

## **CHAPTER IV**

### **DATA EXERCISE**

#### **A DESCRIPTIVE STUDY ON FACTORS AFFECTING THE SANITATION PROGRAM IN DONG HA VILLAGE, SUB- DISTRICT NAMSON, SOCSON, NORTHERN VIETNAM**

##### **4.1 Introduction**

Many sanitation programs have been conducted in Vietnam especially in the rural areas. However, at present time most of rural communities in Vietnam still living in poor sanitation condition, in term of, accessibility to hygienic sanitation facilities and safe water. On the other hands, at households level poor sanitation practices and bad habits still exit in their daily life. There are many reasons for poor condition of sanitation in rural areas of Vietnam. Our proposed project plans to improve sanitation practices in Namson Sub-district and by implementing this project we hope not only to provide some active changes in the households but use the knowledge and experiences gained in this project to other similar program in rural areas in Vietnam. The project covers all households in Namson Sub-district and, for the Data Exercise process we have selected one village among six villages of Namson Sub-District.

Namson Sub-district is located 100km Northwest of Hanoi and there are six villages in Namson Sub-district. According to the statistics from the Namson Statistic report on December.2001, the total population of the Sub-district was about 7,440 inhabitants (nearly 1,200 households), with Gross Domestic Product per capita is about 140 US\$. The total area is about 2,935 ha, where agricultural production is the main source of income, therefore, the economic status of the households is still very low .In Namson Sub-district, 366households (31 %) are categorized like the poorest with GDP per capita below 60US\$.

A descriptive statistics has been used in Data Exercise to describe the situation of sanitation practices at the households and test an instrument. Beside that, we try to answer the question what knowledge and practices we should add more in sanitation education, that we plan to provide to households in our proposed project when we are going to conduct it in the future.

## **4.2 Objectives**

1. To test the instrument in term of wording, structure of questionnaire, understanding of respondent about the questions.
2. To test the process of the survey in term of time, administration, logistic.
3. To determine sanitation knowledge and practices of the housewives to be used in the development of the proposal project.

### **4.3 Description of Data Exercise Process**

#### **4.3.1 Methodology of Data Exercise:**

A survey was conducted at Dong Ha village, Namson Sub-district, this village was randomly selected from six villages of Namson Sub-district. Dong Ha is the nearest village to the Commune Health station. According to the statistics of Dong Ha statistics report at December.2001 it has 1,345 inhabitants (nearly 200households). In general, Dong Ha is similar to most other villages in the Sub-district in term of socio-economic pattern and it has been chosen for data collection of Data Exercise process and latter on in our proposed project Dong Ha was also selected for implementing of pilot project.

#### **4.3.2 Sample size**

Due to the limit of time, man-power and other resources the minimum size of study group should be selected as 40 housewives from 40 households in Dong Ha village.

#### **4.3.3 Sampling:**

Systematic sampling was used for selecting the households in the survey. Based on the list of households that was available from Local committee with the total number of households of 200, the sampling interval was 200 divided by 40, which equals 5. Numbers were assigned to each household and the first household was randomly selected from the first five households and after that the selection continued by

selecting one household for every five households until the number of households was reached to a size of forty.

#### **4.3.4 Data collection**

Sets of structured questionnaires and checklist (for observation) were used to collect information from housewives. The interviewers were students at Faculty of Public Health, Hanoi Medical University. The survey was conducted by six students, who are now at 6<sup>th</sup> academic year under supervision of the supervisor from 1. March 2002 to 5. March. 2002.

Completed questionnaires were checked for completion, entered into the computer by the researcher. The Statistical Package for Social Science (SPSS) software for Window was used for data entry and analysis.

## **4.4 Results**

According to our plan we have intended to do a cross-sectional survey of 40 housewives, but due to the limitation of time, bad weather, and other difficulties there were only a total of 34 housewives involved in our survey. The following are findings from the survey:

#### 4.4.1 Findings in general information of households

Table 4.1 shows that all housewives were literate and most of them had an education level at Primary school. This may be one of the advantages for us to conduct a course on sanitation education in our project. We can also observe that 94.1% of housewives were farmers and only 5.9 % of them had small business.

Number of persons were present in the household in our findings shows that most of the households (60.6%) had average from six to seven member in their household, only 3 household (8.8%) had eight members in their household.

**Table 4.1: Education and occupation of housewives**

Education and occupation	Frequency	Percentage
<b>1. Education</b>		
▪ Primary school	24	70.6
▪ Secondary school	10	29.4
▪ Other	0	0
<i>Total</i>	<u>34</u>	<u>100</u>
<b>2. Occupation</b>		
▪ Farmer	32	94.1
▪ Small business	2	5.9
<i>Total</i>	<u>34</u>	<u>100</u>

#### 4.4.2 Findings on the socio-economic status of households

Regarding the economic status, Table 4.2 indicates that 17.6% households were in debt, this finding may be reasonable because in fact, nowadays Vietnam still has approximately 18% of the population being categorized as the poorest (GSO.2000). Observations made from our observers reconfirmed the figures when it shows that 73.5 % of households had house built from cheap materials such as bamboo, soil, and wooden and only 26.5% households had house built up from brick and cement that

considered as a good and expensive materials. Only 29.4 % households had saving but mostly this saving is in term of rice when they want to buy something they have to sell their rice to have money, this is a very popular practice of households in rural Vietnam.

**Table 4.2: Household income**

<b>Income &amp; construction material of house</b>	<b>Frequency</b>	<b>Percentage</b>
<b>1. Income of households</b>		
▪ Have saving	10	29.4
▪ Are in debt	6	17.6
▪ No saving , no debt	18	52.9
<i>Total</i>	<u>34</u>	<u>100</u>
<b>2. Construction materials of the house</b>		
▪ Bamboo and soil	9	26.5
▪ Wooden	10	29.4
▪ Cement and wood	6	17.6
▪ Cement and brick	9	26.5
<i>Total</i>	<u>34</u>	<u>100</u>

Figures from Table 4.3 shows that almost households (94.1%) had radio, this fact may give advantages for our project if we can encourage the households to listen to specific program about sanitation from radio. Only 8.8% households had other valuable assets such as motorbike.

Finding on the socio-economic status of households in this survey reconfirms the fact that, Dong Ha like most of the Vietnamese rural communities is at low socio-economic status. In line with this, a revolving fund as one kind of financial support to the households may be needed to provide a mean for the households to build latrine as proposed in our project.

**Table 4.3: Households' commodities of 34 households**

<b>Valuable assets of the household</b>	<b>Frequency</b>	<b>Percentage</b>
Radio	32	94.1
Electric fan	34	100
Bicycle	23	67.6
Television set	12	35.3
Motorbike	3	8.8
Electric water pump	1	2.9

#### **4.4.3 Findings on Knowledge, Awareness and Practices of households about latrine**

Table 4.4 shows that among 34 households, there were seven households who did not have latrine and according our findings two households (28.6%) usually defecated in animal-pen and five of them (71.4%) usually defecated in the neighbor latrine.

In addition, when we asked these seven housewives about the reasons why they do not have latrine one housewife did not answer and other five housewives answered that they do not have enough money for construction of latrine. Therefore, a revolving fund as proposed in this project may provide incentive for these families to build latrine for their own use.

**Table 4.4: Latrine and type of latrine at households**

<b>Latrine</b>	<b>Frequency</b>	<b>Percentage</b>
<b>1. Households</b>		
▪ Have latrine	27	79.4
▪ Do not have latrine	7	20.6
<i>Total</i>	<u>34</u>	<u>100</u>
<b>2. Type of latrine at households</b>		
▪ One vault	25	92.6
▪ Two vaults	2	7.4
<i>Total</i>	<u>27</u>	<u>100</u>

In terms of knowledge about hygienic latrine, Table 4.5 indicates that, 18.5% of housewives did not know what is hygienic latrine and 100% of housewives did not know a hygienic latrine needs a bucket for toilet paper and a broom for regular cleaning. This situation may tell us about the poor practices for operation and maintenance of latrine at households. The main sources that the housewives got information about a hygienic latrine is from radio, this finding may be reasonable because from Table 4.3 we observe that 94.1% of survey households have radio.

**Table 4.5: Knowledge of households about hygienic latrine**

<b>The answers</b>	<b>Frequency</b>	<b>Percentage</b>
<b>1. Criteria of hygienic latrine</b>		
▪ No bad odor	8	29.6
▪ No flies	15	55.6
▪ No feces or urine on the floor	18	66.7
▪ Bucket for toilet paper	0	100
▪ Broom for cleaning	0	100
▪ Do not know	5	18.5
<b>2. The sources of information</b>		
▪ Radio	14	51.9
▪ Television	5	18.5
▪ Health workers	5	18.5

It can be clearly seen from Table 4.6 that among 27 households who had latrine 100% of them used fresh feces as fertilizer and no one used decomposed feces. On the other hand, 85.2 % of housewives thought fresh feces is better for plants and 63% of housewives thought it is not dangerous when using fresh feces. This fact should be a very great concern just because many diseases can be transmitted from excreta of one person to the mouth of another. This is a very important information to be used in our proposed project when we try to encourage and promote households to segregate the



feces and arrange for its proper disposal so that the disease agents can not reach the new host.

**Table 4.6: Feces as fertilizer at households who have latrine**

<b>Feces as fertilizer</b>	<b>Frequency</b>	<b>Percentage</b>
<b>1. Type of using feces</b>		
▪ Fresh feces	27	100
▪ Decomposed feces	0	0
<i>Total</i>	<u>27</u>	<u>100</u>
<b>2. Reasons of using fresh feces</b>		
▪ Think it is better for plants	23	85.2
▪ Not dangerous	17	63.0
▪ Long time habit	12	44.4
▪ Do not know	0	0

#### **4.4.4 Finding on KAP of households about diseases related to human excreta disposal**

Table 4.7 shows that only 64.7% housewives knew that improper disposal of human excreta can cause diseases and 35.3 % housewives do not know. This fact may reflect a lack of knowledge on sanitation practices. Lack of knowledge on proper disposal of human excreta together with practice of using fresh feces as fertilizer at 100% of survey households (Table 4.6) should be two main factors that can cause diseases related to human excreta disposal such as diarrhea and worm infection.

**Table 4.7: Improper disposal of human excreta can cause diseases**

<b>The answer</b>	<b>Frequency</b>	<b>Percentage</b>
▪ Know	22	64.7
▪ Do not know	12	35.3
<i>Total</i>	<u>34</u>	<u>100</u>

In our survey we found that there were 86.4% of housewives answered that they have seen worm in their feces or their children feces but according to Table 4.8 there were 95.5% of households have not been de-wormed since last 6 months. This may explain about very high rate of worm infection at rural areas where de-worming should be done two times per year.

**Table 4.8: De-worming at households in the last six month**

<b>De-worming</b>	<b>Frequency</b>	<b>Percentage</b>
▪ Only some one	1	4.5
▪ No body	21	95.5
<i>Total</i>	<u>22</u>	<u>100</u>

Table 4.9 shows that 100% of housewives did not know about the practice of not using fresh feces, of washing hands after defecation and before having meal, of de-worming every year can prevent them and their children from worm infection. This fact shows that the housewives did not know about the important prevention of worm infection despite its simplicity. Previous study shows that improving in human excreta disposal facility can lead to 30% reduction in diarrhea by its self. However, if we can do both improving excreta disposal facility together with practice of washing hands after defecation and before meal we can have 50% reduction in diarrhea (Dao Ngoc Phong et. al.1989).

**Table 4.9: Knowledge on prevention of worm infection**

<b>The following activities can prevent worm infection</b>	<b>Frequency of correct answer</b>	<b>Percentage</b>
▪ Construct hygienic latrine	6	27.3
▪ Do not use fresh feces	0	0
▪ Using safe water	2	9.1
▪ Having safe food	16	72.7
▪ Wash hands after defecation and before meal	0	0
▪ Fly control	3	13.6
▪ De-worming every year	0	0
▪ Do not know	3	3.6

The figures in Table 4.10 show that there was very poor practice in washing hands after defecation and before meal and drinking only boiled water. Among 34 housewives were interviewed only 22 of them answered our question and most of them (95.5% of housewives) only sometime washed their hands. Whereas, 4 out of 22 (18.2% of housewives) never washed their hands after defecation and before meal. Drinking only boiled water is very simple way to prevent parasitic infection and diarrhea but 100% of housewives did not usually drink boiled water. In comparing Table 4.9 and Table 4.10 we can see that housewives did not wash their hands after defecation because they lack the knowledge that no washing hands after defecation can lead to worm infected and it could be other reasons like availability of water.

**Table 4.10: Practice of washing hands after defecation and drinking boiled water**

<b>Practices</b>	<b>Frequency</b>	<b>Percentage</b>
<b>1. Wash hands after defecation</b>		
▪ Never	4	18.2
▪ Sometime	18	95.5
<b>2. Drink boiled water</b>		
▪ Not usually	22	100

#### 4.4.5 Finding on KAP of households about water supply sources

Table 4.11 points out that rainwater and open-dug well were the main sources of water supply at households (76.5% of households) and rain water (67.6% of households). Rainwater could be a safe water source if households can collect and use it in a proper way (Dao Ngoc Phong et. al.1989). Especially there are 8.8 % of households still used water from river and 2.9% of households still used water from ponds that considered as unsafe water supplies. Among 34 households were observed only one of them (2.9%) used tube-well as water drinking supply. Our finding also found that there were 29 housewives who think that their water supply sources are safe (85.3% of housewives), three housewives think their water sources are not safe (8.8% of housewives) and two housewives do not know their water supply sources safe or not (5.9% of housewives). This fact may explain why housewives do not boil their water because they think their water supply is safe. Otherwise, our finding also found that, most of households use open-dug well (76.5% of households), that considered as not safe for drinking water.

**Table 4.11: A usual drinking water supply sources of households**

<b>Drinking water supply</b>	<b>Frequency</b>	<b>Percentage</b>
▪ Rain water	23	67.6
▪ Open dug well	26	76.5
▪ Tube-well	1	2.9
▪ River	3	8.8
▪ Pond	1	2.9

#### **4.4.6 Findings on Local Health Care Services and Local Sanitation Program**

All housewives (34) answered that there are health workers in their village. However, the Health Care service activities in the village is poor, 25 housewives answered that the health workers never done health education before and other nine housewives do not know whether the health workers ever have done health education or not.

Since last year among 34 households only seven households (20.6% of households) have had a visit from health workers but the housewives can not remember whether the health worker have recommended them to do something or not.

If we provide the sanitation education course for the housewives, most housewives (91.2%) expressed willingness to participate and three housewives (8.8%) do not want to take part because they are too busy and have no time to go to the education course.

#### **4.4.7 Finding on the household's health situation**

According to Table 4.12, the most serious illness that the households had during the last year is diarrhea. This disease may be related to the poor sanitation practices at the households.

**Table 4.12: The most serious illness that the households have during the last year**

<b>Illness</b>	<b>Frequency</b>	<b>Percentage</b>
Diarrhea	15	44.1
Worm infection	1	2.9
Common cold	7	20.6
Respiratory infection	7	20.6
Chest pain	1	2.9
Stomach ache	3	8.8
Other	0	0
<i>Total</i>	<i>34</i>	<i>100</i>

#### **4.4.8 Finding from observation and assessment of interviewers**

There were only two households who used double vaults latrine, which considered as hygienic latrine if the household could use it properly (Dao Ngoc Phong et al .1989). Our interviewers went to observe latrines at households and assessed these latrines by using the checklist. The findings are as following: among 27 households who have latrine only 2 latrines are hygienic (7.4%), other 11 latrines are rather hygienic (40.7%) and 14 latrines are not hygienic (51.9%). As shown in Table 4.13 the most popular latrines used by households is one-vault latrines (92.6%). This kind of latrine is considered as a not hygienic and not safe for households when they continuously take feces from this latrine to use as fertilizer without treatment of feces to become decomposed feces.

**Table 4.13: Observation of latrine**

<b>Observation</b>	<b>Frequency</b>	<b>Percentage</b>
<b>1. Have latrine or not</b>		
▪ Yes	27	79.4
▪ No	7	20.6
<i>Total</i>	<u>34</u>	<u>100</u>
<b>2. Type of latrine</b>		
▪ One vault	25	92.6
▪ Double vaults	2	7.4
<i>Total</i>	<u>27</u>	<u>100</u>
<b>3. Assessment of latrines</b>		
▪ Very hygienic	0	0
▪ Hygienic	2	7.4
▪ Rather hygienic	11	40.7
▪ Not hygienic	14	51.9
<i>Total</i>	<u>27</u>	<u>100</u>

Our interviewers also went to observe the water supply sources of households and assessed these water supply sources by using the checklist. The findings are as following: among 23 households who used rain-water for their drinking water, only one household had safe water supply facility and other 22 had rather safe. Among 27 households who used open-dug well, 25 household had rather safe water supply facility and 2 households did not have safe facility.

We try to demonstrate the relation between households' knowledge and households' practices in operation and maintenance of their latrines by crosstabulation. Table 4.14 shows that among 13 households who had hygienic and rather hygienic latrine there were nine households who had high knowledge and four households had medium knowledge, this fact may be reasonable because people may practice what they know. But on the other hand, there were two households, when they had high knowledge, their latrines were not hygienic. This fact should be a lesson learned and we

have to ensure that our sanitation education in the proposed project can transfer the households' knowledge in to their daily life practices.

**Table 4.14: Crosstabulation of knowledge of households about criteria of hygienic latrine and hygiene of households latrine**

		Knowledge of criteria of hygienic latrine			Total
		Low	Medium	High	
Hygienic of latrine (observation)	Hygienic			2	2
	Rather hygienic		4	7	11
	Not hygienic	5	7	2	14
Total		5	11	11	27

Table 4.15 shows that there were those who had knowledge of improper disposal of human excreta can cause diseases (9 out of 20) but their latrines were unhygienic. This fact may reconfirm us that although the people have knowledge but they still do not practice.

**Table 4.15: Crosstabulation of knowledge of households about improper disposal of human excreta can cause diseases and hygiene of households' latrines**

		Hygiene of latrine (observation)		Total
		Hygienic	Not hygienic	
Knowledge of improper disposal of human excreta can cause diseases	Know	11	9	20
	Do not know	2	5	7
Total		13	14	27



Table 4.16 indicates that among 27 households who have latrine, seven of them do not have knowledge of improper disposal of human excreta can cause disease. On the other hand, seven households who do not have latrine there are 5 of them do not have this knowledge. Results from Table 4.15 and Table 4.16 may reconfirm us that our proposed program should be comprehensive; promoting of construction of hygienic latrine have to combine with providing sanitation education.

**Table 4.16: Crosstabulation of knowledge of households about improper disposal of human excreta can cause diseases and having latrine or not at households**

		Have latrine (observation)		Total
		Yes	No	
Knowledge of improper disposal of human excreta can cause disease	Know	20	2	22
	Do not know	7	5	12
Total		27	7	34

Figures from Table 4.17 show that among 20 households, who had diarrhea during the last 2 weeks, 13 households did not have hygienic latrine. This fact may reflect the fact that diarrhea may relate to unhygienic latrine. But on the other hand, 7 households who had hygienic latrine but they also had diarrhea and this may show that unhygienic latrines are not the only determinant that led to diarrhea at households.

**Table 4.17 Crosstabulation of diarrhea at households during last two weeks and hygiene of households latrine**

		Hygiene of latrine (observation)		Total
		Hygienic	Not hygienic	
Diarrhea at households since last two weeks	Yes	7	13	20
	No	6	1	7
Total		13	14	27

In Table 4.18 we try to explore the relation between practice of washing hand and the hygiene of latrine at households who have diarrhea since last two weeks. The figures indicates that among 3 households who had diarrhea, two of them never washed their hand and also have unhygienic latrine. But for those households who only wash their hand some time we can not differentiate the level clearly just because we did not define the meaning of “some time” in the questionnaire and we can use it like lesson learned to design better questionnaire.

**Table 4.18: Crosstabulation of washing hands after defecation and hygiene of latrine among 20 households who have diarrhea during last two weeks**

		Wash hand after defecation		Total
		Never	Sometime	
Hygienic of latrine (observation)	Hygienic		2	2
	Rather hygienic	1	8	9
	Not hygienic	2	7	9
Total		3	17	20

## 4.5 Summary of Findings

With the findings from the survey of 34 housewives at 34 households we can conclude that:

1. Most of the households surveyed are at low socio-economic status.
2. There are very high rates of using fresh feces as fertilizer at the households, all of households who have latrine, they use fresh feces as fertilizer.
3. There are a lack of knowledge and poor practices of households about diseases related to human excreta disposal and water supply sources. Many simple but important practices such as washing the hands after defecation and before meal, and drinking only boiled water still do not exist in daily life of households' members.
4. Even when people have knowledge about proper sanitation practices they often fail to incorporate these knowledge in their daily life practices.
5. Poor Local Health Care services, there are health workers in the village but they did not give Health or Sanitation education for a long time. Otherwise, they rarely pay a visit to households.
6. The most serious disease at households since last year and last two weeks is diarrhea. It is considered like a very specific disease that related to poor sanitation practices and there are many determinants that affect to this disease such as practice of washing hand and drinking only boiled water, hygienic latrine at households, usage of feces as fertilizer.

7. The observations come from of interviewers of latrines and water supply sources at households show that most of latrines and water supply sources are not hygienic and safe.

## **4.6 Lesson Learned**

Results found from the Data Exercise are used to improve and reconfirm our strategy in the proposed project. At the same time, it is a good exercise for developing the skill in carrying out research work in the future. Lesson learned from this data exercise are as follows:

1. There were 6 students who take part in doing interview and observation. For reliability of their observation we should test whether their standard for observation are equal or not. However, due to limit time and another necessary resources we did not test this before, we should plan to test this when we go to do the base-line survey for our project in the future.
2. To prevent bias, the training for the interviewers should take more time and it is better if they have a chance to do a pretest and after that to retrain them if possible.
3. Checking data in the field daily by the supervisor is necessary to determine and to correct the mistakes.
4. The questionnaire should be short but ensure that it can collect the necessary information. Questionnaire should also be clear and easy for respondents and even interviewers to provide accurate information. The questionnaire

should be well designed for data analysis later on. Circumstances of the respondents should be considered when designing the questionnaire.

5. Timing is also an important lesson. Interview and observation took place just after TET holiday (Lunar New Year Festival of Vietnam), which was a time for planting young rice. Therefore, interview and observation were done only in evening time when the farmers return from the field. At that time, the weather in Northern Vietnam was very bad with rain, cold, and low temperature, which were the limitations for interviewers moving from household to household in the village. Therefore, daily and seasonal activity and weather condition during the survey should be taken in to consideration. It took long time for one interviewer to interview and observe each household. Farmers came back late from the farm, therefore, one interviewer could interview and observed only one household because they could not observe the sanitation facility and water supply in the darkness due to time limitation.
6. Duration for data collection should be longer, so that data collected would be done more carefully.
7. The sample size may not large enough so the results are not able to generalize and to analyze about the relationship among the factors.
8. From the results of Data Exercise we can reconfirm that a comprehensive project should be implemented. Health education should be provided to the households to improve their sanitation practices and transfer their knowledge into their daily life practice, especially in promotion of using decomposed feces, knowledge on a hygienic latrine, practices of washing

hands and de-worming yearly. We also learned that, most of the households can afford from one third to a half of the price of latrine that we should plan to introduce to the households in our proposed project.

9. The last but not least is that, I conducted my data collection in rural Vietnam when my advisor was in Bangkok and then whenever I met difficulties I could not have her advises on time.

## REFERENCES

Dao Ngoc Phong et al .1989. *The Cross-sectional Survey study of Sanitation situation and factors affect to Sanitation Practices at rural areas in Northern Vietnam.*  
Hanoi