



Project on monitoring the MDG targets 10 and  
11 in 17 towns in Laos with Department of  
Statistics

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# Accessing to the water Supply and Sanitation

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## I. Introduction

The water is one of four basic factors and necessary to livelihood of human in the world and also the sanitation is very important and necessary to ensure good health of population and longevity. Therefore, there are many organizations in the world pay attention on this issue, particularly UN-HABITAT has an agreement to cooperate with sub-Mekong Region countries and establish a project called Mekong Region Water and sanitation initiative (MEKWATSAN) of the governments of Lao P.D.R, the Royal Government of Cambodia, the People's Republic of China (Yunnan Province) and the Socialist Republic of Vietnam, whose overall objectives regarding to water and sanitation service, demand on the provision of adequate water and universal service on sanitation supported by the UN-HABITAT. Government of Lao P.D.R has adopted improving for water supply and sanitation as strategy or high priority sectors to develop infrastructure and poverty eradication. The government's national goal set for 2020 is to provide 24 hour per day in accessing to safe water for 80 percent of each urban population and achieve the Millennium Development Goal (MDG) for water and sanitation, especially for reducing poverty of population.

### ●Objective

Data collection an accessing to safe water, using sanitation and protect environmental which will be used to making plan for 25 cities under the support of UN-Habitat. The main purpose is to monitoring the achievement of Millennium Development Goal (MDG) particular goal 7, targets 10 and 11 regarding to the use of water and sanitation. Besides it is to compile data for decision makers and solving the issues on the use of water, sanitation, contaminated water and garbage in small towns to ensure the better supplying and good services.

## **II. Survey methodology**

### **1. Criterias for selection of supervisor and enumerators**

In order to efficiently implementation of the water supply and sanitation survey. The training for supervisors and enumerators were needed to be done wich was to train them how to collect data and how to fill information into the forms. The selection of supervisors and enumerators was done by provincial planning & Investment division and water utility officers by using LSB's criterias, wich are as follows:

#### **●Criterias for supervisor selection:**

- The field supervisors for the survey should be provincial statistical staff who had experience on participate in the survey before at least 3 surveys.

#### **● Responsibilities of supervisors:**

1. Coordinate with Lao Statistic Bureau and Department of planning & investment.
2. Monitor and provide technical assistant to enumerators.
3. Help the enumerators to solve the problems that might happen during the survey period.
4. Summarise and report about the survey operation to Lao Statistic Bureau.
5. Send all survey documents to LSB after the field work.

#### **●Criterias for enumerators' selection:**

1. Participate in training for enumerators at central level.
2. Check consistency of data in the questionairs.
3. After field work enumerators have to submit all questionairs that were used to interview to the Provincial Planning & Investment Division.

#### **●Responsibilities of enumerators during the survey.**

1. Interview all sample households by using the correct questionairs.
2. Check questionairs after completed the interview.

3. When there is a problem in the questionnaires, enumerators must contact to the sample household and go back to do an interview again.

**•Responsibilities of enumerators after the survey:**

1. Check all information in the questionnaires that were used for interview and then send all the questionnaires to supervisors.

2. Report on problems that happened during the survey to the supervisors.

All criterias that were used to select supervisors and enumerators based on standard criterias of LSB which are used for all surveys.

## **2. Sampling selection**

The sampling selection for Water and Sanitation Survey base on the UN-HABITAT's target area of the project, which consist of 200 villages in 25 districts of 14 provinces namely: Luangnamtha province, Luangprabang, Xayabury, Omdomxay, Borkeo, Hauptant, Xiengkhuang, Vientiane province, Bolikhamxay, Khammuan, Savanaket, Saravan, Sekong and Autapeu. In each target village sample households were selected 10 percent of total households. The objective of the survey is to collect general information of the target villages by interview the head of villages, in the sample household the interview was done thru head of household, women age 15-60 years old, children under 5 years old and homeless people.

### **2.1. Sample household selection method.**

Selection of sample household of the survey on accessing to the water supply and sanitation survey is to make list of the total number of households in the village and then divide to required sample household.

**•Procedures of sample household selection**

1. Step 1: Conduct household listing by working with head of village.

2. Step 2: Selected 10% percent of total households in each village.

3. Step 3: After that selected 80% percent of none-poor household from the 10% of the total sample households.

4. Step 4: Selected 20% percent for poor households from the 10% of the total

sample households.

Selection of sampling must to follow these steps:

Find out interval:  $l=N/n$

$N$ = Totality of households at villages (poor and none-poor household)

$n$ = Number of required samples household.

- If the result of division is fraction then keep one digit.

For example: Total of households 67 of which none-poor households is 56 and poor households is 11, first select total sample households 10% of total households in village, which calculation as:  $(67 \times 10)/100= 6,7$  households, therefore, number of sample households is 7.

• After that select 80% of none-poor households from 7 households, as  $(7 \times 80)/100= 5,6$  households, 6 non-poor sample households. To select non-poor sample households is as follows:

1. To get total of none-poor household divide to 6 as  $56/6= 9,3$  so the 9,3 is interval and then we make 9 coupons to select the first sample household.

- Step 1: Put 9 coupons into a box and take the Box lift up over eyes then ask representative from village chiefs to draw one coupon , what number he get that is mean that household

number will be the first sample household (Assuming that No 2).

- Step 2: The first sample household is No2 as  $2+9,3= 11,3$  household No 11 will be second sample household.

- Step 3:  $11,3+9,3= 20,6$  that mean household number 21 will be the third sample household.

- Step 4:  $20,6+9,3= 29,9$  it the fourth sample household is number 30.

- Step 5:  $29,9+9,3 = 39,2$  it the fifth sample household is number 39.

We will do like this until reach to 6 households.

2. Selection 20% of poor householdss from 7 households which calculate as:  $(7 \times 20)/100= 1,4$  so get only 1 sample household, so:

we make 11 coupons to select the poor household.

Step 1: Put the 11 coupons into a box and take the Box lift up over eyes and then ask one of representative from village chiefs to draw one coupon out will be the process of selection will continue as above mentioned. Whatever, number he got that will be the number of poor household to be a poor sample household for survey.

#### **Remark:**

1. In case number of poor household within village less than the number of sample households need them interview the entire household.

For example: Total of households 431 households within 5 poor household.

- To calculate 10% of the entirety households, equal  $(431 \times 10)/100 = 43,1$  so would get 43 households. And then calculate 80% of none-poor households,  $(43 \times 80)/100= 34,4$  were get 34 hhs.

- Then calculate 20% of all poor household,  $(43 \times 20)/100 = 8,6$  were get 9 hhs. But if actual total of poor household in the village only 5 households, therefore, the 5 households must to entire interview.

In this sample case the remaining 4 hhs would be add to none-poor households  $(34 + 4) = 38$  as none-poor households.

2. In case there is no poor household at village just follow regular calculation, no need to calculate 20% of poor household, just calculate 10% of total households.

### **III. Village information**

The total number of target villages of project was 197 villages, from which in can be seen that 195 villages have electricity, 87 villages have water supplies, there were market in 35 villages and 166 villages have school. If look by provinces and districts it can be seen that there are many villages in Borikhamxay province have electricity such as in Paksan district there are about 22 villages have electricity and follow by Savannakhet province where 17 villages in Kaisone district have electricity.

In the comparison between provinces, each province has different condition. In Luangprabang many villages have water supply especially in Narn district and Kaisone district in Savannakhet where each of them has 13 villages use water supply and follow by Houn district in Oudomxay, where there are 10 villages use water supply. The higher numbers of villages with market are found in Koun district in Xiengkouang province which are about 6 villages, and follow by Houn district in Oudomxay province (3 villages with market). Village with school are found to have more in Paksan district in Borikhamxay province, which are about 20 villages and follow by Kaisone district in Savannakhet province where there are 17 villages have school.

#### **•The use of water and Sanitation**

Bottle water is the main drinking water source in 86 villages of 197 villages follow by unprotected spring which is used by 29 villages. For the main source of drinking water as pipe water is used by only 16 villages, see table 2.

Table 3 shows about the main source of water for using; which is use by 40 villages then followed by unprotected well which is used by 35 villages.



Regarding to insufficient of water supply, there are 41 villages insufficient water supply. According to the residence. Rural areas have an insufficient of water supply more than urban areas. There are 25 villages have insufficient water supply while only 16 villages in urban areas. If we look by provinces, the most insufficient of water supply found in Oudomxay Province about 9 villages and also in Borikhamxay Province see table 4.

Table 5 shows about the month when the insufficient of water supply occurred, the most difficult time is from January to May with 39 villages have little water. From June to October, there are 2 villages face an insufficient of water supply. From November to December no village face the shortfall of water supply. If look among provinces, 9 villages in Borikhamxay province face the shortfall of water supply between January and May, and there are 8 villages in Luangprabang Province have similar condition.

## **VI. Household information.**

Table 6 shows the average number of households which do not have sanitation is about 49 households per village. In urban areas, on average there are 47 households per one village do not have sanitation, 52 households per one village in rural areas do not have sanitation. It means that the rural areas have bigger average number of households that do not use sanitation. Among provinces, the number of Vilabury district in Savannakhet Province has 370 households without latrine and 146 households without latrine in Keooudom district Vientiane Province.

### **● The main source of drinking water**

Total number of households in this survey was 3,920 households of which there are 1,840 households get the main source of drinking water from the vendors or about 46.94 percents, 709 households use the piped water or about 18.09 percents, proportion of households which use other source of drinking water is less than one percent. Among provinces it can be seen that Vientiane province has a high percentage of households using drinking water from the vendors which is about 95.28 percent, and follow by Luangnamtha province constituted at 68.66 percent of total households in the province. Between urban and rural areas, urban areas have higher

percentage of households (59.11 percent) than in rural areas (39.82 percent) which using drinking water from vendors (see table 7).

Table 8 shows total number of villages in this survey which is 3,920 villages, the main source of water used by households is piped water, which is about 40 percent, and follows by dug well (31.89 percents). Between provinces, the main source of water used by households are the dug well. In Khammuane Province there is 81.29 percent of households use dug well which has higher proportion than other province. In urban areas the percentage of households (43.6 percent) using piped water is higher than rural areas (21.5 percents).

#### ● **Distance to the main source of water**

The average of time consumption from households to the main source of water is 1.64 minutes and the average of distance is 20.81 metres. For the poor households, the average of distance is quite high 45.97 metres and time consumption is 3.67 minutes. For non-poor households, the average of distance is 16.99 metres and average of time consumption is 1.32 minutes. As the results, it can be noted that poor households is far from water source and use more time to get to the main source of water, so poor households are not comfortable compared to non-poor households. Between provinces, Xayabury Province uses more time (7.64 minutes) to get water source and distance only 74.06 metres which may cause by difficult road. If we look for the distance, the farthest from poor households to main source of water is in Oudomxay Province is 89.87 metres but time used only 4.05 minutes. If we look between urban and rural, poor households in urban is far from the water source as the average of 48.00 metres and 3.56 minutes for the time used (see table 9).

#### ● **Main person collecting drinking water for the households**

From table 10 it can be seen that out of 806 households about 472 households or 58.56 percents were delivered drinking water by adult woman. Follow by 21.22 percents of total households have no specified person go to collect drinking water, and only 2.11 percents or 17 households where main person collecting water are male children under age 15. If we look among provinces, the highest percentage of households is in Attapeu province (82.86 percents)

where adult women are the main person collecting drinking water for the households. In Hoaphan Province about 81.82 percents of households have women age 15 and over are the main persons collecting drinking water for the households. Between urban and rural areas there are no different, in general women 15 and over are main person collecting drinking water for the households, which is constituted of 58 percents of total households in urban and rural areas.

● **The safety for women and children to the water source .**

The safety for women and children in 806 households is very safety by proportion is 88.09 percent of total households follow by 10.30 percent of household there is quite high risk to have accident for woman and children. For the risk of crime is lowest only 1.61 percent or 13 households. Among provinces, Luangnamtha, Oudomxay and Borkeo Province are similar about 100 percent of households are safe in accessing to water source for both women and children. Between urban and rural, the safetiness in these two areas is quite similar level which was reported about 88.09 percents of households. This figure seems to reveal that in both urban and rural have the safety for women and children in access to the water source.

● **Quantities of water used per month**

Table 12 shows about the average quantities of water used in a month in household, which is about 17.5 cubic metres and average payment for water utilization is Kip per month. The average quantity water use for non-poor households is 18.2 cubic metres and paid 45,149.8 kip per month. In poor households the average quantity of water used is 10.4 cubic metres and paid 26,153.2 kip per month. In urban non-poor households used water around 17.8 cubic metres and paid 47,446.6 kip per month, and poor households used water 10.5 cubic metres and paid 27,294.2 kip per month. In rural areas non-poor households used water 20 cubic metres and paid 34,620.1 kip per month, for poor households used water 8.5 cubic metres and paid 15,200 kip per month. From table 12 we can observe that the average quantity of water used for household in Savannakhet Province was higher (22.5 cubic metres) and paid 63,773 kip per month. In non-poor households used water 25.7 cubic metres and paid 64,528 kip per month, for poor households used water 10.5 cubic metres and paid 22,625 kip per month.

## ● Qualities of water

From table 13 it can be seen that the total number of household in the survey was 3,898 households of which 98 percent of households has a reported that the water is clear, while mentioned water is unclear and less than one percent said other thing. Besides that there were 22 households did not answer less than one percent of total households. Among urban and rural areas, in urban 98.44 percents told that water is clear, and 1.33 percent said water is unclear. In rural area 97 percent of households mentioned that water is clear and only 2 percent said water is unclear, All households in Khammuane province used clear water, then follow by Hoaphan province about 99 percent of households using clear water and the lowest percentage of households (87.8 percent) in Borkeo province used clear water.

Table 14 shows that most households told that water has chlorine smell (98.13 percent), less than two percent said water has bad smell and less than one percent said water has no smell, In urban 98.44 percents of households drank water with smells of chlorine, 1.33 percent drank bad smell water. In rural areas about 97.41 percents of households drank water with smell of chlorine; with bad smell was 1.92 percent. In Xayyabury Province nearly 100 percent of households drank water with smell of chlorine, and less than one percent drank bad smell water. For Luangprabang Province 98.92 percents of households drank water with smells of chlorine, and drank bad smell water 0.81 percent of households.

In general, table 15 reveals that the total number of households in the survey was 2,118 households to make water clean and safe to drink 87.49 percents of households boiled water and let water stand and settle was 2.93 percent of households, and water filter was 1.32 percents, used sieve water through a cloth 0.52 percent, add bleach/chlorine is 0.42 percent, used solar disinfection is only 0.09 percent, used other method was 5.76 percents and didn't know was 0.14 percent of total households. In urban most of households (92.29 percents) boiled water before drink, used water filter was 1.66 percent, let water stand and settle was 1.66 percent. In rural 78.39 percents of households boiled water for drinking, let water stand and settle was 5.34 percent. Bokeo province households (98.36 percents) boiled water for drinking and using water filter was only 1.64 percent, In Khammuan Province 49.52 percents of households boiled water

for drinking and used other method 27.62 percent. According to above data we can say that the command method used to make water safely to drink is boiling.

### ● **Using of sanitation**

Table 16 shows that there are 83.17 percent of households used latrines, 16.83 percents did not use latrine and only 0.56 percent not answers. About 76 percent of non poor household used latrine and 11.13 percent did not use latrine. From the survey only 7.59 percent of households used latrine and did not use only 5.70 percents. Around 88 percent of households in rural use latrine and 11.7 percent did not use, in urban areas 79.74 percent of non poor households used latrine and only 8.56 percent of poor households used latrine. In rural areas 71.62 percent of households use latrine and 28 percent did not use latrine, in rural area 66.19 percent of non poor households used latrine and only 5.43 percent of poor households used latrine. From table 16 it can be noted that Vientiane Province had highest percentage of households (99.72 percent) used latrine, then follow by Hoaphan Province where about 99.02 percent of households use latrine and Khammuane Province had the lowest percentage of households (45.61 percent) used latrine.

### ● **The type of sanitation.**

Table 17 shows that large number of households (80.6 percent) used flush to pit, then follow by 8.11 percent of households used the flush to somewhere else, Flush to septic tank has 4.81 percent, Pit latrine with slab was 2.84 percents, Pit latrine without slab/open pit was 1.73 percent, households had no facilities or bush/field was only 1.02 percent and other was 0.89 percent.

In urban households usually used the flush to pit 78.36 percent, used the flush to somewhere else 8.18 percents. In rural areas used the flush to pit was about 87 percent of households, used the flush to somewhere else was 7.8 percent. In Borikhamxay province households used the flus to pit was largest proportion (90.91 percent). In Hoaphan province households used the flush to somewhere was 36.63 percent. Oudomxay province households used pit latrine without slap/open pit was 19.74 percent. In Attapeu province used the flush to

septic tank was 13.54 percent of households. The percentage of households use bush/field was highest in Khammuanne (11.54 percent).

Table 18 shows that out of total number of households (3,242) 88 percent was headed by men and 12 percent was headed by women. Households headed by men (91 percents) used the pit latrine with slap and households headed by women used the pit latrine with slap was 91.3 percent. The flush to septic tank is the type of latrine that was used by 85.2 percent of households headed by men, while only 15 percent of households headed by women used. Households with no facilities was 90 percent headed by men and only 10 percent headed by women.

## **V. Information on children under 5 years old**

### **● Child's health and diarrhea**

In general the number of children age under 5 years old was 1,017 persons of which 112 children had diarrhea (7.38 percent). In urban there were 71 children who had diarrhea (6.98 percents). In rural had 41 children with diarrhea (8.2 percent). According to the type of households, it shows that there were 1,301 children live in non-poor households of which 90 children had diarrhea (7 percent). In poor households there were 216 children of which 22 children (10.19 percent) had diarrhea. If we look at the age, 1 year old children were 278 persons and from them 40 children had diarrhea (14.39 percent). For 2 years old children there were 344 persons and 22 of them had diarrhea (6.4 percent). See table 19.

Table 20 shows that out of 112 diarrhea children, 74 percent of them drank a lot of water when they had diarrhea, drank a little of water or did not drink was 15.17 percent and had normal drink 10.71 percent. In urban there were 71 diarrhea children and most of them drank a lot of water (69 percent), drank a little of water or did not drink was 15 percent. In rural areas there were 41 children with diarrhea, 69 percent of them drank a lot of water and 15 percent drank a little of water or did not drink. According to the type of households, the poor households had 90 children with diarrhea and 71.11 percent drinking a lot of water and 17 percent drank a little of water or did not drink. For non poor households there were 22 children with diarrhea, 86.36 percent of them drank a lot of water and 9 percent drank a little of water or did not drink.

Regarding to age of children, there were 40 children at age one about 73 percent of them drank a lot of water, 18 percent drank a little of water or did not drink and 10 percent drank water normally. For 3 years old children (22 children) 64 percent of them drank a lot of water, 23 percent normally drank water and drank a little of water when they had diarrhea was only 14 percent.

Table 21 shows that in general, there were 1517 children of whom most of them (99.7 percent) had no malaria, there were less than one percent of children had malaria. Children who had been checked and treated were 5 children. Children who had medicine which was given by the doctor were 4 people which were 75 percent.

In rural areas there were 500 children. The percentage of children without malaria was 99.2 percent. For children who had been checked or treated were 4 children or 75 percent, 3 children were given some medicine by doctor. In urban areas, there were 1,017 children. The percent of children who didn't have malaria was quite high which was about 99.9 percent. There is only 1 child was checked up and did not have medicine from doctor.

With respect the type of households, in non-poor households there were 216 children of which 99.5 percent of them had no malaria. A child who was checked up and had received medicine from doctor is only one child. For the poor households there were 1,301 children, 99.7 percent of them had no malaria. There were 4 children were about 75 percent, and 3 children or 66.7 percent had been given medicines by doctor.

According to age of children, 248 children were under 1 year of age had never have malaria. There were 278 children were 1 year and 99.3 percent of them did not have malaria. There were only 2 children had malaria and had already been checked up by doctor. There were 343 children at age 3 years old children and about 99.7 percent of them had no malaria, only one person was checked up and received medicine from doctor. For 4 years old children there were 304 people and none of them had malaria.

#### ● **The disposal stools of children under five years old**

Table 22 shows that there were 860 children under 3 years old, about 27 percent of them the stools were buried follow by 24.65 percent throw outside the yard, 21.5 percent of children

used the toilet, thrown into the latrine was 18.95 percent, for not disposed of or left on the ground was only 4.06 percent.

There were 282 children live in rural areas, their stools was thrown outside the yard (39 percent), follow by 23 percent buried outside in the yard. In urban children there were 578 children, their stools (26 percent) were buried outside in the yard and 24.7 percent of them used the latrine.

In poor household there were 733 children, in general the stools of 26.19 percent of children was buried outside in the yard, 24.01 percent of children used the latrine. In non-poor household there were 127 children, and about 54.33 percent thrown the stools outside the yard and buried outside in the yard was 29.92 percent.

Children who were age at 2 years old made up 329 children, only 34 percent of them used the latrine and 28.88 percent buried their stools under ground. There were 268 children about 27 percent of them thrown stools inside the yard and 24.25 percent buried outside in the yard.

#### ● **The use of mosquito net**

Using mosquito net helps to prevent human from mosquitoes which cause malaria. In general there were 1,458 children in the survey. Out of them 96 percent used mosquito net, 2 percent did not using mosquito net and used other was only 1.45 percent. There are three types of mosquito nets first is normal mosquito net which was used by 39 percent of children, temporary liquid medicine mosquito net was 34.6 percent and the last one is the permanent liquid medicine mosquito net which was used by 23.9 percent of children.

Percent of rural children who used mosquito net was very high (98 percent) and used the temporary liquid medicine mosquito net (45.1 percent). Percent of urban children who used mosquito net was 95.18 percent and used the normal mosquito net was 43.28 percent.

Regarding to the type of households, percent of non-poor household where children used mosquito net was 97.68 percent and used the temporary liquid medicine mosquito net was 45.02 percent. For the poor household, 95 percent of children used mosquito net and used normal mosquito net was 40.33 percent.

With respect to age of children, it can be seen than 97 percent of one year old children used mosquito net and 42.4 percent used normal mosquito net. Among three years old children



97 percent of them used mosquito net and 37.3 percent used the temporary liquid medicine mosquito net. (See table 23)

## VI. Tables

**Table 1: The number of village with electricity, Piped water and market by**

**Province and district**

Province / District	Number of Village				Total number of Village
	Electricity	Piped water	Market	School	
<b>Total</b>	<b>195</b>	<b>87</b>	<b>34</b>	<b>166</b>	<b>197</b>
<b>Luangnamtha</b>					
<b>Sing</b>	<b>11</b>	<b>3</b>	<b>1</b>	<b>8</b>	<b>11</b>
<b>Oudomxay</b>					
<b>Namor</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>3</b>
<b>Houn</b>	<b>10</b>	<b>10</b>	<b>3</b>	<b>3</b>	<b>10</b>
<b>Borkeo</b>					
<b>Tonpherng</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>6</b>
<b>Luangprabang</b>					
<b>Xiengngern</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>6</b>
<b>Nan</b>	<b>13</b>	<b>13</b>	<b>2</b>	<b>11</b>	<b>13</b>
<b>Ngoi</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>7</b>
<b>Huaphan</b>					
<b>Samtai</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>5</b>
<b>Xayabury</b>					
<b>Xayyabury</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>3</b>
<b>Phieng</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>6</b>
<b>Kaenthao</b>	<b>8</b>	<b>8</b>	<b>2</b>	<b>5</b>	<b>8</b>
<b>Xiengkhuang</b>					
<b>Khoun</b>	<b>7</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>7</b>
<b>Vientian Province</b>					
<b>Keooudom</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>7</b>	<b>7</b>
<b>Sanakham</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>4</b>
<b>Viengkham</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>
<b>Borikhamxay</b>					
<b>Paksan</b>	<b>22</b>	<b>3</b>	<b>1</b>	<b>20</b>	<b>22</b>
<b>Khammuane</b>					
<b>Thakhaek</b>	<b>13</b>	<b>3</b>	<b>1</b>	<b>12</b>	<b>13</b>
<b>Savannakhet</b>					
<b>Kaisone</b>	<b>17</b>	<b>13</b>	<b>1</b>	<b>17</b>	<b>17</b>
<b>Outhoumphone</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Atsaphangthong</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>5</b>
<b>Phine</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>5</b>
<b>Vilaburyó</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>4</b>
<b>Saravane</b>					
<b>Khongsedon</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Sekong</b>					
<b>Laman</b>	<b>8</b>	<b>7</b>	<b>1</b>	<b>8</b>	<b>8</b>
<b>Thateng</b>	<b>9</b>	<b>8</b>	<b>1</b>	<b>9</b>	<b>10</b>
<b>Attapeu</b>					
<b>Samakhixay</b>	<b>10</b>	<b>9</b>	<b>2</b>	<b>8</b>	<b>10</b>

**Table 2: The number of villages by main source of drinking water, province and district**

Province / District	Main source of drinking water									
	Piped water	Piped into yard or plot	Tubewell/Borehole	Protected dug well	Unprotected dug well	Protected spring	Unprotected spring	Surface water	Bottle of water	Number of Village
<b>Total</b>	16	23	10	8	18	29	6	1	86	197
<b>Luangnamtha</b>										
<b>Sing</b>	2	0	1	0	2	0	0	0	6	11
<b>Oudomxay</b>										
<b>Namor</b>	0	0	0	0	1	1	0	0	1	3
<b>Houn</b>	0	9	0	0	0	0	0	0	1	10
<b>Borkeo</b>										
<b>Tonpheng</b>	0	0	1	1	0	2	1	0	1	6
<b>Luangprabang</b>										
<b>Xiengngern</b>	0	0	0	0	0	6	0	0	0	6
<b>Nan</b>	2	11	0	0	0	0	0	0	0	13
<b>Ngoi</b>	0	0	0	0	0	6	0	0	1	7
<b>Huaphan</b>										
<b>Samtai</b>	0	0	0	1	1	0	3	0	0	5
<b>Xayabury</b>										
<b>Xayyabury</b>	0	0	0	1	0	0	0	0	2	3
<b>Phieng</b>	0	0	1	1	0	2	0	0	2	6
<b>Kaenthao</b>	0	0	0	0	0	0	0	0	8	8
<b>Xiengkhuang</b>										
<b>Khoun</b>	0	0	0	2	0	5	0	0	0	7
<b>Vientiane Province</b>										
<b>Keooudom</b>	0	0	0	0	0	0	0	0	7	7
<b>Sanakham</b>	0	0	0	0	0	0	0	0	4	4
<b>Viengkham</b>	0	0	0	0	0	0	0	0	3	3
<b>Borikhamxay</b>										
<b>Paksan</b>	0	0	0	0	4	4	0	0	14	22
<b>Khammuane</b>										
<b>Thakhaek</b>	0	0	0	1	7	0	0	0	5	13
<b>Savannakhet</b>										
<b>Kaisone</b>	1	0	0	1	0	0	0	0	15	17
<b>Outhoumphone</b>	0	0	0	0	0	0	0	0	1	1
<b>Atsaphangthong</b>	0	0	1	0	0	0	1	0	3	5
<b>Phine</b>	0	0	3	0	0	0	0	0	2	5
<b>Vilabury</b>	0	0	0	0	3	0	1	0	0	4
<b>Saravane</b>										
<b>Khongsedon</b>	0	0	1	0	0	0	0	1	1	3
<b>Sekong</b>										
<b>Laman</b>	7	1	0	0	0	0	0	0	0	8
<b>Thateng</b>	3	1	2	0	0	3	0	0	1	10
<b>Attapeu</b>										
<b>Samakhixay</b>	1	1	0	0	0	0	0	0	8	10

**Table 3: The number of villages by main source of water Province and District**

Province / District	Main source of water										
	Piped water	Piped into yard or plot	Tubewell/Borehole	Protected dug well	Unprotected dug well	Protected spring	Unprotected spring	Surface water	Rainwater collection	Tanker-truck	Drinking water
<b>Total</b>	40	27	23	23	35	31	5	7	1	4	1
<b>Luangnamtha</b>											
Sing	2	1	1	0	7	0	0	0	0	0	0
<b>Oudomxay</b>											
Namor	0	0	0	0	0	2	0	1	0	0	0
Houn	0	10	0	0	0	0	0	0	0	0	0
<b>Borkeo</b>											
Tonpherng	0	0	1	2	0	2	1	0	0	0	0
<b>Luangprabang</b>											
Xienggern	0	0	0	0	0	6	0	0	0	0	0
Nan	3	10	0	0	0	0	0	0	0	0	0
Ngoi	0	0	0	0	0	7	0	0	0	0	0
<b>Huaphan</b>											
Santai	0	0	0	1	1	0	2	1	0	0	0
<b>Xayabury</b>											
Xayyabury	0	0	0	1	0	0	0	1	1	0	0
Phieng	0	0	1	2	0	2	0	1	0	0	0
Kaenthao	2	0	4	2	0	0	0	0	0	0	0
<b>Xiengkhuang</b>											
Khoun	0	0	0	2	0	5	0	0	0	0	0
<b>Vientiane Province</b>											
Keoudom	1	0	0	4	1	0	0	1	0	0	0
Sanakham	0	0	0	0	0	0	0	0	0	4	0
Viengkham	0	0	0	3	0	0	0	0	0	0	0
<b>Borikhamxay</b>											
Paksan	2	0	3	0	13	4	0	0	0	0	0
<b>Khammuane</b>											
Thakhaek	0	2	0	1	10	0	0	0	0	0	0
<b>Savannakhet</b>											
Kaisone	12	1	1	3	0	0	0	0	0	0	0
Outhoumphone	1	0	0	0	0	0	0	0	0	0	0
Atsaphangthong	0	0	4	1	0	0	0	0	0	0	0
Phine	0	0	5	0	0	0	0	0	0	0	0
Vilabury	0	0	0	0	3	0	1	0	0	0	0
<b>Saravane</b>											
Khongsedon	0	0	1	0	0	0	0	1	0	0	1
<b>Sekong</b>											
Laman	7	0	0	0	0	0	1	0	0	0	0
Thateng	3	2	1	0	0	3	0	1	0	0	0
<b>Attapeu</b>											
Samakhixay	7	1	1	1	0	0	0	0	0	0	0

**Table 4: The number of villages with lacking of water supply by province**

Province	Number of Village		Total
	Urban	Rural	
<b>Total</b>	<b>16</b>	<b>25</b>	<b>41</b>
Luangnamtha	1	0	1
Oudomxay	9	0	9
Borkeo	0	3	3
Luangprabang	1	7	8
Hoaphan	0	0	0
Xayabury	0	0	0
Xiengkhoang	2	0	2
Vintiane Province	1	1	2
Borikhamxay	0	9	9
Khammuane	0	2	2
Savannakhet	2	2	4
Saravane	0	0	0
Sekong	0	1	1
Attapeu	0	0	0

**Table 5: Number of month lacking water supply by province**

Province	Number of month		
	1-5	6-10	11-12
<b>Total</b>	<b>39</b>	<b>2</b>	<b>-</b>
Luangnamtha	1	0	-
Oudomxay	7	2	-
Borkeo	3	0	-
Luangprabang	8	0	-
Huaphan	0	0	-
Xayabury	0	0	-
Xiengkhuang	2	0	-
Vintiane Province	2	0	-
Borikhamxay	9	0	-
Khammuane	2	0	-
Savannakhet	4	0	-
Saravane	0	0	-
Sekong	1	0	-
Attapeu	0	0	-

**Table 6: The average of households which do not have latrine by urban/rural, province and district**

District / Province	Average household in village		Total
	Urban	Rural	
<b>Total</b>	<b>47</b>	<b>52</b>	<b>49</b>
<b>Luangnamtha</b>			
<b>Sing</b>	<b>23</b>	<b>4</b>	<b>18</b>
<b>Oudomxay</b>			
<b>Namor</b>	<b>96</b>	<b>0</b>	<b>96</b>
<b>Houn</b>	<b>42</b>	<b>0</b>	<b>42</b>
<b>Borkeo</b>			
<b>Tonpherng</b>	<b>0</b>	<b>76</b>	<b>76</b>
<b>Luangprabang</b>			
<b>Xiengngern</b>	<b>0</b>	<b>42</b>	<b>42</b>
<b>Nan</b>	<b>97</b>	<b>32</b>	<b>82</b>
<b>Ngoi</b>	<b>0</b>	<b>70</b>	<b>50</b>
<b>Hoaphan</b>			
<b>Samtai</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>Xayabury</b>			
<b>Xayyabury</b>	<b>7</b>	<b>0</b>	<b>7</b>
<b>Phieng</b>	<b>83</b>	<b>0</b>	<b>83</b>
<b>Kaenthao</b>	<b>24</b>	<b>0</b>	<b>24</b>
<b>Xiengkhoang</b>			
<b>Khoun</b>	<b>21</b>	<b>0</b>	<b>21</b>
<b>Vientian Province</b>			
<b>Keooudom</b>	<b>3</b>	<b>146</b>	<b>44</b>
<b>Sanakham</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Viengkham</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Borikhamxay</b>			
<b>Paksan</b>	<b>1</b>	<b>18</b>	<b>16</b>
<b>Khammuane</b>			
<b>Thakhaek</b>	<b>21</b>	<b>78</b>	<b>65</b>
<b>Savannakhet</b>			
<b>Kaisone</b>	<b>83</b>	<b>78</b>	<b>81</b>
<b>Outhoumphone</b>	<b>94</b>	<b>.</b>	<b>94</b>
<b>Atsaphangthong</b>	<b>61</b>	<b>84</b>	<b>65</b>
<b>Phine</b>	<b>43</b>	<b>52</b>	<b>44</b>
<b>Vilabury</b>	<b>370</b>	<b>95</b>	<b>164</b>
<b>Saravane</b>			
<b>Khongsedon</b>	<b>.</b>	<b>56</b>	<b>56</b>
<b>Sekong</b>			
<b>Laman</b>	<b>57</b>	<b>58</b>	<b>57</b>
<b>Thateng</b>	<b>60</b>	<b>44</b>	<b>47</b>
<b>Attapeu</b>			
<b>Samakhixay</b>	<b>45</b>	<b>0</b>	<b>45</b>

**Table 7: Percent of households by main source of drinking water, residence and province**

Residence / Province	Main source of drinking water							Total
	Piped water	Tubewell/ Borehole	Dug well	Water from spring	Rainwater collection	Vendors	Other	
Total	709	180	697	411	66	1840	17	3920
	18.09	4.59	17.78	10.48	1.68	46.94	0.43	100
Residence								
Urban	20.98	4.02	15.12	7.71	1.51	50.11	0.55	100
Rural	11.59	5.88	23.76	16.72	2.07	39.82	0.17	100
Province								
Luangnamtha	9.70	0.00	20.90	0.75	0.00	68.66	0.00	100
Oudomxay	48.67	0.00	18.63	11.41	1.52	19.39	0.38	100
Borkeo	0.00	9.41	20.00	42.36	0.00	28.24	0.00	100
Luangprabang	52.94	0.00	0.80	43.05	0.80	2.41	0.00	100
Huaphan	0.00	0.00	50.00	43.14	6.86	0.00	0.00	100
Xayabury	2.17	10.87	29.95	5.56	5.07	46.38	0.00	100
Xiengkhuang	0.00	0.00	48.86	47.73	1.14	2.27	0.00	100
Vientiane Province	0.00	0.00	4.72	0.00	0.00	95.28	0.00	100
Borikhamxay	6.23	3.11	26.64	10.38	0.35	53.29	0.00	100
Khammuane	0.00	1.17	60.23	0.00	0.00	38.60	0.00	100
Savannakhet	7.42	4.91	16.05	1.91	0.40	68.71	0.60	100
Saravane	0.00	28.57	1.79	0.00	21.43	44.64	3.57	100
Sekong	57.70	12.39	2.72	3.32	3.02	20.85	0.00	100
Attapeu	30.47	3.91	5.86	5.47	1.17	50.00	3.13	100

**Table 8: Percent of households by main source of using water, residence and province**

Residence / Province	Main source of using water							Total
	Piped water	Tubewell/ Borehole	Dug well	Water from spring	Rainwater collection	Vendors	Other	
Total	1442	479	1250	418	163	149	19	3920
	36.79	12.22	31.89	10.66	4.16	3.80	0.48	100
Residence								
Urban	43.58	11.69	27.65	7.52	4.50	4.54	0.52	100
Rural	21.52	13.41	41.39	17.72	3.39	2.15	0.41	100
Province								
Luangnamtha	23.13	0.00	76.12	0.75	0.00	0.00	0.00	100
Oudomxay	61.98	0.00	17.11	9.51	11.03	0.00	0.38	100
Borkeo	0.00	9.41	32.94	57.65	0.00	0.00	0.00	100
Luangprabang	52.94	0.00	0.80	44.92	1.34	0.00	0.00	100
Huaphan	0.00	0.00	50.98	41.18	7.84	0.00	0.00	100
Xayabury	5.80	28.74	50.24	6.04	8.70	0.48	0.00	100
Xiengkhuang	0.00	0.00	48.86	47.73	3.41	0.00	0.00	100
Vientiane Province	7.22	8.61	41.39	0.00	11.67	31.11	0.00	100
Borikhamxay	14.19	11.76	63.32	10.38	0.35	0.00	0.00	100
Khammuane	14.62	2.34	81.29	0.58	1.17	0.00	0.00	100
Savannakhet	47.94	18.46	26.78	1.20	1.10	3.41	1.10	100
Saravane	3.57	75.00	0.00	0.00	19.64	1.79	0.00	100
Sekong	78.55	11.48	3.02	3.63	3.32	0.00	0.00	100
Attapeu	75.78	7.42	8.20	4.30	1.56	0.00	2.73	100

**Table 9: Time and distance to water source by type of household, residence and province**

Residence / Province	Type of household					
	Poor household		Non poor household		Total	
	Average time (Minutes )	Average distance (Metres)	Average time (Minutes)	Average distance (Metres)	Average time (Minutes)	Average distance (Metres)
<b>Total</b>	1.32	16.99	3.67	45.37	1.64	20.81
<b>Residence</b>						
Urban	1.33	18.36	3.56	48.00	1.64	22.45
Rural	1.29	13.96	3.93	38.95	1.63	17.12
<b>Province</b>						
Luangnamtha	1.03	7.42	1.18	13.82	1.05	8.47
Oudomxay	4.05	89.87	5.00	77.02	4.24	87.33
Borkeo	0.27	1.93	0.80	28.00	0.33	5.00
Luangprabang	1.28	13.04	2.61	20.10	1.53	14.38
Huaphan	1.78	8.58	3.57	55.00	2.15	18.14
Xayabury	2.26	24.16	7.64	74.06	2.87	29.82
Xiengkhuang	5.49	48.39	6.47	66.65	5.68	51.92
Vientiane Province	0.65	12.02	2.71	16.67	0.78	12.33
Borikhamxay	0.74	8.94	2.74	29.35	1.04	11.98
Khammuane	2.99	33.09	6.38	79.38	3.63	41.75
Savannakhet	0.32	2.58	1.66	11.88	0.43	3.30
Saravane	2.41	24.93	0.00	0.00	2.41	24.93
Sekong	1.24	14.06	3.41	44.92	1.65	19.93
Attapeu	0.74	11.47	3.75	87.08	1.30	25.64

**Table 10: percentages of households by main person collecting drinking water, residence and province**

Residence / Province	Main person collecting drinking water						
	adult women	adult men	Female child under 15	Female child under15	No specific person	Don't know	Total
<b>Total</b>	472	90	53	17	171	3	806
	58.56	11.17	6.58	2.11	21.22	0.37	100
<b>Residence</b>							
Urban	58.55	11.15	4.83	1.49	23.42	0.56	100
Rural	58.58	11.19	10.07	3.36	16.79	0.00	100
<b>Province</b>							
Luangnamtha	64.52	3.23	6.45	0.00	25.81	0.00	100
Oudomxay	73.91	5.43	11.96	3.26	5.43	0.00	100
Borkeo	66.67	16.67	0.00	0.00	16.67	0.00	100
Luangprabang	65.83	7.50	21.67	5.00	0.00	0.00	100
Huaphan	81.82	4.55	0.00	0.00	9.09	4.55	100
Xayabury	56.29	11.92	1.32	0.66	29.14	0.66	100
Xiengkhuang	47.44	10.26	1.28	1.28	39.74	0.00	100
Vientiane Province	20.00	28.57	0.00	5.71	42.86	2.86	100
Borikhamxay	74.36	7.69	0.00	0.00	17.95	0.00	100
Khammuane	48.94	0.00	0.00	0.00	51.06	0.00	100
Savannakhet	52.31	16.92	6.15	3.08	21.54	0.00	100
Saravane	63.16	36.84	0.00	0.00	0.00	0.00	100
Sekong	40.91	15.15	10.61	3.03	30.30	0.00	100
Attapeu	82.86	17.14	0.00	0.00	0.00	0.00	100



**Table 11: Percent of households by the safetiness for women and children to access to the water source, residence and province**

Province	Safety	Not safety / Rick of crime	Not safety / Rick of accident	Total
<b>Total</b>	<b>710</b>	<b>13</b>	<b>83</b>	<b>806</b>
	<b>88.09</b>	<b>1.61</b>	<b>10.30</b>	<b>100</b>
<b>Residence</b>				
<b>Urban</b>	<b>87.73</b>	<b>1.12</b>	<b>11.15</b>	<b>100</b>
<b>Rural</b>	<b>88.81</b>	<b>2.61</b>	<b>8.58</b>	<b>100</b>
<b>Province</b>				
<b>Luangnamtha</b>	<b>100.00</b>	<b>0.00</b>	<b>0.00</b>	<b>100</b>
<b>Oudomxay</b>	<b>100.00</b>	<b>0.00</b>	<b>0.00</b>	<b>100</b>
<b>Borkeo</b>	<b>100.00</b>	<b>0.00</b>	<b>0.00</b>	<b>100</b>
<b>Luangprabang</b>	<b>86.67</b>	<b>0.00</b>	<b>13.33</b>	<b>100</b>
<b>Hoaphan</b>	<b>27.27</b>	<b>0.00</b>	<b>72.73</b>	<b>100</b>
<b>Xayabury</b>	<b>95.36</b>	<b>0.66</b>	<b>3.97</b>	<b>100</b>
<b>Xiengkhoang</b>	<b>97.44</b>	<b>0.00</b>	<b>2.56</b>	<b>100</b>
<b>Vintiane Province</b>	<b>37.14</b>	<b>11.43</b>	<b>51.43</b>	<b>100</b>
<b>Borikhamxay</b>	<b>97.44</b>	<b>0.00</b>	<b>2.56</b>	<b>100</b>
<b>Khammuane</b>	<b>93.62</b>	<b>4.26</b>	<b>2.13</b>	<b>100</b>
<b>Savannakhet</b>	<b>96.92</b>	<b>3.08</b>	<b>0.00</b>	<b>100</b>
<b>Saravane</b>	<b>63.16</b>	<b>0.00</b>	<b>36.84</b>	<b>100</b>
<b>Sekong</b>	<b>71.21</b>	<b>4.55</b>	<b>24.24</b>	<b>100</b>
<b>Attapeu</b>	<b>97.14</b>	<b>2.86</b>	<b>0.00</b>	<b>100</b>

**Table 12: Quality of water used and monthly payment by type of households, residence and Province**

Province	Type of household					
	Poor household		Non poor household		Total	
	Quantities of using water	Paid per mount	Quantities of using water	Paid per mount	Quantities of using water	Paid per mount
Total	10.4	26153.2	18.2	45149.8	17.5	43634.6
	10.5	27294.2	17.8	47446.6	17.1	45687.8
Residence						
Urban	10.5	27294.2	17.8	47446.6	17.1	45687.8
Rural	8.5	15200.0	20.0	34620.1	19.6	33772.1
Province						
Luangnamtha	10.0	14000.0	10.9	13793.1	10.8	13812.5
Oudomxay	4.0	13500.7	6.9	22248.3	6.4	20753.4
Borkeo	0.0	0.0	0.0	1200.0	0.0	1200.0
Luangprabang	4.6	5000.0	7.0	4006.3	5.9	4091.4
Huaphan	0.0	0.0	5.0	10000.0	5.0	10000.0
Xayabury	1.0	0.0	11.6	25766.6	11.5	25766.6
Xiengkhuang	0.0	1000.0	34.3	3088.2	34.3	2868.4
Vientiane Province	0.0	0.0	20.2	53285.7	20.2	53285.7
Borikhamxay	0.0	0.0	31.1	61170.7	31.1	61170.7
Khammuane	18.0	44810.0	22.7	53854.2	22.3	53158.5
Savannakhet	10.5	22625.0	25.7	64528.0	25.5	63773.0
Saravane	0.0	0.0	0.0	0.0	0.0	0.0
Sekong	7.9	22727.3	12.4	40647.0	12.0	38300.4
Attapeu	18.2	47432.1	17.3	45871.3	17.5	46095.4

**Table 13: Percent of households by colour of drinking water, residence and province**

Residence / Province	color of water				
	Clear	Not clear	Other	Total	Not answer
Total	3825.00	59.00	14.00	3898	22
	98.13	1.51	0.36	100	0.56
Residence					
Urban	98.44	1.33	0.22	100	12
Rural	97.41	1.92	0.67	100	10
Province					
Luangnamtha	92.54	7.46	0.00	100	0
Oudomxay	98.86	1.14	0.00	100	0
Borkeo	87.80	7.32	4.88	100	3
Luangprabang	98.92	0.81	0.27	100	3
Huaphan	99.02	0.00	0.98	100	0
Xayabury	99.76	0.24	0.00	100	1
Xiengkhuang	97.70	2.30	0.00	100	1
Vientiane Province	98.87	0.85	0.28	100	6
Borikhamxay	96.52	2.79	0.70	100	2
Khammuane	100.00	0.00	0.00	100	0
Savannakhet	98.89	0.81	0.30	100	4
Saravane	96.30	1.85	1.85	100	2
Sekong	96.68	3.32	0.00	100	0
Attapeu	98.44	1.17	0.39	100	0

**Table 14: Percent of households by smell of drinking water, residence and province**

Residence / Province	smell of water					
	Smell of chlorine	Smell bad	not smell	Don't know	Total	Not answer
Total	3825	59	12	2	3898	22
	98.13	1.51	0.31	0.05	100	0.56
Residence						
Urban	98.44	1.33	0.22	0.00	100	12
Rural	97.41	1.92	0.50	0.17	100	10
Province						
Luangnamtha	92.54	7.46	0.00	0.00	100	0
Oudomxay	98.86	1.14	0.00	0.00	100	0
Borkeo	87.80	7.32	4.88	0.00	100	3
Luangprabang	98.92	0.81	0.27	0.00	100	3
Huaphan	99.02	0.00	0.98	0.00	100	0
Xayabury	99.76	0.24	0.00	0.00	100	1
Xiengkhuang	97.70	2.30	0.00	0.00	100	1
Vientiane Province	98.87	0.85	0.28	0.00	100	6
Borikhamxay	96.52	2.79	0.00	0.70	100	2
Khammuane	100.00	0.00	0.00	0.00	100	0
Savannakhet	98.89	0.81	0.30	0.00	100	4
Saravane	96.30	1.85	1.85	0.00	100	2
Sekong	96.68	3.32	0.00	0.00	100	0
Attapeu	98.44	1.17	0.39	0.00	100	0

**Table 15: Percent of households by method to make water safer to drink, residence and province**

Residence / Province	Method to make water safer to drink									
	Boil	Add bleach/ Chlorine	Use water filter	Sieve it through a cloth	Use modern water filter	Solar disinfection	Let water stand and settle	Other	Don't know	Total
Total	1853	9	28	11	28	2	62	122	3	2118
	87.49	0.42	1.32	0.52	1.32	0.09	2.93	5.76	0.14	100
Residence										
Urban	92.29	0.36	0.79	0.50	1.66	0.07	1.66	2.60	0.07	100
Rural	78.39	0.55	2.33	0.55	0.68	0.14	5.34	11.76	0.27	100
Province										
Luangnamtha	95.24	0.00	0.00	0.00	0.00	0.00	2.38	2.38	0.00	100
Oudomxay	94.81	0.00	0.47	0.47	0.00	0.00	0.47	3.30	0.47	100
Borkeo	98.36	0.00	1.64	0.00	0.00	0.00	0.00	0.00	0.00	100
Luangprabang	96.44	0.27	0.82	0.00	0.27	0.00	0.00	2.19	0.00	100
Huaphan	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100
Xayabury	85.14	0.90	0.90	0.00	6.31	0.45	6.31	0.00	0.00	100
Xiengkhuang	95.35	0.00	2.33	0.00	1.16	0.00	1.16	0.00	0.00	100
Vientiane Province	84.91	0.00	0.00	1.89	3.77	0.00	3.77	5.66	0.00	100
Borikhamxay	74.81	0.74	10.37	4.44	5.19	0.00	0.74	3.70	0.00	100.00
Khammuane	49.52	0.00	0.00	0.00	0.95	0.95	20.00	27.62	0.95	100
Savannakhet	75.48	0.32	1.59	0.00	0.64	0.00	0.96	21.02	0.00	100
Saravane	96.77	0.00	0.00	0.00	0.00	0.00	3.23	0.00	0.00	100.00
Sekong	90.84	1.53	0.00	0.00	0.00	0.00	6.11	1.15	0.38	100
Attapeu	96.88	0.00	0.00	2.34	0.00	0.00	0.78	0.00	0.00	100

**Table 16: Percent of households by type of household use latrine, residence and province**

Residence / Province	Type of household							Total	Not answer
	Poor household		Non poor household		Total				
	Use latrine	Not use latrine	Use latrine	Not use latrine	Use latrine	Not use latrine			
Total	296	222	2946	434	3242	656	3898	22	
	7.59	5.70	75.58	11.13	83.17	16.83	100	0.56	
Residence									
Urban	8.56	5.07	79.74	6.63	88.30	11.70	100	12	
Rural	5.43	7.10	66.19	21.29	71.62	28.38	100	10	
Province									
Luangnamtha	7.46	8.96	73.88	9.70	81.34	18.66	100	0	
Oudomxay	15.59	4.18	73.00	7.22	88.59	11.41	100	0	
Borkeo	6.10	6.10	82.93	4.88	89.02	10.98	100	3	
Luangprabang	14.56	3.77	72.78	8.89	87.33	12.67	100	3	
Huaphan	20.59	0.00	78.43	0.98	99.02	0.98	100	0	
Xayabury	7.02	4.36	86.20	2.42	93.22	6.78	100	1	
Xiengkhuang	16.09	2.30	81.61	0.00	97.70	2.30	100	1	
Vientiane Province	6.50	0.00	93.22	0.28	99.72	0.28	100	6	
Borikhamxay	8.71	5.92	83.28	2.09	91.99	8.01	100	2	
Khammuane	4.68	14.04	40.94	40.35	45.61	54.39	100	0	
Savannakhet	1.41	6.04	77.24	15.31	78.65	21.35	100	4	
Saravane	0.00	0.00	79.63	20.37	79.63	20.37	100	2	
Sekong	9.37	9.67	57.40	23.56	66.77	33.23	100	0	
Attapeu	8.20	10.55	66.80	14.45	75.00	25.00	100	0	

**Table 17: Percent of households by type of Latrine, residence and province**

Province	Type of latrine							Total
	Flush to septic tank	Flush to pit	Flush to somewhere else	Pit latrine with slap	Pit latrine without slap	No facilities	Other	
Total	156	2613	263	56	92	33	29	3242
	4.81	80.60	8.11	1.73	2.84	1.02	0.89	100
Residence								
Urban	5.83	78.36	8.18	2.18	3.27	1.09	1.09	100
Rural	1.98	86.83	7.93	0.47	1.63	0.82	0.35	100
Province								
Luangnamtha	3.67	89.91	2.75	3.67	0.00	0.00	0.00	100
Oudomxay	0.00	69.53	2.58	7.30	19.74	0.86	0.00	100
Borkeo	0.00	87.67	12.33	0.00	0.00	0.00	0.00	100
Luangprabang	2.47	89.20	0.93	0.93	5.86	0.31	0.31	100
Huaphan	2.97	47.52	36.63	1.98	10.89	0.00	0.00	100
Xayabury	3.90	85.71	3.64	2.86	2.08	1.82	0.00	100
Xiengkhuang	2.35	43.53	16.47	7.06	8.24	0.00	22.35	100
Vientiane Province	8.50	72.52	15.30	0.85	0.00	0.85	1.98	100
Borikhamxay	3.79	90.91	4.92	0.00	0.00	0.00	0.38	100
Khammuane	10.26	74.36	3.85	0.00	0.00	11.54	0.00	100
Savannakhet	5.89	88.99	3.07	0.64	0.00	1.28	0.13	100
Saravane	2.33	88.37	9.30	0.00	0.00	0.00	0.00	100
Sekong	1.36	63.80	33.48	0.45	0.45	0.45	0.00	100
Attapeu	13.54	81.77	2.60	2.08	0.00	0.00	0.00	100

**Table 18: Percent of household by sex of head of household and by type of latrine**

Type of Latrine	Head of household		Total
	Woman	Man	
<b>Total</b>	<b>403</b>	<b>2839</b>	<b>3242</b>
	<b>12.43</b>	<b>87.57</b>	<b>100</b>
<b>Flush to septic tank</b>	<b>14.74</b>	<b>85.26</b>	<b>100</b>
<b>Flush to pit</b>	<b>12.51</b>	<b>87.49</b>	<b>100</b>
<b>Flush to somewhere else</b>	<b>11.79</b>	<b>88.21</b>	<b>100</b>
<b>Pit latrine with slap</b>	<b>7.14</b>	<b>92.86</b>	<b>100</b>
<b>Pit latrine without slap</b>	<b>8.70</b>	<b>91.30</b>	<b>100</b>
<b>No facilities</b>	<b>10.00</b>	<b>90.00</b>	<b>100</b>
<b>No facilities but use public or other's facilities</b>	<b>13.79</b>	<b>86.21</b>	<b>100</b>
<b>Other</b>	<b>21.74</b>	<b>78.26</b>	<b>100</b>

**Table 19: The number and Percent of children with diarrhea by residence, type of household and age**

Residence, type of household, Children under Five years	diarrhea		not diarrhea		don't know		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Total</b>	<b>112</b>	<b>7.38</b>	<b>1,404</b>	<b>92.55</b>	<b>1</b>	<b>0.07</b>	<b>1,517</b>	<b>100</b>
<b>Residence</b>								
<b>Urban</b>	<b>71</b>	<b>6.98</b>	<b>945</b>	<b>92.92</b>	<b>1</b>	<b>0.10</b>	<b>1,017</b>	<b>100</b>
<b>Rural</b>	<b>41</b>	<b>8.20</b>	<b>459</b>	<b>91.80</b>	<b>0</b>	<b>0.00</b>	<b>500</b>	<b>100</b>
<b>Type of household</b>								
<b>Poor household</b>	<b>90</b>	<b>6.92</b>	<b>1,211</b>	<b>93.08</b>	<b>0</b>	<b>0.00</b>	<b>1,301</b>	<b>100</b>
<b>non poor household</b>	<b>22</b>	<b>10.19</b>	<b>193</b>	<b>89.35</b>	<b>1</b>	<b>0.46</b>	<b>216</b>	<b>100</b>
<b>Children under Five years</b>								
0	20	8.06	227	91.53	1	0.40	248	100
1	40	14.39	238	85.61	0	0.00	278	100
2	22	6.40	322	93.60	0	0.00	344	100
3	14	4.08	329	95.92	0	0.00	343	100
4	16	5.26	288	94.74	0	0.00	304	100



**Table 20: Percent of children who drink water when they get diarrhea by residence, type of household and age**

Residence, type of household, Children under Five years	Children who drink water when they get diarrhea					
	drink a little of water or not drink	normal drink	drink a lot of water	Don't know	total	Number
<b>Total</b>	<b>15.18</b>	<b>10.71</b>	<b>74.11</b>	<b>0.00</b>	<b>100</b>	<b>112</b>
<b>Residence</b>						
<b>Urban</b>	<b>15.49</b>	<b>15.49</b>	<b>69.01</b>	<b>0.00</b>	<b>100</b>	<b>71</b>
<b>Rural</b>	<b>14.63</b>	<b>2.44</b>	<b>82.93</b>	<b>0.00</b>	<b>100</b>	<b>41</b>
<b>Type of household</b>						
<b>Poor household</b>	<b>16.67</b>	<b>12.22</b>	<b>71.11</b>	<b>0.00</b>	<b>100</b>	<b>90</b>
<b>non poor household</b>	<b>9.09</b>	<b>4.55</b>	<b>86.36</b>	<b>0.00</b>	<b>100</b>	<b>22</b>
<b>Children under Five years</b>						
0	20.00	10.00	70.00	0.00	100	20
1	17.50	10.00	72.50	0.00	100	40
2	13.64	22.73	63.64	0.00	100	22
3	14.29	7.14	78.57	0.00	100	14
4	6.25	0.00	93.75	0.00	100	16

**Table 21: Percent of children who have malaria by residence, type of household and age**

Residence, type of household, Children under Five years	Ratio of children who have malaria				Children have checked up for malaria				Children have given the medicine from doctor				
	Have	Not have	Total	Number	Check up	not check up	total	number	Have	Not have	Don't know	total	number
<b>Total</b>	<b>0.33</b>	<b>99.67</b>	<b>100</b>	<b>1517</b>	<b>80.00</b>	<b>20.00</b>	<b>100</b>	<b>5</b>	<b>75.00</b>	<b>25.00</b>	<b>0.00</b>	<b>100</b>	<b>4</b>
<b>Residence</b>													
<b>Urban</b>	<b>0.10</b>	<b>99.90</b>	<b>100</b>	<b>1017</b>	<b>100.00</b>	<b>0.00</b>	<b>100</b>	<b>1</b>	<b>0.00</b>	<b>100.00</b>	<b>0.00</b>	<b>100</b>	<b>1</b>
<b>Rural</b>	<b>0.80</b>	<b>99.20</b>	<b>100</b>	<b>500</b>	<b>75.00</b>	<b>25.00</b>	<b>100</b>	<b>4</b>	<b>100.00</b>	<b>0.00</b>	<b>0.00</b>	<b>100</b>	<b>3</b>
<b>Type of household</b>													
<b>Poor household</b>	<b>0.31</b>	<b>99.69</b>	<b>100</b>	<b>1301</b>	<b>75.00</b>	<b>25.00</b>	<b>100</b>	<b>4</b>	<b>66.67</b>	<b>33.33</b>	<b>0.00</b>	<b>100</b>	<b>3</b>
<b>non poor household</b>	<b>0.46</b>	<b>99.54</b>	<b>100</b>	<b>216</b>	<b>100.00</b>	<b>0.00</b>	<b>100</b>	<b>1</b>	<b>100.00</b>	<b>0.00</b>	<b>0.00</b>	<b>100</b>	<b>1</b>
<b>Children under Five years</b>													
0	0.00	100.00	100	248	0.00	0.00	0	0	0.00	0.00	0.00	0	0
1	0.72	99.28	100	278	100.00	0.00	100	2	50.00	50.00	0.00	100	2
2	0.58	99.42	100	344	50.00	50.00	100	2	100.00	0.00	0.00	100	1
3	0.29	99.71	100	343	100.00	0.00	100	1	100.00	0.00	0.00	100	1
4	0.00	100.00	100	304	0.00	0.00	0	0	0.00	0.00	0.00	0	0

**Table 22: Percent of the method to disposal stools by residence, type of household and age**

Residence, type of household, Children under Five years	Use latrine	Thrown into the latrine	Thrown into the channel	Not disposed of or left on the ground	Buried outside the yard	Thrown outside in the yard	Other	Total	Number
<b>Total</b>	21.51	18.95	1.40	4.07	26.74	24.65	2.67	100.00	860
<b>Residence</b>									
Urban	24.74	23.18	1.04	4.67	25.95	17.65	2.77	100.00	578
Rural	14.89	10.28	2.13	2.84	28.37	39.01	2.48	100.00	282
<b>Type of household</b>									
Poor household	24.01	21.01	1.50	4.64	26.19	19.51	3.14	100.00	733
Non poor household	7.09	7.09	0.79	0.79	29.92	54.33	0.00	100.00	127
<b>Children under Five years</b>									
0	4.56	22.82	2.49	7.47	27.39	28.22	7.05	100.00	241
1	18.66	22.76	1.49	4.10	24.25	26.87	1.87	100.00	268
2	34.35	14.29	0.30	1.22	28.88	20.67	0.30	100.00	329
3	50.00	0.00	4.55	9.09	18.18	18.18	0.00	100.00	22

**Table 23: Percent of children using mosquito net by residence, type of household and age**

Residence, type of household, Children under Five years	Children use mosquito net					Type of mosquito net					
	Sleep	Not sleep	Other	Total	Number	permanent liquid medicine mosquito net	temporary liquid medicine mosquito net	normal mosquito net	Don't know	total	Number
<b>Total</b>	96.11	2.44	1.45	100	1517	23.94	34.64	39.71	1.71	100	1458
<b>Residence</b>											
Urban	95.18	2.85	1.97	100	1017	26.24	29.34	43.29	1.14	100	968
Rural	98.00	1.60	0.40	100	500	19.39	45.10	32.65	2.86	100	490
<b>Type of household</b>											
Poor household	95.85	2.46	1.69	100	1301	25.18	32.88	40.34	1.60	100	1247
non poor household	97.69	2.31	0.00	100	216	16.59	45.02	36.02	2.37	100	211
<b>Children under Five years</b>											
0	96.77	2.42	0.81	100	248	23.75	25.00	48.75	2.50	100	240
1	97.48	1.08	1.44	100	278	21.40	35.42	42.44	0.74	100	271
2	96.51	1.45	2.03	100	344	25.60	33.73	38.25	2.41	100	332
3	96.79	2.33	0.87	100	343	24.70	37.35	36.75	1.20	100	332
4	93.09	4.93	1.97	100	304	23.67	39.93	34.63	1.77	100	283