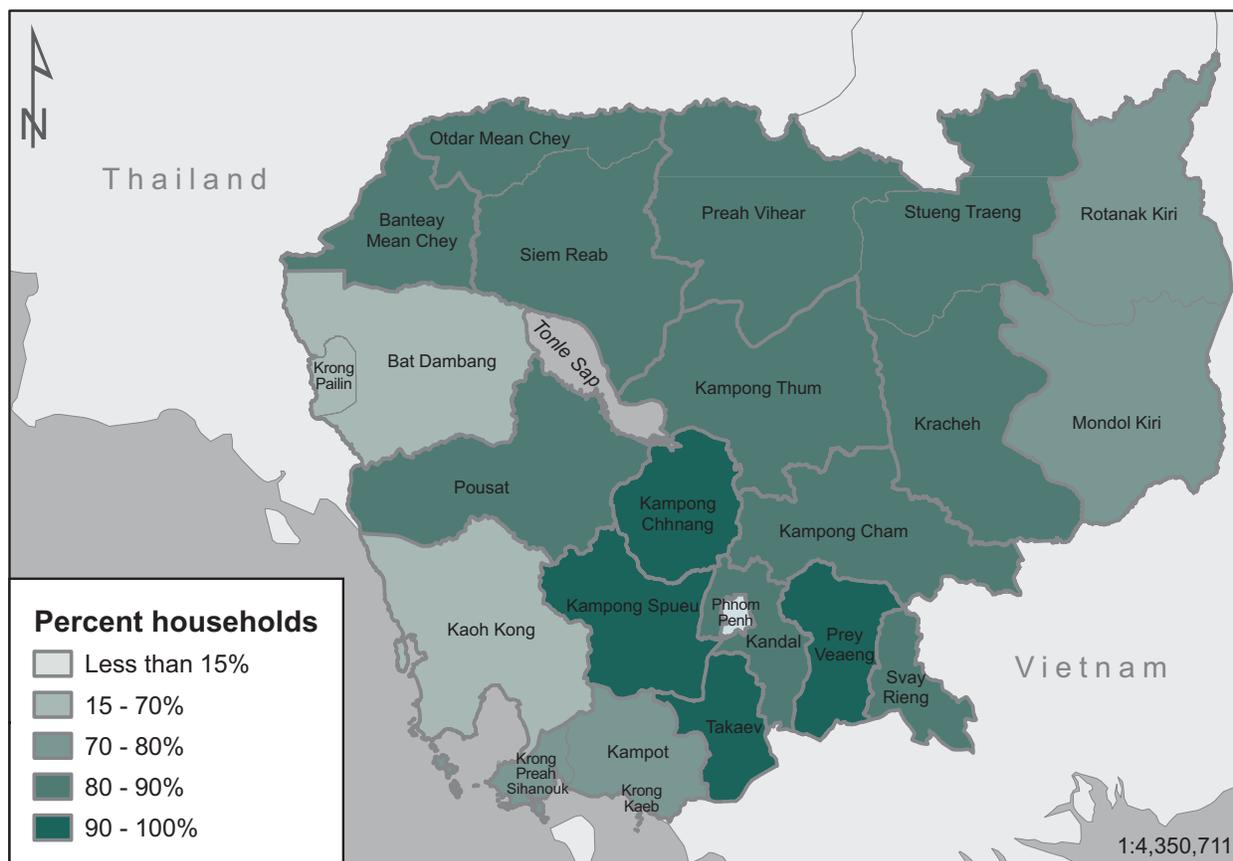
## Figures II-1 and II-2. Households Using Water From Unprotected Sources, Cambodia DHS, 2000



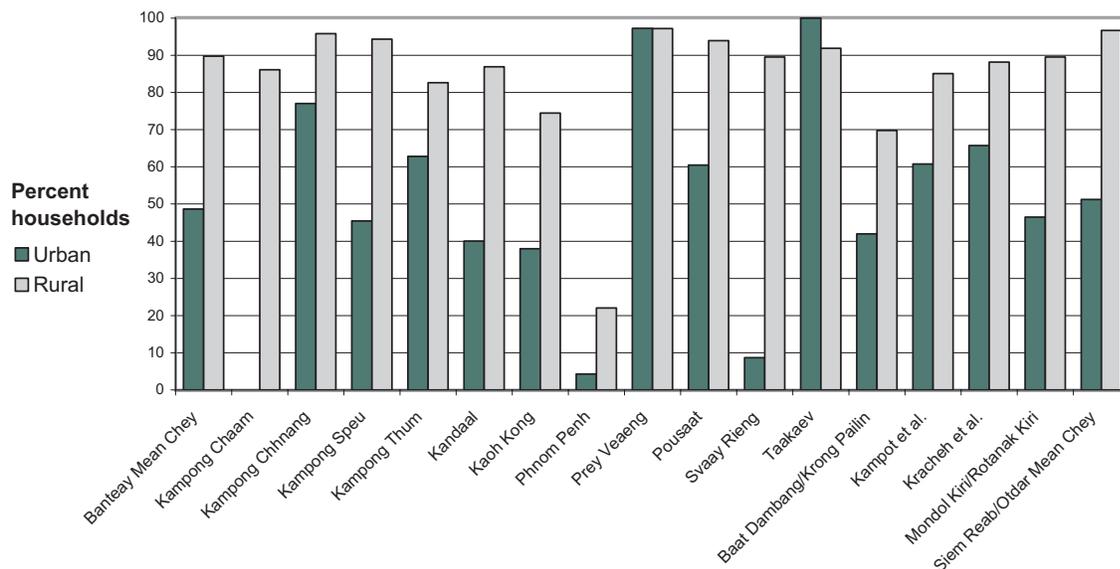
**Figure II-3. Households Using Unprotected Water by Urban-Rural Status, Cambodia DHS 2000**



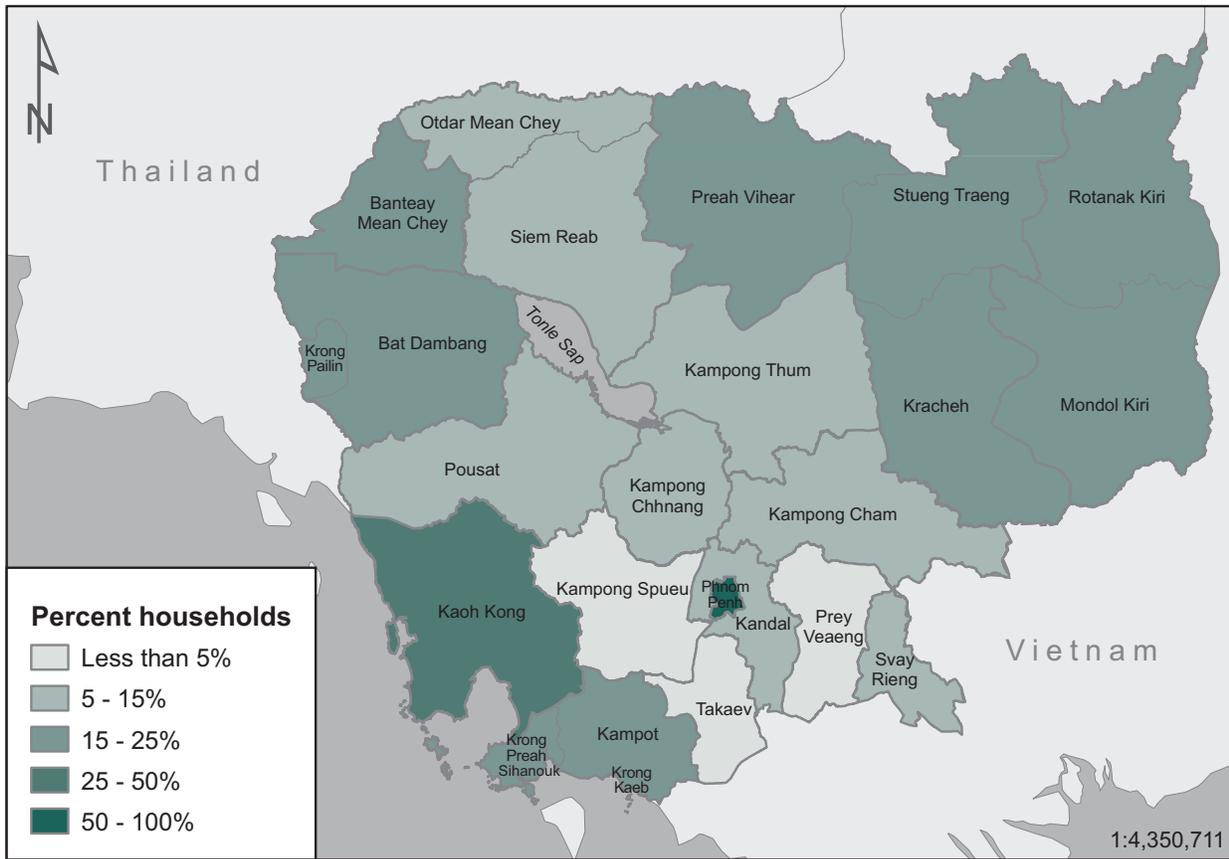
**Figure II-4. Households With No Toilet Facility, Cambodia DHS, 2000**



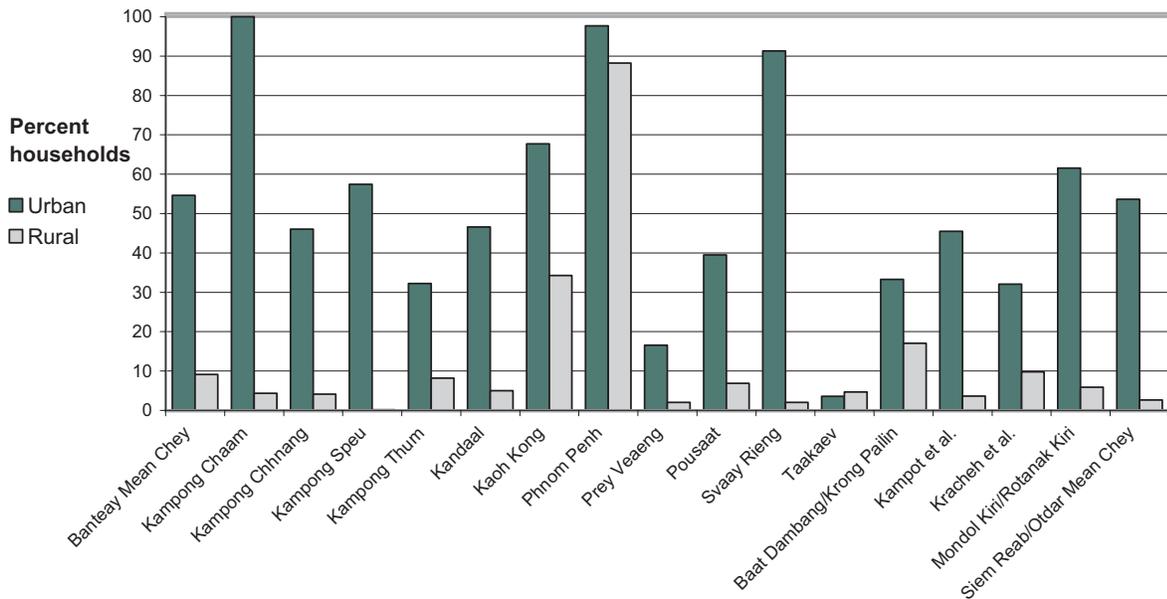
**Figure II-5. Households with No Toilet Facilities by Region and Urban-Rural Status**



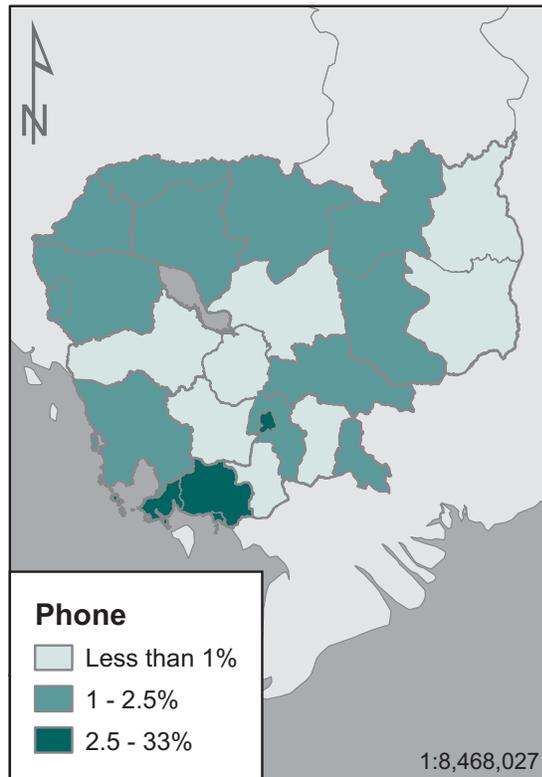
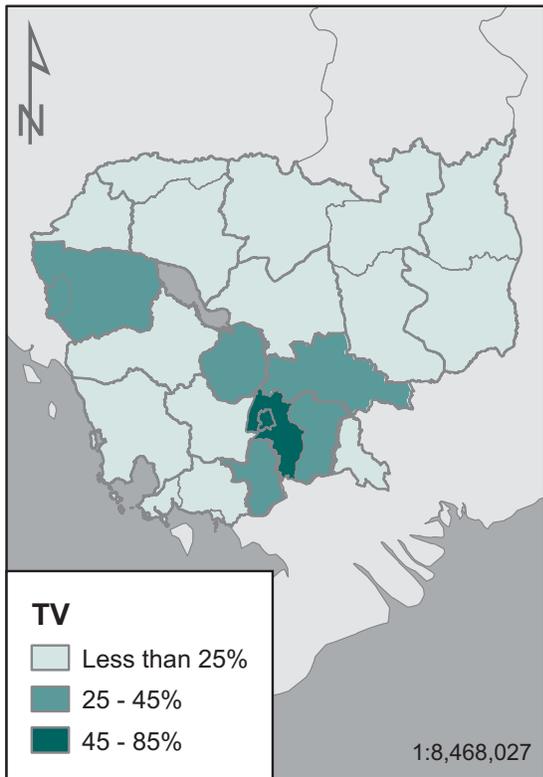
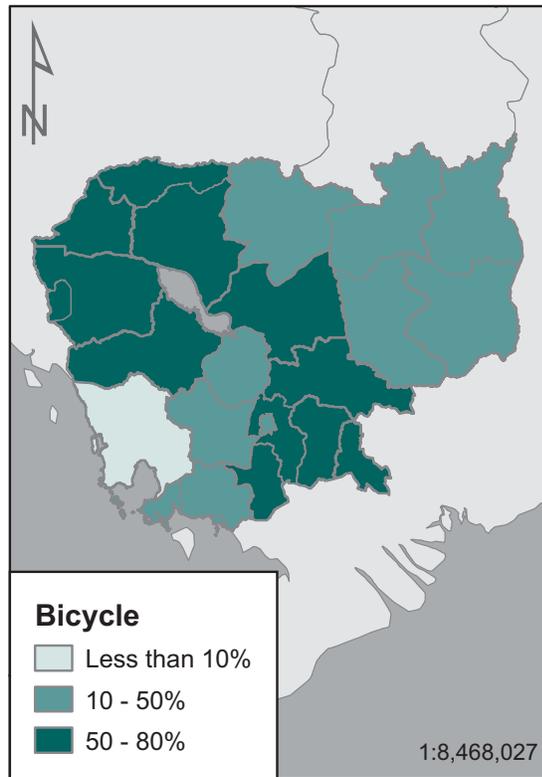
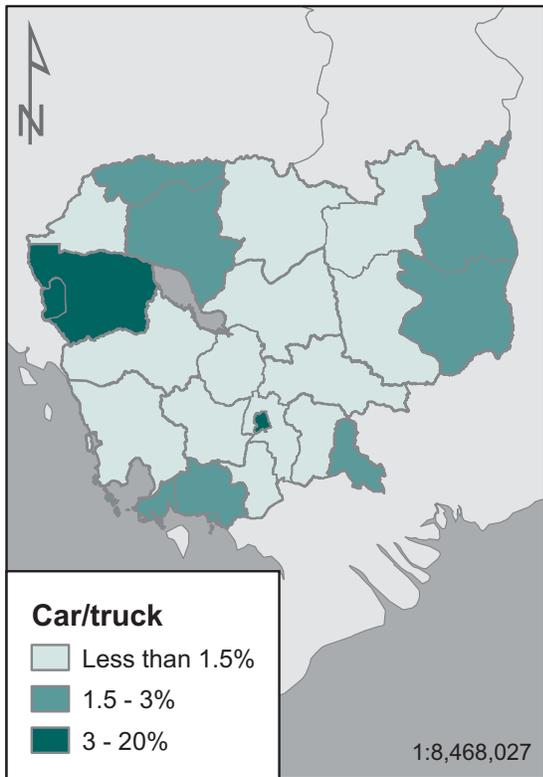
**Figure II-6. Households with Electricity, Cambodia DHS, 2000**



**Figure II-7. Electricity by Region and Urban-Rural Residency**



**Figure II-8. Ownership of Selected Household Assets, Cambodia DHS, 2000**



### III. Characteristics of Women

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The DHS women’s questionnaire collected background information on women, including their educational attainment, employment, and exposure to media. Four of these indicators have been mapped to provide insight into regional differences in women’s background characteristics.

#### Education and Literacy

Figure III-1 and table III-1 describe educational attainment by region and urban-rural residency. The easternmost region of Cambodia, which includes the provinces of Mondol Kiri and Rotanak Kiri, has the highest percentage of women with no formal education, and 86% of rural women in this region have no formal education. Phnom Penh has the lowest percentage of women with no education (5% urban; 11% rural) and the highest percentage of women with secondary or higher education (57% urban; 37% rural).

Women with no education or primary education only were also asked questions gauging their literacy level. The distribution of education and literacy levels are quite similar, with the percent of women who are illiterate highest in Mondol Kiri/Rotanak Kiri and lowest in Phnom Penh.

#### Exposure to Mass Media

Women were asked about their exposure to three types of media: television, radio, and newspaper. Television was the most common type of media overall, with 56% of women nationwide reporting that they watched television at least once per week on average. Watching television was particularly common in Phnom Penh, where 89% of women watched television at least once per week on average. The exposure to television was lowest in the easternmost region of Mondol Kiri/Rotanak Kiri, where 16% of women reported watching television once per week. Nationally, radio was somewhat less common than television (46% of women listen once per week), and reading the newspaper was least common (12% of women read a newspaper once per week).

Overall, women in Phnom Penh were most likely to be exposed to all three types of media (35%), while women in Banteay Mean Chay and Pousat were least likely to be exposed to all three types of media (2.7 and 2.9%, respectively).

#### Employment

The majority of women in most regions are employed in full-time or seasonal occupations, and employment rates are higher among women in rural areas. (See figure III-4 and table III-3.) In Phnom Penh, most employed women work in year-round occupations, while in other areas of the country the majority of women work seasonally or occasionally.

#### Figures and Tables

- ◆ Figure III-1: Women With at Least Some Formal Education

Highest level of education attended, regardless of whether or not the level was completed. “Primary” refers to the first six years of education and secondary to the next six years. In this figure, the distribution of women with at least some formal education is mapped. (All women; n=15,351)

◆ Table III-1. Women’s Education by Region and Urban-Rural Residency

This tabulates women based on educational attendance at three levels (none, primary, secondary and higher), region, and urban or rural residence. (All women; n=15,351)

◆ Figure III-2. Percent Women Who Cannot Read

This figure represents women who were unable to read part of a sentence in a language familiar to them. (All women; n=15,351)

◆ Figure III-3. Exposure to Three Types of Mass Media per Week Among Women

This figure represents women who reported usually watching television, reading a newspaper, and listening to the radio at least once per week. (All women; n=15,351)

◆ Table III-2. Exposure to Three Types of Mass Media

Exposure to each of the three individual media types is tabulated by region and urban or rural residency. (All women; n=15,351)

◆ Figure III-4. Women Currently Employed

Currently employed women are women working at the time of the survey. (All women; n=15,351)

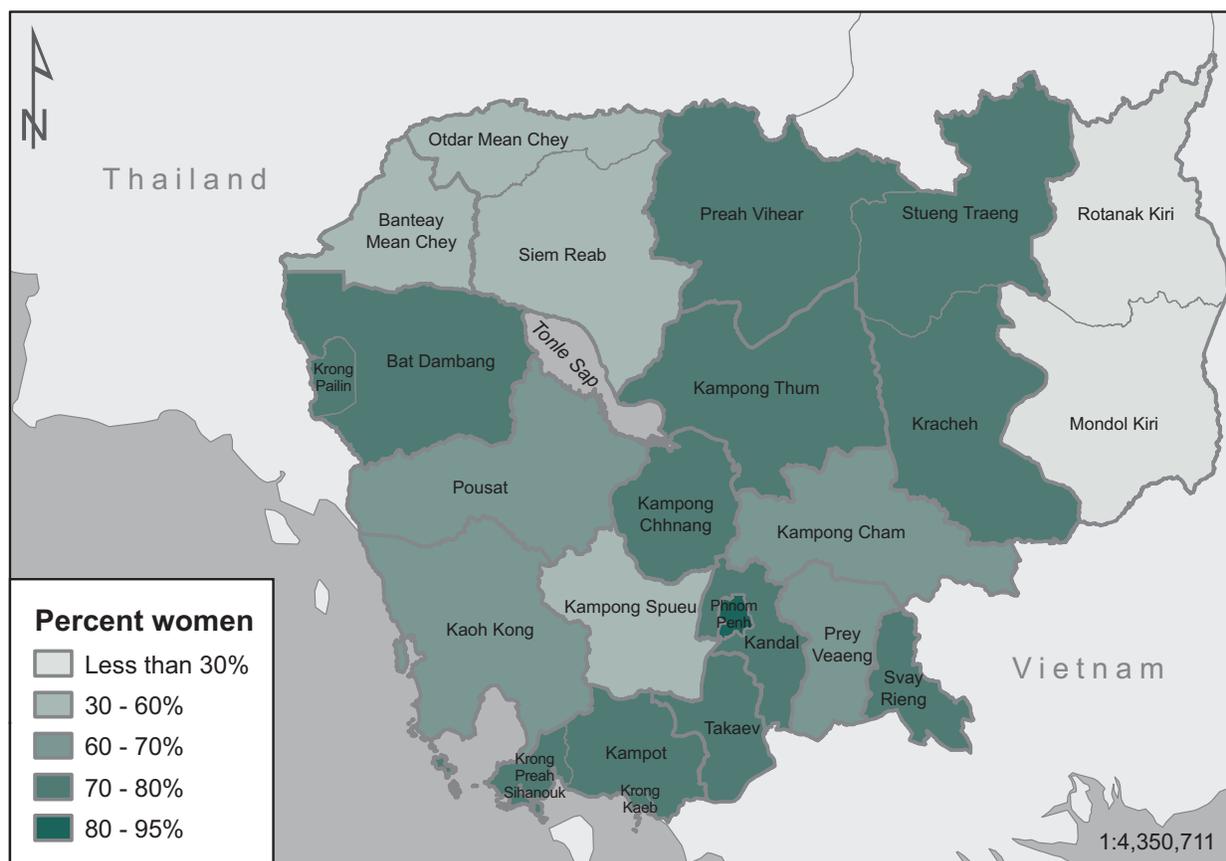
◆ Table III-3. Percent Women Employed By Region and Urban-Rural Residency

Currently employed women tabulated by region and urban-rural residency. (All women; n=15,351)

◆ Figure III-5. Seasonality of Women’s Employment

Figure represents women who are employed all year, seasonally, or occasionally, by region. (Currently employed women; total includes some missing values; n=11,420)

**Figure III-1. Women With at Least Some Formal Education, Cambodia DHS, 2000**



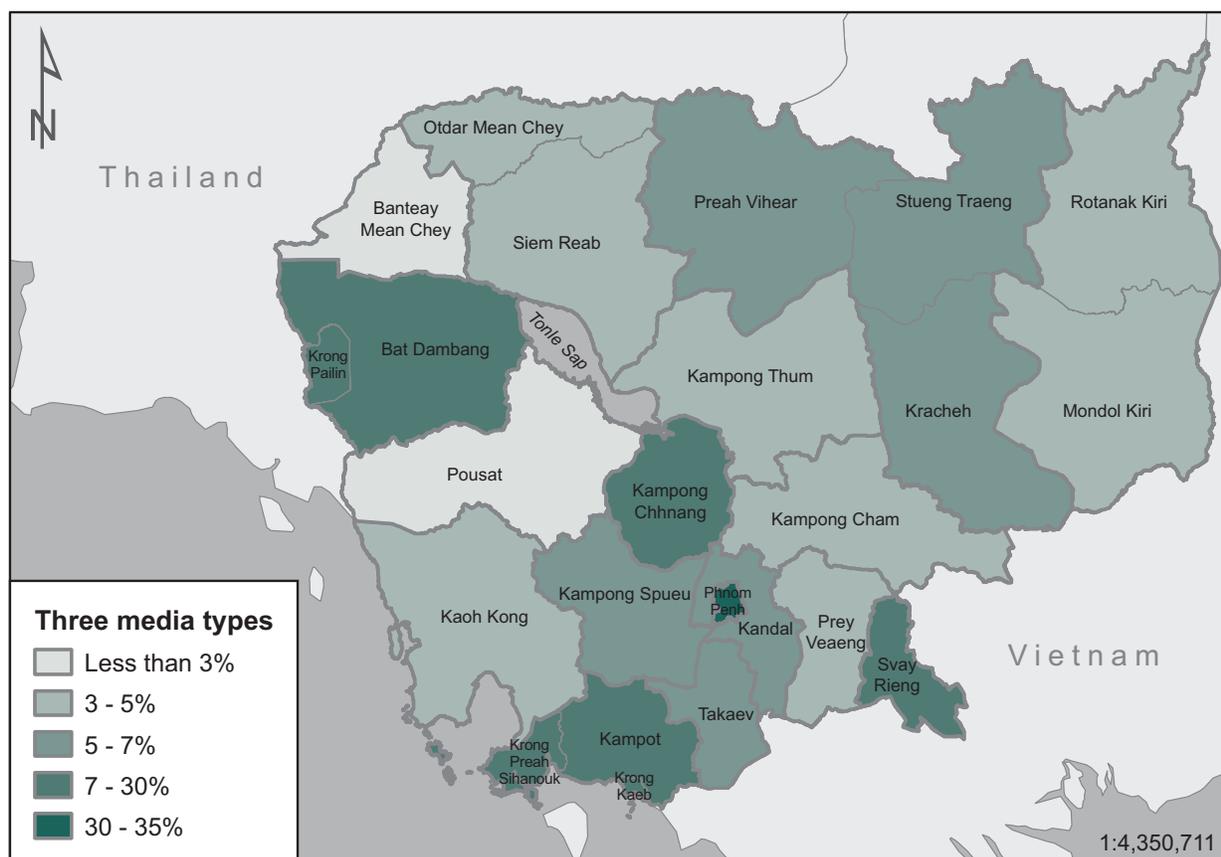
**Table III-1. Women's Education by Region and Urban-Rural Residency**

Regions	Urban			Rural		
	None	Primary	Secondary/ Higher	None	Primary	Secondary/ Higher
Banteay Mean Chey	20.55	46.57	32.88	48.88	40.96	10.17
Kampong Chaam	8.33	37.50	54.17	34.65	55.59	9.76
Kampong Chhnang	14.12	55.22	30.66	24.50	68.08	7.42
Kampong Speu	17.77	53.23	29.00	48.33	44.72	6.95
Kampong Thum	16.55	56.39	27.06	26.24	64.58	9.18
Kandaal	21.68	46.69	31.63	23.40	62.57	14.03
Kaoh Kong	20.65	59.29	20.06	45.84	48.74	5.41
Phnom Penh	5.31	37.50	57.19	11.21	51.49	37.30
Prey Veang	23.54	67.56	8.90	35.42	57.07	7.51
Pousaat	26.48	50.68	22.84	33.31	57.27	9.42
Svaay Rieng	12.12	42.42	45.45	24.61	64.09	11.30
Taakaev	18.88	51.34	29.78	19.90	62.53	17.57
Baat Dambang/Krong Pailin	20.12	46.18	33.70	22.15	57.79	20.06
Kampot/Krong Kaeb/Krong Preah Sihanouk	29.66	49.65	20.68	19.15	66.22	14.63
Kracheh/Preah Vihear/Stung Traeng	15.06	56.10	28.84	29.23	59.32	11.45
Mondol Kiri/Rotanak Kiri	37.82	38.11	24.08	86.30	12.92	0.78
Siem Reab/Otdar Mean Chey	19.33	48.39	32.28	53.97	40.91	5.13
<b>Total</b>	<b>15.43</b>	<b>45.68</b>	<b>38.90</b>	<b>30.98</b>	<b>56.45</b>	<b>12.56</b>

**Figure III-2. Percent Women Who Cannot Read, Cambodia DHS, 2000**



**Figure III-3. Exposure to Three Types of Media per Week Among Women, Cambodia DHS, 2000**

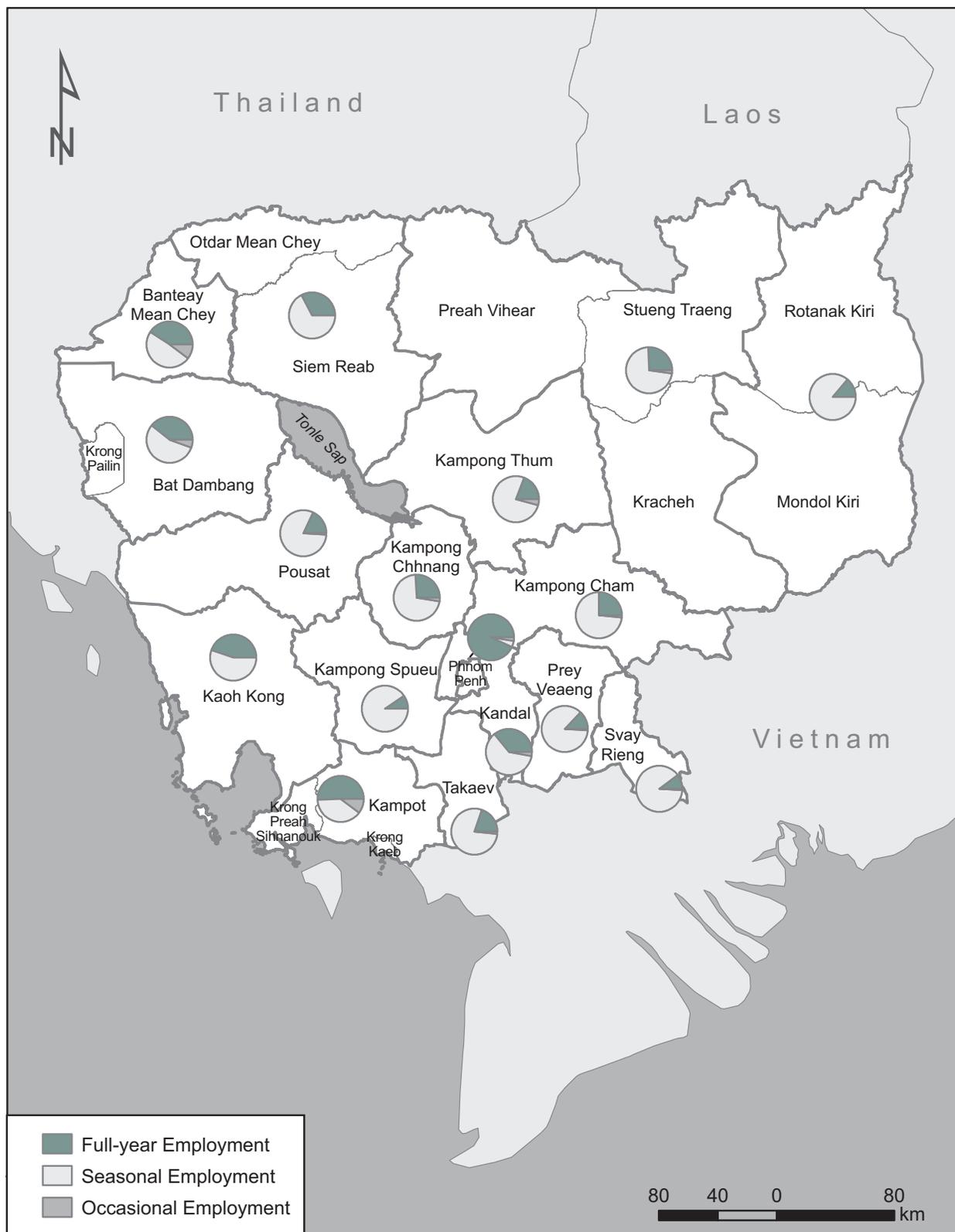


**Table III-3. Exposure to Media by Type**

Region	Newspaper	TV	Radio
Banteay Mean Chey	7.91	31.88	21.54
Kampong Chaam	7.29	52.39	45.00
Kampong Chhnang	9.89	64.49	53.62
Kampong Speu	8.08	56.06	32.99
Kampong Thum	9.87	22.64	41.63
Kandaal	7.41	60.98	36.60
Kaoh Kong	11.11	33.15	21.12
Phnom Penh	40.61	89.25	60.36
Prey Veang	6.01	65.51	45.82
Pousaat	7.24	49.60	30.87
Svaay Rieng	15.24	40.03	55.08
Taakaev	6.71	77.47	69.24
Baat Dambang/Krong Pailin	11.37	63.17	56.89
Kampot/Krong Kaeb/Krong Preah Sihanouk	14.19	53.79	54.87
Kracheh/Preah Vihear/Stung Traeng	11.44	21.81	28.96
Mondol Kiri/Rotanak Kiri	8.38	15.68	12.55
Siem Reab/Otdar Mean Chey	6.21	44.85	38.15
<b>Total</b>	<b>12.27</b>	<b>56.30</b>	<b>46.14</b>



**Figure III-5. Seasonality of Women's Employment, Cambodia DHS, 2000**





## IV. Family Planning, Maternal and Child Health, and Early Childhood Mortality

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The DHS women’s questionnaire also collected information on a range of health topics, including family planning and contraception, antenatal and delivery care, and care for childhood diseases and vaccinations. A limited selection of indicators is discussed below: current use of contraception, antenatal care and place of delivery, and childhood vaccinations.

### Contraception

Figure IV-1 illustrates regional differences in current use of modern contraception methods among married women. Use of modern contraception is highest in Bat Dambang/Krong Pailin (29.0%), Banteay Mean Chay (28.9%), and Phnom Penh (27.4%), and is lowest in Mondol Kiri/Rotanak Kiri (9.2%).

### Antenatal and Delivery Care

Figure IV-2 illustrates the percent distribution of mothers by the type of antenatal care received for their last pregnancy. Nationally, around two-fifths (38%) of women received antenatal care from a traditional or medical provider. In some regions, over three-quarters of women received no antenatal care: Mondol Kiri/Rotanak Kiri had the highest percentage of women who received no antenatal care, at 80.5%, followed by Prey Vaeng at 79.4%. Phnom Penh was the only region in which the majority of women (84%) received antenatal care from a medical provider, such as a doctor, nurse, or midwife.

The pattern of delivery care is similar to that of antenatal care. The highest percentage of women living in Phnom Penh delivered at a medical facility (70.7%), while the lowest percentage delivered at a medical facility in Prey Vaeng (2.4%) and Otdar Mean Chay/Siem Raeb (1.9%).

### Infant and Child Mortality

Figure IV-4 maps infant and child mortality in Cambodia. Both infant (1q0) and child (4q1) mortality are particularly high in the easternmost region of Cambodia, and both are relatively low in Phnom Penh and the southwest regions of Kaoh Kong and Kampong Spueu. Infant mortality is also low in the north-central regions of Kracheh/Pireah Vihear/Stung Traeng and Kampong Thum. Table IV-2 presents a variety of statistics on early childhood mortality by region.

### Childhood Vaccinations

Figure IV-5 shows regional rates of two types of vaccinations: measles and BCG (anti-tuberculosis). Nationally, 77.3% of children aged 12-23 months received a BCG vaccination, and 55.4% of children received a measles vaccination. For both, vaccination rates are lowest in Kaoh Kong (BCG: 38.83%; measles: 26.60%), and higher in Taakev (BCG: 96.2%; measles: 74.1%) and Kandal (BCG: 91.4%; 62.2%).

## Figures and Tables

- ◆ Figure IV-1. Currently Married Women Using Modern Methods of Contraception

Current users only. (Currently married women; n=9,071)

- ◆ Figure IV-2. Antenatal Care Provider

(Women who gave birth in the five years preceding the survey; some missing values included in total; only most-qualified caregiver is included if multiple caregivers were specified; n=8,834)

- ◆ Figure IV-3. Percent Births in Public or Private Health Facilities

(Births in five years preceding survey; missing values included in total; n=8,834)

- ◆ Table IV-1. Urban-Rural Differences in Place of Delivery

(Births in five years preceding survey; missing values included in total; n=8,834)

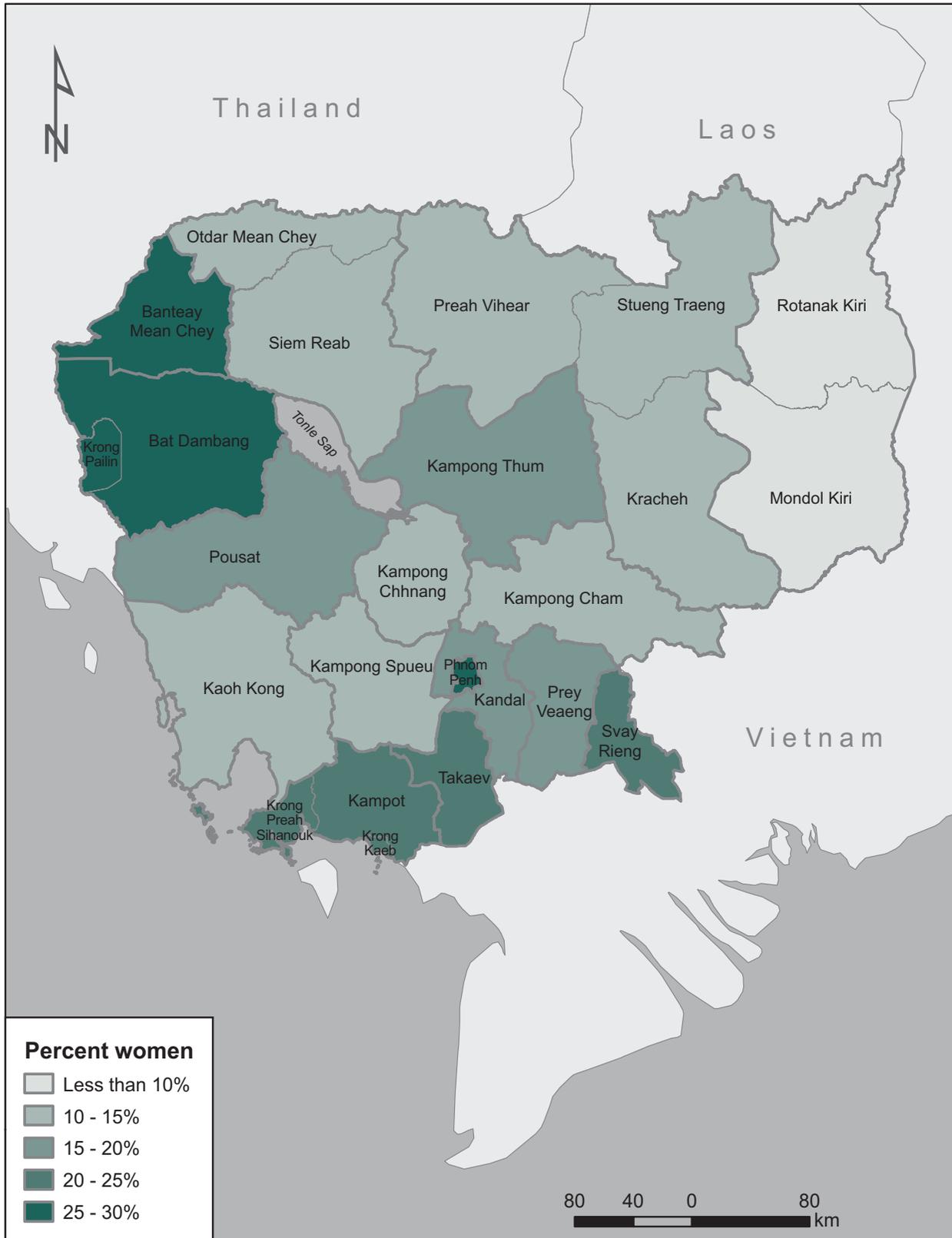
- ◆ Figure IV-4. Infant and Child Mortality in Ten Years Preceding Survey

- ◆ Table IV-2. Early Childhood Mortality by Geographic Area and Urban Residency

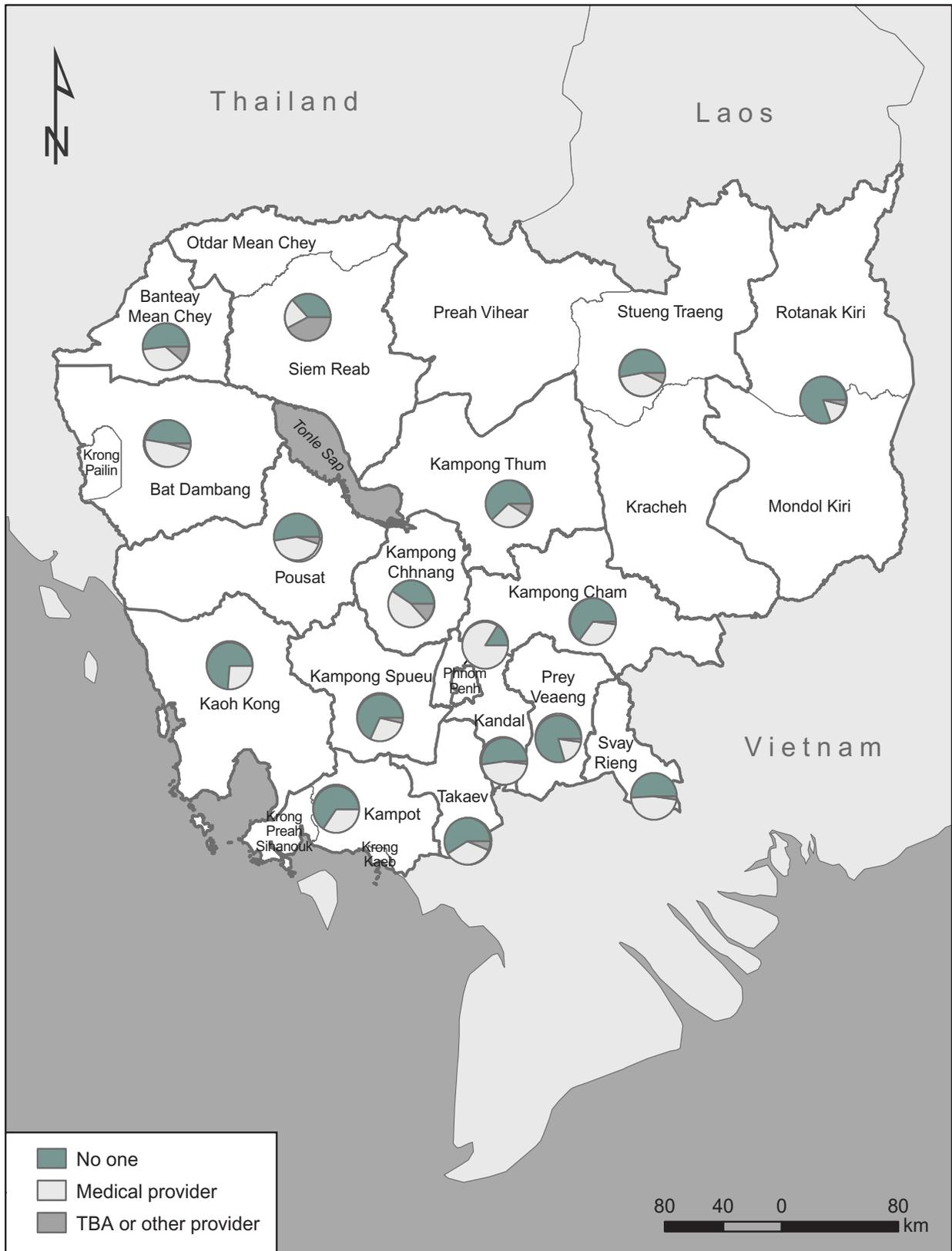
- ◆ Figure IV-5. Children Aged 12-23 Months Who Have Received Selected Vaccines

Vaccines presented include measles and BCG (anti-tuberculosis). (Children aged 12-23 months; n=1,329)

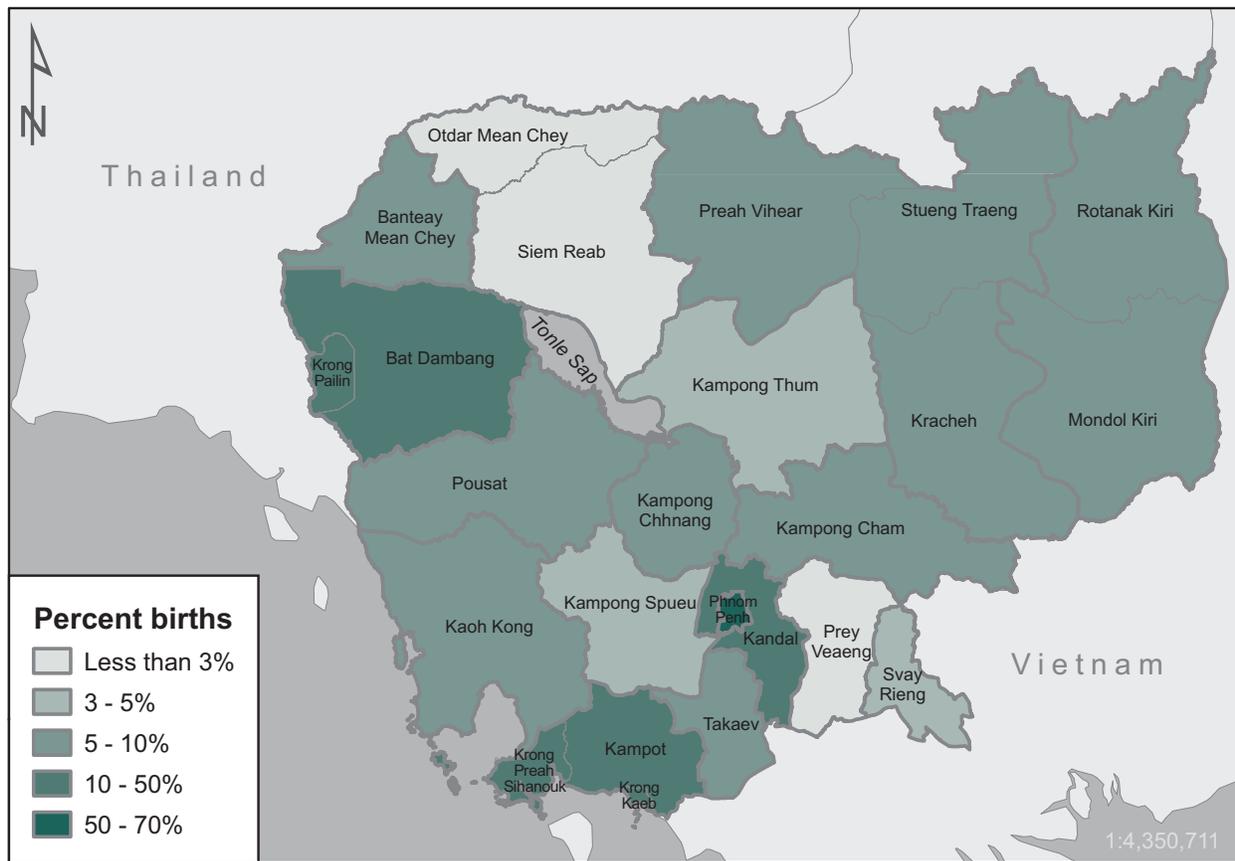
**Figure IV-1. Currently Married Women Using Modern Methods of Contraception, Cambodia DHS, 2000**



**Figure IV-2. Antenatal Care Provider, Cambodia DHS, 2000**



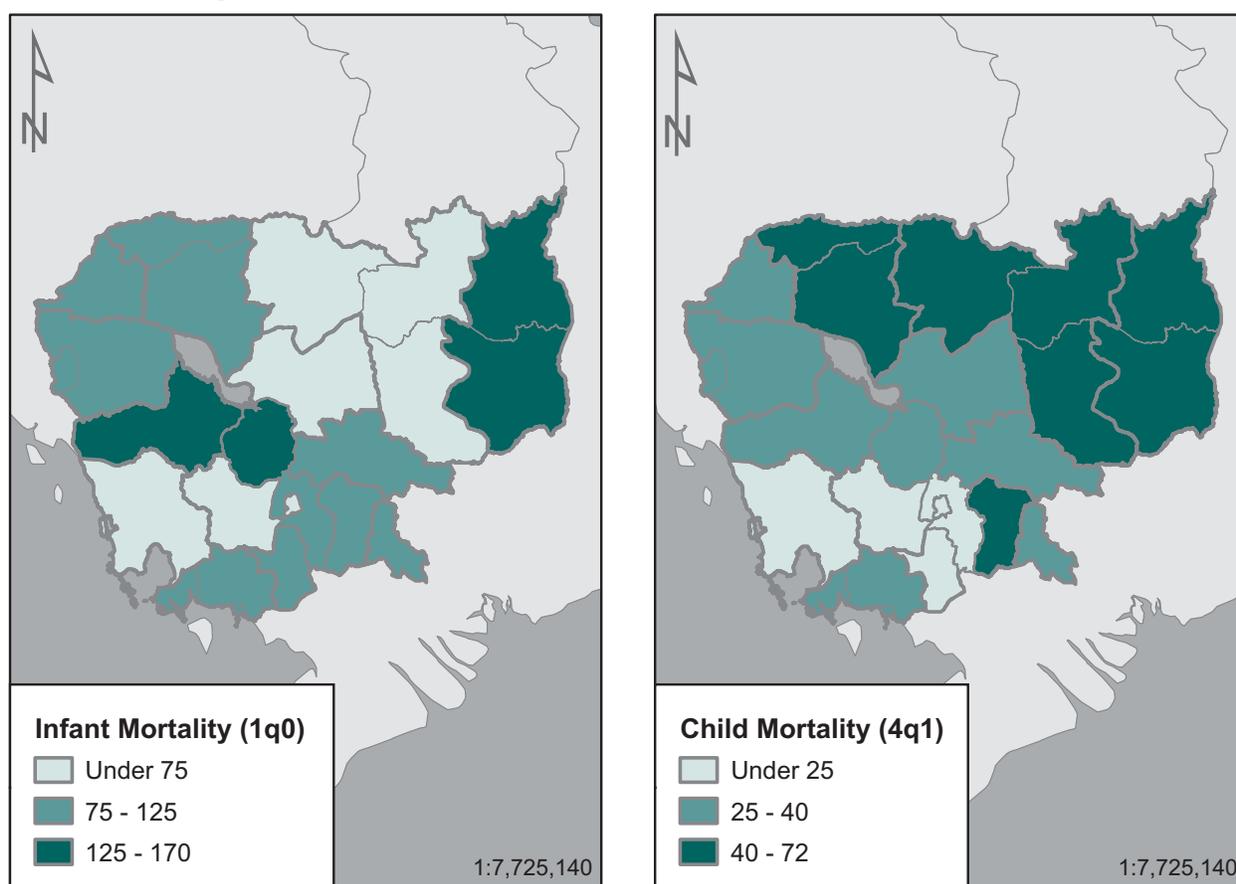
**Figure IV-3. Percent Births in Public or Private Health Facilities, Cambodia DHS, 2000**



**Table IV-1. Urban-Rural Differences in Place of Delivery**

Region	Urban			Rural		
	Home	Health Facility	Other	Home	Health Facility	Other
Banteay Mean Chey	81.23	18.77	0.00	93.57	3.84	0.78
Kampong Chaam	0.00	100.00	0.00	92.80	3.59	0.85
Kampong Chhnang	58.82	41.18	0.00	97.03	1.97	0.00
Kampong Speu	62.52	37.48	0.00	97.14	2.87	0.00
Kampong Thum	90.57	8.08	0.00	97.73	2.28	0.00
Kandaal	64.36	35.64	0.00	85.18	12.56	0.24
Kaoh Kong	80.27	11.54	1.12	92.75	5.13	0.15
Phnom Penh	11.51	88.50	0.00	46.21	44.23	8.36
Prey Veang	82.16	17.84	0.00	98.39	1.35	0.00
Pousaat	82.28	17.72	0.00	94.23	4.35	0.19
Svaay Rieng	61.54	38.46	0.00	94.41	1.94	0.00
Taakaev	70.56	29.44	0.00	91.20	7.82	0.39
Baat Dambang/Krong Pailin	78.77	21.23	0.00	91.74	7.58	0.23
Kampot/Krong Kaeb/Krong Preah Sihanouk	82.37	17.63	0.00	93.53	6.12	0.35
Kracheh/Preah Vihear/Stung Traeng	84.03	15.97	0.00	97.30	1.87	0.00
Mondol Kiri/Rotanak Kiri	71.60	27.40	0.00	98.17	1.53	0.00
Siem Reab/Otdar Mean Chey	91.09	8.91	0.00	98.23	0.40	0.20
<b>Total</b>	<b>65.87</b>	<b>33.89</b>	<b>0.02</b>	<b>92.47</b>	<b>5.73</b>	<b>0.54</b>

**Figure IV-4. Infant and Child Mortality in Ten Years Preceding Survey, Cambodia DHS, 2000**



**Table IV-2. Early Childhood Mortality by Region and Urban-Rural Residency**

Region	Neonatal Mortality (NN)	Post-Neonatal Mortality (PNN)	Infant Mortality (1q0)	Child Mortality (4q1)	Under-five Mortality (5q0)
Banteay Mean Chey	31.4	46.8	78.2	32.0	107.7
Kampong Cham	38.7	69.2	107.9	29.0	133.8
Kampong Chhnang	41.9	87.4	129.3	35.3	160.0
Kampong Spueu	26.4	41.9	68.3	22.7	89.5
Kampong Thum	38.8	25.7	64.5	36.7	98.8
Kandal	38.8	50.3	89.2	20.9	108.2
Kaoh Kong	31.5	39.2	70.7	21.6	90.8
Phnom Penh	14.0	23.6	37.6	12.6	49.7
Prey Veaeng	52.4	58.7	111.0	45.3	151.3
Pousat	51.0	88.4	139.4	38.7	172.7
Svay Rieng	56.2	45.8	102.0	30.7	129.6
Takaev	38.4	57.7	96.0	24.9	118.5
Bat Dambang/ Krong Pailin	38.3	59.7	98.0	31.7	126.6
Kampot/Krong Kaeb/ Krong Preah Sihanouk	42.0	58.4	100.4	26.7	124.4
Preah Vihear/Stueng Traeng/Kracheh	25.9	45.4	71.3	51.9	119.5
Mondol Kiri/ Rotanak Kiri	79.8	90.1	169.8	71.6	229.3
Siem Reab/Otdar Mean Chey	44.6	33.3	77.9	50.6	124.6
<b>Total</b>	<b>39.1</b>	<b>53.6</b>	<b>92.7</b>	<b>31.9</b>	<b>121.6</b>

**Figure IV-5. Children aged 12-23 months who have received selected vaccines, Cambodia DHS, 2000**

